

Strategic Business Location Decisions: Importance of Economic Factors and Place Image

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Abstract

Our research provides a novel perspective by examining the effect of both economic factors and non-economic factors such as place image on business location decisions. This paper expands the extant theory and practice by identifying and considering in addition to the economic factors, place image factors, i.e., sense of place, identity (retention factors) and brand image, visual image, and reputation (attraction factors). The most significant issue in quantitative studies such as facility location problems is the inability to identify qualitative factors previously considered nebulous correctly. The authors, with the help of a case study of Amazon's Headquarters 2 location decision, contend that in addition to economic factors, image factors are important for strategic location decisions. Specifically, our analysis shows that Amazon's decision to move a part of HQ2 to Arlington, Virginia can be explained through place image factors. We posit that place image should be given due consideration for strategic location decisions.

Location, location, location is a worn-out cliché, but often true, in the literature. Business site selection is a complex strategic decision and may affect a company's future in the long run. Quite often location decisions boil down to careful analysis of economic factors by managers. Driven by the

significant contributions of moving manufacturing to low wage countries to increase the profits, companies have been relocating their facilities to these regions, and non-economic factors have been accorded little or less than adequate importance.

This exodus to low wage regions cost the U.S. 5.7 million manufacturing jobs between 2000 and 2010.¹ In recent years, however, firms have begun to recognize the hidden costs of moving facilities away from customers based purely on economic factors. For example, ET Water Systems, a California company that builds irrigation systems for businesses, initially located its manufacturing facility to China. As significant amounts of capital were tied up in big shipments with long lead times, innovation stagnated due to the distance between manufacturing and design, and the quality of products decreased, ET Water Systems reconsidered the decision. A cost analysis revealed that when the cost of shipping, duties, and other fees were taken into consideration, producing in California was only 10% more expensive than producing in China. Also, the company faced numerous issues due to other factors such as finding qualified workers and regulatory issues.²

Another example of on-shoring is of Rolls Royce that has manufacturing plants in high- wage countries such as Germany, U.S., England, and Singapore. Similarly, international companies such as Apple, General Motors, Boeing, Ford, and Intel have moved a portion of their production to the U.S.³ The companies that follow the trend of moving on-shore cite reasons other than costs: lack of intellectual property (IP) protections, violations of environmental regulations and/or human rights, unsafe environment, financial instability, rapid increases in wages, lack of skilled labor, and the instability of transportation costs.⁴

The strategic impact of non-economic factors on business site selection is recently being recognized in domestic location decisions as well. For example, in the recent decision for Amazon's second headquarters, the company has listed both economic factors and non-economic factors such as capital and operating costs, incentives, cultural community fit, and quality of life. Another example is of Mars Wrigley Confectionary moving its headquarters to their hometown, Newark, citing reasons such as "returning to their roots."⁵ In our research, we propose a multi-perspective framework for business site selection that considers both economic and non-economic factors. Based on a weighted decision matrix and an analysis of Amazon's HQ2 decision we find that while economic factors identified the top three candidates, the final decision was based on non-economic factors.

We posit that focusing on economic factors for operations decisions is undoubtedly reasonable; however, strategic decisions such as facility location require long-term thinking involving qualitative factors such as being 'closer

to home,' place image, sense of place, identity, brand, and reputation, in addition to economic considerations. Hence, in this paper we explore the answers to the following questions:

1. What are the economic and non-economic factors important in Amazon's Headquarters 2 (HQ₂) decision?
2. What are the implications of location decisions for the stakeholders in the long term in the Amazon HQ₂ case?

In the rest of the paper, we identify and discuss factors for business location decisions based on literature review. We then combine both economic and place image factors in a single framework. With the help of Amazon's HQ₂ case study we describe the economic factors that impact facility decisions and show that only through place image factors the final decision to move Amazon HQ₂ to Arlington, Virginia can be explained.

