

Four\$quare: Hybrid Spaces of Economic Activity

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Abstract

The study of cyberspace in geography is not new; however the nature of digital spaces is changing with the development of mobile technology, social media, and location-based media platforms. Much of the content found online is now user-generated and embedded with geographic coordinate information in what is termed the geoweb. While the geoweb provides extensive databases of digital information, it also represents a pivotal shift in the way that digital space is studied by geographers. Online spaces, and especially those spaces created by location-based social media platforms, represent a hybrid space that meshes the physical information of the offline world with the digital information of the online. As a hybrid space, the internet has the power to shape offline places and spaces as well as the individual decisions people make within those locations. Physical spaces as well shape online space through the creation of these forms of location-based social media by recognizing that people are embodied. This dissertation seeks to employ the hybrid nature of online/offline spaces to look at sites of consumption and economic geography. Using data from the location-based social media platform, Foursquare, this dissertation argues that the nature of consumption is changing. While physical storefronts are a necessity for our lives as physical beings, an online presence on location-based social media platforms is needed for economic growth and success. Those offline areas left out of the online discussion due to the digital divide may continue to fall behind.

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Chapter 1

Check In Here:

Economic Activity in a Hybrid Space

Social media and ‘big data’ have become buzzwords in the US media and in academic research. As more people are contributing to publicly available data sets from social media accounts, academics and corporations have access to larger pools of knowledge about individuals and places. Geographers are just starting to grapple with the intricacies of using voluminous datasets in geographically focused research (Sui, Elwood, and Goodchild 2013). Much of this GeoWeb research has paid attention to what geographers stereotypically know best: mapping the data to look at where patterns are found. While research like this has its place, what geographers have not necessarily been doing is tying these patterns back to geographic concepts long explored and understood in geography’s many subdisciplines.

Economic geography is one subdiscipline where social media has not been readily studied. Concepts in economic geography such as the urban hierarchy, consumption, and retail trade can be revisited and understood in new ways with data from social media and the GeoWeb. This dissertation combines data from social media, specifically the network Foursquare, with traditional geographic research on consumption and retail trade. Using the theory of hybrid spaces and hybrid geographies as a framework, economic geography can be reevaluated with details about places provided by social media users on the internet.

The changing nature of hybrid consumption spaces is the primary subject of inquiry for this dissertation. Overarching themes include the changing ways geographers can do research on a variety of geographic topics with the development of Web 2.0 resources as well as how the

internet and social media alter the way in which people interact with space. Spaces of consumption will change and be shaped by the internet and social media activity. Geographers should use these new resources to look at how people are affected by technology as they create spaces of daily life.

While consumption, hybrid space, and social media are the general themes, specifically, this dissertation seeks to answer four research questions:

- What are the patterns of places that people are more likely to visit on Foursquare at a regional level?
- How does Foursquare use in different types of venues vary according to race, income, education, or age?
- How do local business owners interact with Foursquare or use the service as a gateway to their clientele?
- What can Foursquare tell us about how virtual and physical spaces of retail trade affect one another?

In attempting to address these questions, and using Foursquare as a case study, the larger issue of hybrid consumption space can be addressed.

The following two chapters outline geographic research as it pertains to the rest of this dissertation. Chapter 2 tackles the recent cultural turn in economic geography (Barnes 2001) and its effects on the study of consumption and retail trade. Both of these are important areas of economic geography that are being revitalized with the combination of cultural geographies of identity, performance, and placemaking (Kneale and Dwyer 2003). Through this new lens, economic geography has developed richer understandings of the driving forces behind consumer decisions. Some of the most commonly consumed products today include technology, both

hardware and new software applications. Chapter 2 engages with the demand for technology and the increase in user generated content in the era of Web 2.0. This information has been combined with traditional geographic coordinates in a myriad of ways on what has been termed the GeoWeb (Elwood 2011). The desire that people have to post content about spaces of their daily lives online drives both the creation of certain types of big data and this dissertation.

Chapter 3 continues with a closer examination of mobile phone technology, location-based media, and hybridity. Though the term “hybrid space” has been in use by geographers for over a decade, it has been seized by media scholars as many are currently experiencing a “spatial turn” in their own work (Gordon and de Souza e Silva 2012; Wilken and Goggin 2012; Farman 2012). However, hybrid spaces are much more theoretically informed than media scholars give them credit. Geography needs to capitalize on this opportunity to engage more deeply with hybrid spaces before the term is acculturated into other fields without a thorough knowledge of the long history of debates on place and space. Chapter 3 also introduces the social network Foursquare, from which the data for this thesis were obtained. This platform relies on people’s desires to broadcast their location information across the GeoWeb as well as on mobile and location-based technology.

Chapter 4 outlines how the data are collected from Foursquare as well as some of the inherent concerns with using social media data. Extrapolating conclusions about all people from only those who use a certain social network is problematic. Therefore this dissertation does not intend to speak to the experiences of everyone in the cities included, only Foursquare users. Some problems with using social media as a data source also stem from the digital divide and who is/is not using or has/does not have access to the technology. While cell phones and the internet have become fairly ubiquitous in US society, there are groups of people who get left out

of data sets reliant on the most recent communications technologies. These groups include the elderly, impoverished, and undereducated. Foursquare too is a biased data set, made up of users who have smartphones and a desire to share their location information. This dissertation speculates on the evidence of a racial bias within Foursquare use as well.

Subsequent chapters scrutinize Foursquare data using a multi-scalar approach by analyzing a region, groups of select cities, and a single city as case studies. Chapter 5 starts at the coarsest scale by contextualizing consumption and Foursquare data in terms of a regional urban hierarchy. The chapter uses the example of the Southeastern United States to explain the persistence of urban hierarchies within the context of digitization and contemporary globalization. Data from Foursquare provide a way to measure the types of goods and services available in each of the ten cities chosen to represent the urban hierarchy in the Southeastern US. The chapter concludes with a discussion of the prevalence of placelessness among lower order cities and the distribution of a wider variety of goods and services in cities atop the hierarchy.

Moving finer in scale, Chapter 6 uses three groups of comparable cities to assess differences in Foursquare use and possibly consumption patterns among a variety of age cohorts, race and ethnic distinctiveness, and income levels. In looking at these groups of cities, Foursquare use among groups with dissimilar identity characteristics is also considered. While smartphone and internet use is typically a trait of the young, educated, and white, it will be shown that when it comes to Foursquare use, race is the biggest indicator of whether or not there will be Foursquare venues present in a given location. More so than any other demographic indicator, race defines consumption patterns and Foursquare use.

Lastly, Chapter 7 narrows in on the local scale and attempts to get an understanding of why business owners may or may not choose to engage with a location-based social network

such as Foursquare. Kansas City, MO was chosen as a study area for this chapter. A traditionally industrial city with a recent emphasis on local technology entrepreneurship, Kansas City is a revealing and relevant location to consider the relations between consumption and social media. Interviews with business owners showed that they are extremely familiar with social media sites as a way to engage with customers; however, they prefer to use sites where they are able to have a level of control over the content provided. While Foursquare continues to develop its platform to become ever more business-friendly, the business community in Kansas City has moved on to embrace local applications where they are the content creators (ex. Lantern, Front Flip).

Foursquare is one example of a network of users who provide geocoded data on aspects of their daily life. While social networks ebb and flow in terms of their importance, influence, and popularity, the point of using social media data is to demonstrate how spaces are being renegotiated and re-imagined through time. In a networked society, the spaces of flows (to borrow from Castells 2011) are constantly shifting as new relationships are being created among people, among technologies, and among places. As the study of relational space, geography needs to embrace the digital becoming of places. The rest of this dissertation will argue spaces of consumption are one area where digital space is reconfiguring the paths that people follow in everyday life.

Chapter 2

Consumption and the GeoWeb

The scope of this dissertation is to unite several areas of geographic research under the umbrella of geographies of digital media. This chapter examines research conducted recently in the economic geographies of consumption and retail trade as well as the turn of internet research towards Web 2.0, the GeoWeb, and neogeography. Corporate interests increasingly look towards these manifestations of personal daily life in order to take advantage of local geographic knowledge. The increasing availability of personal information on the internet and social media sites has allowed for businesses to incorporate it into their marketing strategies. The act of relaying conscious consumption decisions on the internet has driven corporations to utilize this information in encouraging future purchases.

Material and Online Consumption

Economic geography, one of the oldest branches of modern geography, has recently reinvented itself amid ongoing research on culture, inequality, and globalization (Barnes 2001). Some topics covered by economic geographers decades ago, such as the spatiality of retail consumption, are being revitalized based on new understandings of space as flows and networks in a globalized world (Hall 1998; Godfry and Zhou 1999; Beaverstock et al. 2000; Alderson et al. 2010). Consumption is not a static, disembodied practice, but rather a multi-scalar event, entwined with class, gender, ethnicity, geopolitics, ethical considerations, and individual identities. Commodities are traced through the networks that make up their creation, from the source of raw materials, to the workers that manufacture goods, to the advertising mad men that

drive individuals to desire items, and finally to the site of the body and home.

Telecommunications and new media have made consumer understandings of where goods and services come from more transparent.

This reconceptualization of space in relational terms has gone hand in hand with a rejuvenated understanding of consumption as an economic, cultural, and spatial process (Hartwick 1998). Economic functions cannot be separated from their cultural context in which they are embedded (Murphy 2002; Barnes 2001). Differing drastically from neoclassical economic theory, when viewed by the new economic geography, economies are hybrid in that they encompass economic decisions and also cultural factors that affect those decisions, both of which then affect the economy as a whole.

One of the areas of economic geography that has been significantly affected by the notion of hybridity is geographies of consumption. Though there was some earlier research that combined the notions of cultural and economic geography, notably those of Applebaum (1965), in general economic geography did not experience the “cultural turn” until the later 1990s. In combining culture with consumption, the geography of consumption was opened up to a variety of new areas of study such as marketing (Hartwick 1998), spaces of retail consumption (Goss 1999), and the consuming body (Valentine 1999). Individuals and their actions were taken more seriously within economic geography as a source of how and why consumption occurred where it did. More recently, geographies of consumption have focused on responsible consumerism (Miller 2003) and brand-spaces and consumer-driven products (Tokatli 2012). Recent geographies of consumption stress the need to understand goods and services as socially constructed products of the spaces in which they are developed and used (Hartwick 1998; Leslie 2002; Reimer 2000).

Among other issues, consumption research has recently explored food studies in depth. Bell and Valentine (2013, p. 3) declare “food has long ceased to be merely about sustenance and nutrition. It is packed with social, cultural and symbolic meanings.” They continue to emphasize the links between consumption, identity, and food “in a world in which self-identity and place identity are woven through webs of consumption, what we eat (and where, and why) signals ... who we are” (Bell and Valentine 2013, p. 3). The foods that people choose to eat are often proclamations of cultural identity, metaphors for other aspects of culture or society (Shortridge and Shortridge 1998). As Bell and Valentine (2013) further remark, food consumption also marks different passages of time (through seasonal offerings), distinct parts of a person’s life course, and specific traditions with family and friends. Consuming food is not simply about the physical act of eating, but rather about performing identity, culture, and social relations. The growth in “foodie” culture in the United States and elsewhere contributes to the idea of consuming food as a manifestation of one’s identity. Going out to eat specific foods in specific locations is being embraced by men and women identifying as “foodies” (Cairns, Johnston, and Baumann 2010). Celebrity chefs are increasingly gaining ground on television, the internet, and in their own restaurant chains. Not only does the food that we eat create our identity, but where we eat also adds to who we envision ourselves to be.

The scope of consumption studies varies widely, from a focus on economic perspectives of commodity chains to cultural interpretations of self-identity and material goods (see Kneale and Dwyer 2003 or Crang and Jackson 2001 for overviews of consumption studies). Rather than simply contrasting consumption with production, however, academics have asserted that on its own “consumption is a meaningful activity which helps us create social identities and relationships with others; as we do this the things we consume are given human values” (Kneale

and Dwyer 2003, p. 300). Therefore, consumption has been linked with aspects of identity creation such as ethnicity (Williams et al. 2001; Crewe 2000) age (Morrison, Nelson, and Ostry 2011; Thomas 2005), gender (Morrison, Nelson, and Ostry 2011; Ren and Kwan 2009; Leslie 2002), income, and (dis)ability (Shaw 2006). The implications of a wider understanding of consumption is to see the act as an event in its own right – an event that varies through time and space and is dependent on a variety of individual identities, therefore dispelling the idea of the mythical rational consumer of neoclassical economics.

Previous research has looked at ethnicity and consumption with a focus on the ethnic and immigrant experience in terms of marketing independent stores to a wider population (Lo 2009; Kaplan and Li 2006; Dwyer and Jackson 2003). Similarly there have been several geographic studies of the influence of Asian fashion in Britain, raising questions of Western cultural appropriation or increased multicultural awareness at the expense of specific ethnic groups (Jackson 2002). Tourism Studies has also considered the use of ethnic identity for the purposes of consumption: destinations for tourists are seized by preconceived notions of what the place and population should represent. However, as Ateljevic and Doorne (2003) note, some entrepreneurs have capitalized on the opportunities tourism and the consumption of ethnic goods have brought to their families, such as manufacturing the tie-dyed cloth of Bai women in China.

Commodity chain approaches have also dealt with ethnicity from the point of view of labor (Reimer 2000, Hughes 2000). For example, Slocum (2008) identifies the ethnic differences in buying and participating in the Minneapolis Farmers' Market. She concludes that the demand for local, alternative, and cleaned (no roots and in packaging) foods is largely a white phenomenon. Other foods are purchased by immigrant populations, leaving a void of African Americans who partake in farmers' market shopping (Slocum 2008). Grocery shopping can also

be viewed as an ethnic and cultural practice. Wang and Lo (2007) found that among Chinese immigrants in Toronto, many were willing to drive longer distances to be able to shop at ethnic grocery stores because of the unique social experience these retail outlets provide. Their conclusions differ from traditional consumption analysis that posits grocery shopping as a local activity dependent on distance to the shopping center. Even the most mundane of consumer activities is deeply rooted in social and cultural experience.

Additionally, consumption patterns have been shown to vary by age and gender in terms of what foods people choose to eat (Morrison, Nelson, and Ostry 2011) and as a way for young girls to perform an identity in public outside of the influence of adults (Thomas 2005). The fashion industry, food, and gender have also been explored extensively from the point of view of commodity chains (for an overview see Crewe 2001; Leslie 2002). Though there is a growing understanding of consumption and retailing in conjunction with individual culture, Williams et al. (2001) point to the fact that these recent concerns have overlooked situational constraints on consumption. In focusing on identity as a driver of consumption, the physical barriers for why people are actually consuming where and what they are may be overlooked.

The impact e-shopping has had on society and geography has also been explored in consumption studies (Ren and Kwan 2009; Hjorthol 2009). In the US, women are more likely than men to adopt e-shopping as a method of commercial activity (Ren and Kwan 2009). Access to cars has also been shown to have a large impact on whether or not people will shop online (Ren and Kwan 2009). E-shopping is often most utilized to save time, money, and travel and is also largely driven by familiarity with the internet (Ren and Kwan 2007; Ren and Kwan 2009). Online purchasing is highly dependent on proximity to physical retail outlets. Ren and Kwan (2009, p. 276) conclude “access to local stores matters and that the spatial distribution of

shopping opportunities influences people's e-shopping patterns.” Where people shop is still largely a reflection of income and geographic proximity. The internet does not appear to alter consumption patterns significantly in that people are not *substituting* their shopping behavior with e-commerce, but rather *supplementing* it (Ren and Kwan 2009). Similar to where people choose to eat, where people shop could be a reflection of cultural trends, a performance of identity, or reflect accessibility.

Additionally, current geographies of retail trade have emerged with the same goal as consumption studies: to tie together economic and cultural activities to better understand the locational dynamics of retail outlets (Wrigley 2009). Literature on the geography of retail trade was traditionally empiricist, emphasizing applications of central place theory and the modeling of retail trade (Berry 1967). Recent geographies of retailing have changed their focus to the nature of business in the post-Fordist era, particularly as retailing has shifted steadily from small, locally-owned stores to large transnational corporations such as Wal-Mart (Brunn 2006). While academics still study the impact of transnational corporations and superstores, the geography of retail trade has expanded beyond these interests to include topics such as retail inclusion/exclusion, which discusses how some segments of society are segregated from retail spaces (Wrigley 2002). The ability to obtain goods and services from particular retail trade locations is also largely dependent on factors such as car ownership, employment status, age, and family size as well as emotional experiences tied to previous shopping trips (Williams et al. 2001).

Geographies of retailing and consumption have also been opened to new research possibilities with the rise of the internet. Although there was an initial response to the internet as

something that would erase the traditional boundaries and problems associated with retailing, as Zook (2002, p. 555) points out, this is not the case:

The various drags of economic frictions are still present, and are only partially and selectively being overcome. In short, the Internet doesn't reduce the relevance of geography. It simply adjusts which aspects of geography and which types of economic friction are most relevant for analysis.

Instead the internet has provided new ways of conceptualizing retailing with "multichannel organizational forms" or "bricks and clicks" leading the way in retail growth (Wrigley, Lowe, and Currah 2002). These forms are retail locations that have an embedded physical presence as well as online outlets. E-commerce has reinforced geography in some instances with services such as Craigslist, a website where people can list goods for sale to advertise to people who are nearby (Zook et al. 2004). Newer online businesses (Groupon and Living Social, for example) capitalize on location information embedded within browser history to offer coupons and other daily deals to retail outlets within close proximity to a user (Wilson 2012). Geography also plays a role in hosting websites for consumption practices that are illegal in some locations such as gambling or pornography (Zook et al. 2004; Wilson 2003). While the internet may open up new retail spaces, it also serves to buttress consumption patterns already in place.

Kitchin and Dodge (2011) point out the many ways that retailing and consumption have changed due to the nature of software and coded spaces. Aside from a discussion of online retail outlets, software has changed the nature of the consumer in many ways. The increased use of credit cards, ATMs, and store loyalty programs are several examples of the nature of consumption today. In some cases, customer experiences would be much altered from what they currently are without the use of computerized management systems that calculate everything from food preferences to daily schedules, such as resorts and casinos.

The literature of consumption and retail trade has specifically dealt with notions of culture embedded within economic spaces, but there are other avenues where the idea of economies as hybrids could be applied as well. Although there is a growing literature on online consumption (Murphy 2002; Wrigley 2002; Weltevreden and van Rietbergen 2009; Ren and Kwan 2009), thus far economic geographers have not dealt with social media and its effects on retail trade. A study of location-based social media platforms and the GeoWeb can help to show what places are popular for internet-inspired consumption and where they are located. It may also illuminate the types of businesses that get left out of people's consumption habits due to the digital divide among other factors.

Internet Spaces and Places

Geographies of the internet can be broken down into three distinct categories of study: the physical infrastructures involved with the internet, the geographical implications of internet politics such as censorship, and the spaces and places created on and by the internet. Research on internet infrastructure grew out of research from the 1960s and 1970s on access to telecommunications lines (Purcell 2010). Mapping telephone line and fiber optic cables is important when considering issues of digital divides within and among countries. Similarly, the number of internet hosts within a state serves as a reminder of core-periphery divides and the hierarchical power structure that exists across the globe (Warf 2001). The structure of the internet and corporations that compliment internet activities have become important industries that are spatial in nature and closely tied to the geography of venture capital (Zook 2005).

Claims about the "death of distance" that arose with the internet did not dissuade geographers from arguing for the importance of understanding the geopolitical implications of

internet networks (Purcell 2010). Censorship remains one of the key ways in which the state can continue to mediate control over its people in a digital age (Warf 2011). Commonly held beliefs that the internet in and of itself is a democratic tool to overthrow incompetent dictators has only been further fueled by recent events in the Arab Spring (Morozov 2011; Warf 2011; Fekete and Warf 2013). Even states seemingly unwilling to embrace technological developments, such as North Korea, have adopted policies to control information flows within their borders (Warf 2015). Though advances in communications technology have allowed for the creation of new networks, geographers have reasserted the importance of space and place to power dynamics and control of information.

The internet has also led to the creation of new spaces and places of interaction. Though virtual spaces are sometimes questioned as worthy of geographic study, as Adams (2005, p. 80) remarks “what makes any space real is that it serves as a context in which people coordinate actions and undertake complex projects” among other activities. The interaction of people and events creates a space where that activity occurs. Virtual spaces and places are real locations where events occur. Because of the relational understanding of space, cyberspaces have come to be understood by geographers in a variety of ways. They are spaces where people can perform their identity beyond the stereotypical “dog on the internet” (Kennedy 2006), where people can create meaningful social interactions often tied up with intense emotional attachment (Kendall 2009), and where individuals can be used for exploitative and racist campaigns (Nakamura 2009). With the advent of social media, the internet has only been further opened up to the creation of new spaces and places of meaning within people’s everyday lives. Looking at the internet through the lens of the GeoWeb has provided geographers with one way in which to

understand how the virtual world of online activity is increasingly intertwined with the material world of physical spaces.

Journeys through the GeoWeb

The consumption of technology has led geographers to consider how interactions using the internet have changed social behaviors and data manipulation. By “buying into” new technologies and user driven media, people have been generating copious amounts of data about themselves on the internet. This data is often consumed by corporations for marketing purposes (Wilson and Graham 2013; Wilson 2012). In consuming technology, the users are creating a product for businesses to incorporate into their future sales promotions. People are essentially selling themselves to perpetuate a market that actively attempts to sell products to them.

Termed Web 2.0 by O’Reilly in 2005, new interactions on the internet are distinct from previous uses (Haklay, Singleton, and Parker 2008). Web 2.0 marks a shift in the internet “away from an assemblage of data repositories (Web 1.0) ... to a collaborative platform of embedded applications and services, of which social networking is a primary example” (Elwood 2011, p. 7). Therefore, “content in Web 2.0 is created and distributed in a social context with users producing information and data in the form of ‘user-generated content’ for other users to consume” (Stephens 2013, p. 981). Web 2.0 represents a pivotal shift in how the internet is both produced and consumed. Much of the content is created by the same people who consume it, opening up the internet from a one-to-many platform to a many-to-many platform.

Alongside the emergence of Web 2.0 is the growth in the GeoWeb. While Web 2.0 specifically refers to user-generated content, the GeoWeb is any digital media that merges traditional web information with geographic locations. Artifacts from the GeoWeb could be

images, videos, status updates, tweets, captions, cartoons or anything else on the internet that has latitude-longitude coordinates attached to it or from which latitude and longitude coordinates can be easily derived (Elwood 2011; Haklay, Singleton, and Parker 2008). The GeoWeb has opened up what geographers have traditionally thought of as geographic information to include a variety of user-generated content linking anything from poetry to photography to specific locations on the earth's surface. As a result, the amount of material on the GeoWeb has led geographers to explore topics such as tracking riots on Twitter across the US (Crampton et al. 2013), images of damage from Hurricane Katrina (Crutcher and Zook 2009), and the relationship between the neoliberal state and mapmaking (Leszczynski 2012), among other topics. That the data is user-produced also calls for a renewed understanding of privacy under Web 2.0 structures. As Elwood (2011) illuminates, no longer is there the one technology-owning "big brother" watching from above, but rather a whole conglomerate of internet lurkers who are also able to watch over, and control, the world on platforms like Google Street View or Twitter (Dobson and Fisher 2007). Those creating the content are altering their own privacy by uploading geographic information about them. Privacy on the GeoWeb in the era of Web 2.0 looks different than traditional definitions.

Because of the nature of Web 2.0 and the GeoWeb, there have been claims that the internet is being democratized. Spatial data no longer are the "preserve of the professional geographer, cartographer, and surveyor" but rather anyone with access to a computer and the knowledge to modify web content can be a creator of digital space (Zook et al. 2004, p. 172). However while in theory the internet is an autonomous space, in practice this does not seem to be the case. For example, Stephens (2013) analyzed the gender bias in the creation of content in Open Street Map and Google Maps. In Open Street Map, Stephens finds a wholly gendered

space where there are several categories for places that commodify women (e.g., strip clubs, escort services), but suggested categories for traditionally feminized spaces of care (e.g., child care, hospices) have been routinely rejected as necessary additions to the mapping platform by other users (Stephens 2013). Excluding some businesses becomes a problem as many applications, including Apple products, are abandoning paying Google for their mapping services in favor of Open Street Map (Stephens 2013). Google Maps is unfortunately no more gender friendly than Open Street Map, as “men serve as the gatekeepers of local knowledge and determine what is significant enough to be represented on the base map” (Stephens 2013, p. 982). Both internet mapping platforms reflect a male view of the landscape, bringing to mind Rose’s (1993) consideration of the “male gaze.”

