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A Literature Review of World Cities - Where is Vancouver?

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A LITERATURE REVIEW OF WORLD CITIES - WHERE IS VANCOUVER?

ABSTRACT

The objective of this paper is to identify, organize, and discuss the key themes and characteristics that are associated with world cities in the literature to date. The paper consists of five sections, with each section exploring a major theme of world cities. Sections one to three discuss the physical and the intangible attributes of world cities. Sections four and five turn to a different direction and explore the effects that are generated by the formation of world cities.

The section on Commercial and Financial Sector discusses the relationship between global cities and the commercial and financial sector. This sector consists of Advanced Producer Services (APS), international financial centres, and multinational corporation headquarters. The Transportation and Telecommunications Networks section reviews the transportation and telecommunication networks that are featured among global cities. These networks are a critical component of the formation of world cities because they support the global activities of multi-national corporations. The Migration section examines the correlation between world cities and the movement of people into world cities on both a permanent and temporary basis.

The Social Indicators section of the paper identifies the indicators that are commonly shared among world cities. Many world cities experience a high cost of living, produce a substantial gross domestic product (GDP), and create wide income disparity between the rich and the poor. The section on Environmental Factors highlights emerging developments between global cities and environmental issues, such as environmental degradation and sustainability. The paper concludes by assessing the City of Vancouver against each of the five sets of criteria.

INTRODUCTION

BACKGROUND

The notion of world cities has been discussed for nearly a century. The wide interest in this topic is evident from the richness of the ongoing debate contained in the literature. A brief scan of the literature reveals a number of different theories and viewpoints that have been presented over the years in explaining the composition of world cities. Furthermore, as more research had been devoted to this area, new terminologies such as '*global cities*', '*globalizing cities*', and '*leading world cities*', have emerged to describe the concept of world cities.

In 1915, Patrick Geddes was the first to establish the term '*world cities*'. Geddes, who was a pioneer thinker and expert in city planning, defined world cities as an area where world business transactions are conducted (Geddes, 1915). Since then, researchers have built on Geddes's insights and have identified additional attributes to the world cities

concept. In 1966, Peter Hall described world cities as a region that exhibit a set of unique characteristics, such as acting as a centre for national and international trade, financial services, and political power (Hall, 1966). Robert Cohen asserted in 1981 that world cities are home to the headquarters of the world's largest multi-national corporations (Cohen, 1981).

During the late 1980s and early 1990s, Saskia Sassen coined the term '*global cities*' when she proposed that major world cities have been influenced by globalization and the increasing use of new telecommunication and information technology. Sassen argued that global cities have shifted away from traditional industrial activities, such as manufacturing, and that these cities are moving towards a more centralized sector of producer services (Sassen, 1991). Other experts argued that Sassen had only tested a relatively small number of cities in her research which has led to a debate on the term global cities. Peter Marcuse and Robert van Kempen introduced a new term called "globalizing cities" to emphasize that there are a number of smaller-size cities that also possessed the characteristics of global cities introduced by Sassen (Marcuse and Kempen, 2000). In 2005, Peter Taylor proposed the term "leading world cities" in order to create a neutral position between the different terminologies that were being used to describe the concept of world cities (Taylor, 2005).

PURPOSE OF THE PAPER

The purpose of this paper is to identify, organize, and discuss the key themes and characteristics that have been associated with world cities in the literature to date. It is important to recognize and distinguish these themes and characteristics of world cities. For example, there is a common assumption that a city with a large population would be classified as a world city. However, large populations are an attribute of a mega-city and not of a world city (Beaverstock et al., 1999). The conclusion of this paper examines the studies referenced in this paper that have discussed whether the City of Vancouver possesses world city attributes.

From the literature, there does not appear to be a universally accepted definition of world cities. Rather, a set of common themes and attributes associated with the concept of world cities has been put forward by various researchers in the field. Throughout the literature, these themes and attributes are commonly seen as overlapping. Nonetheless, this paper employs these themes and attributes and organizes them into five sections which are listed in the table below. The table also identifies the authors or organizations whose work is used to support the literature review of this paper.

World City Themes, Attributes, and Authors

Note: the authors are grouped according to their publications

WORLD CITY THEMES	WORLD CITY ATTRIBUTES AND AUTHORS
Commercial and Financial Sector	Advanced Producer Services (APS) • *Saskia Sassen* • *Jonathan Beaverstock, Richard Smith, and Peter Taylor* International Financial Centres • *Michael Goldberg, Robert Helsley, and Maurice Levi* • *Howard Reed* • *James Faulconbridge* • *Saskia Sassen* Multinational Corporation Headquarters • *Robert Cohen* • *Arthur Alderson and Jason Beckfield* • *Paul Knox and Peter Taylor*
Transportation and Telecommunications Networks	Airline Networks • *Peter Rimmer* • *Frank Witlox, Laetitia Vereecken, and Ben Derudder* • *Ben Derudder, Frank Witlox, and Peter Taylor* • *Ben Derudder, Lomme Devriendt, and Frank Witlox* Freight Networks • *Peter Rimmer* Telecommunication Networks • *Peter Rimmer* • *Mitchell Moss*

Migration	Skilled Labour • *Saskia Sassen* • *Jonathan Beaverstock and Richard Smith* • *Sami Mahroum* • *Peter Hall* • *Russell King and Enric Ruiz-Gelices* • *Kevin O'Conner* Unskilled Labour • *Saskia Sassen* • *John Friedmann* • *Mark Abrahamson* Tourism • *John Friedman and Goetz Wolff* • *Government Office for London, Llewelyn-Davies* • *Susan Fainstein* • *Mark Abrahamson*
Social Indicators	Income Disparity • *John Friedmann* • *Saskia Sassen* • *Kathryn Neckerman and Florencia Torch* Gross Domestic Product (GDP) • *PriceWaterhouseCoopers* • *Jonathan Beaverstock* Quality of Life • *Mercer Consulting Group* • *Corporation of London*