Literature Review

Weber's work, now known as classical location theory, focused on identifying facilities that maximize profit.⁶ Models like these base facility decisions solely on efficiency and effectiveness.⁶ Since then, many operations research practitioners investigated the facility location problem by maximizing profit or minimizing costs.⁷

An emerging stream of research has started to draw attention to the limitation of classical location theory and highlight other qualitative variables playing an important role in business site selection for practitioners. Furthermore, the factors that impact site selection for manufacturing and retail site selection are vastly different. Studies are emerging that consider qualitative factors of site selection as well as quantitative factors.⁷

Farahani et al. perform a survey of multicriteria facility location models and highlight the importance of qualitative factors such as environmental risks, resource availability, access to public facilities, e.g., airports and public transportation, political matters and regulations, competition, and reliability, i.e., low possibility of disruptions.⁸

Business site location decisions start with economic factors such as transportation, labor, real estate, constructions costs, tax incentives, labor and resource availability, proximity to suppliers or markets, and sustainability. Qualitative factors such as proximity to industry clusters, anchor institutions, and the presence of an innovative culture and social networks are gaining importance. For service firms, locating close to competitors, i.e., competitive clustering, gives the firms the ability to capture

spillover demand.⁸ These factors may represent the minimum requirements for regions to be included in a preliminary facility location list; not being included in this preliminary list could be detrimental for the economic growth in a region.

The quality of life concept, commonly found in place image and urban design literature, is not prevalent in the site selection literature. Dogan used bayesian networks and total cost of ownership methodology to incorporate qualitative factors such as quality of life to business site selection decisions.⁹ In this analysis, the author indicated that in addition to data, domain knowledge is important in facility location decisions. This sentiment is supported by Area Development, a site selection company, “Of the 13 site selection criteria we [use to] evaluate sites, quality of life has relatively minor impact in the early stages...in the later stages, it becomes more important and is measured relative to the other short-listed location candidates.”¹⁰

Recently, Clouse and Dixit identified and emphasized the role of place image in business location decisions.¹¹ In this paper, we first identify and discuss traditional and contemporary factors that directly or indirectly impact facilities decisions and then propose a framework that describes their relationships. Although some qualitative factors are considered in business site (facility location) decisions in academia, only a few studies include something akin to place image as a contributing factor to business site selection.

Economic Factors Affecting Business Site Selection

The impact of economic factors on the business site (or facility location) decisions has been studied extensively. With globalization, several factors that were not prevalent in the past such as tariffs and exchange rates are now relevant. A Delphi study based on a panel of experts indicated that the most significant cost related factors impacting facility location decisions in order of importance are: wage rates, transportation, fixed costs, energy cost/availability, and other manufacturing costs.¹² Similarly, other economic factors in order of importance are tax structure and incentives, customs duties, tariffs, exchange rates, proximity to high-quality suppliers, GDP/GNP growth, income per capita, and the country’s debt.¹³

Costs

Costs associated with expanding or establishing facilities have implications on the competitive position, strategic focus and market position of a company. For example, with its recent NIKEiD customizable sneakers program, Nike offers a delivery time of custom products within six weeks. To achieve this short turnaround for customized shoes, Nike started shipping

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products direct-to-customers and expanded its network to Japan and Brazil to be closer to customers. Similarly, a firm can focus its strategy on being efficient or responsive. The costs associated with expanding or establishing facilities can be categorized as labor, fixed, energy, and other costs.

Labor costs have been known to be a significant factor in firms moving manufacturing to low-wage regions. Specifically, starting in the 2000s, many firms built their facilities in low-wage countries such as China. However, in recent years, a relocation of manufacturing facilities from China to other regions is observed. This could be attributed in part to the rapid increase in wages in China (Figure 1).¹⁴ Nowadays, many U.S. based manufacturers are moving their production to Mexico as (1) the shorter distance translates to lower transportation costs, (2) the NAFTA (North American Free Trade Agreement) and now the USMCA (United States-Mexico-Canada Agreement) means no duties, and (3) as wages have been increasing rapidly in China since 2013, they decreased in Mexico (Figure 1).

Fixed costs are one-time costs associated with opening facilities including land, building, or equipment costs. While fixed costs constitute a significant portion of initial investments, their impact on the business location decisions is not as impactful as labor costs. Fixed costs, in general, impact the size of the facilities rather than the location.