Race has also been reflected upon with regards to the GeoWeb. Crutcher and Zook (2009) addressed the posting of images of flood damage to Google Maps and Google Earth in New Orleans following Hurricane Katrina. Though the flooding hit areas in the affluent white neighborhood of Lakewood equally as hard as areas in the lower income, African American Ninth Ward, images and comments posted to Scipionus and linked to Google Maps and Google Earth were largely of Lakewood rather than the Ninth Ward. The difference in the number of images posted online between these two neighborhoods is similar to the number of user-generated placemarks on Google Maps: there are more placemarks in white neighborhoods in New Orleans than in African American areas. Crutcher and Zook (2009) conclude “while Google Earth did not create the economic and racial divides present in society, the use of its mapping services in the post-Katrina context reflect this gulf and have arguably reinforced and recreated racialized cyberscapes” (p. 523). The presence of a racially divided GeoWeb questions the assumption that the internet is a democratic space, representative of all people, just as Stephens

(2013) remarks with regards to gender. The GeoWeb reflects rather than eradicates social discrepancies on the ground.

Another term that has risen with the exploration of datasets on the GeoWeb is neogeography. Neogeography refers to the process of going beyond the simple creation of GeoWeb content to look at the social practices that are produced through the use of digital spatial data by non-expert users (Wilson and Graham 2013). By bypassing those who have traditionally controlled geographic knowledge, “neogeography enables subjects to participate in world-making, to create the contexts of their spatial presence by coding their surroundings” (Wilson and Graham 2013, p. 5). Neogeography calls for further examination of the GeoWeb by pushing past the simple mashup of web content and x-y coordinates to understand it as “socially produced space that blurs the oft-reproduced binary of virtual and material spaces” (Crampton et al. 2013, p. 132). The new spaces and social contexts that are generated by the GeoWeb is worthy of examination by geographers.

Connections between Economic Geography and the GeoWeb

While it may appear that consumption, retail trade, and the GeoWeb do not have much overlap, the growth in the demand for GeoWeb-based technologies has only further fueled the creation of increasingly more layers of user-created content. As Wilson (2012) comments on the Where 2.0 conference, “the managing of digital spatial information has become more squarely a direct function of business” (p. 1266). Corporations are engaging with location-based services and GeoWeb content in an effort to capitalize on the fact that people still largely consume goods and services in physical space. One of the ways that the two are merging, as will be demonstrated in the following chapter, is through location-based technology and mobile devices.

As digital media increasingly become a part of everyday life, the connections between online content and offline activity are no longer disassociated occurrences. What people consume speaks to an individuality that is also represented in neogeography and on Web 2.0. Businesses capitalize on GeoWeb content to push their goods and services to markets most likely to purchase them. While online shopping has not become the wave of the future some people suspected it would in the late 1990s, it does not nullify the ways in which online spaces are in fact coloring consumption patterns.

Chapter 3

Mobile Technology, Locative Media, and Hybridity

Social media, defined as any interactive platform used for exchanges among people, is a pervasive term in today's society. Social media and especially location-based services (those applications that specifically utilize a user's geographic location) are popular among Americans (Duggan and Smith 2013). For instance, Facebook user rates have been increasing worldwide at a rate of approximately 10% a year to where there are now over 1,300,000,000 users across the globe (internetworldstats.com). In the US as of December 2013, 72% of adults use Facebook and 18% use Twitter. About 42% of US adults use more than one social media site (Duggan and Smith 2013).

With the development of mobile technology and smartphones (phones that connect to the internet), social media platforms are able to extend beyond the spaces of computer use such as the home, office, or Wi-Fi-enabled coffee shop. Social media platforms that utilize a location-based aspect let users see and utilize information about their physical location as well as the location of friends through a digital platform.

The availability of information about places and spaces online has many implications that are changing the way in which people act not only with each other but also with specific places. The dual presence of locations in physical and virtual space has enabled many sites to become hybrids in that they simultaneously exist in both a physical and digital sense, changing how people interact with them. Many of these places and spaces are areas where people consume goods and services, often basing their consumption decisions on online information.

The effects that hybrid retail spaces have on consumer behavior have not been fully addressed in academic circles. This chapter outlines research on mobile phone technology as well as the development of theories of hybrid geography and hybrid spaces. It will then look at the locative social media application Foursquare. The chapter concludes with an overview of research conducted on Foursquare as well as discusses recent trends in economic geography and its connection to social media research.

The Cell Phone, a Prerequisite to Foursquare

Mobile or cell phone technology grew out of radio communication that began in the early 20th century. Mobile technology was originally developed for the US military. Improvements in radio communication during the 1960s sparked a demand for mobile units, especially for use in cars (Ling 2004). During the 1980s and 1990s, standards in mobile technology were developed to allow for international calling. Growth of mobile technology has been recent and rapid. Though the pervasiveness of cell phones in the US is not as great as in European countries, for all intents and purposes, mobile phones are ubiquitous throughout the country (Adams 2009). The Pew Research Institute began collecting data on cell phone ownership in the US in 2000, when approximately 53% of adults owned a mobile phone. By February 2014 that number jumped to 90% of adults owning a cellular phone (Fox and Rainie 2014).

Early research on cell phones found that many people originally bought the devices for safety in the event of an emergency (Ling 2004). The trend began to change as younger generations started using mobile phones for the coordination of activities among groups, sparking the argument that the mobile phone allows people to be free of place. Often this view is

tied to other technologies such as the internet, or to widespread social changes like globalization (Wilken and Goggin 2012; Malpas 2012). However as Malpas (2012, p. 31) reiterates,

the mobile phone, along with the communications technology of which it is a part, is as much tied to place as any other phenomenon, and what it brings about is not a separation from place, but rather a change in the way place is experienced, or better in the particular way in which place is configured, and the modes of engagement that are operative within it.

Mobile technology does not erase space and place, just as the internet does not create a flat world. Instead what the cell phone has done is to change the way that people operate in and utilize the spaces around them, thus creating new places. The public sphere often includes public and private uses at the same time. People can interact with one another on the street, but they can also remove themselves from the hubbub, “going away” as Gordon and de Souza e Silva (2012) call it, by wearing headphones, standing off to one side of the street to send a text message, or talking on their phone on a train instead of to the person sitting next to them (Ling 2004).

Mobile technology has allowed for a shift in understanding schedules and time as well. People coordinate events when necessary as opposed to arranging predetermined times because of their access to immediate communication technology. Therefore,

the partners to a meeting do not have to be geographically located in order to renegotiate their plans, they can do it literally ‘on the fly’. Thus we move away from a linear conception of time in which meetings, social engagements, appointments, and assignments are fixed points at various time points to a situation in which these elements can, to some degree, be negotiated (Ling 2004, p. 76).

Phone space is no longer fixed and tied to a specific geographic location, such as in an individual’s home, but is movable and associated with the individual’s body and everyday life. Space and place are reproduced differently through the use of the mobile phone. Members of society not only act within their surroundings in a different way than without a mobile, by maintaining a private public, but they also are able to utilize the spaces around them in new ways

as well. Spaces for gathering or meeting up with friends are more flexible than before because of the possibility of reworking predetermined plans at the last minute. The spaces of interaction for a particular group of people are less bounded because of the ease of movement and changes in coordination with a cell phone. Ling (2004) found that this new way of organizing time and space was prevalent among younger people; however, since his book was published, cellular phone growth has been tremendous, growing from less than 50% ownership in the US in 2002 to over 90% ownership in 2014 (Fox and Rainie 2014). The act of quick changes in daily scheduling based on mobile phone coordination likely has become a fairly pervasive phenomenon.

The Rise of Location-based Social Media and its Effects on Space

Location-based social media platforms that are accessible on cell phones have only enhanced the changing social dynamics present with the introduction of the mobile phone. By the 1990s the technology for the creation of location-based social media was firmly established with the use of global positioning systems (GPS) by corporations such as Garmin and TomTom. Originally embedded in cars, GPS grew in popularity with the rise of cell phones in the late 1990s and early 2000s. Mobile companies sought to capitalize on GPS technology by offering maps, GPS services, and weather data (Goggin 2012). Most mobile phones today are equipped with location-based services whether owners use these or not. The Federal Communications Commission, as one example, required mobile carriers to provide phone numbers and location information for any call to an emergency dispatch service from a cell phone. This move, among others, led to the further development of location-based services and location-based social media

for mobile phones, both by mobile corporations and by private commercial ventures (Goggin 2012).

Perhaps the largest industry that grew because of location-aware mobile phones is in navigation and GPS, with products such as Google Maps, created for mobiles in 2006 (Goggin 2012). Mapping programs like Google Maps allow for users to geolocate themselves based on the nearest mobile towers as well as satellite signals. Features today on smartphones locate users based on cell phone towers, satellites, and nearby Wi-Fi networks. Though most mobile owners still use GPS technology largely for navigation, many are beginning to utilize applications that find local restaurants or other attractions or for social networking and gaming (Goggin 2012).

Developing social media that utilizes GPS functions adds a new dimension to mobile technology and changes how people interact with their environment. Today possessors of mobile phones can do much more than call another person to coordinate everyday activities in physical space. They can send messages to one another through not only texts on the phone themselves, but through other social networks that are accessible on a mobile phone. There is a convergence of online spaces accessed through cell phones with the physical spaces where people are using their phones.

This junction between the digital and physical spaces and places has been addressed by digital media scholars. de Souza e Silva (2006, p. 263) uses the term *hybrid space* to define the theoretical location where digital technologies and physical spaces unite: “hybrid spaces merge the physical and the digital in a social environment created by the mobility of users connected via mobile technology devices.” Though de Souza e Silva points to the need to define the spaces of interaction when the internet is brought into the public sphere by way of cell phone technology, there is a lack of geographical awareness to her research. Her basic conclusion that

hybrid spaces exist ignores the theoretical history of what constitutes spaces and places and why it is important that the creation of hybrid space is acknowledged. For de Souza e Silva, hybrid spaces create a new social environment, but the meanings underlying space and place making, something central to human geography, are never explored. Her research, while useful in outlining the intersection of digital and material spaces, adds little to a discussion of why these new spaces matter.

The notion of hybrid space can be traced to geographers such as Whatmore (2002) and Massey (2005). Actor-network theory (ANT) questions the dichotomies created by those who study scientific phenomena such as natural/social and global/local (Latour 2005). ANT argues that in envisioning a world permeated by opposing forces, the relationships between such opposing forces are downplayed. What matters in the study of science, however, is not the separate existence of things or people, but rather the effects that they have on one another. As Whatmore (2002) states, geography is a discipline that continuously rests on the belief that there is a separation between nature and society: the two “opposing” sides of geography are physical and human geographies. She uses ANT to argue that human geographers are making “efforts to escape the dialectical vortex of nature-society relations” and move beyond the social construction of things to understand the complex relations that create spaces (p. 2). Space has been widely accepted as a product of both human and non-human actions, something that is made by people, animals, and things and their activities.

Massey (2005) explains that spaces and places are relational phenomena in that they are continuously produced through both natural and cultural interactions. Spaces are hybrids because they encompass aspects of both the natural world and society (Whatmore 2002). Spaces and places are not something that are predetermined nor given, but rather constantly shifting entities

that take on the characteristics of those things embedded within the space. Therefore the term hybrid space has a much deeper theoretical understanding than what de Souza e Silva allows. Hybrid spaces are produced between human and environmental interactions through a variety of mediums, of which the convergence of the digital and physical worlds is one example.

Kitchin and Dodge (2011) and Dodge and Kitchin (2005) have explored the nature of digital/physical hybridity with their discussion of code/space. In their view, “society consists of collectives that are hybrid assemblages of humans and nonhumans (Latour 1993), wherein the relationship between human and technology is complex, contingent, relational, and productive” (Dodge and Kitchin 2005, p. 169). Code, in the form of software, pervades every aspect of contemporary daily life. Therefore, the digital is ever prevalent in everyday actions from taking public transportation to shopping at a grocery store. Further, Kitchin and Dodge (2011, p. 17) define code/space as “any space that is dependent on software-driven technologies to function as intended.” In their view, code/space is a relational product of the intersection between software and space, a functional hybrid of digital technology and physical spaces where events transpire to produce social relations. The geographers do make a distinction between code/space and coded spaces: code/space requires software for the space to properly function whereas coded spaces are those spaces that are enmeshed with technology, but can operate as planned without it. They give the example of an airport check-in area as a code/space because travelers cannot utilize the services without technology (Kitchin and Dodge 2011). However a coffee house where the credit card machine has broken, while inconvenient, does not inhibit a person from purchasing a coffee with cash, and is an example of coded space.

Location-based social media platforms produce a type of hybrid space, one that combines actions that take place on both digital platforms and in physical spaces. Kitchin and Dodge

(2011, p. 199) briefly mention that location-based services emphasize “the extent to which activities in public space will become coded practices,” however they say little else on the subject of location-based social media platforms and the impact they are having on consumer decision making. The production of such new spaces and places for social interaction allows both physical and virtual places to become hybrid in that they exist on multiple planes, being both physical and virtual and a combination of the two simultaneously. These places and spaces then constantly shift and are reproduced in the physical setting as well as the digital setting, each affecting the other. Hybrid space does not simply exist in and of itself, but is a product of a variety of physical, virtual, social, and environmental interactions.

Though geography has developed an understanding of spaces as hybrids, the concept of hybrid space has not frequently been applied to the digital/physical divide outside of Kitchin and Dodge’s (2011; 2005) work on code/space. Zook and Graham’s (2007, p. 468) concept of DigiPlace as “the understanding of a location based on and filtered through information about a place that is available in cyberspace” is another major geographical example of the digital/physical hybridity of places and spaces. The rise of internet mapping platforms such as Google Maps and Google Earth has raised interest in studying virtual geographies from the perspectives of privacy and sense of place. Zook and Graham (2007a, 2007b) introduce the concept of DigiPlace to explain the hybrid nature of spaces that have both a virtual and physical presence. By examining the search function on Google Maps, Zook and Graham present the idea that physical places are shaped just as much by their virtual counterparts as virtual places are shaped by their physical ones. The virtual mapping projects of Google create maps that affect people’s perceptions of physical places. Understanding a place through its virtual counterpart gives Google Map users a view of that location quite different from one they would get if they

were only looking at the physical dimension of the place. For example, internet searches conducted through Google's algorithms may eliminate some locations while promoting others. Zook and Graham (2007a, 2007b) make the case that some local restaurants in certain search areas do not appear on a Google Map search. Also, because Google uses Euclidian distance combined with a ranked list of popular search terms instead of Manhattan distance (distance based on a horizontal/vertical grid structure), Google Maps may present an inaccurate calculation of things such as the closest hospital to an individual. In this sense, the virtual environment changes how people come to know and understand a physical place.

Location-based social media platforms accessed through smartphones enhance the changing relationships that mobile phone users have with space and place. These types of applications change the nature of the spaces and places users interact with in their everyday lives. They create hybrid spaces and places, those that exist both online and offline, which have an effect on how people and their environment interact with one another in the creation of actions and events. Through location-based social media platforms, the digital and physical worlds become fused in a hybrid space that allows for new possibilities in terms of actions and events. The Foursquare application is an excellent example of how hybrid space and location-based social media are having an effect not only on how people are engaging in social activity with one another, but also how the online and offline worlds directly affect each other as well as the actions of those who engage with both physical and virtual environments.

Foursquare, the Hybrid Space of Consumption

According to its website, Foursquare is a “fun, free app for your phone that makes the world easier to use. Keep up with friends. Discover what's nearby. Save money & unlock

rewards” (Foursquare.com). Founded in March, 2009 by Dennis Crowley and Naveen Selvadurai, it has grown by February 2015 to include a network of over 55 million users worldwide as well as over 1,900,000 merchants who use Foursquare for their businesses (Foursquare.com). For privacy reasons, Foursquare does not release personal data on its users, but Foursquare estimates about half of its activity occurs outside of the US. Foursquare is an example of a location-based social media platform (and an example of the GeoWeb): a service in which participants volunteer their geographic location for a specific intent, in this case coordinating social events with other users. Because it is a social media network, users can see their friends’ locations on their home screen (Figure 1). Users “check in” to their current location on a smartphone (a phone with access to the internet) in order to alert their friends as to where they are, collect points to earn virtual badges (icons one can receive based on where they have checked in and are displayed on a user’s profile page), or to take advantage of discount offers that the business may provide exclusively to Foursquare users (Figure 2). While users can browse the features of Foursquare on the internet from any terminal, the functions within the application are only available through the Foursquare application installed on a smartphone. There are similar check-in applications such as Facebook Places and Whrrl as well as other applications that have begun using a check-in feature like Yelp.

When using Foursquare, the user logs in to the application and chooses to “check-in” to a desired location. Foursquare utilizes the GPS function on a cell phone to determine a person’s physical location based on a combination of nearby cell phone towers, within range of Wi-Fi signals, and satellites. Once the location is established, a list of possible venues where the person is physically located will be suggested. The user selects the venue in which he or she is located and checks in. Users then have the option of telling their Foursquare friends their location or

going “off the grid” and not displaying their location. Users can also choose to send (“push”) their location to other social networking sites like Facebook and Twitter. All of these options can be adjusted in the privacy settings for the service, although once a user checks into a venue, all other users at the venue will be able to see that the user is currently there as well. Despite Zook’s and Graham’s (2007) concern for privacy issues with the rise of internet mapping platforms, privacy does not seem to concern Foursquare users, with most utilizing their check-ins to present an image of themselves to their friends and show support for local businesses (Lindqvist et al. 2011; Crammer, Rost, and Homquist 2011). The lack of perceived concern for privacy on Foursquare calls to mind Elwood’s (2011) assertion that privacy has changed in the face of the GeoWeb.

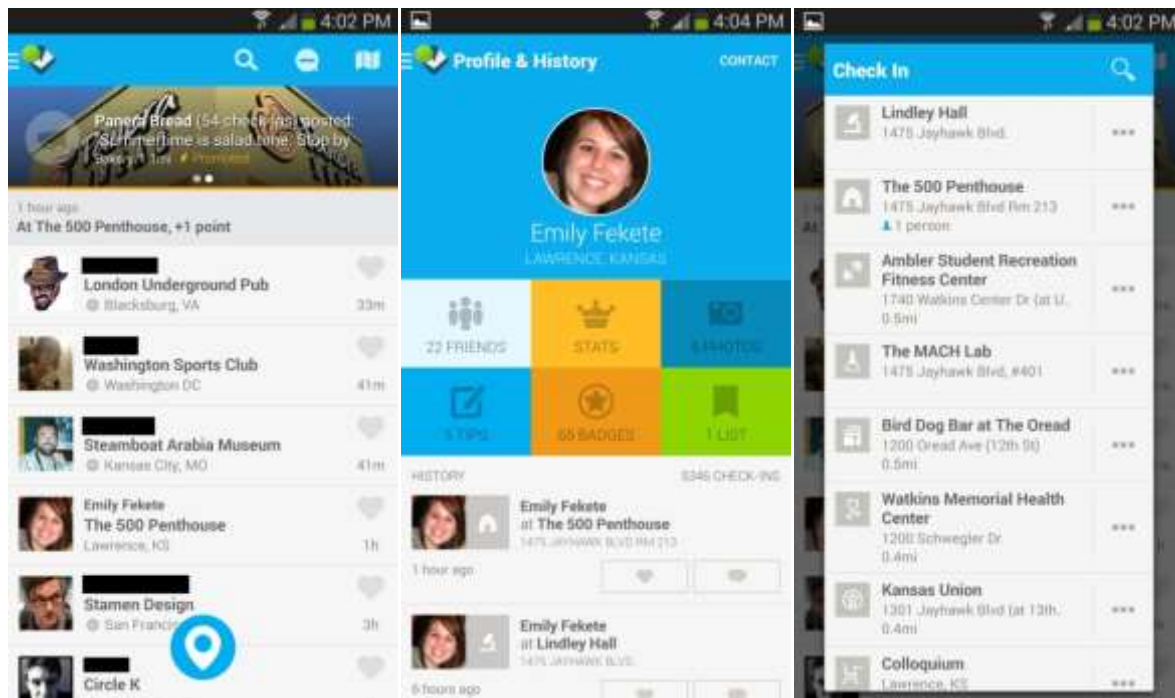


Figure 1: From left to right: Foursquare homepage showing locations of friends, Foursquare profile page, Foursquare check-in screen showing nearby locations.
Source: Author.

Foursquare is unlike some earlier location-based social media platforms because the users can actively create the venues in which they can check in, making it a part of the GeoWeb. If a venue is not listed on Foursquare, the user has the option of creating a new venue or “checking in anyway.” Therefore it is possible to have multiple virtual venues for one physical location or have some venues that only exist virtually, such as was the case for the heavy snowstorms in New York City in January 2011 that resulted in the creation of a venue entitled “Snowpocalypse” (Sun 2011). Though the venue is now listed on Foursquare’s website as closed, it acquired 38,512 check-ins, demonstrating that people often wish to share not only physical locations but also that they are part of a mass event (Cramer, Rost, and Homquist 2011).

Foursquare venues are assigned “venue type” information. Most venues are listed under categories such as restaurant, nightlife, shopping, or great outdoors. These types are then broken down into smaller categories such as the type of restaurant (e.g., Mexican, American, breakfast spot), bar (e.g., sports bar, gay bar, hookah bar), or shopping or outdoor location. To minimize the possibility of duplicate venues for actual physical locations, Foursquare is routinely policed by its users, sometimes referred to as “super users.” In this way, Foursquare provides a detailed overview of physical venue locations ranging from residences to restaurants and retail stores to hospitals in a virtual database. It also keeps track of the number of times that Foursquare users have checked in to specific locations as well as how many users have been there since the creation of the venue. Foursquare provides a digital record of visits to particular venues in a user’s history as well as a digital footprint for a specific venue in terms of how many users have checked in.

Foursquare offers other services as well. To encourage Foursquare use, the developers turned the application into a game. Users get points for their check-ins based on a variety of

factors such as how often they have been to the location, if they are there with friends, or if they have made some other milestone such as crossing into a different US state or visiting their tenth coffee shop. The user who has checked in to a venue most often within the past 60 days (one check-in per day) becomes the “mayor” of that location. Being the mayor often comes with special privileges such as more points for a check-in, the right to brag to friends, and occasionally special deals (as will be explained). Badges are also awarded based on where users check in and their point totals. These badges can be unique to specific locations, events, or number of instances of checking in to specific types of stores. For example, the University of Kansas has a badge that can be obtained by checking in to a number of buildings on the Lawrence campus. Friends can see each other’s badges that they have won and can compete with one another for who holds the most badges. Linqvist et al. (2011, p. 3) suggested Foursquare users were more likely to use the service “as a game, offering awareness to friends, seeing where friends were, and using check-ins to meet with existing friends.” Similarly Crammer, Rost, and Homquist (2011, p. 1) noted there was a “shift from privacy issues and data deluge, to more performative considerations in sharing one’s location.” By using gamification (turning something into a game), the Foursquare developers not only entice users to stay active in the application, but also turn ordinary places into virtual commodities to collect. Users can claim these virtual venues as their own or encourage friends to visit them in order to maintain a competitive level with one another.

Venue owners are encouraged to participate as well and can set up “specials” to encourage lure new customers and to reward their patrons. Often the special is set up only for the “mayor” (the person who has checked in to a venue the most in the past 60 days) to receive. However other specials also include things such as 10% off a purchase for anyone, free items for

the first time a user checks in, or complimentary items to encourage people to return. Foursquare is a service that can be utilized by retail and restaurant owners to entice a select group of the population, i.e., relatively affluent consumers or customers of a particular gender, race, or ethnicity. It may also be the case that the availability of Foursquare specials influences where people choose to consume. The virtual Foursquare platform could factor into a decision about a choice of restaurant. Venue owners may also see a boost in sales by offering incentives online. Foursquare users can also leave photos or “tips” of the place to let other users in on what the venue has to offer or what places should be avoided at all cost. Though Foursquare differs from other “click and mortar” retail venues in that no sales are conducted online, it uses the virtual platform to promote, advertise, and encourage people to visit particular physical venues. These locations may be places such as restaurants or bars that cannot have the same type of multichannel organization as a traditional retail store because goods and services are consumed on premises; however, they can still obtain some of the benefits of digital consumption through online advertising. Foursquare is one of many examples of how the GeoWeb is being combined with both corporate interests and individual desires.