Environmental Factors	Environmental Challenges • *Roger Keil* • *Peter Newman* • *Brantley Liddle and Fred Moavenzah* • *David Satterthwaite* Environmental Sustainability • *Peter Newman and Jeffery Kenworthy* • *Hank Dittmar* • *Marina Alberti and Lawrence Susskind* • *Statistics Canada* • *The Organisation for Economic Co-operation and Development*

STRUCTURE OF THE PAPER

This paper consists of five sections, with each section exploring a major world cities' theme. Section one to three discusses the physical and intangible attributes of world cities. These attributes are commonly identified in the literature and are seen to be the essential requirements for a city to gain world city status. Sections four and five take a different direction to explore the attributes that are caused by the functionality of world cities. Attributes in Sections four and five are not discussed nearly as much in the literature compared to those in Sections one to three. Moreover, there is a growing trend that more studies are being conducted on Section five – Environmental Factors. The paper will conclude by examining how the City of Vancouver has been linked to these key themes of world cities in the literature. The following provides a brief summary of each section:

- **Section One - Commercial and Financial Sector:** discusses the relationship between global cities and the commercial and financial sector. This sector consists of Advanced Producer Services (APS), international financial centres, and multinational corporation headquarters. APS's are major knowledge activities associated with the world economy, which includes accountancy, advertising, banking, and legal services. Global cities possess international financial centres that are connected to major markets as well as provide residency to the majority of the world's largest multinational corporation's headquarters.

- **Section Two - Transportation and Telecommunications Networks:** reviews the transportation and telecommunication networks that are featured among global cities. These networks are a critical component of the formation of world cities because they support the global activities of multi-national corporations. Many writers have observed that world cities experience a significant flow of people, goods, and information.

- **Section Three - Migration:** examines the correlation between world cities and the migration of people on both a permanent and temporary basis. People are drawn to world cities because of employment opportunities and tourist attractions. This section contains three components of migration: skilled labour, unskilled labour, and international tourism.

- **Section Four – Social Indicators:** identifies the social indicators that are commonly shared among world cities. The literature suggests that the majority of world cities exhibit a high cost of living, produce a significant amount of gross domestic product (GDP), and create wide income disparity between the rich and the poor.

- **Section Five – Environmental Factors:** delves into the recent trend of environmental issues and its connection with global cities. Although environmental issues have not been traditionally discussed as main attributes of

global cities; this section attempts to highlight the emerging developments between global cities and environmental issues, such as environmental degradation and sustainability.

- **Conclusion – Where is Vancouver?:** examines the studies referenced in this paper that have discussed whether the City of Vancouver possesses attributes of a world city. The section assesses the City of Vancouver against each of the five sets of criteria.

This paper does not aim to solve the definition of world cities nor does it make a distinction between the various terminologies used to describe the concept of world cities. Therefore, the terms world city and global city are used interchangeably throughout the rest of the paper.

SECTION ONE: COMMERCIAL AND FINANCIAL SECTOR

In the literature authors have made references to Patrick Geddes' and Peter Hall's work on linking commercial and financial activities as one of the most important characteristics of world cities. These commercial and financial activities include trade, communications, finance, education, culture, and technology (Beaverstock et al., 1999). Since the work of Geddes and Hall, authors have been more specific and have provided more details regarding these financial and commercial attributes, which include Advanced Producer Services (APS), international financial centers, and the location of multinational corporation headquarters.

ADVANCED PRODUCER SERVICES (APS)

In 1991, Saskia Sassen introduced the concept of '*global cities*'. Based on her empirical analysis, she suggested that since the 1960s, world cities became increasingly interconnected with other major cities from around the world through the use of technology. Sassen argued that this movement led to the dispersion of certain commercial activities, such as factories, offices, and service outlets away from the main regions of the city. This movement also resulted in the concentration of other activities known as producer services, which are required by organizations to support the dispersed commercial components. It is the result of both the dispersion of manufacturing activities and the concentration of commercial and financial activities that have created new strategic roles for cities such as New York, London and Tokyo. Sassen states "the more globalized the economy becomes, the higher agglomeration of central functions in relative few sites, that is, the global cities….the "things" a global city makes are services and financial goods" (Sassen, 1991, p.5).

While Sassen recognizes that global cities have moved towards a service and financial industry, her findings were limited to three main cities – New York, London, and Tokyo. Other authors noticed that the producer services were also apparent in numerous other cities around the world. In the article, "A Roster of World Cities", Beaverstock, Smith and Taylor examined accountancy, advertising, banking, and legal services activities that were only offered to corporate organizations within world cities (Beaverstock et al., 1999). They called these activities '*advanced producer services*' because these four functions were not available to average citizens. The authors classified world cities by means of three levels: Alpha, Beta, and Gamma. Levels were based on the degree of concentration of advanced producer services. Alpha described cities with the highest concentration level of *world city-ness*, Beta is the second highest level, and Gamma is the cut-off level for being considered a world city. The results of this study produced 10 Alpha world cities, 10 Beta world cities, and 35 Gamma world cities. The notion of advanced producer services would form the backbone of much of the future research and studies associated with world cities.

INTERNATIONAL FINANCIAL CENTRES

Another main feature of world cities is the establishment of international financial centers, which are “major urban concentrations of financial services with a large portion of those services directed towards international financial transactions. They are also leading domestic centers for financial services in their own countries” (Goldberg et al. 2005 p.83).

In 1981, Howard Reed pioneered the identification of international financial centers as a major characteristic of world cities (Beaverstock et al. 1999). Reed ranked world cities based on the strength of their international financial centers. Although Reed had provided a solid foundation for further research of international financial centers, some have argued that Reed’s assessment of world cities failed to explain the factors and processes by which international finance centres become prominent (Faulconbridge, 2004).