Figure 1. Nominal Wages (U.S. Dollars)

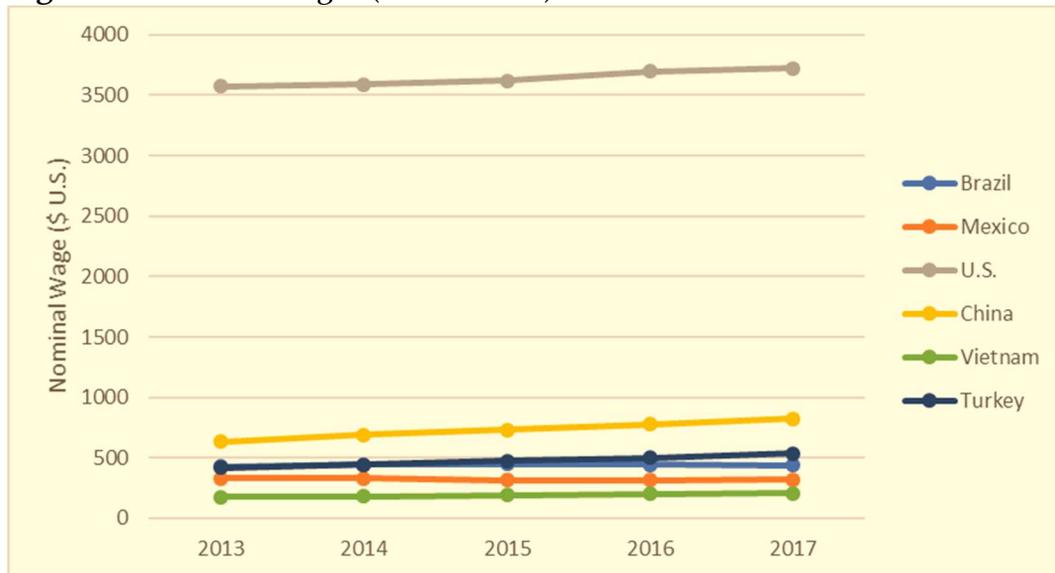


Figure adapted from Global Wage Report 2018/19¹⁴

Energy costs are variable costs associated with operations. These costs vary not only by nation but also by state and region. According to Ovo Energy, the average electricity cost in 2011 in China and India in U.S.

cents/kwh was 4¢ lower than in the U.S. and 20¢ lower than some European countries. The electricity prices range in U.S. states as well.^{15,16} In May 2018, the state with the highest and lowest electricity prices were Hawaii and Washington, respectively. On the other hand, natural gas prices in the U.S. and Mexico are 50 to 170% less than that of China's.¹⁷

Other manufacturing costs include sourcing or transportation costs. As transportation costs are directly related to the distance and the mode of transportation, firms that locate their facilities away from customers usually incur high transportation costs. Similarly, businesses that are located closer to that suppliers have lower transportation costs. According to Industry Week, material costs are 43% lower in low-cost countries such as Malaysia, Thailand, Indonesia, and India.¹⁸

Regulatory Factors

Tax structure and incentives were in the top 10 most important factors in site selection for businesses in 2007.¹⁹ Almost all states and countries use tax breaks to attract businesses. For example, in 2004, Reno, Nevada offered one of the largest incentive packages in the U.S. auto industry to lure Tesla's Gigafactory that could top \$1.3 billion in tax benefits.²⁰ In 2018, after changes to the U.S. tax code to keep foreign investors from leaving, China had offered to exempt foreign investors from tax on their earnings temporarily.²¹ Delaware, on the other hand, attracted many major corporations such as Apple, Coca-Cola, Google, and Walmart with its business-friendly tax-laws.²²

Regulations have the power to direct businesses actions. In a survey conducted by Area Development in 2007, corporate tax rate, state and local incentives, environmental regulations, and tax exemptions rank as the 7th through 10th most important factors in strategic location decisions.²³ In the last decade, strict and increasing environmental regulations in the developed countries were one of the drivers of offshoring by companies. Although regulations may deter companies from locating to certain regions, the benefits of these types of regulations are clearly visible in people's quality of life.

Customs duties and tariffs are both taxes implemented by a country on imported goods. Tariffs have been declining worldwide since the 1940s.²⁴ However, recently trade wars between China and the U.S. are causing tension. While some believe that new tariffs may move manufacturing from China back to the U.S., others think that they will only increase prices for customers.

Exchange rates refer to the value of a country's currency compared to that of another country and is another factor that makes countries with weak currencies attractive for plant location.