Typically users are located in or near the venue to which they are checking in. Foursquare relies on the GPS coordinates from a smartphone to calculate a user’s position. Therefore it is difficult to check in to a location not within range of the GPS on the phone. However, there are instances of Foursquare users who cheat the system and check in to a location far from where they are located, even leading some developers to create programs that allow for businesses listed on Foursquare to verify users’ locations when checking in (Carbunar and Potharaju 2012). This phenomenon, known as “jumping,” is most common in Indonesia, where many Foursquare participants use a device that connects to the mobile web to check in to venues hundreds or

thousands of miles from their current location for the purpose of collecting badges as trophies to compete against their friends (Glas 2013). For the typical Foursquare user, jumping is a phenomenon not commonly utilized, though some members will check in to locations when they are nearby to ensure that they maintain their mayorship of a venue or obtain a certain amount of points for the day. But, as Glas (2013) notes, cheating in Foursquare is typically seen as an annoyance to other users, and not necessarily a common practice.

One of the newest features Foursquare has added to its application is called “Explore” (Figure 2). This element allows users to search by category or keyword for places near their current location. “Powered by data from over 2,000,000,000 check-ins,” Foursquare boasts, the Explore feature helps users to discover new places within their own neighborhoods, encouraging them to go visit these venues for the first time (foursquare.com). The Explore function further offers users a chance to look for places that they have not yet visited, those places that their friends have visited, places that Foursquare recommends to them based on previous check-ins, or to look specifically at locations on Foursquare that offer specials. Explore has changed Foursquare from an application that served the purpose of reaffirming people’s physical locations based on their phone’s GPS coordinates to one in which people can get a new idea of their current location by browsing a virtual version of it. As Zook and Graham (2007) explain for DigiPlace, Stephens (2013) noted for Open Street Map, and Crutcher and Zook (2009) comment for New Orleans, the Foursquare Explore function shapes the way that people understand their physical environment by biasing content in favor of those businesses listed on the site. Companies that pay for additional advertising or offer specials also appear more frequently, giving Foursquare users a corporate twist in their consumption patterns.

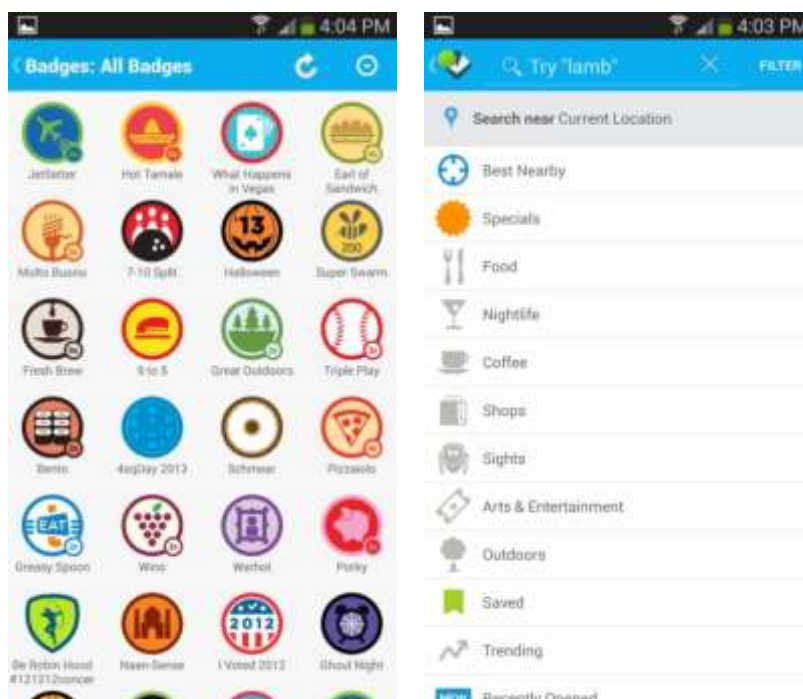


Figure 2: Screen shot of some badges collected on Foursquare (left) and the Explore feature (right). Source: Author.

Media scholars such as Gordon and de Souza e Silva (2012) have looked at how mobile technology is used to filter people's environments. By using a cell phone or other electronic device in public, people do not have to choose to interact with others or the media around them such as the billboards they walk by or the person handing out flyers on a street corner. And "as more of the world's information is available online, it is possible for people to outsource some of that filtering to their mobile and location-aware devices" (Gordon and de Souza e Silva 2012, p. 92). But people do not just use their mobile technology for "going away" or diminishing the noise around them. A filter is written into the technology itself. Foursquare's Explore feature creates ways for users to not only remove themselves from the landscape around them, but to filter that landscape based on keywords. No longer do users have to wander through city streets to discover the newest coffee shop or best sandwich in town. Now they can scroll through a list of virtual venues that connect with the physical places nearby in order to decide where they wish

to go. Echoing arguments of DigiPlace, the technological coding of Explore alters the look of an environment, shaping destination decisions based on popular venues or those with the most tips. A person could easily walk by a small café with few interactions on Foursquare on their way to a similar business that is on several users' to-do lists. Thus, the virtual environment of Foursquare affects consumption patterns on the ground.

In addition, Foursquare is moving away from a distinctly user-driven network to one that is increasingly corporate in nature, perhaps capitalizing on the social habits of younger generations of mobile phone users, who tend to make quick on-the-go decisions to go to various destinations (behaviors becoming popularized as suggested by Ling 2004). Several new tools have been developed to benefit business owners who have claimed their locations on the network. Not all Foursquare venues for retail locations are claimed by their owners. Many Foursquare venues are created by a user and the business owner never interacts with the online venue. On the other hand, some Foursquare venues are created by the business owner. This is often done by chain establishments who have a corporate office that is able to create all Foursquare venues for all of their chain locations. New businesses will also create a Foursquare venue for their location, often before they open for customers, in an effort to promote themselves. Once an owner has successfully created or claimed a business on Foursquare, the owner has the capability to set up specials for customers or to post updates for people who are nearby or who have checked in to the store previously. Analytics are also available that list details on the time of day people most frequently check in to the store, how many people have checked in, an average demographic profile of the people who have checked in, how many check ins have been pushed to Twitter or Facebook, and detailed information on the mayor and other top visitors to the location. Foursquare will not give the exact information users have listed on

their profiles to venues for privacy reasons; however if a user is the mayor or is a frequent visitor to a location, the user essentially forfeits their privacy rights, allowing the venue owners to see the user's profile information. Claiming and interacting with a Foursquare venue can provide a business owner with valuable demographic information about their client base.

Users have already listed many businesses on Foursquare whether the locations are claimed or not. Foursquare capitalizes on this fact by encouraging business owners on their website to join the conversations Foursquare users are already having about the venues through their check-ins and tips. In this way, Foursquare persuades businesses to use their service to connect to what their customers are saying in the tips left at various venues as ways to improve their products and services. Entrepreneurs can also place ads on Foursquare that will show up on a cell phone when a person is near the physical site of the business or when they use the Explore feature to search for specific types of businesses. Advertising through Explore essentially shuts out other locations in the vicinity by pushing those locations paying for advertising to the top. Advertisements only enhance the filtering done by the Explore feature, widening the divide between those businesses that have established a hybrid space and those that have not. Brands and other ventures that do not have physical storefronts can also advertise on Foursquare and their ads will appear when people have checked in to places relevant to the corporation, such as when a Netflix advertisement pops up when a person checks in to their residence or a Captain Morgan's rum promotion that appears when checking in to a bar. Users who open the Foursquare application at specific times may also see targeted advertising such as an Olive Garden restaurant announcement about lunch specials during midday hours.

Many of the features designed by Foursquare to encourage corporate use of the service by businesses are designed as filters of the world. Targeted advertising seeks to bring in nearby

people and drive them to their location over others that could potentially be closer. Even brands such as the History Channel or HBO create online support of specific locations based on Foursquare lists they believe will be of interest to their followers. Increasingly, many people are interacting with their physical environments through the filter of digital media. People not only remove themselves from the physical space around them by using mobile technology, but also reshape their individual activity spaces through the use of digital code. Businesses need to claim (and are claiming) their online spaces and become hybrids in order to compete and continue to drive customers to their locations (Wilson 2012). Undeniably, hybrid spaces exist both from a geographical and digital media standpoint. That these spaces directly influence human interaction and the production of new spaces of activity and consumption is unquestionable.

Previous Foursquare Research and its Gaps

Previous work on Foursquare has centered on user behavior and data visualization (Phithakkitnukoon and Olivier 2011; Noulas et al. 2011a, Lindqvist et al. 2011; Cramer, Rost, and Homquist 2011). As mentioned, Cramer, Rost, and Homquist (2011) and Lindqvist et al. (2011) looked into the reasons why people enjoy using the Foursquare service, with many using it as either a fun game to engage with friends or as a public performance and as a way to show support for various venues or brands. Checking in through location-based social media also sends messages to others about the place a person is located, deepening the ties between sense of place and daily life (Ozkul 2013). But Foursquare does not only allow people to interact with current friends, it facilitates the establishment of new connections among strangers as they battle for the mayorship of a location or continually see their online presence in frequently visited locations (Humphreys and Liao 2013). The space of the social network allows for online

interactions between people located in physical space without necessarily having a face-to-face meeting. Glas (2013) addresses the gamification aspect of Foursquare and instances of cheating within the service. While most people consider themselves to be standard users of Foursquare, sometimes they can inadvertently cheat because of inaccurate information posted to the platform. Foursquare is seen as the site of a game for many “cheating” individuals, especially in Indonesia where it is considered a cultural asset to be able to break down rules established by game creators (Glas 2013, Carbunar and Potharaju 2012).

Other user-based research has focused on how to improve the Foursquare platform by looking at the way in which people are currently using the application. Noulas et al. (2011 b) used data collected from Twitter on Foursquare check-ins that have been pushed to Twitter to profile different types of Foursquare users. These user groups in London and New York were compared to address similarities in the two cities. Likewise, Joseph, Tan and Carley (2012) and Long, Jin, and Joshi (2012) use Foursquare data to cluster users into groups for the purpose of understanding how to make better recommendations to users of whom to friend and where to go. All three of these studies identify certain categories of venues that appeal to these groups of users that could lead to development of more useful recommendation models in the future. Sklar, Shaw, and Hogue (2012) use data from Foursquare to visualize venues that are trending (venues that have spikes of activity during a certain time frame) to better understand the popularity of places and events as tied to certain time periods. This research is again tied to the Foursquare recommendation features to ensure quality recommendations for users.

Also assessing different types of users prevalent in the Foursquare system, Vasconcelos et al. (2012) looked at tips, dones, and to-dos and found that there are several types of users, including some who are more influential in the system (these are regular users and also large

businesses or brands promoting themselves in various locations). Tips, dones, and to-dos are other ways in which to interact within the Foursquare platform. A user can provide a tip (usually a recommendation for other users) on the page for a specific place. Users can also add places where they want to check-in to a to-do list. Once they have successfully checked in to a to-do list place, it is considered a “done.” Tips, dones, and to-dos are publically available information in Foursquare and a way for people to meet other users through the platform. The findings from Vasconcelos et al. (2012) are that the most influential users are those who share a large number of tips, those who do not tend to utilize the tips and to-dos features, and user profiles that are associated with spam activity. Again using tips and dones as a data source, Pontes et al. (2012) argue that while individual check-ins are only seen by friends, the availability of public data can allow other users to fairly consistently infer the home city of a particular user. This finding calls into question the relative privacy of the network. For the average Foursquare user, the findings of Pontes et al. (2012) should not be surprising. Foursquare will frequently email a user, welcoming them home when they check in to a location near their house for the first time after several check-ins in other locations during a trip away. Clearly Foursquare utilizes this knowledge to help calculate where users are more likely to check in to places in the future.

Both Phithakkitnukoon and Olivier (2011) and Noulas et al. (2011a) sought to obtain visual patterns of when and where users are checking in. These studies show that there are relationships between art and food venues in New York City and London due to the timing of check-ins conducted by individual users. Noulas et al. (2011) discuss the relationship between day of the week and time of day and check-in activity. Similarly, Aubrecht et al. (2011) use data collected every hour over a week-long period in Lisbon to discuss the potential of Foursquare data for studies of time geography. They mapped the check-in density in the city center during

peak work week hours as compared to weekend hours to address the potential of modeling human mobility patterns. Using data from Foursquare and other location-based social media platforms to address physical distance between online friends, Scellato et al. (2011) conclude that those users with larger groups of friends will more often be friends with people further from themselves in physical distance. As a result of reaching this conclusion, Scellato et al. hope to apply gravity models to future explanations of online friendships.

While these studies show interesting insights into user behavior and user interaction with their physical environments through digital platforms, the studies do not address specific venues, the notion of the creation of hybrid space for social and environmental interactions, or discuss business uses of Foursquare or consumption patterns. Foursquare offers an opportunity to see the places where people go to obtain goods and services and the patterns associated with these venues at different geographical scales and among different socio-economic communities. Though linked to a virtual space, Foursquare gives information on physical locations of users, the places that are most popular among the users of the network. This location information can be integrated with current geographical research on hybridity and the geographies of consumption and retail trade. Because so much of the U.S. economy relies on where individuals are going to make consumer choices, it is challenging to study aspects of consumption and retail trade without data on individual location information. Data on individual consumer choices are often difficult and time consuming to obtain. Location-based social media platforms provide an avenue to explore consumption patterns, what places are dominant places of consumption on the landscape, and how these may be tied to virtual environments. Looking at how specific businesses use these services can also illuminate how consumption patterns are tied to

socioeconomic characteristics in urban areas, shedding light on those demographics more likely to be left behind as venues continue to promote themselves in hybrid space.

There have been few studies that combine the notions of hybrid spaces found in Zook and Graham's DigiPlace (2007) or in Kitchin and Dodge's code/space (2011; 2005) with those of geographies of consumption and retail trade. This is an oversight within the geographic literature that can be tackled by studying location-based media and using Foursquare as a dataset. Though consumption occurs in the home (Leslie and Reimer 1999; 2003) and online (Murphy 2002), Foursquare data offer an opportunity to see the places that are popular for people to frequent outside of their homes to obtain goods and services and the patterns associated with these venues at different geographical scales and among different socio-economic groups. Despite being linked to a virtual space, Foursquare gives information on physical patterns of places of consumption. Geographic location information on businesses within cities can be determined through the 2007 US Economic Census and other similar databases; however, Foursquare provides much more detail on business popularity and type than these other services. Data from Foursquare can help to tackle this gap in the literature by showing what places are popular for consumption in various urban environments to understand consumer trends as well as access to different types of goods and services in a global economy.

Location-based social media platforms have further exaggerated changing social practices introduced with mobile technology. Users of these applications now have other means to make spontaneous plans with friends aside from simply calling one another to alert each other to their physical location. Users can now see digitally where their friends are located in physical spaces. Aside from new ways to socialize and mingle with people, location-based social media platforms and the GeoWeb also open up new possibilities for interacting with places in public

space. The concepts of code/space and DigiPlace explain how our relationships to place and space change when looking through the lens of a coded digital platform. The same can be said of platforms like Foursquare, a code/space in itself, and the associated places of consumption listed on Foursquare, examples of coded spaces and DigiPlaces. Places become hybrids as they must exist in the multiple spaces of the physical and digital worlds in order to stay relevant and compete with their counterparts. The implications that hybrid spaces have on businesses and consumption patterns have so far been overlooked in academic research. While scholars have addressed the reasons people choose to use location-based social media platforms or ways to improve these digital platforms, there has been little written about the impact that these media have on brick-and-mortar consumer locations. Similarly, studies have not combined these hybrid sites of retailing with demographic data on ethnicity, income, age, or education. It is important to know the socioeconomic characteristics of customers located near businesses that are linked to online sites because having an online presence may increasingly have an effect on patterns of the places of consumption in the future.

Chapter 4

Foursquare Data, Limitations, and the Digital Divide

Foucault (1972) brought to light the notion that discourse plays an active role in constructing social realities. Geographers have embraced this notion, applying it not only to geographic discourses, but mapping and cartography as well. As Dodge (2005) notes, “mapping provides a means to organize large amounts of, often multidimensional, information about a place in such a fashion as to facilitate human exploration and understanding ... mapping not only represents reality, but also has an active role in the social construction of that reality” (115). Drawing from Harley (2001), Dodge explains that maps not only provide a visual display of data, they actively shape how people understand places. Using maps to understand place echoes the notions of DigiPlace and neogeography in that online visualizations of data often affect how a location is perceived. The same can be said for Foursquare data. Foursquare venues in many ways represent virtual extensions of physical places. Locating these venues on a map not only provides a way to visualize large amounts of data, but also to correlate this data with census tract data.

While visualization should not be the only way information from Foursquare is analyzed and understood, the sheer size of the data sets make it difficult to appreciate the social network from any other viewpoint. By creating maps of the Foursquare venues found in a variety of cities and linking them to socioeconomic characteristics, it becomes possible to discern patterns that can be examined in detail to get a richer comprehension of consumption and individual economic choices in these locations. This dissertation explicitly seeks to address a series of research

questions on the types of locations Foursquare is most frequently used and how businesses are involved in the creation of hybrid economic space using the application.

Research Questions

The primary purpose of this dissertation is to use Foursquare to look into how the internet shapes consumption patterns. Specifically the research questions of this study are:

1. What are the patterns of places where people are more likely to visit on Foursquare at a regional level?
2. How does Foursquare use in different types of venues vary according to ethnicity, income, education, or age?
3. How do local business owners interact with Foursquare or use the service as a gateway to their clientele?
4. What can Foursquare tell us about how virtual and physical spaces of retail trade affect one another?

These questions will be addressed in the subsequent chapters on urban hierarchies in the Southeastern US (chapter 4), demographic comparisons of Foursquare use in selected cities (chapter 5), and interviews with business owners in Kansas City, MO (chapter 6) using data from Foursquare and the US Census Bureau.

Data Collection

To access its venue data, Foursquare allows the public to use its application programming interface (API) for free from its website. This policy is designed so that others can make applications that utilize Foursquare data and also so people can take advantage of a public data

source for research (foursquare.com). However, to access the data, a researcher must have a familiarity with APIs and computer coding. For this dissertation, a program was written by an independent company (Red Stapler Software) that can obtain all of the venue data from Foursquare within a particular radius of a given latitude and longitude point. After inputting the point coordinates for a location into the program, the API then returns 50 data points within the radius specified. Because more than 50 data points exist in many areas, the program written for this dissertation creates enough multiple overlapping squares within the individual radii around the geographical coordinates to fill the area. In this way, a series of sets of 50 Foursquare venues can be obtained for a large geographic area. The program then sorts out the repeated venues so as to avoid duplicates. Foursquare allows for up to 5,000 requests for data to be made per hour, which also had to be factored into the extraction program. Therefore, the program could be run one time and capture all of the data over a period of hours and not exceed the 5,000 per hour request limit.

To mine the data for the various cities, a grid of latitude and longitude coordinates was created in Excel for each location that encompassed the geographical boundaries of the city as shown on Google Maps. The grid coordinates were checked on Batchgeo.com by copying and pasting the coordinates from the Excel spreadsheet into Batchgeo. The Batchgeo output gave drop pin locations for each coordinate, mapping out the grid over the Google Map of the selected city. By mapping the grid coordinates, it ensured that there was adequate coverage for the collection of data. For larger cities such as Denver and Atlanta, the grids and radii were made much smaller than those grids in less populated areas to account for all of the venues within the denser areas of the cities.

Data from Foursquare can be organized based on the following categories: identification number (each Foursquare venue is assigned a unique number by Foursquare when a user creates it); the name of the location, whether or not the location is claimed (if the owner of the venue has created a merchant page for the venue and established it as an official Foursquare venue); the categories and subcategories of the venue (venue type); the number of times the venue has been checked in to; the number of unique users who have checked in to the venue; the number of tips left by users at the venue; the address (includes street address, city, state, postal code, and country); latitude and longitude of the venue; distance of the venue from the point requested in the API scrape; the number of specials at a venue; and the details for the special. This data can then be uploaded as an x-y point layer file into ArcMap based on the latitude and longitude coordinates provided for each venue. Each map illustrates the data on Shop and Service venues and Food venues proportionally based on the number of visitors each location had received to date. The symbology for the venues is a series of white and dark gray circles displayed at 40% transparency to show overlap in venues. Therefore some of the data points will appear light gray in color. The maps are included in each chapter to provide a visual representation of the Foursquare venue locations. Because this dissertation is looking at places, it is important to note, not just the popularity of each location, but also their distribution and relative location to census tracts and other areas of each city. By mapping the Foursquare locations, it provides better illustration of where the venues are located in relation to various demographics, illuminating gaps in Foursquare service among the cities discussed.

Also uploaded to ArcMap is information from the US Census Bureau at the census tract level on median family income, percentage of whites, percentage of African Americans, percentage of Hispanics, percent of population with a high school diploma, percent of population

with a bachelor's degree or higher, and median age. The census data used are the five-year estimates from the 2012 American Community Survey (<https://www.census.gov/acs/www/>). Census tract data was used because it has been shown to be an accurate measure for understanding larger scale neighborhood dynamics (Massey, Gross, and Shibuya 1994). For the entirety of the dissertation, only the Foursquare locations in the central city for each location were used because of the high volumes of retail establishments of some of the chosen study areas and the associated difficulty with collecting all data points. Not including data from surrounding suburbs may present a bias in the results because it is likely that those people consuming goods and services in the inner city are from the surrounding metro area. Similarly, people are mobile and are able to consume in areas that differ demographically from themselves. Therefore the consuming populations in each census tract and businesses in each tract may not exactly align.

While Foursquare is an excellent resource for observing consumption trends in urban locations, the data source is not perfect. Because users generate the venues from their cell phones that have GPS systems with varying accuracy, the venue information and their geographical coordinates may not be precise. There are also places that do not have a corresponding Foursquare venue because one has not yet been created by any users. Similarly, when data are collected, it represents a snapshot in time of a location. Businesses regularly open and close and the presence, or lack thereof, of a venue on Foursquare may or may not reflect the on-the-ground nature of the area. Because Foursquare accumulates data over time, its data is constantly in flux. Therefore, up-and-coming newer venues will likely not have as many user visits as popular older venues. However, Foursquare users are an active community and shape the data themselves. Similar to other forms of open source software, the Foursquare database is constantly being updated and policed by users who want an accurate and useful space to share with their friends.

Data Limitations and the Digital Divide

There is a significant disparity between those who have access to the internet and those who do not. Access to the internet does not imply a simple issue of whether a person can or cannot go online. There are a variety of ways that people are able or unable to access the internet, such as having a connection in their home, public library, workplace, community center, or school. As society becomes more dependent on the internet for daily activities, the negative impacts of not having internet access have become increasingly noticeable. Though the digital divide exists among different countries (specifically between the developed and developing worlds), it also is found within countries (Castells 2001; Malecki and Moriset 2008; Gibson; Luckman, and Brennan-Horley 2012). Rural areas and areas with low incomes have a lower usage rate of digital technologies than do other areas within the same country (Gibson, Luckman and Brennan-Horley 2012). As Malecki and Moriset (2008, 199) point out, “we are witnessing the emergence of a systemic loop” in that if these places continue to be left off the grid, they will remain places of increasing inequality. Rural and poor locations across the globe are falling behind in terms of being able to compete in an increasingly digital world. Physical access to the internet, however, is increasing with the availability of smartphones.

Access to technology is not only about having the income or physical access required to use the technology. It is also about education and attitudes. A person who does not know how to use the technology cannot be said to have access to it (Malecki and Moriset 2008). Without the knowledge of how to use a technology, it is not possible for a person to be able to fully utilize all of the features built into it. The lack of education underscores problems associated with such programs, as demonstrated by One Laptop per Child, which seeks to donate laptops to children in the developing world as a means of providing equal access to technology (Morozov 2011).

Simply giving technology to people does not equate to the knowledge of how to use the technology to the best advantage. Therefore, discussions of access must include skill sets as well as the physical material.

Currently, about 13% of the population in the United States does not use the internet (Fox and Rainie 2014). This percentage varies according to ethnicity, age, and income level.