In the article “Global Financial Centers”, Sassen attempts to explain the factors that transform an ordinary city into a global financial center. She points out that there are two essential factors which are responsible for this transformation. The first refers to the shift of scattered equity holdings from various areas to a highly consolidated regional centre. Major institutional banks and investment houses are the typical establishments located within the consolidated regional centers that hold the equities. The second signifies emerging markets which start receiving new financial investments and are taking the first steps towards becoming a global financial center. (Sassen, 1999) Sassen suggests that as these global financial centers emerge, they will be interconnected with other international financial centres to take advantage of various business synergies.

MULTINATIONAL CORPORATION HEADQUARTERS

One of the most compelling approaches in analyzing world cities is the attempt to rank world cities based on characteristics such as the number of different multinational corporation headquarters located in a particular world city. In 1981, Cohen noted that “changes in the corporation and in the structure of advanced corporate services have led to an emergence of a series of global cities which serve as international centers for business decision-making and corporate strategy formulation” (Cohen, 1981, p.300). He further argued “merely examining the foreign and total sales of corporations headquarters in a city is not sufficient to gauge its importance as a center of business…. Only a place of with a wide range of international business institutions can be truly called a world city” (Cohen, 1981, p.302). Cohen went on to construct an emerging world urban hierarchy in which he ranked US cities based on the number of corporate headquarters of corporations listed in the Fortune 500 (Cohen, 1981).

The world hierarchy presented by Cohen was based on an empirical analysis and many academics accepted his approach and advanced his research. Alderson and Beckfield suggested that there is a correlation between world cities and multinational enterprises and their subsidiary branches. The authors took the location of headquarters and

subsidiary branches of the world's top 500 largest multinational firms and used relational variables consisting of outdegree, closeness, and betweenness to rank the importance and power of world cities (Alderson and Beckfield, 2004). Others, such as Knox and Taylor, employed the number of global architectural firms in relation to those of advanced business services to determine "global arenas" (Knox and Taylor, 2005). Both Alderson and Beckfield and Knox and Taylor believed that determining connectivity of corporations is an ideal approach to determining the "*globalness*" of a city.

SECTION ONE SUMMARY

Numerous studies in the literature have linked commercial and financial activities as one of the most important characteristics exhibited by world cities. These commercial and financial activities have become more advanced to meet the specific needs of corporate organizations. Many studies make references to Beaverstock, Smith, and Taylor's criteria of the four types of advanced producer services – accountancy, advertising, banking, and legal services – which are the most prevalent and dominant commercial and financial activities within world cities. Authors have observed that multinational corporations tend to establish their headquarters in world cities to access the available supply of advanced producer services. Moreover, as capital flows into world cities from various regions, world cities establish themselves as major international financial centers.

SECTION TWO: TRANSPORTATION AND TELECOMMUNICATION NETWORKS

The formation of world cities requires a solid transportation and telecommunication network infrastructure that supports the agglomerated commercial and financial activities, such as APS. Moreover, these transportation and telecommunication need to be interconnected with other world cities in order to transfer people, physical goods, and information data. As Peter Rimmer points out "top-ranking global regions or world cities have become key nodes in this emerging network structure…rapid transportation and communication paths connecting these world cities have become critical links in global development patterns" (Rimmer, 1996, p. 434). The literature reports on research conducted on airline, freight, and telecommunication networks because they are seen as the main infrastructure that provide world cities with networking capabilities. Furthermore, several researchers have suggested that in terms of classifying world cities, what flows in and out of cities are just as important as what is fixed within.

AIRLINE NETWORKS

The analysis of the airline networks and its relationship with world cities is examined in two areas: the flow of airline passengers and the usage of major hubs. In 2004, Witlox, Vereecken, and Derudder produced a study that mapped the global network economy based on the global passenger flow within each city. The authors defined passenger flow as the number of passengers "between the origin and the final destination regardless of the fact that stopovers are made" (Witlox et al., 2004). The study was conducted using a Marketing Information Data Transfer (MIDT) database that holds airline booking information. The study examined a dataset from January 2001 to August 2001, rather than the whole of 2001, to offset the effect of the September 11 terrorist attacks. The authors ranked world cities based on various criteria, such as connections size and the number of arrivals and departures. However, the authors questioned the methodology of their research when the results of their study indicated that Tokyo was ranked 23rd in terms of airline passenger flow; but all other major studies indicate Tokyo as being one of the top five world cities. In 2007, Derudder, Witlox, and Taylor used a similar approach to assess the connectivity of US Cities to other cities within and outside the US by analyzing the number of arrivals and departures at each city's airports (Derudder et al., 2007)

The usage of airports as airline hubs for connecting flights in between cities have also been viewed as a key indicator of world cities. Recently, Derudder, Devriendt, and Witlox used the MIDT database to analyze airline hubs (Dreudder et al., 2007). Very often airlines do not provide information on locations where their customers change planes; hence, the authors argue that the MIDT database is one of the most comprehensive databases because MIDT captures this information. The study looked into the absolute and relative intensity of hubs. Absolute intensity is the number of passengers who use the airport as hubs and relative intensity refers to the ratio of the number of passengers who use the hub divided by the total passengers who uses the airport In

addition, this study also tallied the connections for each airport hub and the number of cities it connects with.

FREIGHT NETWORKS

While several researchers have referred to freight networks as a major component of a world city, only one contributed significant research on the topic. Peter Rimmer discussed the importance of freight networks, especially sea-land services and air freights, in his article "Transportation and Telecommunications among World Cities". Rimmer said that "because large container ports acts as important international gateways, it is tempting to equate them with world cities" (Rimmer, 1998, p. 439). He used 1984-1999 survey data extracted from the *Containerisation International Yearbook* to examine the top 25 container seaports with the highest traffic rates. Rimmer's objective was to test whether the top 25 container port cities would be the same or close to the list of world cities identified by commercial or financial attributes such as APS or multinational headquarters. Even though cities such as Hong Kong, Singapore, New York, and Tokyo were identified in the list of the top 25 container seaports, the rest of the cities on the list, such as Kaohsiung and Pusan, are not regarded as world cities. This led Rimmer to conclude that seaports alone cannot be the sole determinant of world cities.