Growth

Labor availability refers to the availability of talent with the right qualifications and is a significant factor in location decisions for firms. For example, in locating its second headquarters, Amazon requires a place with the potential to attract and retain technical talent.²⁵

Competitiveness in the host region presents challenges for foreign investors. For example, in 2015 as China's economy was booming, Apple had captured most of the smartphone market. However, as China's growth rate decreased, inexpensive local brands, Xiaomi Inc. and Huawei Technologies Co., were preferred over iPhones.²⁶

Non-Economic Factors Affecting Business Location Decisions

In the previous section, we summarized the various economic factors firms consider when moving manufacturing and retail facilities or offices. However, only economic factors are not sufficient in business site selection decisions of firms. Mark Hendricks of the Entrepreneur highlights that one of the main reasons companies consider moving is the "intangible issue of quality of life."²⁷ While some papers study the impact of quality of life factors such as crime, weather, infrastructure, cost of living, and recreational activities, simply quantifying these factors is not enough to accurately describe the life in a place.^{8,11} Hence, in this paper, we emphasize that in addition to economic factors, place image factors that describe a location are important in business site selection. We discuss the non-economic factors, specifically place image, that affect business decisions as follows:

Place Image

Brand, as outlined by Clouse and Dixit in their model of place image, is the intended message of a place that is propagated to the community and potential businesses.¹¹ The brand of a place, similar to the brand of a company, depends on people's perceptions. Brand is a combination of images, logos, and slogans and represents the story that a place wants to tell the world. For example, Silicon Valley in the Southern San Francisco Bay Area is known to many as the technology hub of the world. Brand cannot just be created by one person; it needs to be accepted by the people. For example, "Cleveland Rocks" slogan is accepted by many as Cleveland is known as the birthplace of rock and roll or New York City is known as the "city that never sleeps" due to its constantly alive streets.

Visual Image is the symbolic representation of a place. It is what people see, know, and picture when the place name is mentioned. This could be the Willis Tower in Chicago, or Pentagon City in Arlington, Virginia depending on a person's knowledge and interest in the place. Iconic buildings are a

significant part of the visual image of a city. In addition to iconic buildings, other visual factors such as green spaces or water coverage also contribute to the visual image of a city. Note that visual image of a city can be formed outside, i.e., without ever visiting.

Reputation is what a place is known for and how it is colloquially known. This is often based on problems that have or are currently facing a place which can include anything from environmental issues, the temperament of the population, or other designations. A negative reputation of a city has a significant impact on attracting and retaining talent and firms. For example, in June 1969, the Cuyahoga River in Cleveland, Ohio spontaneously caught fire due to heavy pollution which led to the creation of the Clean Water Act. Still, to this day, some question the pollution levels of the Cuyahoga River and associate Cleveland with “the river that caught fire.”

Sense of Place refers to the experience of visiting and interacting with a place. One cannot truly understand what a place is like until visiting. Sense of place goes beyond what is felt with the five senses; it is an experience. Even different neighborhoods in cities have their own sense of place. For example, while Murray Hill in New York is known as the place for recent college graduates transitioning into working life, Harlem is known as the jazz center of New York, and Brooklyn is the place for trend-setters. Sense of place is subjective and tied to the experience and perception of a person. For example, while a person may find New York exciting, another person may find it dirty and over-crowded.

Identity is the last of the place image dimensions and alludes to the character of the people in each place. Perhaps they are known for being fast-paced or lazy, intelligent or uneducated. For example, while Beijing is known as fast-paced and highly competitive, Changsa is more relaxed. Identity along with sense of place are the factors that retain businesses and talent in a city. For example, an industry that hires a lot of foreign talent needs to ensure that its employees feel connected and at home in their work and living environment. Major metropolitan areas in the U.S., in general, are more diverse in comparison to suburban and rural areas and attract more immigrants.²⁸