According to a recent Pew study (Fox and Rainie 2014), those aged over 65 are the least likely to have access to the internet, with only about 57% of the elderly population of the US having access. The youngest generations of the US are the most likely to have internet access with a rate of 97% among those aged 18-29 and a 93% rate in those aged between 30 and 49. For those who are 50 to 64 years in age, the internet penetration rate is 88%. Those with lower incomes and education levels are also less likely to have internet access in the US. The highest income levels of the US (households earning over \$75,000) have a near-saturation rate of 99% access while households earning between \$50,000 and \$74,999 have a 93% usage rate. Households where the annual earnings are \$30,000 to \$49,000 are close to the national average in terms of internet use at 85%. Those who make less than \$30,000 a year are the least likely to have internet access with only a 77% penetration rate (Fox and Rainie 2014). There is not an overwhelming difference in Internet access among various ethnic groups. Whites have the highest proportion of internet users at 85%, followed by Hispanics at 83%, and lastly African-Americans at 81% (Fox and Rainie 2014). This information clearly shows that within the United States, there is a divide among internet users based on age, income, and education level. As outlined below, however, the digital divide in the US may be changing because of the increasing prevalence of smartphone use, which has closed the gap among ethnic differences in terms of access to the internet. Therefore, today's digital divides may be more substantially based on age, education, and income than on

ethnicity because of the growing prevalence of minority groups who own smartphones to gain internet access.

It is important to note that the data for this dissertation are limited to people who use Foursquare and have a smartphone. While it may provide a good sample of the population on which to draw impressions of consumer patterns, it is inevitably biased. According to a Pew study on cell phone usage in the United States, about 58% of adults own a smartphone (Fox and Rainie 2014). This number is heavily skewed by age, education, and income. The age group that has the highest proportion of people who own a smartphone is 18-29 year olds, with 83% owning a smartphone. This number is followed by the 30-49 age group (74%) and then the 50-64 age group (49%). There is a sharply lower rate of smartphone ownership among older aged adults, with only 19% ownership among those over the age of 65. Clearly, though smartphone ownership is increasing, it is still most prevalent among younger generations (Smith 2012). Therefore, it makes sense that Foursquare use is also concentrated in younger age cohorts. Young people are also more mobile, meaning that they will not only be more likely to be visiting different sites of consumption, but also that they will more likely be checking in to places further from their residence. Age could play a significant factor in which Foursquare venues become most popular that is not necessarily based on proximity to where young people live.

The same trend can be seen regarding family income. Typically, those with a higher household income are more likely to have a smartphone. In families who make over \$75,000 a year, smartphone use is at 81%, while families who make less than \$30,000 only have an ownership rate of 47% (Fox and Rainie 2014). Families in middle income brackets are similar since those who make between \$30,000 and \$50,000 have a 53% ownership rate and those between \$50,000 and \$75,000 have a 61% ownership rate (Fox and Rainie 2014). The difference

in ownership among income brackets is likely tied to the difference in usage among educational levels as those with the most education are also those who are most likely to own a smartphone. Therefore, Foursquare usage is likely to be a group of younger, better educated, and higher earning people (Smith 2012).

Smartphone usage does not vary substantially by ethnicity. Both African American and Hispanic groups have a higher prevalence (59% and 61%, respectively) than whites (53%) (Fox and Rainie 2014). This may have to do with the use of smartphones for personal internet service among economically poorer groups of people, leap-frogging traditional internet sources. Foursquare does not release personal data on users in the United States, and they claim about half of their activity occurs outside of the US. Another report by Pew states that about 18% of smartphone users have some type of location-based service that includes Foursquare among other similar services such as Google Maps (Zickuhr 2012). As vendors increasingly accommodate those with access to smartphones, those who do not have the technology will not be able to take advantage of these services.

Location-based social media platforms have traditionally been dominated by male users with an almost 2:1 ratio of men to women using them (Sells 2012), echoing Stephens's (2013) conclusion that much of the geographic content on the internet is created by men. Initially Foursquare had a gender bias as well, with a 2011 user ratio of 60% men to 40% women (Oxford Institute 2012). However, the difference in the ratio of male to female users of the service evened out towards May 2012 (David McCandless 2012). According to *Information is Beautiful* (2014), in November 2014 female Foursquare users now outnumber male, making up 62% of the Foursquare user base. As consumption is driven by women, it makes sense for Foursquare as a consumption-based social network to be dominated by female users. Although class and ethnic

use of Foursquare have not been studied, these factors may also play a role in who is using it and to whom Foursquare and those vendors who use the service are catering. Because venue owners can see a breakdown of demographic characteristics of users who have checked in to their business, it may be that vendors are currently pushing specials that are heavily gendered, class-based, or based on racial profiling. While Foursquare may be seen by many users as a game, not having access to the application may have other ramifications that go beyond entertainment.

Last, physical environment also has an effect on mobile technology and smartphone use.

As Gibson, Luckman, and Brennan-Horley (2012) point out,

physical geography is an *active* agent in the ‘new’ landscapes made possible by mobiles ... Innovative smartphone developments in the areas of global positioning systems (GPS) navigation and augmented reality can be rendered useless depending on one’s location, terms of service, and handset capability (125).

A secluded mountain town may have less location-based social media and Foursquare use simply because of the inability of phone signals to penetrate the terrain. Therefore, Foursquare as a service may not be able to gain users in rural locations, limiting them from having access to the types of specials that large corporations offer nationwide, such as American Express discounts at select locations. While the lack of availability of Foursquare specials in rural areas only affects a small percentage of the population, it is an example of how the urban-rural digital divide may leave people lacking access to goods and services because of geographic location.

Ultimately, this dissertation is looking at places listed on Foursquare and their popularity as driven by individual users. Though it is the Foursquare places that is the center of this dissertation, it is important to understand the user base that is creating Foursquare venues and checking in to these locations, thus determining the popularity of each place. Places are dynamic and dependent upon their relationships with people, things, and other places. The users that are

generating Foursquare places and checking in to these locations are shaping the nature of the online venue, therefore having an effect on offline action. Foursquare places are a reflection of the Foursquare user base in that their existence and popularity is driven by the network of users. Therefore, while Foursquare does have the potential to provide extensive information about offline retail spaces, it is, as all places are, a product of its relationship with those who actively use the service. Though Foursquare provides a rich database for obtaining data on consumption patterns, it constitutes a small, non-random sample of the US population who are likely to be relatively young, well educated, and have a higher than average family income. There appears to be less divide among populations of different ethnic backgrounds in terms of smartphone usage than internet usage in the United States (Fox and Rainie 2014). Because of the demographics of smartphone use, Foursquare prevalence should not be influenced by ethnicity when age, income, and education are held constant. If we look at the digital divides that separate smartphone users, Foursquare should be used by a younger, educated, and moderately wealthy population.

Foursquare also does not provide data on consumption per se. Users who check in to a specific Foursquare venue are not necessarily consuming a tangible good or service. However, by checking in to a Foursquare venue, a user is, at the very least, consuming a place. Previous research on the motives behind Foursquare users (addressed in the previous chapter) do indicate that the motives behind a check in are varied, from wanting to meet up with friends to presenting a certain image of themselves and their consumption decisions to an online audience. Because of the self-selective nature of a check-in, the information on popularity of Foursquare venues may not be the most accurate in terms of actual consumption trends. People may by-pass checking in at a McDonald's, but diligently check in at every local brewery they visit because of the novelty. Despite these drawbacks, Foursquare data does provide a look into the popular places of business

as established by their user base, giving perspective on the Foursquare venue as a place and also cities as places viewed through the lens of Foursquare. Foursquare users are also mobile and are able to consume goods and services in neighborhoods that differ demographically from themselves. Foursquare data does, however, give insight into which types of neighborhoods are likely to have businesses listed on Foursquare.

The chapters that follow use the data outlined above in an attempt to address all of these questions. Though only using data from Foursquare could be problematic in that it is not representative of the population as a whole, it is still a valuable data source for geographic research and is likely representative of an identifiable cohort of the population (i.e. young, educated, and moderately wealthy). Foursquare is one of the few social networks exclusively dependent upon place and location. While geographic location information on businesses within cities can be determined through the economic census and other similar databases, Foursquare provides much more detail on business popularity and type than these other services. With Foursquare we can get a bigger picture of specific types of venues that are popular among people who use the application. Despite representing a small segment of the population, there are few other ways (such as loyalty cards specific to certain stores) in which to gather information about consumption patterns, particularly if patrons do not make a purchase. Recognizing the types of places popular among a variety of consumers, albeit a specific type of consumer, can be beneficial in terms of future planning and marketing.

Chapter 5

Foursquare Consumption and the Urban Hierarchy in the Southeastern United States

Social media can breathe new life into understandings of the urban hierarchy. Because research on urban hierarchies is based on the social, spatial, and economic organization and interactions among and within cities, looking at the types of goods and services available to consumers provides an understanding of how certain metropolitan settings compare to one another.

Though it might be argued that globalization has markedly altered landscapes of consumption by opening up smaller markets to a greater variety of products and diminishing the advantage long held by larger urban centers that offer diverse arrays of goods and services, this process does not appear to be the case in the urban Southeastern US. Instead, the regional urban hierarchy persists with larger city centers having a greater quantity and variety of goods and services than do those with smaller populations. Cities at the bottom of the hierarchy not only lack a wide range of retail outlets, but also share the same few options available in the form of large box stores and chain restaurants.

Can data from social media, particularly Foursquare, be used to detect the persistence of the regional urban hierarchy in the Southeastern US despite the march of globalization? What does the continued occurrence of the urban hierarchy tell us about consumption patterns in the Southeastern US? This chapter presents a new avenue for discussing regional urban hierarchies and their associated consumption patterns. It opens with a section on previous investigations of urban hierarchies. The chapter then analyzes Foursquare consumption data for ten cities of

various sizes in the Southeastern urban hierarchy. It concludes with comments on regional urban hierarchies in the age of digital technology.

Changing Understandings of Urban Hierarchies

The concept of the urban hierarchy has enjoyed a long history within the discipline of geography. The origins of analytical treatises on urban hierarchies can be found in the 1930s work of the renowned German geographer, Walter Christaller, and his famous dissertation, *Central Places in Southern Germany* (1933, reprint 1966), which gave rise to a generation of work centered on Central Place Theory. In focusing on retail shopping, Christaller's model considered the range and thresholds of various commodities, and focused on consumer behavior to explain why larger centers offered a greater variety of goods and services. Larger cities exhibited wider hinterlands within which were nested smaller urban centers and their respective zones of influence. Essentially, it posited that the hierarchy of places reflected the hierarchy of goods and services that they offered. In this conception, retail trade was the central dynamic driving urban growth.

In the 1960s, Brian Berry (1970) expanded upon Christaller's model to introduce the theory of city-size relationships (Lake 2009; Jayne and Bell 2009). Looking at city population size as well as business patterns and economic growth, Berry famously conceptualized "cities as systems within systems of cities" (Lake 2009, p. 306). Building on Zipf's law, the rank-size relationships of cities exhibits a logarithmic pattern to the population size of cities from the top of an urban hierarchy to the bottom. The urban hierarchy offers a means to evaluate and compare metropolitan environments. However, all of these early conceptualizations were widely criticized

for offering ahistorical, static portraits of urban areas that ignored the dynamics of labor markets, agglomeration, and other socioeconomic processes.

Another well-known urban geographer, Alan Pred (1977), used the historical growth of U.S. urban manufacturing and the spread of information, specifically through the telegraph, to explain why certain American cities exerted more influence over others in the urban hierarchy in the 19th century, emphasizing the processes of circular and cumulative causation at work in the creation and reproduction of uneven spatial development. Pred argued that Christaller's hierarchy of central places could be supplemented by more dynamic understandings of differential urban growth, a view in which uneven access to information and agglomeration economies played a central role. This concept was explored later by Peter Hall (1998), who made a similar case that the lower levels of Christaller's hierarchy were disappearing as global cities grew in economic significance.

The urban hierarchy is essentially a ranking of cities in which those with larger populations have a greater range of diverse financial activities and superior access to information, which in turn leads them to exert disproportionate economic influence over other urban areas and the economy as a whole. When viewed through the lens of consumption, larger populations are able to support niche markets and provide access to a large variety of goods and services. Thus, retail businesses can afford to offer specialized items in locations further up the urban hierarchy because it is economically feasible to do so. In contrast, cities with smaller populations must rely on larger ones for access to particular products as they are unable to sustain specialized goods and services themselves.

Under recent rounds of globalization, emphasis on the study of urban hierarchies has shifted to world cities and networks of the international economy. Beaverstock et al. (2000)

categorized urban areas worldwide as either alpha, beta, or gamma depending on their connections to one another and their importance to the overall economy. Alpha cities sit atop the global urban hierarchy as they have the most shared firm presence, followed by beta, then lastly by gamma cities. The central argument of Beaverstock et al. (2000) is that the growing network and linkages among locations included in the global urban hierarchy is fundamentally changing the way that geography is understood, i.e., as a “world of flows, linkages, connections, and relations ... one of networks rather than the mosaic of states” (p. 123). Subsequent work on the global urban hierarchy revealed that despite the claims of theorists like Friedman (1986), who argue that globalization is forcing urban environments around the world to catch up to one another, the persistence of the global hierarchy indicates an increase in inequality among cities (Alderson et al. 2010). This disparity around the world is a direct result of the lag time in development in postcolonial cities and other locations in the global South. In these locations, later development than other world cities is a consequence of an initial lack of access to technology and information. It may be that cities higher in the global hierarchy will continue to prosper while those further down will be increasingly left behind.

An inadvertent repercussion of the recent emphasis on the global urban hierarchy has been the neglect of national and sub-national ones. There has been comparatively little work on regional hierarchies and their associated consumption trends. While there have been arguments that global hierarchies are replacing older rural-urban dynamics (Hall 1998), this does not appear to be the case when looking at the types of goods and services available in cities in the Southeastern US. Instead, it is evident that the increasingly global nature of most goods and services may not be reaching lower order cities except through large national chains that control

the types of products provided to their customers. This chapter moves beyond the global city by focusing on consumption in a regional urban hierarchy.

The Southeastern United States is generally regarded as a distinct region and contains a variety of urban environments suited to the discussion of a regional urban hierarchy. For this paper, the Southeastern United States includes the states of West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Mississippi, and Alabama (Figure 3). To analyze the urban hierarchy, an assortment of cities was chosen based on population as well as location throughout the Southeastern United States to ensure a range in both size and geographical contexts (Table 1). Sitting atop the Southern urban hierarchy, Atlanta with 443,775 people and Raleigh with 423,179 people are followed by Richmond, VA with a population of 210,309 and Knoxville, TN with a population of 182,200. Further down the hierarchy are cities with populations of approximately 50,000 people, including Owensboro, KY, Pensacola, FL, and Southaven, MS. At the bottom of the urban hierarchy are the smallest urban areas under consideration, Bluefield, WV, Newberry, SC, and Atmore, AL, each with approximately 10,000 inhabitants. To appreciate the nature of consumption in these cities, it is important to note the context within which contemporary retailing occurs, including the growing use of social media, a topic to which this paper now turns.

To demonstrate the spatially uneven availability of goods and services within the Southeastern urban hierarchy, Foursquare data on shop and service venues and food venues were mapped for the ten cities (Table 1). To minimize the amount of data being collected and computed, only the census tracts in the central city were analyzed. These data were proportionally drawn based on natural breaks to represent the number of individuals who have checked in to the venue in order to generate an understanding of venue popularity. Data for these

ten cities were collected between September 6 and 13, 2013. For Atlanta, a Pearson's correlation was run to test if there was a significant relationship between the number of Foursquare venues in a census tract and the demographic information for that tract. The number of Foursquare venues was correlated with the following variables: total population, racial profile (percentage of total population that is white, African American, Hispanic), median income, median age, and percentage of the population with a bachelor's degree or higher. These correlations were then tested for significance. Correlations were only conducted for Atlanta because, as the top of the Southern urban hierarchy, Atlanta holds a privileged position as a place to understand the dynamics of consumption in a large urban center. Future research should compare the correlations found in Atlanta to other regional metropolises to identify differences among their consumption patterns. Foursquare data provides an excellent window with which to view the variety of goods and services available within each urban location.

Table 1: Population of Selected Cities in the Southeastern Urban Hierarchy.

City Rank in Southeastern Urban Hierarchy	2012 central city population
1. Atlanta, GA	443,775
2. Raleigh, NC	423,179
3. Richmond, VA	210,309
4. Knoxville, TN	182,200
5. Owensboro, KY	58,083
6. Pensacola, FL	52,340
7. Southaven, MS	50,374
8. Bluefield, WV	10,502
9. Newberry, SC	10,255
10. Atmore, AL	10,121

Source: US Census Bureau



Figure 3: Select Cities in the Southeastern Urban Hierarchy. Map by Meghan Kelley.

Consumption in the Southeastern Hierarchy

As Table 2 illustrates, Foursquare venues as a percentage of total venues vary by city, from just over 13% in Bluefield, WV to close to 45% in Newberry, SC. Socioeconomic characteristics of the metropolises themselves likely account for the variation in percentage of

Foursquare data, which will be explored in more detail using Atlanta as a case study. It is clear that in the Southeastern US, smaller cities are not able to capture niche markets as well as those above them in the urban hierarchy. The lack of retail trade in cities lower on the urban hierarchy sheds light on the persistence of placelessness in the sense that most of the retail and restaurant options are the same in less populated towns (Relph 1976), i.e., franchises and chains. Though technology and transportation have improved the availability of goods in many cities, as will be shown it may be argued that smaller towns still do not have access to the variety of goods and services that cities with larger populations do except through limited large retail chain stores and restaurants.

Table 2: Comparing Selected Cities of the Southern Urban Hierarchy

	Total Number of Foursquare Food and Shop and Service Venuess	Total Number of Retail Trade and Accommodations and Food establishments (2007)	Foursquare Venuess as a Percent of Actual Venuess	Central City Population	Median Family Income (dollars)	Bachelor's Degree or Higher (%)	White (%)	African American (%)	Hispanic (%)
Atlanta	528	3471	15.21	443,775	45,946	46.1	36.3	54	5.2
Raleigh	734	2741	26.78	423,179	52,891	47.3	53.3	29.3	11.4
Richmond	291	1430	20.35	210,309	39,201	32.9	39.1	50.6	6.3
Knoxville	631	2148	29.38	182,200	33,467	29.7	74.2	17.1	4.6
Owensboro	119	495	24.04	58,083	37,289	17.9	86.1	7.3	3.2
Pensacola	157	624	25.16	52,340	44,628	33.9	64.3	28	3.3
Southaven	138	326	42.33	50,347	56,105	20.8	69.4	22.2	5
Bluefield	19	139	13.67	10,502	31,234	23.6	73.4	23	0.9
Newberry	51	114	44.74	10,225	28,717	25.9	43.9	45.6	8.6
Atmore	16	96	16.67	10,121	34,634	10.8	39.3	55.6	1.8

Sources: Demographic Data for the central city for each location is from the 2010 US Census. Actual business data is from the 2007

US Economic Census. The data on actual numbers of businesses includes all retail trade establishments and all accommodation and food service establishments. Foursquare Food Venuess do not include accommodation service data. Therefore numbers for actual businesses will be slightly higher than those acquired from Foursquare. It is likely that percentages are slightly less than actual values. Demographic information listed for all central cities for general comparative purposes.

Atlanta

Atlanta, the largest metropolis in the Southeastern U.S. with a population of 443,775 and a metro population of 5,522,942, demonstrates diverse economic activity. Atlanta began to solidify its position as the leading economic hub in the Southeast in the 1830s with the development of the Western and Atlantic railroad. As the terminal point for the railroad, Atlanta became a trading and transportation center for goods such as cotton and metal products throughout the Southeast (Garrett 2011). Today, Atlanta continues to be a transportation center as the hub for Delta airlines and with one of the busiest airports in the United States.

Atlanta has a long history of ethnic segregation that is still evident today. The city can be clearly divided into a “white Atlanta” and “Black Atlanta” based on locations of each ethnic group (Holloway and McNulty 2003). The white population of Atlanta is found largely in the northeastern section, coinciding with wealthier neighborhoods and more high-end retail trade. As the map of Foursquare venues shows (Figure 3), many of these commercial establishments are located in “white Atlanta.” The southern and western areas have a majority African-American population and also have few Foursquare establishments, a testament of both the lack of retail outlets within poorer communities and the digital divide, i.e., lower rates of smartphone use among lower-income groups.

The population within Atlanta clearly utilizes the amenities offered to them with some locations on the map having up to 30,000 individual check-ins, twice as many visits as the top ranking venues in any other location discussed in this chapter. With 528 shops and restaurants appearing in the Foursquare database, it appears that the large population creates a customer base for these businesses to develop. Those venues with the highest number of users who have visited them exhibit a wide range of types. Several of the top venues in the shop and service category

are local malls, followed by specialty stores such as the Apple Store, Trader Joe's, and Whole Foods. The popular restaurant venues also speak to the diversity of amenities that are offered within larger cities – almost all of the top restaurants in Atlanta are locally owned rather than national chains. With 368 restaurants on Foursquare in Atlanta alone, locals do not have to search very far for variety.

As the dominant metropolis in the Southeastern US, Atlanta also serves as an important case study for examining Foursquare use among different socioeconomic categories. By correlating the number of venues listed on Foursquare to census tract data on ethnicity, income, age, and education, a picture of how Foursquare is being used throughout the city can be discerned. All of these variables except for age have statistically significant relationships to the number of businesses found on Foursquare within each census tract (Table 3). The correlations between number of businesses on Foursquare and the number of Hispanics in a census tract are the least strong, while the relationship between number of businesses on Foursquare and number of African Americans is negative. The highest indicators of Foursquare venues within a census tract are total population, number of whites, and percent of population with a bachelor's degree or higher. Based on results from Atlanta, it is likely that areas with more Foursquare venues in other cities will also have a predominantly white and well educated population. Such observations serve as poignant reminders of how class and ethnicity intersect, even within the broad domain of cyberspace.

Based on information on the digital divide within the US as well as the historical ethnic divide of the city of Atlanta, the correlations of Foursquare venues in Atlanta with these selected demographic characteristics are not surprising. As noted earlier, it is typical among the US population for those who use smartphones to be more educated and have a higher median income

than those who do not (Smith 2012). The fact that there are more venues present in areas with higher median family incomes and higher levels of education confirms the trend of technology use among the relatively wealthy and educated, and the advantages that it confers. It is worth noting that there was not a significant correlation between age and Foursquare venues, possibly suggesting that although technology use is generally more prevalent among younger generations, consumption is a conscious act that occurs throughout all age cohorts.

Table 3: Correlations between Selected Demographic Characteristics and Number of Foursquare Venues in Atlanta, GA.

Variable	Probability Value	Pearson Correlation
Total Population	.000*	.473
Median Age	.172	.112
Number of Whites	.000*	.563
Number of African Americans	.016*	-.251
Number of Hispanics	.034*	.215
Median Income	.002*	.329
% Bachelor's degree or higher	.000*	.501

*Significant at the .05 level

Though smartphone use does not vary by ethnicity, the correlations indicate that the Foursquare data show the lifestyle of a specific socioeconomic social class in Atlanta, one of wealthier and more educated white individuals, reflecting the historic racial divide found within Atlanta. While these findings could be a reflection of the lack of engagement African Americans have with the Foursquare platform, the fact that there are not many venues in African American census tracts points out the persistence of ethnic divides in cities in terms of consumption patterns. The considerable variety and availability of goods and services at the top of this urban hierarchy that are being consumed by a white, educated, wealthy class of residents can also still be seen.