Rimmer also explored air freight hubs and its relationship with world cities. He argued that when advanced produce services agglomerate within world cities, these business activities will require air freight services to transport various goods, such as business equipments, merchandise, and food (Rimmer, 1998). It addition, there is also a need for express cargo carriers for the delivery of time-sensitive packages. Similar to the approach used to analyze container ports, Rimmer took the top 25 international airports with the highest freight traffic and compared it will the list of world cities from 1984 to 1992. The majority of cities identified with the top 25 freight traffic are commonly regarded as world cities. Although Rimmer did not assert that the volume of air freights experienced by a city's airport directly correlates to gaining status as a world city, he did present a solid argument that world cities exhibit a high volume of air freights.

TELECOMMUNICATION NETWORKS

In addition to transporting passengers and physical goods, the transfer of telecommunication data plays a major role in the formation of world cities. One of the basic requirements for conducting advanced producer services is the provision of information. In 1987, Mitchell Moss argued that telecommunication networks were just as important as transportation networks in terms of providing support for world cities, but his argument received relatively little attention (Moss, 1987). In 1991, Moss observed that new technology-intensive buildings were being built in urban centres together with the development of fiber systems to connect a large number of users to national and international telecommunication networks (Moss, 1991). Moss suggested that as world cities conduct more information-based activities, the development of telecommunication network infrastructure will continue to grow.

Peter Rimmer accepted Moss' view and attempted to test the relationship between global telecommunication traffic and the status of world cities. The information was not available in useable form until 1989, when a time series data set began capturing telecommunication traffic suitable for analysis (Rimmer, 1998). Rimmer took the top 25 international telecommunication routes and was able to identify three major connecting regions with the most global telecommunication traffic – Asia, North America, and Europe. Even though many of world cities reside in the three identified regions, Rimmer did not suggest that global telecommunication traffic is one of the main factors in determining a world city status. Rather, he encouraged the need for further research on the importance of telecommunication networks and their role in connecting world cities. In addition, Rimmer pointed out that the global traffic data used for his research might be problematic because of intermediate service centers, which direct a large volume of global telecommunication traffic, are often located in regions outside of global cities.

SECTION TWO SUMMARY

Several studies identified the importance of transportation and telecommunication networks towards the formation of world cities. These networks provide the underlying infrastructure that connects world cities to other regions. With these networks, world cities possess the capability to transport people, transfer physical goods, and transmit information. Researchers have observed that airline networks in world cities experience significant passengers and freight traffic. Moreover, airports of world cities act as major hubs servicing connecting flights. Other studies have suggested that seaports with high freight traffic cannot solely determine whether cities are of world city status. Moreover, a world city must possess a solid telecommunication network in order to support advanced producer services and other financial and commercial activities. Due to the importance of transportation and telecommunication networks for world cities, there is strong support for the concept that what flows in and out of world cities is just as important as what's fixed within.

SECTION THREE: MIGRATION

With the inflows of financial capital, world cities have attracted a significant number of people both permanently and temporarily. According to a 2002 *The Economist* article "it is impossible to separate the globalization of trade and capital from the global movements of people" (The Economist, 2002, p.3; Benton-Short et. al, 2005). World cities are often perceived as a destination that provides employment opportunities and entertainment attractions. The migration of people into cities is an important factor towards the formation of world cities. The literature reveals three main components of migration: high-skilled labour, low-skilled labour, and international tourism.

SKILLED LABOUR

According to Sassen, the transformation of cities into global cities has led to significant restructuring of the labour work force (Sassen, 1988). This transformation has resulted in the concentration of producer services activities within global cities. Moreover, traditional business activities, such as manufacturing and routine office positions, are moved to less economically developed areas outside of global cities' main regions. As the concentration of producer services rises within global cities, requires an increase in the skilled labour supply to meet demand. Sassen notes that the global city environment will allow for an immigration influx of skilled laborers. Beaverstock and Smith agreed with Sassen and argued that with the influx of financial capital, multinational headquarters residing in global cities have increased their financial powers to affect the demand for skilled labour (Beaverstock and Smith, 1996). In addition to the number of people who migrate to global cities searching for skilled positions, the influx of skilled labour is also increased by organizations that send their skilled workers from various regional branches to their multinational headquarters located in global cities.

Besides employment opportunities presented by global cities, other factors influence either positively or negatively the inflow of high-skilled labour into a global city. Governments are a big factor in creating an environment which either encourages or dissuades skilled workers to migrate to a global city. Governments have the power to "ease immigration and work permits restrictions, providing tax incentives, and promoting the country as an attractive working and living environment" (Mahroum, 2001, p.29).

There is also recent but scant literature that explores the correlation between migration of international students and global cities. This concept is based on Peter Hall's insight in 1997 that major universities foster regional development. Universities such as MIT, Stanford, and Caltech, have led to significant economic growth in their respective regions (Hall, 1997). Others have observed that regions which required skilled labour have greatly supported international student recruitment in order to plan for future labour demands (King and Ruiz-Gelices, 2003). In 2005, Kevin O'Conner attempted to establish a global city hierarchy by identifying the number of international students enrolled in global city regions (O'Conner, 2005). His test sample focused on cities based in the United States, United Kingdom, Australia, and Canada. O'Conner pointed out that a large

number of international students have migrated to a few concentrated regions, such as New York, London, Melbourne, Sydney, Boston, and Toronto, considered as world cities based on advanced producer services. He also noted that a number of global cities that do not have a significant number of international students are building the necessary infrastructure to attract students. Regions not usually considered world cities, such as Oxford, UK and Cambridge, US host a substantial number of international students Therefore, O'Conner has stated that he cannot conclude that there is a firm correlation between world cities and the migration of international students, but he encouraged more research be done on this relationship.