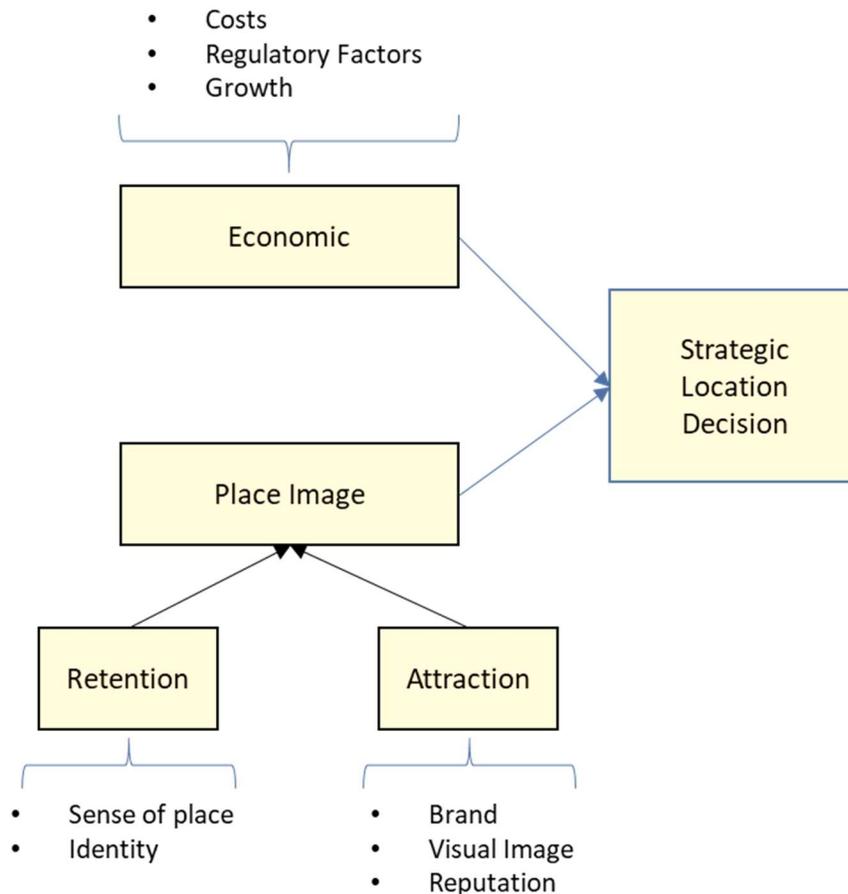
Economic and Place Image Factors Affecting Business Site Selection

The five aspects of place image work together to create the overall image of a place. While brand, visual image, and reputation are focused outward towards attraction, sense of place and identity face inward and are more important in retention efforts. Economic and place image factors together aid in the strategic location decision of firms. While economic factors eliminate infeasible options, place image determines the final selection.

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Discussions with professionals yielded the finding that when the list of place options is between the final two or three choices, emotion becomes the basis for the decision and that is where place image is key to winning the bid (Figure 2).²⁹

Figure 2. Multi-perspective framework for strategic location decisions



Long-term Suitability to Stakeholders

The facility decisions of a firm impact all the stakeholders of a company. In business site decisions, economic factors determine a shortlist of location candidates for the new facilities. However, it is evident from company requirements, e.g., Amazon, economic factors alone are not enough for a company to move to a location. For example, labor availability, an economic factor, is directly related to the ability of a city to attract and retain talent. Millennials prefer to live within a short distance from a metropolitan area. Changsha, the capital of Hunan province in China and home to four

reputable universities, is struggling to find and keep talent. As an incentive, the Changsha government is offering people rent subsidies and \$30,000 to stay. Although Changsha in comparison to mega metropolises such as Shanghai or Beijing, is much smaller and offers a low cost of living with a better quality of life, younger talent prefers the fast-paced life of large cities with better prospects of career growth. Despite the economic opportunities in Changsha, the image of a city impacts people's decisions as well as the companies'.³⁰

To demonstrate the collective impact of economic and place image factors on the strategic location decisions, we propose a novel multi-perspective framework in Figure 2. We then utilize this network to analyze Amazon's second headquarters location decision. Note that while our framework considers both economic and place image factors in business site selection decisions, it can be expanded to include other non-economic factors such as environmental factors, availability of good healthcare facilities or school districts for families.