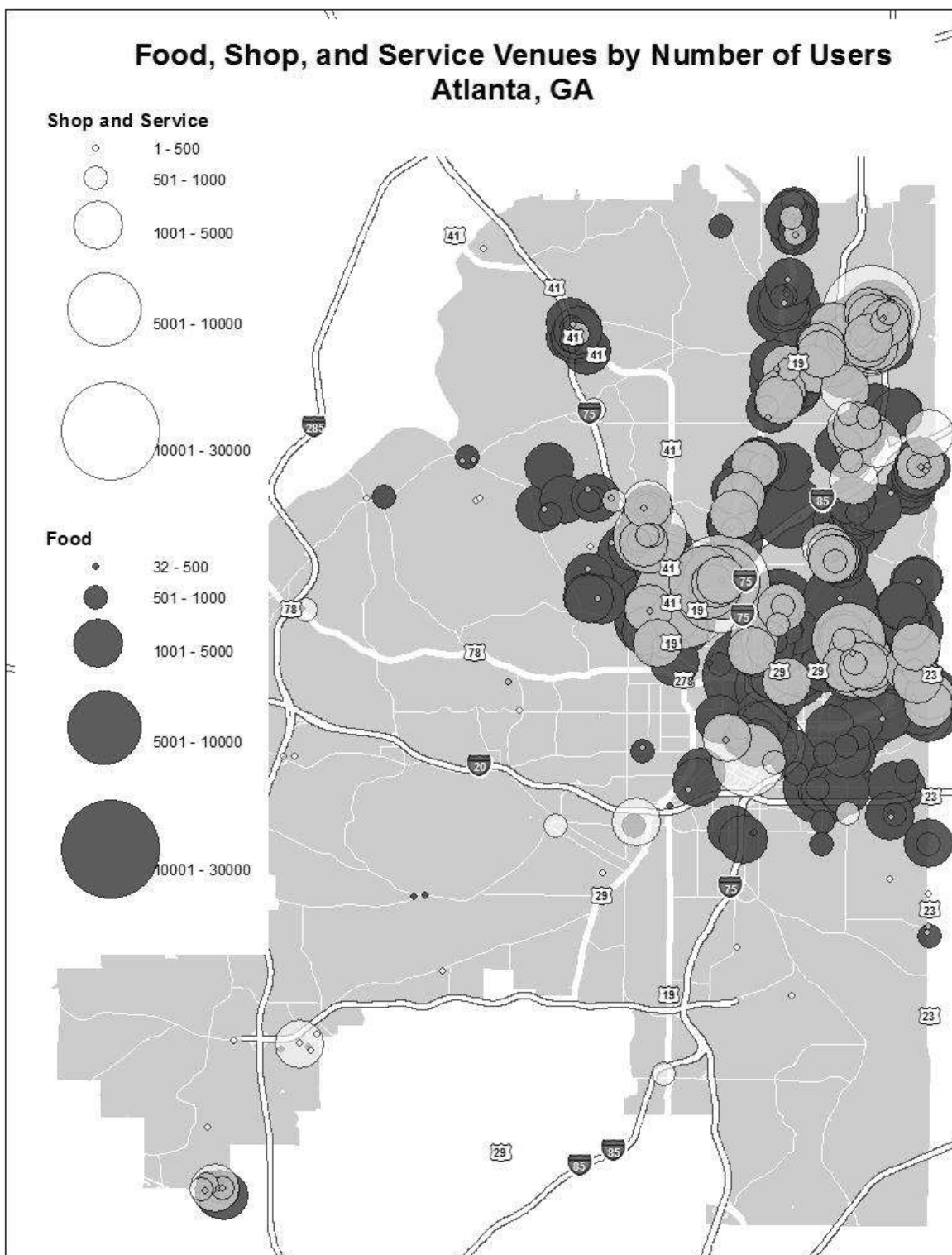


Figure 4: Food, Shop, and Service Foursquare Venues in Atlanta, GA by Number of Users
(Note: For all maps, circles are semitransparent to display overlap in venues)

Raleigh, NC

Raleigh, NC boasts a population similar in size to the city of Atlanta (403,892 in the city limits compared to 420,003) and offers a comparable mixture of shops and restaurants. With 734 individual shopping and food venues listed on Foursquare in Raleigh, it is an example of an area nearing the top of a regional urban hierarchy. There is a cluster of food venues with many check-ins located in the southern historic downtown sections of the city limits (Figure 4).

Raleigh is a fairly young metropolis, with most of its growth occurring after World War II (Peters 2006). Evidence of the more modern growth patterns can be seen in the clustering of food and retail venues along Highway 70 which runs from the extreme northwest corner of Raleigh through the core of the city and towards the south. North Carolina's famous technology-oriented Research Triangle Park is located just outside the western boundary of the city. The presence of a distinct cluster of food and retail venues in the far northwest corner of Raleigh is likely explained by its location just north of Research Triangle Park.

The demographics and economic pursuits of Raleigh provide an explanation for the quantity of food and shopping venues represented on Foursquare. As an urban area with a median family income (\$52,891) and as an area that is well educated with a majority white population, the residents of Raleigh are more likely to use Foursquare frequently. When the presence of Research Triangle Park is taken into consideration, it could be assumed that the Foursquare app is widely used within this urban area because a high percentage of the working population likely has a familiarity with technology use.

Similar to Atlanta, the most heavily frequented shop and service venues in Raleigh are local malls with specialty stores such as an Apple store, Whole Foods, and Trader Joe's. The most popular restaurants are also wide ranging in their scope, from barbeque to breweries and

Cajun to fried chicken. Both the variety and types of venues available in Raleigh, as in Atlanta, speak to the ability of larger cities to provide specialty goods to their consumer base as well as offer a larger number and amount of goods and services. Not only are there more venues in general in both Raleigh and Atlanta than in cities lower on the hierarchy, but there are also more niche products because the population is large enough to sustain purveyors of specialty goods. Atlanta and Raleigh show distinct characteristics through their consumption patterns, marking each location as a unique urban center.

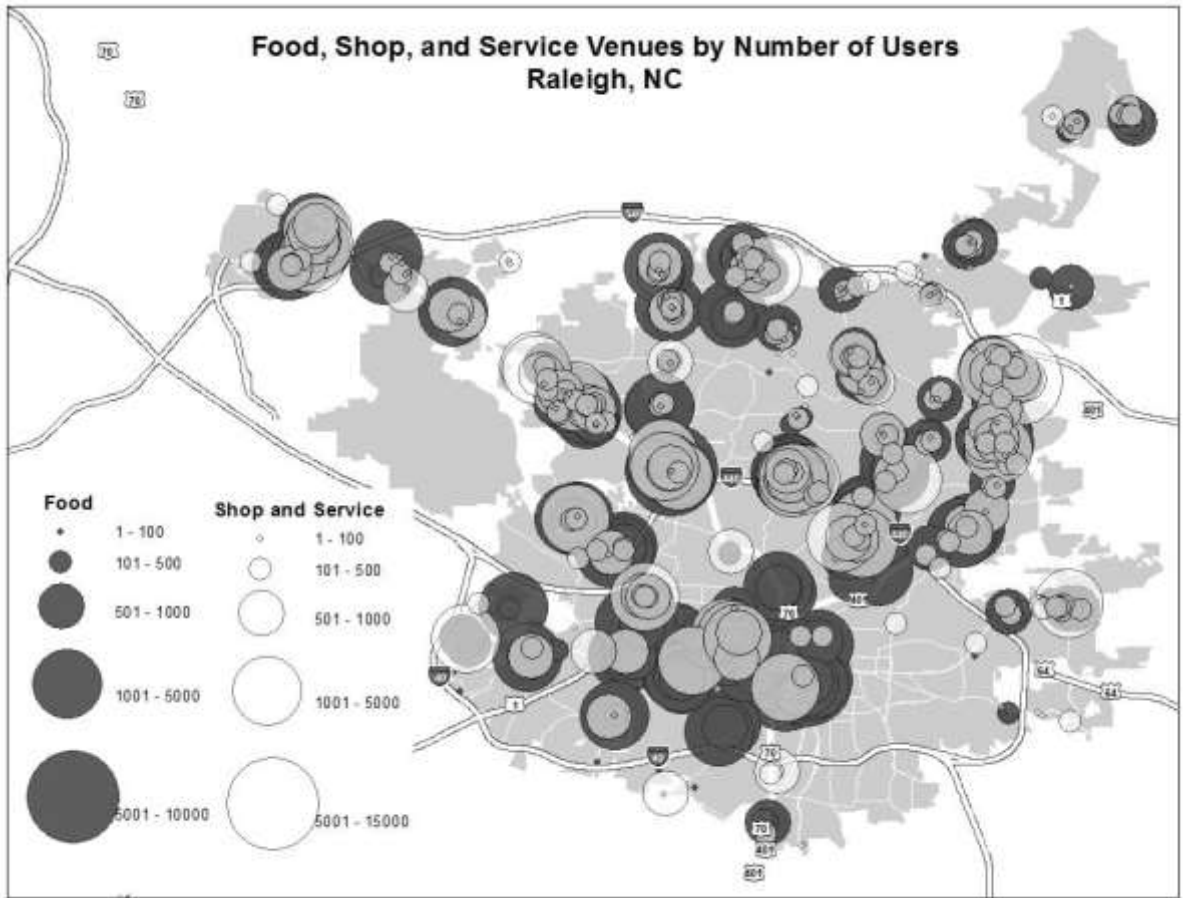


Figure 5: Food, Shop, and Service Foursquare Venues in Raleigh, NC by Number of Users.

Richmond, VA/Knoxville, TN/Owensboro, and KY/Pensacola, FL

Further down the Southeastern urban hierarchy, it is evident that less populous cities do not provide the frequency and scope of venues as larger ones like Atlanta and Raleigh because the smaller populations cannot sustain niche markets as easily. Richmond (population 210,309) contains 291 food and shopping venues, about half as many as Atlanta. Many of the popular Foursquare venues in Richmond are national grocery chains or national home goods stores. These types of stores also appear more than once, albeit from different locations within the city, as top venues, speaking to the lack of variety in Richmond compared to Raleigh or Atlanta. While Knoxville lists 631 venues, a number comparable to both Atlanta and Raleigh, it does not have the variety that larger metropolises enjoy. In the 15 most commonly visited venues in Knoxville, three are Walmart Supercenters, two are Target stores, and one is a Sam's Club. Though these stores are present on the list of venues in Atlanta and Raleigh, they do not top the list of popular venues as in Knoxville, nor are they present in the same numbers and popularity. Similarly, many of Knoxville's top visited restaurants are national chains such as Cheddar's Casual Café, Chili's Bar and Grill, P.F. Chang's, Olive Garden, Starbucks, and Cracker Barrel, as opposed to local specialty eateries. Based on the above observations, the variety and number of goods and services offered further down the urban hierarchy clearly decreases.

Owensboro, KY (population 58,083) and Pensacola, FL (population 52,340) continue the trend in offering fewer goods and services than those areas higher in the urban hierarchy. These cities not only offer fewer economic amenities, 119 and 157 shopping and food venues respectively, but they also resemble each other in the types of goods and services being offered. Five of the top 15 venues in both locations are nationally branded chain stores. The two sites also share four of the same top restaurants and over half of the top restaurants in both Owensboro and

Pensacola are national chains. There is both a lack in the types of venues found in these locations as well as less overall Foursquare check-in sites, demonstrating the deficiency in variety and specialization of goods and services in cities further down the urban hierarchy.

Southaven, MS, Bluefield, WV/Newberry, SC, and Atmore, AL

The lowest tier of the Southeastern urban hierarchy has much less of an array of types of goods as well as number of retail trade options. Southaven, MS is similar to both Owensboro and Pensacola in that it offers 138 restaurants, shops, and services. Most of these establishments are similar in nature to those in Owensboro and Pensacola with stores such as Walmart, Kroger, Best Buy, Lowe's Home Improvement, and Books-a-Million topping the list. The fact that 10 of the most popular 15 restaurants in the area are national chains speaks to the idea of placelessness found in small communities across the United States. As Cresswell (2004) demonstrates, consumer culture and mass communication have led to a homogenization of the world. Our lives increasingly

take place in spaces that could be anywhere – that look, feel, sound, and smell the same wherever in the globe we may be. Fast food outlets, shopping malls, airports, high street shops, and hotels are more or less the same wherever we go. These are spaces that seem detached from the local environment and tell us nothing about the particular locality in which they are located (Cresswell 2004, p. 43).

Despite differences in appearance found in Southaven, Owensboro, and Pensacola, the experience of consumption in these three places is strikingly similar in the locations that exist for consumerism. Inhabitants of lower order cities purchase goods from the same box stores and chain restaurants. The types of goods available through these outlets in the three urban areas are likely also comparable, leading to the conclusion that the residents in these spaces do not have drastically different consumption patterns from one another. The prevalence of chain retail

establishments in these small towns could be a bias in the data. National chain stores have national marketing departments that could be responsible for creating and claiming the Foursquare venues for each of their retail locations. Therefore chain establishments may be over represented as check-in sites throughout the US. However, because a number of people are checking in to these chain locations, it seems probable that the users would create Foursquare venues for those businesses that are not national box stores and are not necessarily claimed by their owners. It is likely that reaching the bottom of the urban hierarchy illuminates the lack of specialty goods and variety of services available in lower order cities. This deficiency reinforces the notion that people in small communities have a gradually more analogous lived experience because of similar choices in both where they shop and what products they consume. The places of consumption are similar in cities at the bottom of the regional urban hierarchy.

Cities at the bottom of the Southern urban hierarchy, such as Bluefield, WV, Newberry, SC, and Atmore, AL, have around 10,000 people to support the local restaurants and shops and services. The types of amenities found in these locales contribute to the specific needs of small, relatively rural communities, such as farming and tractor supply stores (found in Bluefield and Newberry), or are national chains, such as McDonald's or Kentucky Fried Chicken (found in all three locations). The number of choices in shops and restaurants is very limited in these communities – Bluefield has 19 venues, Newberry has 51, and Atmore has 16. Because of the low numbers of venues, their selection is also limited. The array of specialty goods and services available in areas like Atlanta are not present in small towns. Smaller populations are unable to economically support large numbers of businesses; companies choosing to locate in small cities must be those most directly supported by the population or those whose profits are not reliant upon the revenue coming from only one small town.

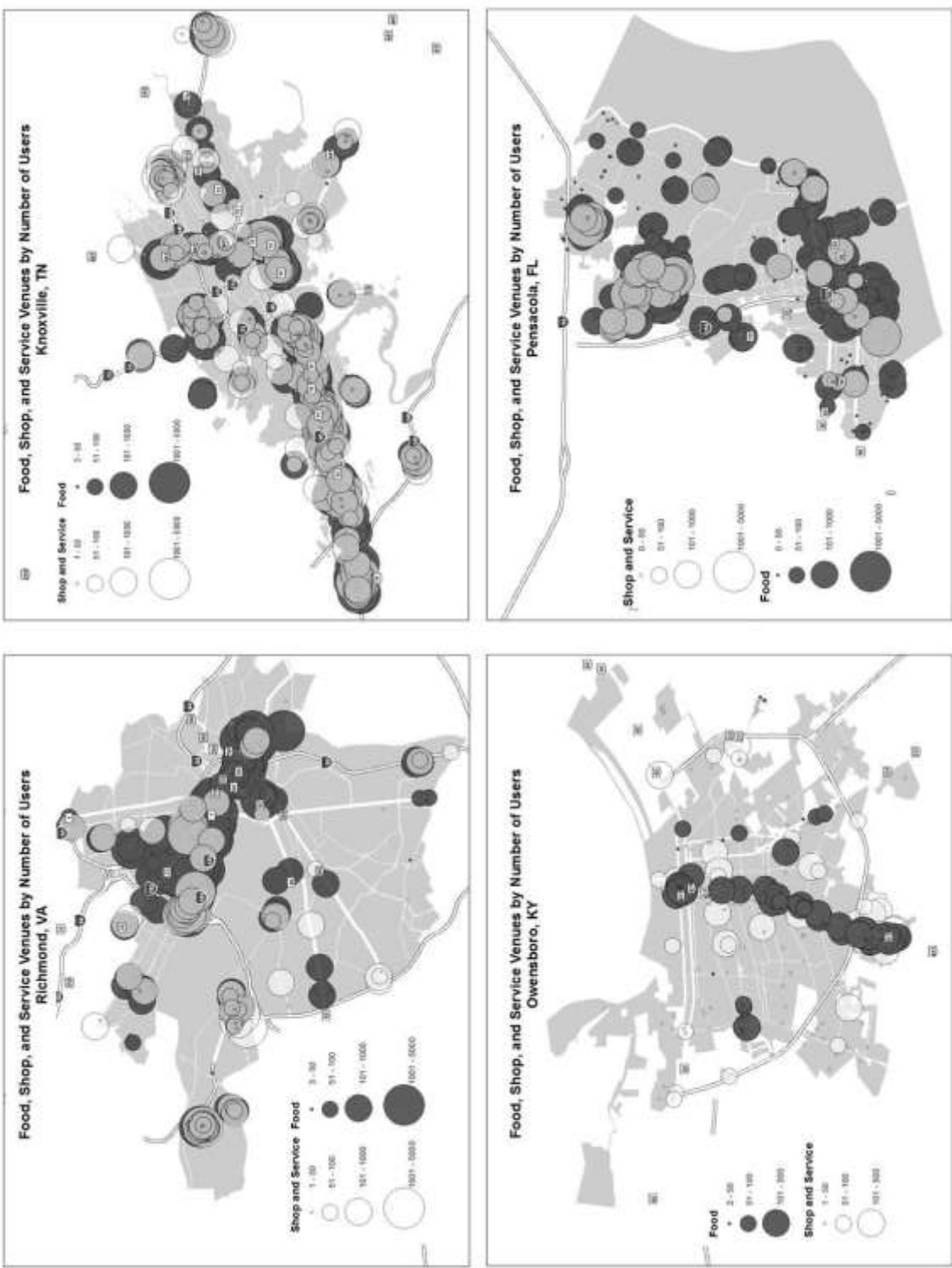


Figure 6: Food, Shop, and Service Foursquare Venues by Number of Users in Richmond, VA; Knoxville, TN; Owensboro, KY; and Pensacola, FL



Figure 7 : Food, Shop, and Service Foursquare Venues by Number of User in Southaven, MS; Bluefield, WV; Newberry, SC; and Atmore, AL.

Conclusion

The Southeastern United States lends itself well to a discussion of regional urban hierarchies. While much of the recent literature on urban hierarchies focuses on global cities, for many places, regional and local systems continue to dominate consumption patterns. The internet and social media have not only altered consumption patterns but also provided a new data source with which to look at them. The growth of regional competition among cities within countries continues to create differences and inequalities among and within urban environments. As a network that provides detailed user-generated information on locations where people are consuming goods and services, Foursquare offers a collection of data to look at these trends in city rankings.

Visualizing sites of consumption can illuminate patterns of retail development in conjunction with demographic characteristics. As evident in Atlanta, retail locations found on Foursquare are still heavily skewed towards areas of relatively higher median family incomes and educational attainment, traditionally known as “White Atlanta.” This pattern testifies to the persistence of social inequalities in cyberspace; indeed, by providing discounts to users if they purchase goods in a certain location, Foursquare may actually amplify such divisions. In Raleigh, the presence of high technology jobs has an impact on urban development as businesses cluster near Research Triangle Park. Foursquare use is also more prevalent in Raleigh due to the high level of familiarity residents have towards technology.

Higher order cities have the capability to support niche markets and specialty stores. The availability of a wide variety of goods and services in larger cities is ubiquitous to the current global economy. Those cities further down the Southeastern urban hierarchy obtain goods and services mostly from large box stores and chain restaurants, signaling a lack of variation in

overall consumption patterns. Though some retailing is moving online, the continued need for and use of brick-and-mortar establishments is clear. People mostly consume products, food, and services offline (Mahapatra 2013). Offline consumption patterns appear to be confirmed by the number of check-ins for various venues in this case study.

In analyzing Foursquare data for the ten cities presented here it is evident that the urban hierarchy structure of the Southeastern US is consistent with previous research. Larger urban centers such as Atlanta and Raleigh are not only able to offer more goods and services in general, but are also able to offer a wider array of these businesses, giving consumers more access to specialty products. Therefore, people residing in more populous locations are better positioned to benefit from the growing number of amenities that cities on the top of the urban hierarchy have to offer. It is likely that the inhabitants of localities higher up in the urban hierarchy will continue to have increased access to these goods and services while those in urban areas near the bottom of the hierarchy will never have the opportunity to utilize these features in their everyday lives.

The lower levels of the urban hierarchy in the Southeastern US exemplify the idea of placelessness with limited variety and uniform commercial choices in these locations. Many of the venues in lower order cities are large box stores such as Walmart, Target, Sam's Club, or farm supply chains. The presence of these consumer options not only gives the impression that the experience of consumption is broadly similar in smaller urban areas, but also demonstrates the limited variety of goods available for purchase. Chain stores generally provide the same products to all their outlets, meaning that places in these bottom tier cities offer the same settings for shopping, and likely also the same merchandise. Despite the persistence of globalization and improvements in transportation, an abundance of specialty products has not yet become available in these less populous cities. Rather, these locations remain in a state of placelessness that is

reinforced by chain stores. Though the case for a shift in the urban hierarchy to include global cities is important, those cities at the bottom of the hierarchy can still be said to be in line with many early arguments made long ago by Christaller.

Chapter 6

Places that Stick Out: Hammering Down Nuances of Foursquare Consumption

The focus of this chapter is Foursquare usage among select pairs of cities across the US. Areas to compare were chosen based on specific demographic characteristics such as ethnicity, income, and age. The purpose is to assess the influence of demographic characteristics on Foursquare use. As demonstrated in the previous chapter, place characteristics shape the types of goods and services available to certain populations. Therefore this chapter looks at pairs of cities that have similar income, ethnicity, and age characteristics and compares their Foursquare use to discern not only Foursquare use patterns, but a picture of each city based on retail locations and their popularity among Foursquare users. After a section on previous research on consumption patterns among different identity characteristics, Foursquare consumption trends in comparable cities will be addressed.

Bethesda, MD and Owensboro, KY are compared to look at how income differences influence Foursquare use. Denver, El Paso, and Baltimore are compared to assess the impacts of ethnicity on Foursquare use. Finally, Lawrence, KS and St. Joseph, MO are compared to understand the consequences of age. It is important to look at how different demographic groups use Foursquare because of the assumption that smartphone users are young, wealthy, and ethnically ambiguous. Does Foursquare use simply follow the pattern of smartphone use? Can distinct patterns of consumption be recognized by studying Foursquare data? By combining census track data for ethnicity, income, and age with data of Foursquare venues in a GIS database, questions like these can be addressed. Comparisons among urban settings can help to answer the question of differences in consumption based on social factors like income, age, and

ethnicity. It can also be compared to current literature on consumption and retailing to determine how Foursquare changes consumption among people who use the application. While this chapter uses data from Foursquare venues to try to map out the popular retail locations in certain cities, it is important to remember that these maps show which places are popular among Foursquare users and may not be representative of all of the retail establishments within a city or of the entire population. It does provide a look at each demographically distinct city from the perspective of retail establishments listed on Foursquare.

For this chapter, data were collected from Foursquare between March 25 and September 3, 2013. Similar to the previous chapter on the Southeastern urban hierarchy, the data on Shop and Service venues and Food venues were illustrated proportionally based on the number of visitors each location had received to date. Only the Foursquare locations in the central city were used because of the high volumes of retail establishments of some of the chosen study areas and the associated difficulty with collecting all data points. For each location, a Pearson's correlation was run to test if there was a significant relationship between the number of Foursquare venues in a census tract and the demographic information for that tract. The number of Foursquare venues was correlated with the following variables: total population, ethnic profile (white, African American, Hispanic), median family income, median age, and percent of the population with a bachelor's degree or higher. These correlations were then tested for statistical significance. Last, the statistical correlations were compared to the other cities in each group, income, ethnicity, and age to show distinct differences in the Foursquare use for each urban area.

Income and Foursquare Usage: Bethesda, MD vs. Owensboro, KY

In order to understand Foursquare use and retail establishment popularity in cities with varied income levels, Bethesda, MD is compared to Owensboro, KY. The two geographic areas have similar demographic characteristics (Table 4) as both places are predominantly white and middle aged. However the discrepancy between median family incomes in the two locations provides a means to assess the role of income in consumption. Both cities have roughly the same 2010 population (60,858 in Bethesda and 57,265 in Owensboro), age characteristics (median ages of 42.5 and 38.1 respectively), and percent of the population that is white (83.2% and 87.5%). Their major demographic dissimilarities exist at the levels of median family income and education. Bethesda has a median family income of \$189,485 with 83.4% of the population holding a bachelor's degree or higher. Owensboro on the other hand has a median family income of \$50,808 and only 17.9% of the population holds a bachelor's degree or higher. While it would be best to use two urban areas that have similarities in education levels to assess opposing income levels, income is closely tied to educational attainment. People with higher levels of education are more likely to earn more money (Bureau of Labor Statistics 2014). The difference in education levels between Bethesda and Owensboro is something that must be taken as a given when assessing the effects of differences in family incomes in two locations of similar size and demography.