UNSKILLED LABOR

While the concentration of producer services will lead to the dispersal of certain business activities, such as manufacturing and routine office positions, there will still be a substantial demand for unskilled labour within global cities. This is due to the fact that some business activities cannot be moved, such as cleaning and maintaining corporate buildings or hospitals (Sassen, 1991). Furthermore, skilled workers who migrate to global cities will require services from unskilled workers. For example, construction, entertainment, and food industries will benefit from the migration of skilled workers into the city. As a result, these industries will provide employment opportunities for unskilled laborers.

Global cities can sometimes attract more unskilled workers than the level of demand justifies, especially when other regional areas face tougher economic environments. If the number of unskilled workers is significantly higher than the number of employment opportunities, the government will incur substantial financial and social costs. John Friedmann explains that due to high volume of inflow of low-skilled workers, global cities will encounter high social costs because of the "massive needs for social reproduction, among them housing, education, health, transportation, and welfare" (Friedmann, 1986, p.326). Hence, many national and local governments attempt to limit the number of unskilled labour migrating to global cities. However, they will permit skilled workers or workers whose services are in demand (Friedmann, 1986). Therefore, it is not uncommon for global cities to experience an inflow of illegal entrants through various means, such as visa overstays or human smuggling (Abrahamson, 2004).

INTERNATIONAL TOURISM

As world cities develop the services that meet the needs of its skilled-workers, they also develop an underlying infrastructure that attracts foreign tourists. When visiting a world city, many tourists will take advantage of the same world city features used by skilled workers, such as subway systems and upscale restaurants (Abrahamson, 2004). Among the early pioneers who identified international tourism as a significant attribute of world cities were John Friedmann and Goetz Wolff. In 1982, these authors observed that a significant number of businesses that focus on servicing skilled workers also cater to international tourists (Friedmann and Wolff, 1982). Examples of industries within world

cities that serve both skilled workers and international tourists include hotel accommodation, entertainment, restaurant, and upscale-retail.

While Friedmann and Wolf had urged that more research be conducted in this area, it was not until the 1990's when more substantial studies began exploring the relationship between international tourism and world cities. In 1996, the Government Office of London commissioned a comparative report called *Four World Cities* that investigated the key sectors of London, Paris, New York, and Tokyo, with the tourism industry as one of the major area of research. The report highlighted that - at the time when the study was conducted - London, Paris, and New York were the most popular destination in the world and that the tourism industry earned a significant amount of revenue for each of the four cities (Llewelyn-Davis, 1996). The tourism industry is concentrated within the centre of world cities and an ideal transportation system should focus on carrying tourists within the city centre and to and from the airport. The report also stated that the key features of world cities which attract international tourists include "increasing the choice of accommodation, food, culture, and entertainment, and enhancing the city's status as an interesting and enjoyable destination" (Llewelyn-Davis, 1996, p. 167). Subsequent studies support the *Four World Cities* report assertion that when world cities offer unique monuments and facilities, such as museums, heritage attractions, convention and exhibition centres, and sport stadiums, they will attract numerous international tourists (Fainstein, 2005-2007) Although these features are important for tourists when selecting a travel destination, the tourism is sensitive to factors like cost, convenience, and transportation.

In 2004, Mark Abrahamson observed a different style of consumption associated with international tourism and world cities. He noted that consumption on items such as viewing attractions and purchasing souvenirs had always been an incidental part of tourism but that there is a growing trend that consumption has become the main objective for many tourists when selecting a travel destination (Abrahamson, 2004). For example, in Canada, there are more people visiting the West Edmonton Mall in Alberta than the Niagara Falls in Ontario. Furthermore, there are many tourist attractions located in world cities that are designed to create consumer-oriented venues. Abrahamson states, "Disney's California Adventure and Universal Studios' City Walk [in Los Angeles, US] are examples of theme parks as urban spaces" (Abrahamson, 2007, p.39). Due to an increasing number of theme parks and attractions that are now designed to create a commercial mall atmosphere, which Abrahamson attributes to what he calls "hyperconsumption".

SECTION THREE SUMMARY

World cities attract a substantial number of people from other regions both permanently and temporarily because of employment opportunities and tourist attractions. Researchers have shown that when world cities shifted from a traditional manufacturing industry to a concentrated advanced producer service industry, they created ample job opportunities for skilled workers. In addition, with the influx of financial capital, multinational headquarters possess the financial power to increase the demand for skilled workers, who

will have to locate in world cities to take advantage of employment opportunities. As more skilled workers migrate into world cities business opportunities are created in various industries, such as construction, food, and entertainment, which cater to the needs of skilled-workers. These businesses will provide employment opportunities for unskilled laborers. World cities can sometimes attract more unskilled workers than the level of demand. Moreover, writers have argued that the infrastructure and services designed for skilled workers have in turn attracted international tourists. It is very common for businesses, such as hotel accommodation, entertainment, restaurant, and upscale-retail, located in world cities to serve both skilled-workers and international tourists. For many world cities, their tourism industry generates significant revenue and employment opportunities.

SECTION FOUR: SOCIAL INDICATORS

This section addresses the linkage between global cities and three social indicators that have been identified in the literature: income disparity, gross domestic product (GDP), and quality of life. The formation of global cities has brought significant changes to the social-economic landscape. Attributes of global cities, such as commercial and financial activities as well as the migration of people into global cities, have significantly influenced the dynamics of the social-economic environment. These social indicators are the key measurements in assessing the overall health of global cities.