Amazon HQ2 Case

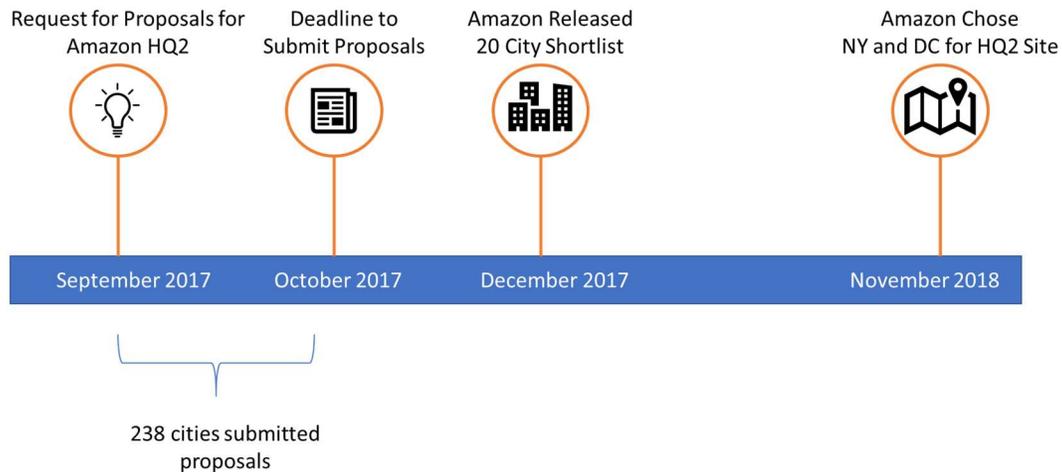
We now demonstrate the importance of place image factors in business site selection using Amazon HQ2 case. On September 7, 2017, Amazon announced plans for its second headquarters and requested proposals from cities addressing a set of economic and non-economic factors.³¹ Economic factors included site and building availability and fit, capital and operating costs, incentives, labor force availability, transportation cost and ease, time to operations, and non-economic factors were cultural community fit and community/quality of life. Two hundred thirty-eight cities from all over the U.S. submitted proposals competing to attract the online retail giant by offering incentives in billions of dollars, creating a city of Amazon or offering significant investments in the transit systems. After months of speculation, Amazon announced its shortlist consisting of twenty cities to the public. Finally, in November 2018, Amazon announced that the finalists for HQ2 are Long Island City, New York and Northern Virginia (Figure 3).³²

We first performed an analysis on the economic factors to identify the top three candidates for Amazon's HQ2. Note that in our analysis we only consider the metro areas with a population of 1 million or more and whose incentives were publicly released. In Table 1, we display the weighted decision matrix for the economic factors included in Amazon's HQ2 decision. The green highlighted cells indicate the top three cities in each criterion and requirement. The details regarding the score calculations and the sources for our data can be found in the Appendix. Our analysis shows that the top three locations when only economic factors are considered are New York followed

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by Montgomery County and Northern Virginia. From Table 1, it is easy to observe that in terms of economic factors Long Island City, New York is the leading choice for Amazon HQ2. This also extends to place image factors of New York City. New York City is a world-renowned city with a distinct visual image, the Statue of Liberty, Central Park, Manhattan, Empire State Building, a reputation to “never sleep,” and boasts a very strong public transportation and education system. While the reasons for choosing New York as the first location for Amazon HQ2 is obvious, the reasons for choosing Northern Virginia (Crystal City in Arlington County) over Montgomery County require further inquiry.

Figure 3. Amazon HQ2 Decision Timeline



The non-economic criteria Amazon’s request for proposal (RFP) listed include “the presence and support of a diverse population, excellent institutes of higher education, local government structure.” Furthermore, community/quality of life criteria is the existence of a community where Amazon employees “will enjoy living, recreational opportunities, educational opportunities, and overall high quality of life.”³¹ Before we compare Montgomery County and Northern Virginia based on their brand, visual image, and reputation, i.e., the factors that attract talent, we first describe the demographics of Amazon employees as different types of people are drawn to different cities. Perhaps the most critical people factor in Amazon’s HQ decision is age. A recent study by Statista shows that the median age of top tech firms does not exceed the late early thirties.³² Hence, it is important that the Amazon HQ2 location caters to this age group.