An upper class commuter suburb of Washington, DC, Bethesda has an extremely high median family income. For most of the town's history, Bethesda was a spot on the toll road to Washington. In 1871, when the population numbered only 20 residents, Bethesda became an official town (Walston 2009). With the development of the trolley (and later metro) line from the capitol, Bethesda began to grow from a way post to an area for the elite of DC to escape the city.

Several tennis and golf clubs were built in Bethesda during the 1920s and many received notoriety by hosting famous athletes and events (Walston 2009). Today the Congressional Country Club in Bethesda regularly hosts the AT&T National Golf Tournament, the Quicken Loans National, and the Tiger Woods Charity Playoffs. Building off of fear that Bethesda would succumb to “unregulated development,” the city adopted a master plan in the late 1970s to contain development around the new Bethesda metro station “core” with additional parks and playgrounds to act as buffers between homes and offices (Walston 2009).

Table 4: Selected Demographic Characteristics for Bethesda, MD and Owensboro, KY.

		Total Number of Foursquare Food and Shop and Service Venues	Total Number of Retail Trade and Accommodations and Food establishments (2007)	Foursquare Venues as a Percent of Actual Venues			
	Bethesda	77	491	15.68			
	Owensboro	119	495	24.04			
	Current Population	Median Age	Median Family Income	Bachelor’s Degree or Higher (%)	White (%)	African American (%)	Hispanic (%)
Bethesda	60,858	42.5	189,485	83.4	83.2	3.3	6.8
Owensboro	57,265	38.1	50,808	17.9	87.5	7.3	3.2

(Note: All tables in this chapter: Demographic Data is from the 2010 US Census. Actual business data is from the 2007 US Economic Census. The data on actual numbers of businesses includes all retail trade establishments and all accommodation and food service establishments. Foursquare Food Venues do not include accommodation service data. Therefore numbers for actual businesses will be slightly higher than those acquired from Foursquare. It is likely that percentages are slightly lower than actual values.)

Most of the commercial establishments are clustered on the eastern edge of town and away from residential neighborhoods. Foursquare use is relatively high as there are a number of

check-ins at places in Bethesda as well as many tip counts posted to Foursquare; however the number of locations present on Foursquare is limited as there are only 77 food and retail stores in the city limits (Figure 8). Most of these are restaurants (55) and the remaining 22 are retail or service outlets. The top 15 most frequently checked-in places are largely independent restaurants or specialty food outlets such as the most checked-in place, Georgetown Cupcake. Only one food venue is a national chain, Rock Bottom Brewery, and the others are an eclectic mix of tap houses, French cuisine, and a mussel bar. The retail locations are national high end chains such as Bloomingdale's, Whole Foods, Barnes & Noble, and an Apple Store showing that the east side commercial area of town clearly caters to those who live in the area.

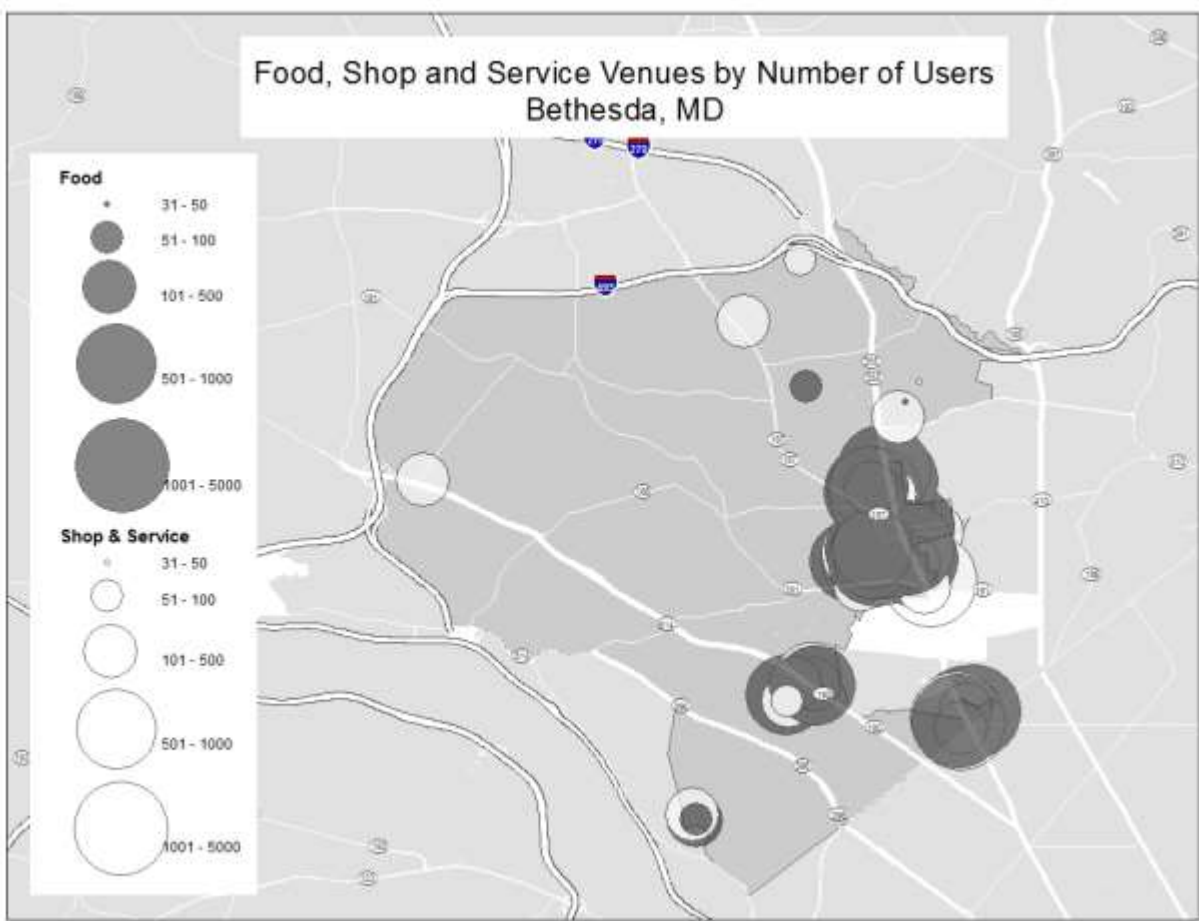


Figure 8: Food, Shop, and Service Foursquare Venues by Number of Users in Bethesda, MD

The 21 census tracts with median family incomes higher than \$150,000 a year do not have many retail or food businesses associated with them, as might be expected in wealthier areas. Only four of these tracts have venues that fall within them (Figure 9) and there are only nine locations total in these wealthier areas (five food venues and four shop and service venues). The retail businesses are those necessary to homeowners, including three grocery stores and one garden center. Of the food establishments, one is a Starbucks, the rest are local restaurants with two being bakeries, one a pizza shop, and the last a sushi bar, again speaking to the local clientele. The locations of these Foursquare venues are for the most part on the edges of these census tracts, further demonstrating the separation that exists in wealthy suburbs between residential and commercial land use – a division likely enforced by local zoning laws.

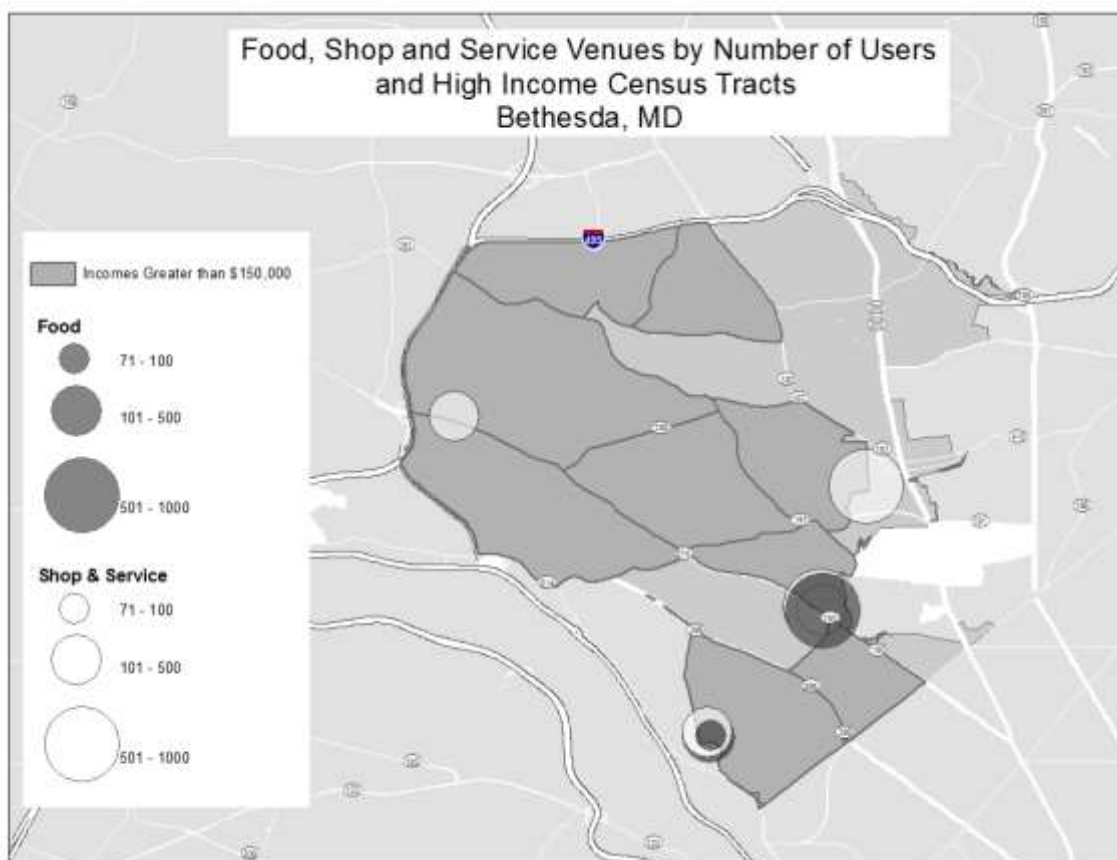


Figure 9: Food, Shop, and Service Foursquare Venues by Number of Users in Census Tracts with a Median Family Income of \$150,000 or Greater in Bethesda, MD.

In contrast, Owensboro is a midsized town in Kentucky with a similar population to that of Bethesda; however the median family income is more than \$100,000 lower than that of Bethesda (\$189,485 in Bethesda compared to \$50,808 in Owensboro). Owensboro sits on the Ohio River, which brought many of the first European settlers to the area around the turn of the 18th century (City of Owensboro). As part of the Western Coal Fields in Kentucky, Owensboro grew because of coal mining and also agriculture in the form of corn, soybean, and tobacco (Owensboro-Daviess County Convention and Visitors Bureau 2014). Historically the main business in town was the nationally recognized Owensboro Wagon Company as well as 18 bourbon distilleries that opened during the 19th century. Today Owensboro's largest employers are in health care, US Bank, and the public school system (Owensboro-Daviess County Convention and Visitors Bureau). Though Foursquare use is not as high as that in Bethesda (the place with the most visitors only has about 500 as opposed to close to 4,000 at the most popular location in Bethesda), there are more locations listed on Foursquare in Owensboro (121 versus 77). The lack of retail trade locations in Bethesda likely speaks to the desire of suburban areas to keep commercial establishments outside of residential areas via zoning. Being an isolated town instead of a suburb of a large metropolitan area, Owensboro likely needs more businesses located within it than does Bethesda.

Looking at the types of establishments, however, further distances Owensboro from Bethesda in the population's consumption habits (Figure 10). Of the 121 venues, 67 are food venues with most of them being national chains or fast food. Nine of the 15 most visited venues are restaurants, including one each of Applebee's Bar and Grill, Buffalo Wild Wings, Chick-fil-A, T.G.I. Friday's, O'Charley's, Starbucks, and Panera Bread Company. Of the remaining two, one is labeled in Foursquare as a "barbeque joint" and the other is a local Mexican restaurant.

The remaining 54 venues are shopping and service locations, the three most popular being a Wal-Mart (the most checked into venue in the town), a Target, and a local mall. The next three most visited shopping locations are a Kroger, a Lowe's Home Improvement, and a Best Buy. Though there are considerably more commercial locations in Owensboro than Bethesda, they are a different type of venue, mostly being national box stores.

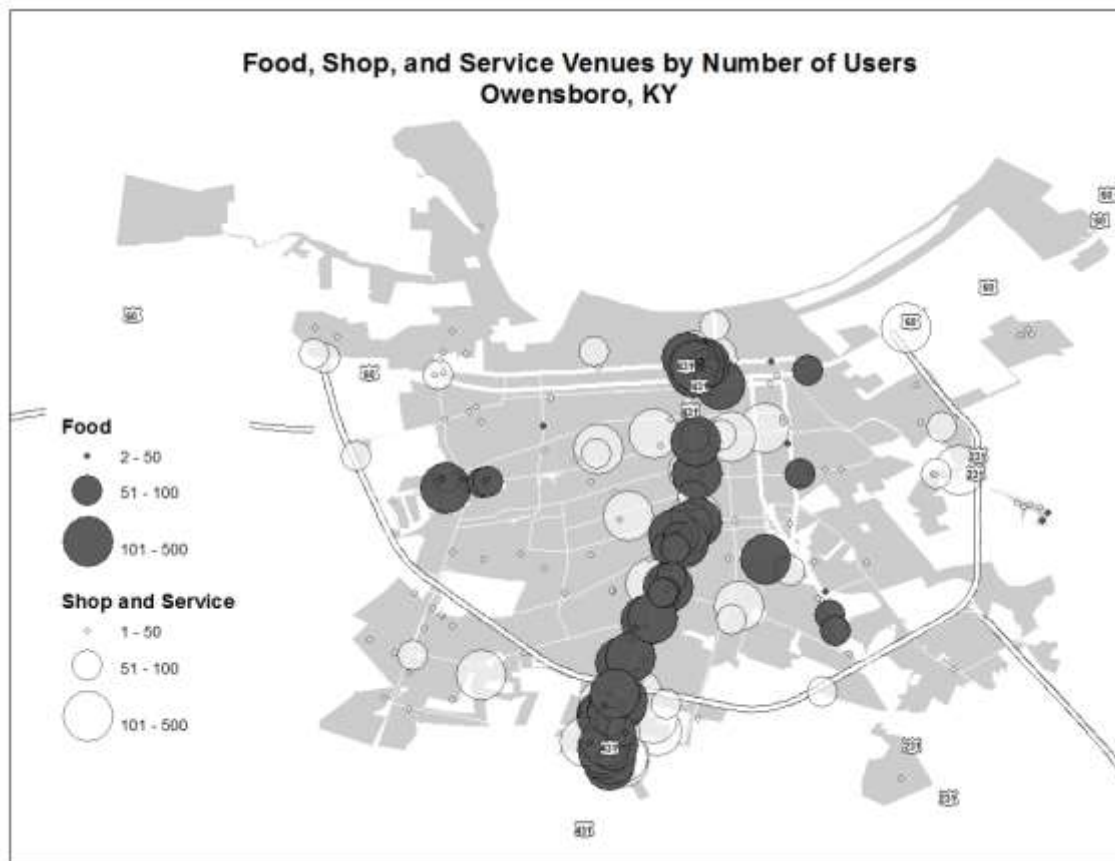


Figure 10: Shop, Service, and Food Venues by Number of Users in Owensboro, KY

The location of these venues throughout the town is also significant as most of them are distributed along a highway running through the center of town. Instead of pushing commercial areas to the outskirts of the urban environment like the suburb of Bethesda, Owensboro has been designed for convenient access for the entire population. The businesses are largely centrally located and in areas most accessible for the entire population, suggesting that access and cost are

likely larger factors for Owensboro residents when considering where to purchase goods and services. There are more venues located in areas of low income (median family income of \$35,000 or less) than there were in very high income census tracts in Bethesda. Two of the three significant clusters of venues found in the city are located in lower income census tracts in the north and center of Owensboro (Figure 11). Of the 40 establishments in these tracts, 19 are shops and services and the remaining 21 are food venues. Despite the plethora of chain establishments within the entire urban environment, within the top 15 visited venues in low income tracts, only six are chains: Starbucks, Kroger, Five Guys, Walgreens, and Kmart. Also located in these tracts are a fitness center, a gas station, an independent coffee shop, and six local restaurants.

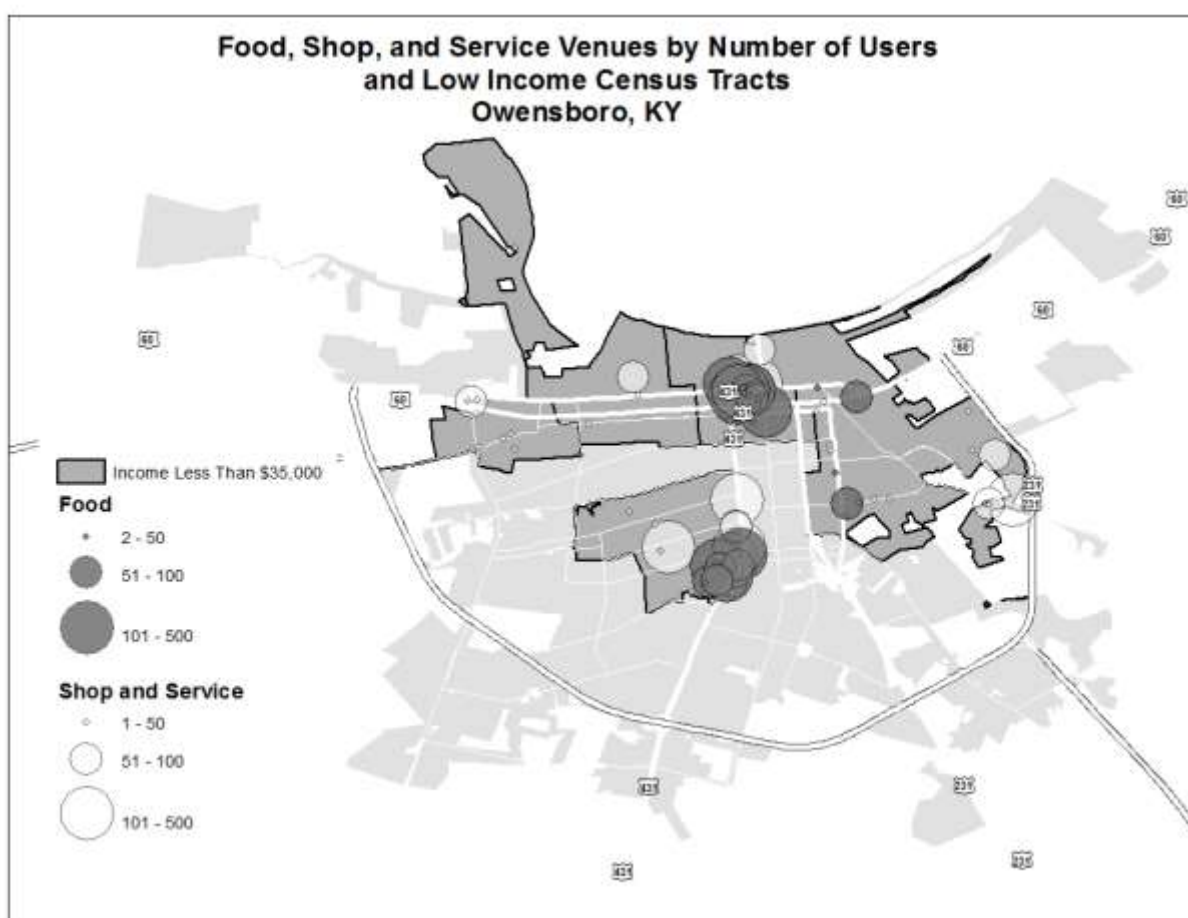


Figure 2: Shop, Service, and Food Foursquare Venues by Number of Users located in Census Tracts with a Median Family Income of \$35,000 or Less in Owensboro, KY.

The correlation between the number of Foursquare locations and various socioeconomic characteristics in Bethesda and Owensboro in Table 5 shows that not many of these factors are significant determinants of Foursquare activity. The only three variables between the two towns that are significant at the .05 confidence level are median age, percent of a census tract that is white, and median income, all found in Bethesda. The relationship between Foursquare venues and these variables are all negative, suggesting that in certain locations like Bethesda (i.e., upper class and white) the relationship that ties Foursquare use and business activity to income only exists to a certain point. There appears to be a tipping point in median income where the wealthiest populations are not located close to shopping and other services because of zoning laws keeping residential and business areas separate. The negative relationship with the number of whites is likely explained again as a product of wealth. The richest areas are also the areas with the highest number of whites and therefore more Foursquare venues are found in the more ethnically diverse locations within Bethesda. It is not surprising that a significant correlation exists between median age and the number of Foursquare venues as younger generations are more likely to be smartphone owners and thus take advantage of applications like Foursquare.

Table 5: Correlations between Number of Foursquare Venues and Select Demographic Characteristics.

Variable	Bethesda		Owensboro	
	Probability Value	Pearson Correlation	Probability Value	Pearson Correlation
Total Population	.061	-.450	.304	.134
Median Age	.005*	-.682	.250	.176
Percent white	.009*	-.639	.174	.243
Percent African American	.351	.118	.222	-.199
Percent Hispanic	.161	-.299	.310	-.130
Median Income	.050*	-.477	.462	.025
Percent Bachelor's degree or higher	.261	-.239	.153	.264

*Significant at the .05 level

Ethnicity and Foursquare Usage: Denver, Baltimore, and El Paso

To investigate the effects of ethnicity on Foursquare use and consumption patterns, three cities with similar population sizes and incomes but vastly different ethnic compositions were chosen. As Table 6 outlines, Denver, Baltimore, and El Paso have similar demographic sizes with varying ethnic components. Denver, CO, Baltimore, MD, and El Paso, TX are metropolises that had similar size populations (600,158; 620,951; and 649,121 respectively) and median ages (33.7, 34.4, and 32.5) in 2010. All three locations are also comparable in income, with Denver having the highest median family income at \$60,326, Baltimore the second highest at \$48,399, and El Paso the lowest at \$44,209. There is a slight difference in education levels between Denver and the other two cities. While 41.3% of Denver's population has a bachelor's degree or higher, only 25.8% of Baltimore's population and 21.9% of El Paso's population have a similar educational level. However, the major differences among the three urban environments are largely ethnic in nature, with Denver being about 69% white, Baltimore being roughly 64% Black, and El Paso being close to 81% Hispanic. To ensure that ethnicity is the dominant characteristic analyzed among these areas, only those census tracts where 75% or more of the population falls within its city's primary ethnic group will be examined. The percentage of existing businesses that have virtual counterparts listed on Foursquare is much higher in Denver than in Baltimore or El Paso. As will be shown, this is likely an effect of the ethnic makeup of both the urban areas themselves and Foursquare users. It is clear that Foursquare is predominantly used by white populations, which affects the number and distribution of locations listed on the application.

Table 6: Selected Demographic Characteristics for Denver, Baltimore, and El Paso.

		Total Number of Foursquare Food and Shop and Service Venues	Total Number of Retail Trade and Accommodations and Food establishments (2007)	Foursquare Venues as a Percent of Actual Venues
	Denver	803	4,049	19.83
	Baltimore	361	3,431	10.52
	El Paso	360	3,325	10.83

	Current Population	Median Age	Median Family Income	Bachelor's Degree or Higher (%)	White (%)	African American (%)	Hispanic (%)
Denver	600,158	33.7	60,326	41.3	68.9	10.2	31.8
Baltimore	620,961	34.4	48,399	25.8	29.6	63.7	4.2
El Paso	649,121	32.5	44,209	21.9	14.2	2.8	80.7

Denver is growing in size as it establishes itself as a popular location for highly educated workers aged 25-34 (Metro Denver Economic Development Corporation 2014). The city has also becoming more ethnically diverse as a larger Hispanic population has moved into the metro area, doubling the percentage of Hispanics between 1970 and 2010 (US Census Bureau). Established in 1858 as a mining and ranching town, Denver primarily served the miners until Colorado was admitted as a US state in 1876. After completing a rail connection to the Transcontinental Railroad in 1870, Denver began to grow as a central shipping and storage location for the western US (Denver Union Station Public Authority 2013). Denver has a thriving economy and a low unemployment rate. During recent years, the unemployment rate in Denver has been returned to pre-recession levels and the city has seen growth in jobs related to natural resources and construction, professional and business services, and healthcare and education (Metro Denver 2014). In addition to an economy based on transportation, distribution, energy, and mining, Denver has an extensive history of beer production and also serves as the

US headquarters for the Coors brewing company, giving rise to its nickname, the “Napa Valley of Beer” (denver.org 2014). Its relative proximity to the front range of the Rocky Mountains also provides residents with access to a myriad of outdoor activities.