INCOME DISPARITY

The formation of global cities has resulted in the migration of skilled and unskilled workers to the city. Several authors have observed that this demographic change has created a large income disparity between the two social groups. John Friedmann has stated that "world formation brings into focus the major contradictions of industrial capitalism – among them spatial and class polarization" (Friedmann, 1986, p. 324). Saskia Sassen agrees with Friedmann's viewpoint on spatial and class polarization. She suggested that in order to fully understand the causation of the spatial and class polarization experienced within global cities, research must be conducted to explore factors other than those that merely describe the difference in salary wages between skilled laborers and unskilled workers. Sassen explained there are two developments within global cities that influence class polarization:

> "One is the vast supply of low-wage jobs required by high-income gentrification in both residential and commercial settings….[such as] expensive restaurants, luxury housing, luxury hotels, [and] gourmet shops… Furthermore, this is continuing need for low-way wage industrial services, even in such sectors as finance and specialized services... [the second development] is the downgrading of the manufacturing sector, a process in which the share of unionized shops declines and wages deteriorate while sweatshops and industrial homework proliferate" (Sassen 1991 p. 9)

No reports or studies have been located that provides comparable income disparity data among global cities. Nonetheless, a large income disparity is not ideal for any global city, as it increases the crime and incarceration rate, creates political discontent and social tension, and negatively impacts the public programs such as education and health. (Neckerman and Torche, 2007)

GROSS DOMESTIC PRODUCT (GDP)

Gross Domestic Product (GDP) is regarded as one of the main indicators in assessing the strength of an economy because it measures the total value of all goods and services produced. A 2007 UK Economic Outlook Report indicates that the top 30 cities in the world ranked by GDP produced 16% of the of the world's total GDP in 2005 (PriceWaterhouseCoopers, 2007). Furthermore, the top 100 cities ranked by GDP

account for 25% of the total world GDP. When examining the list of the world's top 30 cities based on GDP, the majority of these cities, such as Tokyo, New York, Paris, London, Hong Kong, and Toronto, are also included in the roster of world cities based on Beaverstock's criteria of advanced producer services. Hence, it is safe to assume that global cities produce the lion's share GDP and that GDP acts as a key indicator for the overall economic health of global cities.

The 2007 UK Economic Outlook Report also highlighted the top 30 world cities with the highest level of GDP growth from 2002 to 2006. From this list of top 30 world cities, only two cities – Shanghai and Beijing - were also on the roster of world cities based on Beaverstock's criteria of advanced producer services. Hence, global cities do not typically exhibit a very high growth rate in GDP. Also it is very difficult for cities with high GDP growth to catch up to the amount of GDP generated by world cities because as the 2007 UK Economic Outlook Report claims "the most successful cities will be that have comparative advantages in intangible business, financial and consumer services that are not so easily emulated by the rising stars of China [expect Beijing and Shanghai], India, or Brazil. Prominent examples include the continued pre-eminence of London, New York and Tokyo in global financial services". (PriceWaterhouseCoopers, 2007, p.22)

QUALITY OF LIFE

One of the most difficult to measure social indicators that have been related to world cities is quality of life. Unlike income disparity or GDP, quality of life is an intangible concept, and as a result various methodologies and variables have been presented in an attempt to measure this concept. It is beyond the scope of this paper to determine which approach is the most suitable to measure quality of life. Rather, this section discusses some of the variables that have been perceived as essential for quality of life in regards to its relationship with global cities. A 2005 Report entitled "The Competitive Position of London as a Global Centre" produced by the Corporation of London, published a survey on the importance of quality of life to corporate workers. Survey participants were 356 representatives from various advanced producer services organizations such as Lehman Brothers, Merrill Lynch, UBS, Goldman Sacs, and HSBC Asset Management. The results of the survey showed participants perceived the following factors as either important or very important towards contributing to the quality of life of a global city: leisure facilities and culture, healthcare facilities, school and colleges, transport systems, and residential property.

In 2007, Mercer Consulting Group, presented a similar report in which it introduced a concept called "Quality of Living" based on 39 different key variables, which can be grouped into categories, such as political and social environment, housing, natural environment, health and sanitation, and consumer goods (Mercer Consulting Group, 2007). The report compared the quality of life of various cities using New York as the benchmark. The report found no correlation between the list of cities with the highest quality of living and the list of global cities. Although quality of living does not determine a global city's status, it would nevertheless be ideal for global cities to possess

the elements suggested in the Quality of Living index to attract skilled workers and provide a better living environment for all its residents.

SECTION FOUR SUMMARY

Three social indicators have emerged in the literature in describing the social-landscape of world cities: income disparity, GDP levels and quality of life. Income disparity has been documented in many studies. As skilled workers and unskilled workers migrate to world cities, significant class and spatial polarization result because of income disparity between skilled and unskilled workers. This income gap leads to social problems, such as increasing crime activities, creating social tensions, and hindering education and health programs. GDP is another social indicator that assesses the economic strengths of world cities because GDP measures the production of goods and services. According to 2007 UK Economic Outlook Report, the top 30 cities in the world ranked by GDP produces 16% of the of the world's total GDP in 2005. The third social indicator is Quality of Life, has been linked with world cities by a number of reports; however, the methodology and variables used to measure Quality of Life has been difficult to determine. Variables such as leisure facilities and culture, healthcare facilities, school and colleges, transport system, and residential property, are commonly used to measure the Quality of Life in world cities.

SECTION FIVE: ENVIRONMENTAL CHALLENGES AND SUSTAINABILITY

The idea of global cities and their environmental impact has not been explored as extensively as other themes identified in this paper. In 1995, Roger Keil stated that "the research following the 'world city hypothesis' [Friedmann, 1986] has done little to integrate either the ecological problematic or the local politics of policy-making in the world cities" (Keil, 1995, p.281). Keil suggested that this topic be examined more deeply, yet there is scant literature that discusses the correlation between global cities and their environmental impacts. However, there are positive signs that suggest this topic could gain more attention in the near future. Most notably, a number of studies are contained in the literature that explore the relationship between urban development and environmental challenges and sustainability. This section attempts to identify and review prominent studies that relate to global cities in terms of its environmental context.