Table 1. Weighted Decision Matrix for Amazon HQ2 Case

	Weights		Montgomery County										Northern	
	Atlanta	Chicago	Dallas	Los Angeles	Montgomery County	Nashville	New York	Virginia	Newark	Philadelphia	Raleigh	Denver	Columbus	
Metro area with >1 million population	0.1111	0.0553	0.3168	0.1544	0.4657	0.1223	0.0754	1.0000	0.3251	0.0334	0.1836	0.0544	0.0825	0.1030
Site/Building Access to mass transit (Transit Score)	0.1111	0.5412	0.7647	0.4706	0.6000	0.6235	0.2824	1.0000	0.6941	0.7647	0.7882	0.3412	0.5647	0.3647
Capital and Operating Costs environment (Cost of Business)	0.1111	0.3611	0.4483	0.7222	0.2708	0.2889	0.8667	0.3095	0.3824	0.2600	0.5200	0.8125	0.3514	1.0000
Incentives from state and local government to offset capital/operational costs	0.1111	0.1176	0.2000	0.1294	0.0353	1.0000	0.0120	0.3529	0.0674	0.8235	0.2353	0.0059	0.0118	0.2706
Labor Force (Stem Friendliness)	0.1111	0.3375	0.2000	0.3000	0.0500	1.0000	0.5500	0.1250	1.0000	0.1250	0.2375	0.7250	0.3750	0.2750
Strong university system	0.1111	0.2903	0.4500	0.1800	0.5143	0.3600	0.1800	1.0000	0.3600	0.1800	0.3103	0.1800	0.1800	0.1800
Travel time from population centers to project site	0.1111	0.0006	0.0007	0.0008	0.0006	0.0010	0.0008	0.0007	0.0007	0.0008	0.0007	0.9517	1.0000	0.7160
Logistics Airport Size	0.1111	1.0000	0.7683	0.6457	0.8138	0.1441	0.0657	0.9817	0.1441	0.4176	0.2847	0.1122	0.5909	0.0731
Time to Operations (Growth of Entrepreneurship)	0.1111	0.2000	0.0370	0.0909	0.0323	1.0000	0.2500	0.0313	1.0000	0.2500	0.0417	0.0250	0.0769	0.3333
Weighted Mean	0.3226	0.3540	0.2993	0.3092	0.5044	0.2537	0.5335	0.4415	0.3172	0.2891	0.3564	0.3592	0.3684	

In terms of brand, i.e., the intended message of a place to the community, recently Northern Virginia has been identified as the Silicon Valley alternative for technology firms while Montgomery County is reported to be “in an increasingly risky economic and fiscal environment.”^{34,35} Images, photos, and art have a significant impact on the visual image of a place. Zhou et al. performed an analysis using geo-tagged images to develop a brand image for various cities around the world.³⁶ Furthermore, Riza et al. use iconic buildings to define a city’s brand and identity.³⁷ To identify the visual image for Montgomery County and Northern Virginia (specifically Arlington, Crystal City, and Rosslyn), we performed a search using the term “things to do” on Trip Advisor. Our results for Montgomery County returned nature centers and parks while the results for Arlington County returned the Pentagon, the Signature Theatre, and many memorials. While Northern Virginia, e.g., Arlington County, is associated with the image of the Pentagon and war memorials, Montgomery County does not have a distinct visual image attached to it. When we compare the reputation of Montgomery County and Northern Virginia, we find that Northern Virginia-specifically Arlington County- is known to home the largest percentage of millennials in the D.C. area, 27.1%. Furthermore, between 2007 and 2013, Arlington County had the highest growth of millennials in the U.S. and the City of Arlington was ranked as the third best city for millennials.³⁸ Given this information, it is easy to conclude that Arlington has a better chance at attracting young talent than Montgomery County.

To retain talent, the sense of place and identity should allude to people. Arlington County’s reputation for being a millennial-friendly city is easily observable upon a visit. City of Arlington, Crystal City, and Rosslyn, all areas close to Amazon’s proposed HQ2 location is filled with newly built and under construction high rises both for residential and commercial use. The area is brimming with restaurants, coffee shops, bars, and activities that millennials and families with kids may enjoy. Although currently, all these areas are in development, the infrastructure shows the promise of a hip and alive D.C. area neighborhood that Amazon employees can enjoy. Amazon employees will not only be moving to a place that they can identify with but will also have the opportunity to fully define the identity of Arlington County.