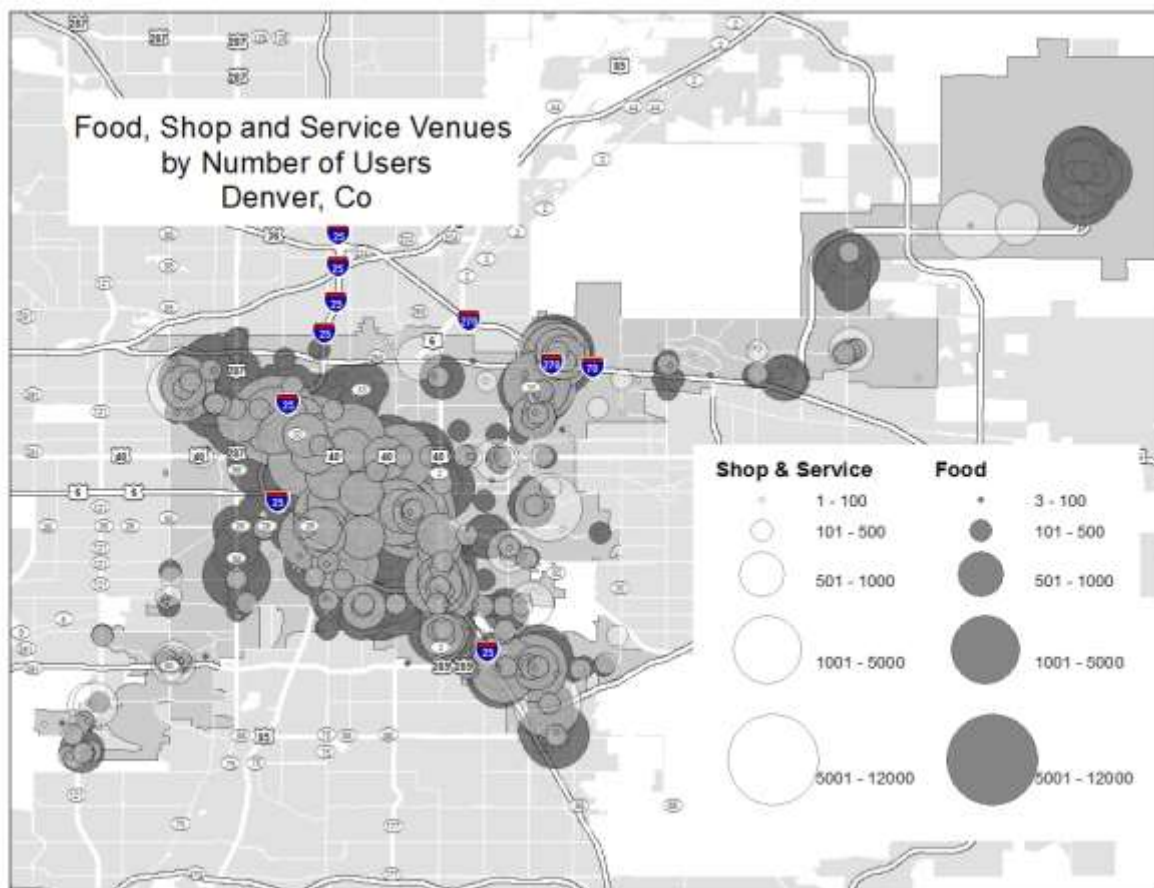


Figure 3: Shop, Service, and Food Venues on Foursquare by Number of Users in Denver.

The popular Foursquare venues in the area speak to the local culture of beer and the outdoors. Many of the 803 establishments are restaurant locations with only 268 shop and service venues listed on Foursquare in Denver. The commercial sites are clearly clustered in the core of Denver as opposed to the less populous annexed part of the city that contains the Denver airport (Figure 12). The central city of Denver has the most Foursquare venue locations.

Foursquare use is relatively high in the city, with the most popular venues experiencing close to 12,000 check-ins. Those venues among the most popular are food establishments, as only three of the top 15 visited locations are shop and service venues: two malls and an REI (a high end outdoor clothing store). Six of the remaining 12 food venues are restaurants devoted to beer, including three breweries (Wynkoop, Rock Bottom, and Great Divide). The final six food venues in the top 15 are all local eateries, most of them being diners or breakfast locations.

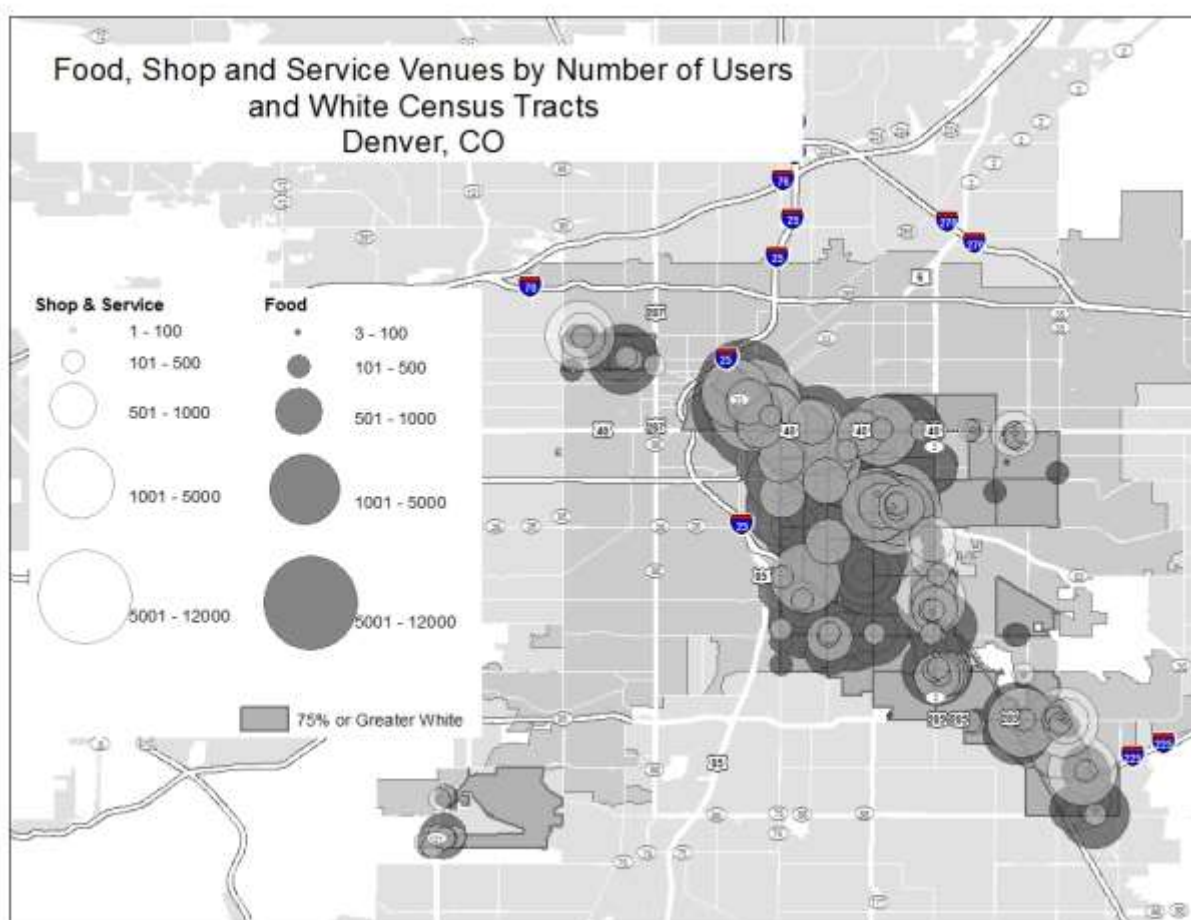


Figure 43: Shop, Service, and Food Foursquare Venues by Number of Users in Census Tracts where 75% or more of the Population is White in Denver

Looking at the census tracts where 75% or more of the population is white eliminates the peripheral areas of the city, including the airport. Close to half of the Foursquare venues (360)

are still found in these census tracts and there is little change in the 15 most popular spots (Figure 13). Eleven of the top 15 venues in the whole city are located in these census tracts. In addition to the two malls, four of the beer-centered restaurants, and four of the diners from the top 15 locations in Denver, the top 15 venues in these tracts also include Dave and Buster's, Cheesecake Factory, Hard Rock Café, and two local eateries. The prevalence of chain establishments is noticeable in the central city of Denver and also coincides with the predominately white census tracts.

The city of Baltimore tells a different story in terms of both Foursquare use and the spatial distribution of consumption patterns. Baltimore was incorporated in 1796 and has served as an important port city throughout US history because of its accessibility to Midwest manufacturing centers (Maryland State Archives 2014). Sometimes considered a Rust Belt city due to the presence of Bethlehem Steel as well as being a US leader in shipping industrial goods such as coal, petroleum, and fuel oils, Baltimore has faced severe population decline and economic hardship (Maryland State Archives 2014). Today the Port of Baltimore still serves as an economic center for the city, employing over 50,000 people; however unemployment in Baltimore is consistently below national averages and 23% of the population of the city lives below the poverty line (US Census Bureau). Low-wage service industries continue to provide many of the jobs in the city though education and healthcare are also large employers (Hopkins 2012; US Census Bureau).

Amidst the deindustrialization and urban decline of the 1970s and 1980s, the Inner Harbor was imagined as a place to revitalize the downtown area of Baltimore (Levine 2000). Over \$2 billion dollars were invested, into the downtown area for convention centers, sports stadiums, and high end shopping and dining in an attempt to bring the middle class back to the

city (Levine 2000). Though Baltimore has since been chided for its failed attempt at sustainable urban tourism building, in 2009 the city still had approximately 7.7 million tourists (Maryland Tourism Development Board 2011). The funneling of public funds into projects to promote the Inner Harbor has left this area of the city as a tourist hotspot; however in doing so, Baltimore officials have been accused of neglecting the core concerns of the rest of the city (Levine 2000). Therefore, Foursquare use along the Inner Harbor is expected to be high because of the presence of tourist attractions and the large numbers of tourists who visit. It is likely that the check-ins along the waterfront are mostly driven by tourists as opposed to locals.

Considering the population size of Baltimore, there is very little Foursquare use and most of the venues found on Foursquare are located near the tourist areas in the Inner Harbor, in the physical center of the Baltimore city limits along the Baltimore harbor (Figure 14). With only 361 venues listed on Foursquare, Baltimore has a low percentage of venues listed for a densely populated urban area. There are 46 total census tracts in the city, mostly along the western edge, that do not have Foursquare venues associated with them at all, likely a reflection of the de-industrialized nature of Baltimore. The only other city that does not have any Shop, Service, or Food venues found in at least one census tract is El Paso. All of the top 15 most visited locations except for the last two are located along the Inner Harbor, and except for a Barnes and Noble bookstore and the Gallery shops at Harborplace all are restaurants. Some of the food venues are chains, Hard Rock, Phillips Seafood, and a Cheesecake Factory, while the remaining restaurants are local places, mainly seafood restaurants.

The census tracts that have 75% or greater population of African Americans confirm the hypothesis that the African American population of Baltimore does not use Foursquare heavily (Figure 15). Of the 361 Foursquare venues listed in the city, only 78 are found in census tracts

with 75% or more African Americans. Thirty-four of the 46 census tracts without associated retail trade locations have populations that are 75% or more African American, located in the west and northeast. The pattern of retail locations should also be noted as it differs significantly from other urban areas. In other locations many of the most popular Foursquare venues are food establishments. However in the African American majority census tracts, most of the locations are retail trade and service businesses. Only 27 of the 78 venues are food spots. Four of the top 15 locations in these areas are large shopping plazas or malls. Another four are grocery stores, one is a farmers' market located on the edge of the census tract area, and one is a gas station. There is a family recreational facility and a Home Depot. The two restaurants listed in the top visited venues are an Applebee's and a Ruby Tuesday.

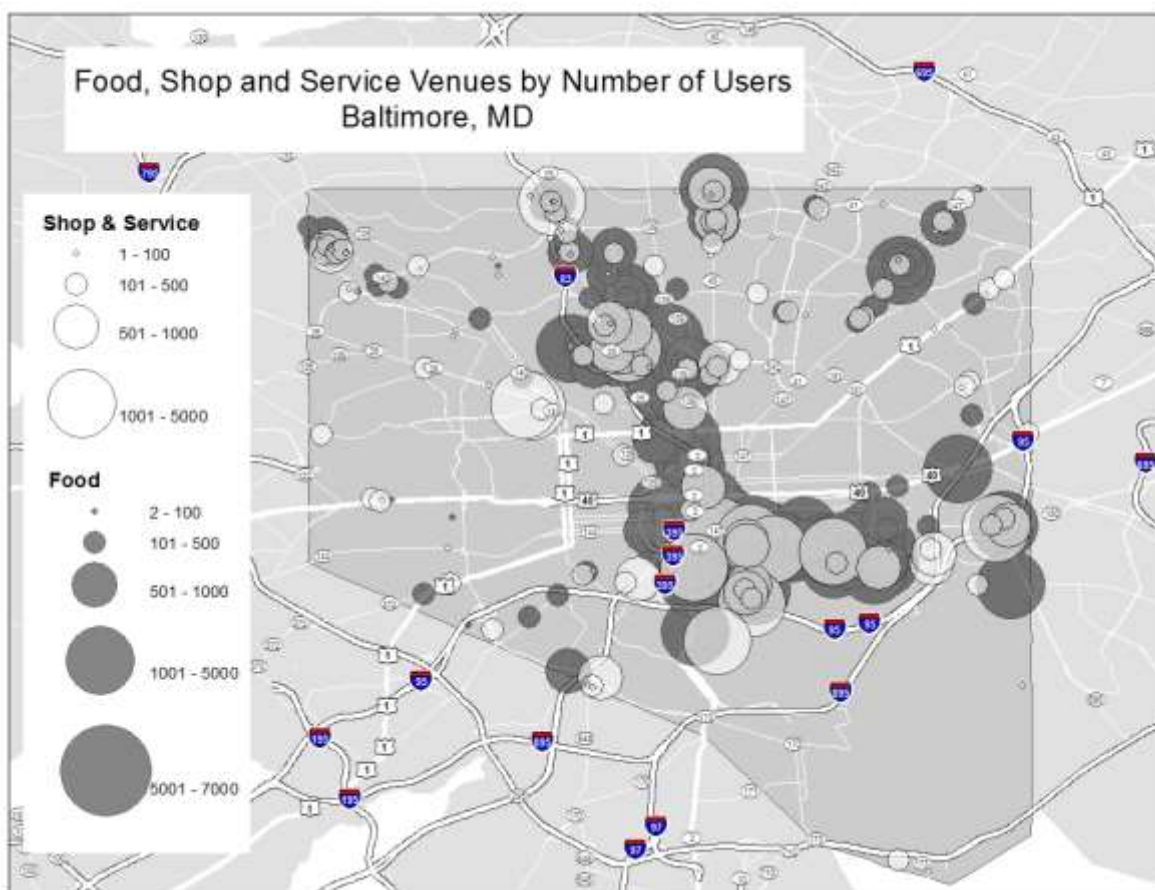


Figure 5: Shop, Service, and Food Venues on Foursquare by Number of Users in Baltimore

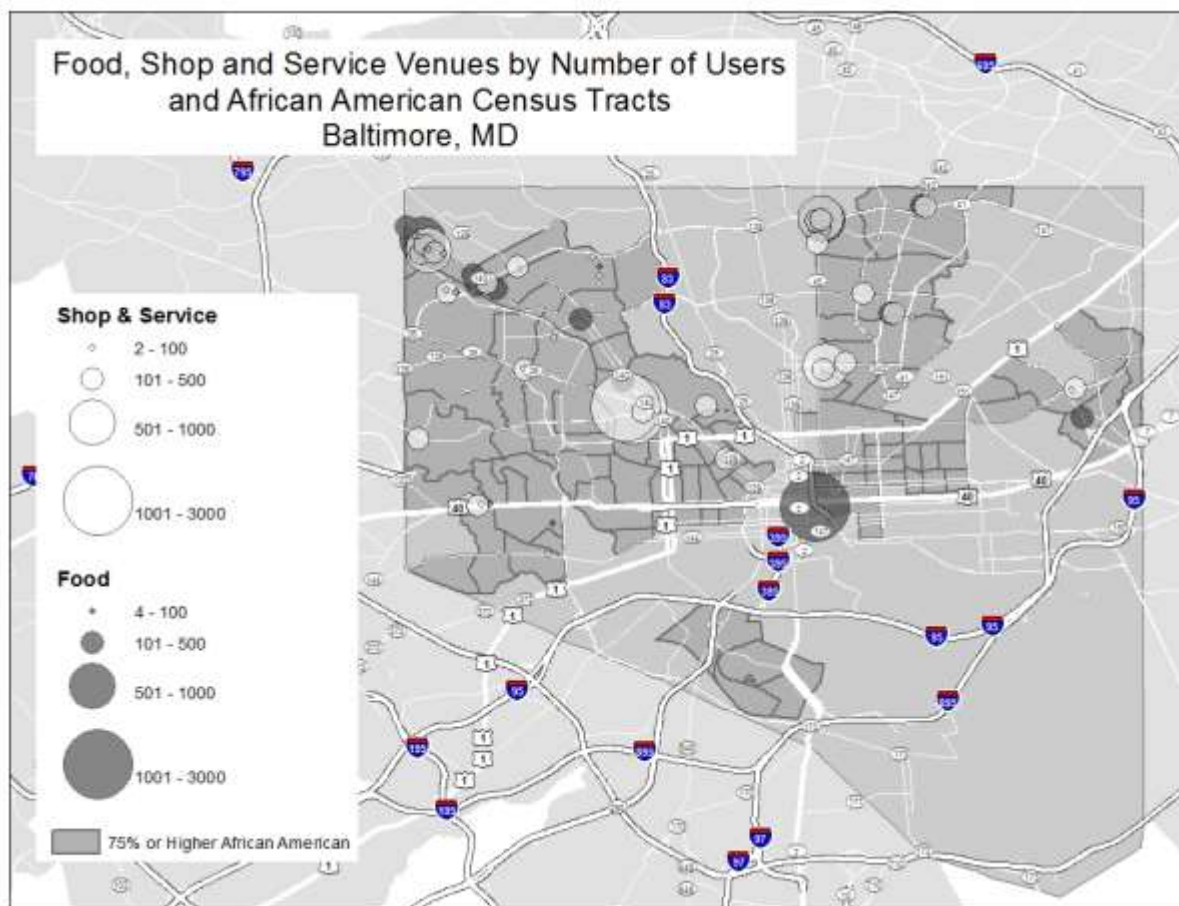


Figure 65: Shop, Service, and Food Foursquare Venues by Number of Users in Census Tracts Where 75% or more of the Population is African American in Baltimore.

The contrast between census tracts that are predominately white in Denver versus those that are predominately African American in Baltimore could not be clearer. There appears to be much more use of Foursquare by white populations due to the fact that there are more businesses and variety of establishments located in areas with a white majority and also possibly because Foursquare is more appealing to white populations who potentially have higher disposable household incomes. This finding mirrors the argument put forth by Crutcher and Zook (2009) that the GeoWeb is a highly racialized place. There is a larger digital footprint in white areas than in historically African American neighborhoods.

El Paso has a long history that led to its current status as a Hispanic urban cultural hub in the Southwest United States. Explored by Spaniards who survived failed expeditions to Florida in 1535/1536, it was officially settled decades later by the Spanish in 1598. The El Paso area remained an important point for trade because of its location on the north bank of the Rio Grande. After the independence of Mexico from Spain, El Paso sustained its position in agriculture and ranching thanks to river access. However, after the close of the Mexican-American War in 1848, El Paso became United States territory and a site for gold prospectors. After the American Civil War, Fort Bliss was established in the border city as a military base. The fort grew rapidly especially during the 1940s and 1950s and by 1986 military personnel made up one-fourth of the city's population (Timmons 2010). Fort Bliss, the fastest growing US Army installation, continues to be the largest employer for the city of El Paso. In addition to the US army, El Paso's economy is bolstered by international trade, the University of Texas at El Paso, and the Medical Center of the Americas (City of El Paso 2012).

El Paso has a similar number of businesses listed on Foursquare and similar Foursquare use to Baltimore. However, the venues are not distributed in the same way, with most of them also being located in the areas with largest populations along highway 10 and in the southeast corner of the city (Figure 16). Even though Foursquare is less prevalent in El Paso than other cities, it still mirrors the overall majority population of the city, unlike that of Baltimore. The trends in El Paso are similar to those found in lower income environments such as Owensboro. There are 49 census tracts that do not have any associated venues in them, mostly in the central north where Franklin Mountain State Park is also located. Of the 361 Foursquare locations found in the remaining tracts, 195 of those listed are food venues. In the top 15 venues, the top three most visited are malls, the Cielo Vista Mall, the Sunland Park Mall, and the Bassett Place Mall.

The other two retail locations in the top 15 visited places are a Target and a Wal-Mart. The types of goods and services available in El Paso are similar to Owensboro in terms of consumption trends, however, with a larger population, El Paso can afford to support multiple establishments. Eight of the remaining venues are chain locations, with two of them being the same chain, Crave Kitchen and Bar, in two different places. The other chains represented are Olive Garden, Hooters, Buffalo Wild Wings, Starbucks, BJ's Restaurant and Brewhouse, and Cheddar's. The final two are local restaurants: a "barbeque joint" (State Line Bar-B-Q) and a "New American" restaurant (The Garden). El Paso seems to be a fairly typical city in terms of retail establishments, albeit an urban area with lower Foursquare use.