ENVIRONMENTAL CHALLENGES

The main factor that causes cities in general to experience significant environmental challenges is its population (Newman, 2006; Liddle and Moavenzadeh, 2002). As the number of people who migrate to cities increases, these cities will encounter greater environmental challenges. Brantley Liddle and Fred Moavenzah propose that there are two distinctive population categories, poverty and affluence, which impact the environment differently (Liddle and Moavenzadeh, 2002) The authors argue that the activities of those who are in the poverty category usually cause environmental challenges that have a local effect; while the activities of the people who are in the affluent class will produce environmental challenges that have global effects. For example, both social groups will cause environmental degradation, such as air and water population as well as the creation of solid wastes; but the affluent group has more power to make an impact on the consumption of natural resources.

In 1997, David Satterthwaite conducted a study in which he examined the differences in environmental problems of cities based on the different levels of national income. Satherthwaite created four categories: cities in low-income countries, cities in low and middle-income countries, cities in middle and upper income countries, and cities in upper-income countries. He observed that cities based in countries that have the highest income are the most prepared and are able to better handle environmental problems than cities based in less prosperous countries. The author argued that cities with higher income have greater potential to invest in the necessary infrastructure and services needed to address these environmental problems. Satherthwaite concluded that as cities grow and become more prosperous, they have the ability to transfer their environmental costs and responsibilities to other regions or people (Satterthwaite, 1997).

ENVIRONMENTAL SUSTAINABILITY

In 1989, Peter Newman and Jeffery Kenworthy presented four principles on the concept of sustainability and its relationship to cities: "1) The elimination of poverty, especially in the third world, is not just on human grounds, but as an environmental issue; 2) The First World must reduce its consumption of resources and production of wastes; 3) Global cooperation on environmental issues is no longer a soft issue; and 4) Change towards sustainability can occur only with community based that take local cultures seriously" (Newman and Kenworthy, 1989, p.2-3). These principles provided a possible foundation for further research and other authors have explored the relationship between cities and environmental sustainability on areas, such as transportation, water management, and energy usage.

Newman and Kenworthy warned of the vulnerabilities of cities being highly dependent on automobiles for transportation (Newman and Kenworthy, 1989). The authors highlighted the dangers of air pollutants and the dependency on a non-renewable energy source. Their insights have led other authors to research how cities should design their transportation systems. For example, Hank Dittmar suggested that when cities plan their transportation system, they must establish and follow environmental sustainability goals such as minimizing the use of nonrenewable resources, providing greater access to the general public, and integrating its system with other transportation methods. (Dittmar, 1995) Newman and Kenworthy argued the need for cities to better manage its water supply in order to maintain the natural cycle of the bioregion in which they are located (Newman and Kenworthy, 1999). The authors suggested that cities should explore new methods in preserving their water supply, such as adopting high quality sewage treatment, promote reuse of stormwater, and minimize use of public water. Marina Alberti and Lawrence Susskind discussed energy usage as a main environmental sustainability issue for many cities. Similar to transportation, energy usage by cities generate air pollutants. The impact of the pollution depends on various variables of each individual city, such as its urban activities and its selection of energy sources. The authors also noticed that the way a city is designed also affects the amount of energy usage. For example, dispersed urban settlement has a higher level of energy consumption than concentrated urban settlements (Alberti and Susskind, 1996)

A number of different indicators have been suggested for measuring environmental sustainability. Statistics Canada produced a report on environment based on three environmental sustainability indicators: air quality, greenhouse gas emission, and fresh water (Statistics Canada, 2006). Other organizations have stressed the need to use significantly more indicators to assess environmental sustainability. The Organisation for Economic Co-operation and Development (OECD) held a conference in 1999 to develop sustainability indicators. The result of the conference led to the publication of '*Towards Sustainable Development: Indicators to Measure Progress*', in which five categories of sustainable indicators were proposed, with each category possessing six to 11 indicators (except for the Economic, Social, and Environmental Indicator Category, for which no

indicators were proposed). These five categories comprise Environmental Performance; Economic, Social, and Environmental; Transportation/Environment; Agriculture/Environment; and Energy/Environment. Examples of indicators from these categories include: CO^2 emissions, waste generation, transport-related air emissions, energy consumption, and land conversation. Hence, there are no universally agreed upon standards in measuring environmental sustainability.

SECTION FIVE SUMMARY

The linkage between world cities and their environmental impact has not been investigated as extensively as other themes identified in this paper. However, there are indications that this topic will garner more attention in the near future. Currently, there are studies that explore the relationship between urban development and environmental challenges and sustainability. Researchers have argued that cities experience environmental challenges because of their population growth. In addition, there are studies that examine the relationship between the level of pollution and different classes of people based on income. These studies show that although both low-income and high-income individuals cause environmental degradation, people in poverty groups usually create environmental problems that have a local effect, while people in the affluent group create environmental problems that have global effect. Environmental sustainability is of great concern for many cities. In the literature, areas of interests regarding environmental sustainability include transportation, water management, and energy usage.

CONCLUSION: WHERE IS VANCOUVER?

Vancouver is viewed by many as one of the world's most desirable cities in terms of residency according to a number of reports in recent years. In 2005 and 2006, The Economist Intelligence Unit (EUI) ranked Vancouver as the best city to live in and the Mercer Consulting Group placed Vancouver third in the world based on quality of life for three straight years, from 2005 to 2007. Despite the recognition that Vancouver is one of the most attractive residential cities in the world, there is limited reference in the literature that identifies the Vancouver as a world city based on the five key themes of this paper. Unlike cities such as New York, London, Paris, and Tokyo, it is uncommon to find studies that employ Vancouver to support arguments of world city attributes. The purpose of this conclusion section is to examine the studies referenced in this paper that have discussed whether Vancouver possesses attributes of a world city.

COMMERICAL AND FINANCIAL SECTOR

Vancouver is not mentioned in major studies associated with international financial centres or multinational corporation headquarters, but some articles investigated whether the City of Vancouver possessed attributes of advanced producer services (APS). In 1999, the article 'A Roster of World Cities' by Beaverstock, Smith and Taylor, compares Vancouver with cities across the world based on APS criteria. Vancouver was chosen along with 121 other cities to comprise of the research's test sample. Cities were ranked based on the concentration of advanced producer services in four main areas: accountancy, advertising, banking, and legal services activities. The concentration of the four main areas is divided into three levels: prime, major, and minor. The results of this study did not place the Vancouver in any concentration level associated with advertising, banking, and legal services. Vancouver was only identified in the accountancy area with a minor concentration level. While the study stated that Vancouver showed some evidence of world city formation it was not included in the roster of the top 55 word cities.