In February 2019, Amazon officials have announced their withdrawal from the HQ2 site in New York City citing reasons such as resistance and criticism from the politicians regarding the incentives provided to Amazon.³⁹ While Amazon HQ2 plan in New York City is canceled, the HQ2 project in Northern Virginia has already started rebranding the Crystal City and Pentagon City neighborhoods. Within only a couple of months of Amazon’s HQ2 decision in Northern Virginia, Crystal City and Pentagon City in

Arlington, Virginia has been renamed “National Landing” and is described as a location that “enjoys ready access to a deep pool of young, highly educated and tech-savvy workers, an abundant supply of affordable office space, diverse housing options, an unparalleled transportation network, and plentiful green space.”⁴⁰

Conclusion

Facility location or business site selection decisions have been studied for almost a century. In the beginning, researchers were only concerned with minimizing costs and maximizing profit. As a result, only economic factors such as labor, energy, transportation or construction costs were considered. As globalization increased and government regulations changed over time, e.g., environmental regulations and taxes increased and tariffs and duties decreased, more factors were included in facility location discussions. Even with these additions, some researchers drew attention to the gap between theoretical research and firm practices. More firms indicate that while economic factors are used to eliminate infeasible regions for building facilities, other qualitative factors, e.g., quality of life and place image, determine the final selection.

For firms to make the final decision to locate their facilities in a certain region, the image of the place should match the image of the company and its employees. For example, a firm interested in attracting the best technical talent must not only provide economic benefits but also a place where the employees can grow their careers and imagine a full life for themselves. While economic benefits and a sense of place and identity may attract firms to a certain region, to retain people and firms, the brand, visual image, and the reputation of a region should be in line with the firm and its employees. Many times, a place is omitted due to one of the aspects of place image – for instance, if the state has a reputation of unfair legislation targeting the LGBTQ+ community as seen in North Carolina.⁴¹ The bottom line is that the C-Suite executives making the location decision will choose the place that they would most like to be; where they see themselves and their workforce will be the most successful and content.

- Choosing the correct facility location improves the competitive advantage of the firm and allows it to focus on a single successful strategy. Our analysis based on Amazon HQ2 case shows that economic factors such as fixed and variable costs, regulatory factors, e.g., incentives and the complexity of permitting processes, labor availability, and business friendliness are still significant factors in business site selection. While economic factors may dictate the

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finalists in a business site selection, non-economic factors such as place image are the differentiating factors among the finalists.

- The appropriate facility location does consider not only the benefit of the stockholders but also the benefit of other stakeholders such as employees. Employees when making choices about where to live consider economic and other qualitative factors such as school quality, cultural activities, quality of life, weather, and the possibility of career development. These qualitative factors are captured within place image.

To be considered for in a business location decision, places must first meet certain requirements in terms of the economic factors. These include taxes and tariffs, labor force, transportation, and other factors specifically relevant to the business or industry. After the extensive list of possibilities is down to the top possible sites, place image enters the picture and should be given due consideration.

Appendix

For each criteria and requirement, the normalized scores on Table 1 are found by dividing the values in Table A1 by the maximum score among all the alternatives. For example, the normalized transit score of Atlanta is calculated by dividing the raw transit score of Atlanta, 46, by the largest transit score among all the alternatives, 85. The sources for the data are given on the Source column of Table A1. While some scores are based on predefined indexes, e.g. kaufmann index, transit score, others are based on rankings. Before we normalize the rankings, we take the reciprocals so that a higher normalized score always corresponds to a better alternative.

Table A1. Source Information for Amazon HQ₂ Data

		Data Source
Site/Building	Metro area with >1 million population Access to mass transit (Transit Score)	Business Insider Walkscore.com
Capital and Operating Costs	Stable and business friendly environment (Cost of Business)	CNBC, Ranking based on states
Incentives	Incentives from state and local government to offset capital/operational costs	Business Insider
Labor Force	Highly educated labor force (Stem Friendliness)	Wallethub
	Strong university system	Topuniversities.com
Logistics	Travel time from population centers to project site	Numbeo, traffic index in minutes
	Airport Size	Related Port Authorities
Time to Operations	Permitting process complexity (Growth of Entrepreneurship)	Kauffman.org
Cultural Community Fit	Population Diversity	worldpopulation.net, US Census 2010
Community/Quality of Life	Crime	Numbeo
	Quality of Life	Numbeo

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