TRANSPORTATION AND TELECOMMUNICATION NETWORKS

Vancouver's transportation infrastructure has been identified as possessing characteristics that are unique to world cities. In the study, 'Mapping the Global Network Economy on the Basis of Air Passenger Transport Flows', Witlox, Vereecken, and Derudder ranked Vancouver International Airport in the top 47 world cities' airports in terms of the number of passenger arrivals and departures from January to August 2001. They stated that during this time, Vancouver's International Airport experienced approximately 4 to 6 million passenger arrivals and departures. However, this number is significantly smaller than airports in London and New York, which experienced approximately 30 to 32, and 28 to 30 million number of passenger arrivals and departures respectively in the same period. In terms of Vancouver International Airport acting as a hub for connecting flights, a similar study called 'Flying Where You Don't Want to Go: An Empirical Analysis of Hubs in the Global Airline Network', did not identify Vancouver International airport in

the top 25 world airports in terms of experiencing most number of connecting flights or the connecting passengers (Derudder et al, 2007). No current studies are available that examine the freight value that Vancouver International Airport handles in comparison to other world city airports.

While Peter Rimmer stated the amount of freight traffic handled by a city's seaport could not solely determine whether the city should obtain world city status; it is interesting to compare the freight traffic volume experienced by the Port of Vancouver in comparison to the freight traffic of other major world ports. In 2005 the American Association of Port Authorities, in 2005, ranked the Port of Vancouver 39th of all seaports in the world in terms of the amount of cargo volume handled. The Port of Vancouver processed 76.5 million metric tons; while the number one largest seaport was located in Shanghai, China, which processed 443 million metric tons of cargo (American Association of Port Authorities, 2005).

MIGRATION

There are no studies that show comparable data of world cities in terms of the number of skilled and unskilled workers, and international students residing in various cities. Two reports compare world cities in terms of the tourism industry. A report by Euromonitor International, a global market research organization that focuses on industries, countries and consumers, produced a list of the top 150 world cities based on the number of visiting tourists in 2006. The report gave the top spot to London with 15.6 million visitors and ranked Toronto 14th with 4.1 million visitors. The report did not include Vancouver in its top 150 cities based on number of visiting tourists (Euromonitor International, 2006). In 2007, Forbes Traveler created a list of the top 50 most visited attractions in the world. The report ranked New York's Times Square as the most visited attraction with 35 million visitors, while Niagara Falls, Ontario was placed sixth with 14 million visitors. The list of 50 most visited attractions did not include any attractions from the City of Vancouver (Forbes Traveler, 2007).

SOCIAL INDICATORS

The 2007 UK Economic Report ranked the top 100 world cities in 2005 in terms of Gross Domestic Product (GDP) at purchasing power parity as well as the top 100 cities estimated to have the highest level of GDP in 2020. Toronto is ranked 21st in 2005 with a GDP of $209 billion and Toronto is placed 22nd in terms of having a projected 2020 GDP of $327 billion. Vancouver is ranked 64th with a GDP of $79 billion in 2005 and is placed 75th in terms of projected 2020 GDP of $121 billion (PriceWaterhouseCoopers, 2007). For the Quality of Life indicator, Vancouver is ranked high in numerous reports. From 2005 to 2007, Mercer Consulting Group has ranked the Vancouver third for three straight years in terms of Quality of Living. In 2005 and 2006, the Economist Intelligence Unit (EUI) ranked Vancouver as the number one city in the world based on livability. In terms of income disparity, there are currently no studies available that compare Vancouver to other world cities.

ENVIRONMENTAL CHALLENGES AND SUSTAINABILITY

The topic of environmental challenges and sustainability has not been explored as extensively as other world cities themes. As a result, there are no studies that compare world cities in terms of environmental challenges or sustainability. Regardless, Vancouver is mentioned in a few reports as being one of the most environmentally friendly cities in the world. In 2007, Forbes magazine produced a ranking of the world's top 25 cleanest cities. The report placed Vancouver 10th - tied with Bern, Switzerland and Montreal, Canada - and it ranked Calgary, Canada as the cleanest city in the world (Forbes, 2007). Elisa Woods ranked the Vancouver as the third greenest city in the world in 2004 in terms of innovation and eco-friendly energy usage (Woods, 2004). Other reports do not recognize Vancouver's environmental practices. The Corporate Knights, a Canadian publication that focuses on the business of environmental sustainability, excluded the City of Vancouver from its ranking of the top five Canadian sustainable cities in 2007. The reported ranked from first to fifth, Quebec City, Ottawa, Kingston, Kitchener and Calgary (Corporate Knights, 2007).

IN CONCLUSION

When compared to cities such as New York, London, Paris, and Tokyo, it is rare to find Vancouver in the literature along with common measures of world city attributes, such as commercial and financial activities, transportation networks, and international tourism. Studies in these areas that include Vancouver often rank it in the middle or bottom tiers of the studies' findings. For example, Vancouver was not included in the top 55 world cities based on advanced producer services (Beaverstock et al., 1999) nor was it identified as one of the top 150 cities based on the number of visiting tourists by Euromonitor International in 2006.

But Vancouver is prevalent in literature associated with liveability and sustainability attributes such as quality of life and leading environment practices. Vancouver has been consistently ranked as a world leader in terms of livability and quality of life by organizations such as The Economist and Mercer Consulting Group. Moreover Vancouver has been ranked as one of the cleanest world cities by Forbes Magazine as well as recognized as a leading world city that exhibits innovation in eco-friendly energy usage (Woods, 2004).

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