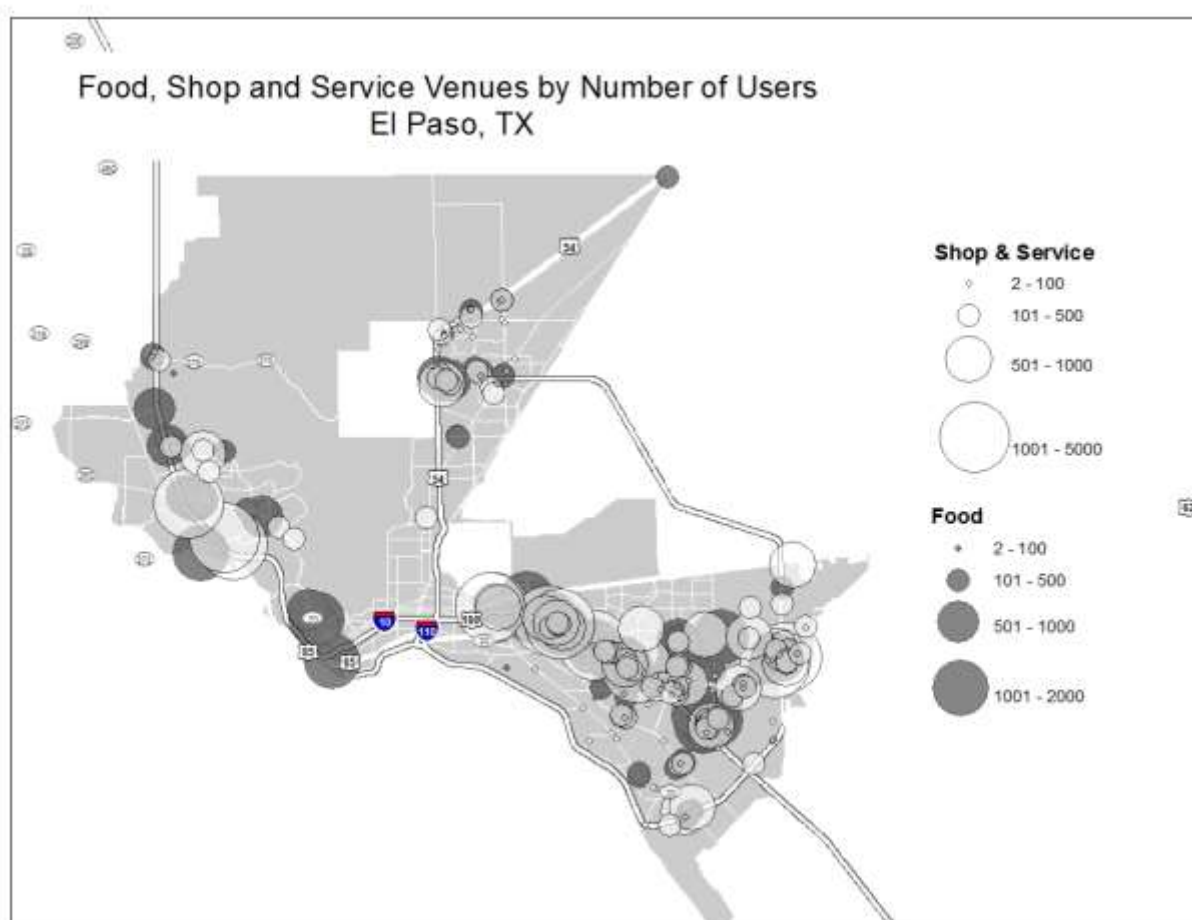


Figure 76: Shop, Service, and Food Foursquare Venues by Number of Users in El Paso

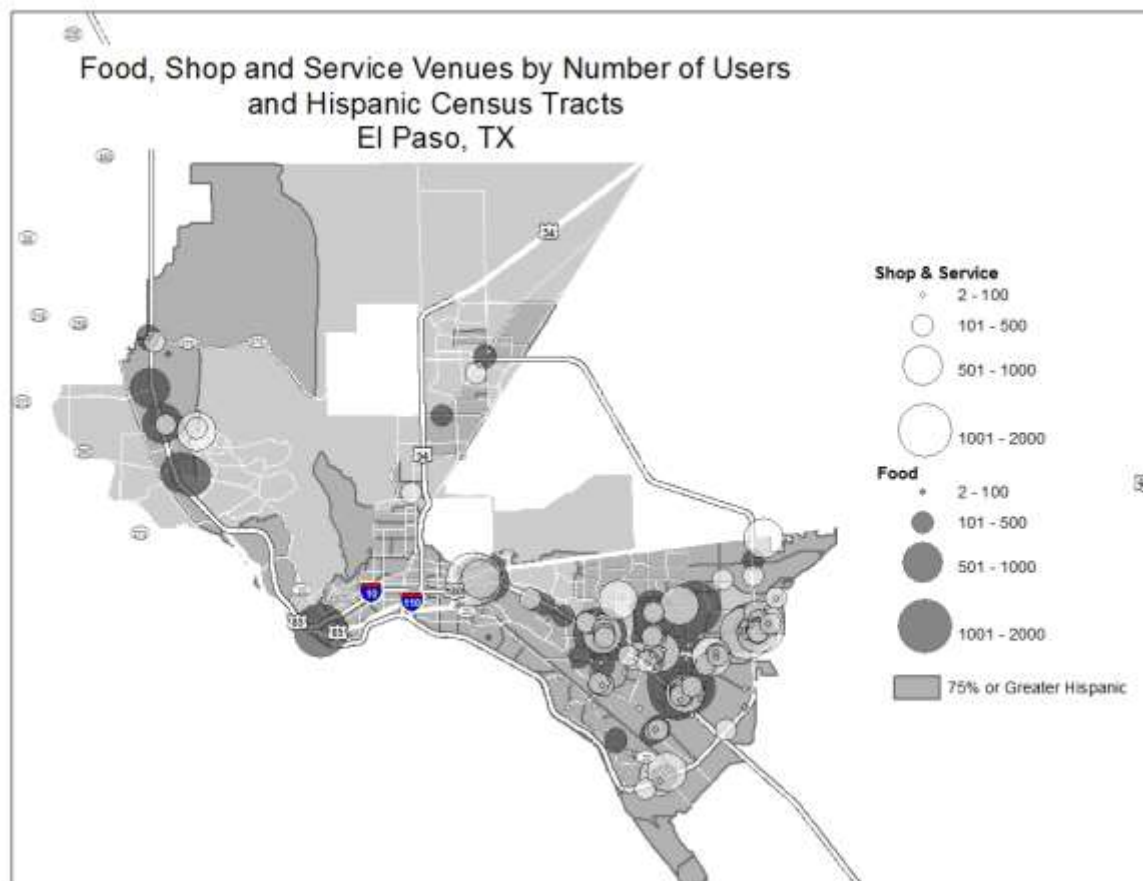


Figure 87: Shop, Service, and Food Foursquare Venues by Number of Users in Census Tracts where 75% or more of the Population is Hispanic in El Paso.

Only looking at the census tracts where 75% or more of the population is Hispanic does not change the image of the city much overall in terms of its Foursquare use. Of the 49 tracts that do not have any associated food or retail service venues, 37 have a majority Hispanic population and are located in the center of the city limits. In the remaining Hispanic tracts there are 254 shop, service and food venues (Figure 17). The high numbers should be expected because these areas are in the southeast corner of the city and are the more populous locations. As in the white

census tracts in Denver, many of the most popular venues in the city are also located in the census tracts that have a majority Hispanic population. Seven of the top 15 venues for the city are located in these selected tracts (one of the malls, the Target, one each of Crave Kitchen and Bars, Buffalo Wild Wings, Cheddar's, and two local establishments). The remaining eight venues are a different Wal-Mart than the previous list, another Target location, a Costco, two Chico's Tacos, an Applebee's, a different Olive Garden location, and Geske's Fire Grill, an American restaurant. While El Paso appears to be a typical US city in terms of the types of retail locations, Foursquare use is low, hinting that the Hispanic population does not use the application as much as white populations do.

Baltimore and Denver both have the most significant relationships between the number of Foursquare venues and various socioeconomic characteristics (Table 7). In both locations there is a significant correlation between the number of establishments on Foursquare and percent white and percentage of the population with a bachelor's degree or higher. Baltimore also has a significant relationship with the number of Foursquare locations and total population and the percentage of African Americans. In both Denver and Baltimore there are more businesses in areas where there are more whites. This relationship is furthered in Baltimore by the significant negative correlation between venues and number of African Americans and similarly in Denver with the number of Hispanics. In addition, in Baltimore there are more venues in wealthier census tracts and in both Baltimore and Denver there are more venues in better educated census tracts. From looking at both of these cities it is clear that the target demographic for Foursquare use is not only wealthier and more educated individuals, but distinctly white populations.

Table 7: Correlations between Number of Foursquare Venues and Select Demographic Characteristics.

Variable	Denver		Baltimore		El Paso	
	Probability Value	Pearson Correlation	Probability Value	Pearson Correlation	Probability Value	Pearson Correlation
Total Population	.056	.174	.002*	.262	.004*	.262
Median Age	.459	.068	.805	.021	.086	-.160
Percent Whites	.004*	.257	.000*	.356	.757	-.029
Percent African Americans	.379	-.081	.000*	-.426	.072	.167
Percent Hispanics	.011*	-.230	.027*	.186	.586	.051
Median Income	.055	.175	.000*	.408	.090	.158
Percent Bachelor's degree or higher	.006*	.250	.000*	.415	.315	.094

*Significant at the .05 level

Age, Education, and Foursquare Use: Lawrence, KS vs. St. Joseph, MO

Lawrence, KS and St. Joseph, MO are comparable towns located in the American Midwest (Table 8). Both towns have similar populations (Lawrence has 87,643 people and is 82% white while St. Joseph has 76,780 people and is 87.8% white), income levels (Lawrence's median family income is \$42,761 and St. Joseph's is \$40,962), and are both located in a semi-rural area of the central Midwest. The major differences between the two places are the median age and the percentage of the population with a bachelor's degree or higher. However, the age and educational statistics are very different for the two cities. Lawrence has a median age of 26.7 where about 53% of the population has a bachelor's degree or higher. By contrast, St. Joseph has a median age of 35.6 and only approximately 20% of the population holds a bachelor's degree or higher. These two factors are largely influenced by the presence of the University of Kansas in

Lawrence and the lack of a university population in St. Joseph. Despite this difference, the number of Foursquare venues in each location is comparable both in terms of number as well as percentage of actual establishments.

Table 8: Selected Demographic Characteristics for Lawrence, KS and St. Joseph, MO.

	Total Number of Foursquare Food and Shop and Service Venues	Total Number of Retail Trade and Accommodations and Food establishments (2007)	Foursquare Venues as a Percent of Actual Venues				
Lawrence	184	625	29.44				
St. Joseph	167	547	30.53				
	Current Population	Median Age	Median Family Income	Bachelor's Degree or Higher (%)	White (%)	African American (%)	Hispanic (%)
Lawrence	87,643	26.7	42,761	52.8	82	4.7	5.7
St. Joseph	76,780	35.6	40,962	19.4	87.8	6	5.7

Lawrence, KS is a college town located in the eastern portion of the state not far from Kansas City. Founded as an effort by the New England Emigrant Aid Company to combat the spread of slavery in the United States in 1854, Lawrence became a battleground during the years leading up to the Civil War with key figures such as John Brown and William Quantrill on the opposing sides (Post 2009). Though Post (2009) argues that the Lawrence community has not preserved its violent history on the landscape, the town is very active in maintaining its appearance as the “Free State” and acknowledges its history through events such as those conducted for the recent Civil War sesquicentennial (Metz 2011). The large student body of University of Kansas (28,000 undergraduate and graduate students) as well as over 1,000 students who attend Haskell Indian Nations University, define many of the demographic

characteristics for the area. With almost 30,000 students at the University of Kansas and another 1,000 at Haskell University, the median age in Lawrence is relatively low, 26.7 years compared to the overall median age in the US of 37.2.

As a demographically younger town, it is unsurprising to learn that social media and Foursquare use are prevalent in the area because of the higher use of social media among younger generations (Figure 18). As of April 2013, there were 184 shop, service, and food venues on the Foursquare platform for Lawrence clustered along the three main thoroughfares of town. Of these establishments, 85 are shopping and service locations and 99 are food venues. The locations that have been visited by the greatest number of Foursquare users are mainly food locations: 11 of the top 15 venues are restaurants; however only four of these are national chain stores and two are regional chains while the rest are locally owned establishments. The other four venues of the top 15 include a Wal-Mart Supercenter, a Target, a QuikTrip (gas station), and a Dillon's (Kroger-owned grocery chain). It would appear that consumption habits in Lawrence favor local establishments for dining and typical suburban chain locations for retail.

However, the presence of the University of Kansas may have also artificially raised the level of social media use. The school has actively held social media campaigns at the beginning of academic years in order to generate student involvement and help college freshmen become familiar with the campus. Activities in the #exploreKU campaign have included encouraging students to Tweet their favorite academic locations, take photos and upload them to Instagram, and check in to particular buildings using Foursquare. In 2011, KU was featured on the Foursquare Blog as a university holding a check-in challenge – an event that gave away prizes for checking in to various locations at the school (Foursquare blog 2011). It must be taken into

consideration that the University of Kansas purposely introduced students to Foursquare, which could account for the higher levels of Foursquare use throughout the town.

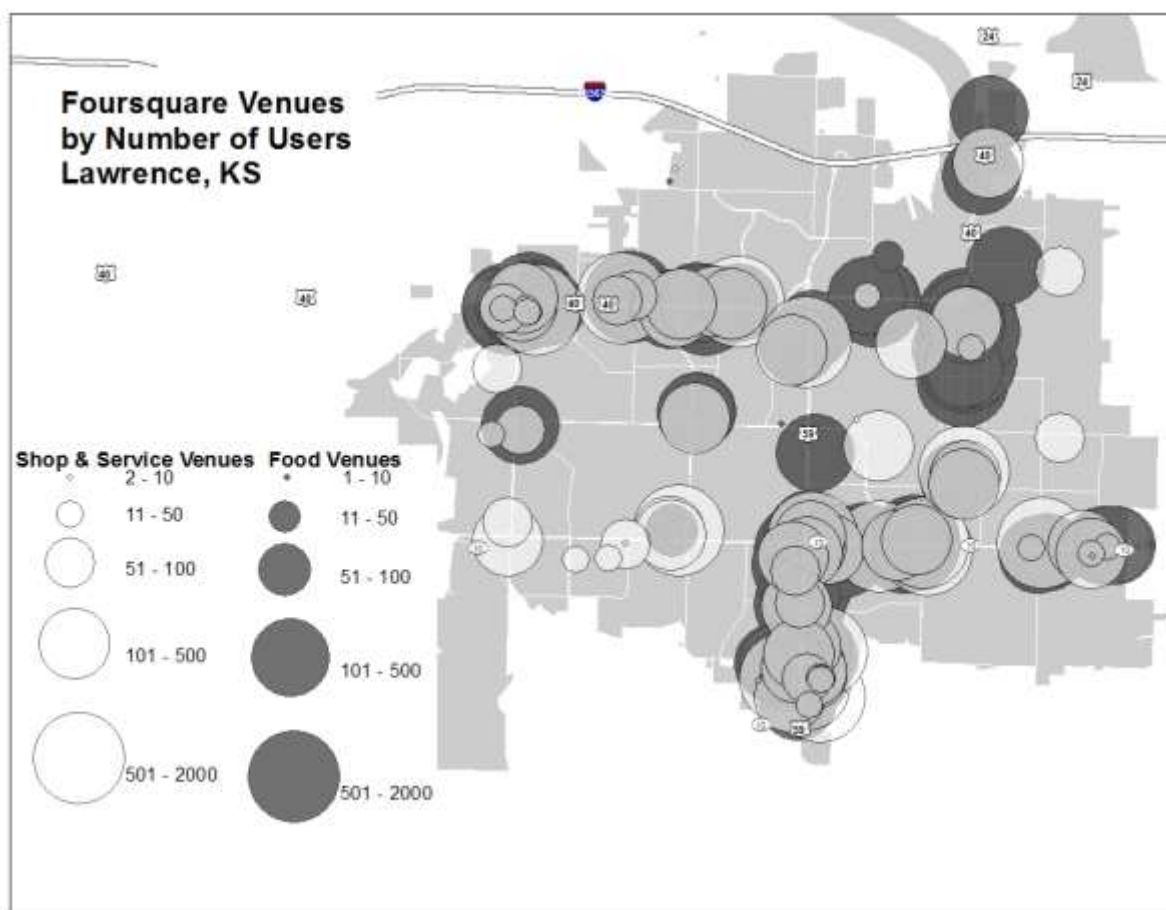


Figure 98: Shop, Service and Food Foursquare Venues in Lawrence, KS by the Number of Users (Note: Free State Brewing Company was excluded from the maps of Lawrence as it far exceeded the number of visitors over other venues at 3,744 as of April 2013).

As can be seen in Figure 19, the shop, service, and food venues that correspond to the younger census tracts are generally those locations with higher numbers of visitors located near the University of Kansas and to the south of town. They are also largely food venues, similar to the trend in the rest of the town, with 12 of the top 15 venues in the younger age census tracts being restaurants. Five of these are national chains and three of these are regional chain locations. The three shopping venues are a Wal-Mart Supercenter, Dillons, and Best Buy.

Compared to the rest of the town, most of the shopping and retail in census tracts with younger age characteristics are chain locations as opposed to local establishments. The difference in the number of venues that are present in younger age tracts versus the whole town is fairly significant as there are 184 Foursquare venues in Lawrence as opposed to 67 venues in census tracts of people 26 years or younger. This is likely due to a lack of shopping, service, or food venues on the KU campus itself (located in the center of the town). It could also be that while Foursquare may be more heavily utilized by younger generations, they are willing to go to different areas than where they live to consume.

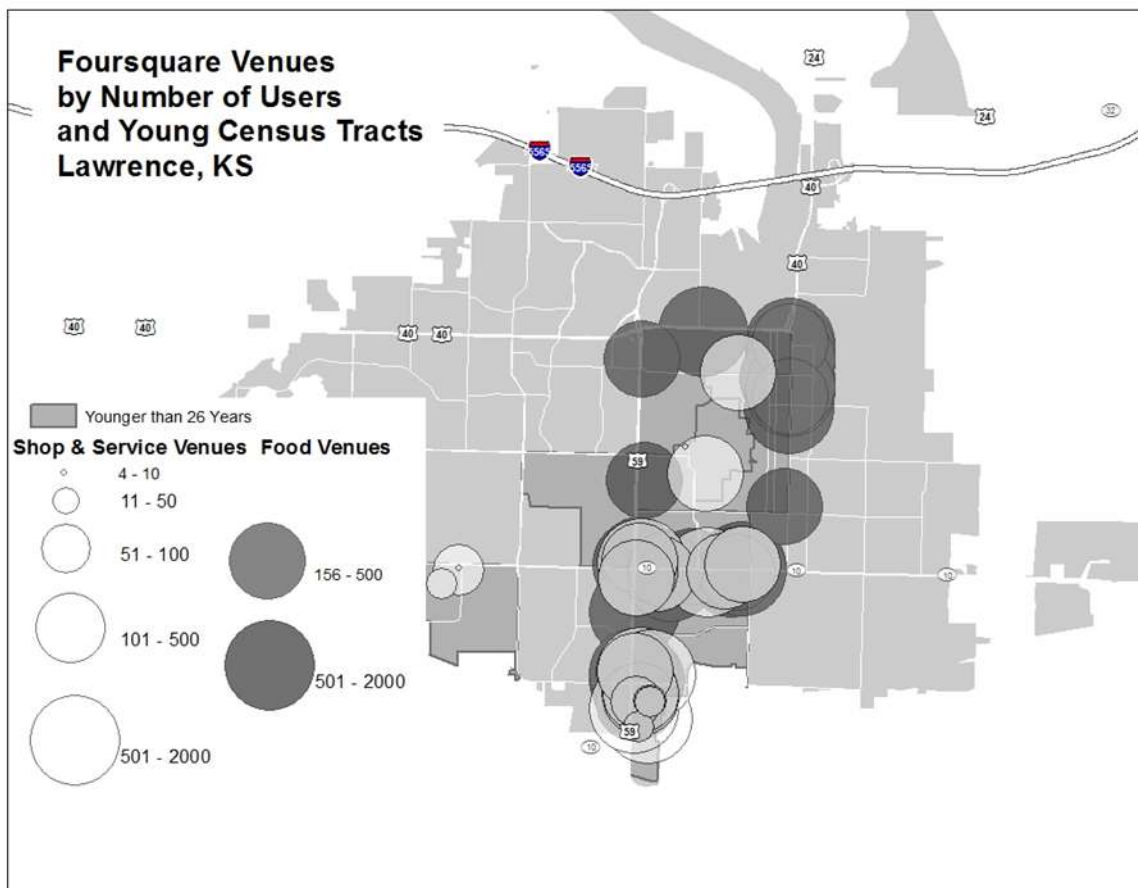


Figure 109: Shop, Service, and Food Foursquare Venues in Lawrence, KS by Number of Users in Census Tracts with a Median Age Younger than 26 (26 was chosen to represent the young median age because it is slightly lower than the median age for the entire town of Lawrence. There were also several census tracts that had a median age between 25 and 26 and should be included).

In contrast, St. Joseph, MO is a demographically much older town with a median age of 35.6 years. The town of close to 80,000 people is also situated just outside of Kansas City, but does not contain a major university. St. Joseph was founded in 1820 as a trading post by Joseph Robidoux and gained national fame as the starting point for the Pony Express (Davis and White 1999). Early in its history, St. Joseph was connected to Chicago via the railroad. There were hopes that St. Joseph would become a major center for meatpacking because of its proximity to ranching and railroad lines; however Kansas City soon outpaced St. Joseph in this growth (Parrish, Foley, and McCandless 2001). Notable destinations in St. Joseph continue to drive some tourism, such as the house where Jesse James was shot (Davis and White 1999). Located in an industrial area, the small city's largest employers currently are Heartland Health System and Wire Rope Corp of America.

Despite the older demographic composition of St. Joseph, the number of Foursquare shop, service, and food venues is relatively comparable to the numbers found in Lawrence, KS (Figure 20). There are a total of 167 shop, service and food venues in the town with 79 of those being food venues and 88 of them shopping or service, suggesting a finding mirroring that found in Atlanta in the previous chapter that age may not be a major factor in Foursquare use. The Foursquare venues are typically located along the highway and main road through town in the east. Of the top 15 most visited venues, nine are restaurants with eight of those being national chains and the ninth a regional chain. The remaining six locations are shopping venues, which including Love's Travel Shop (the most checked in to venue in the town), two Wal-Mart Supercenters, a Target, a Hy-vee (grocery chain), and a local mall. What the similarity in retail trade locations between Lawrence and St. Joseph reveals is that while there are a similar number of shop, service, and food locations in both of these locations, the shopping and dining

experiences of the two populations are vastly different. Lawrence has a presence of national chain stores and eateries; however the more popular locations in Lawrence are not nearly as cluttered with these types of venues than in St. Joseph.

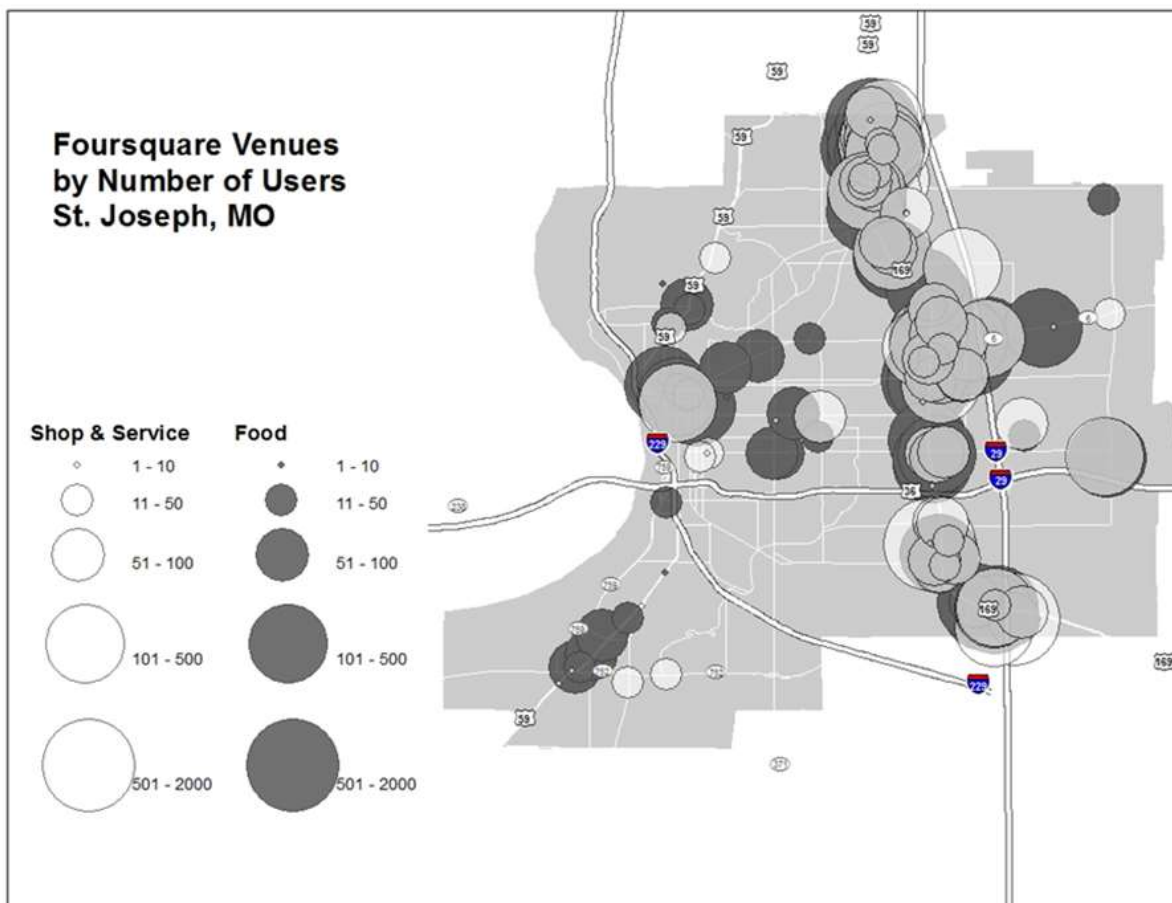


Figure 20: Shop, Service, and Food Venues in St. Joseph, MO by Number of Users.

When looking at the establishments found in census tracts of an older generation in St. Joseph, it is clear that most of them are not located in these census tracts, though two tracts in the north and one in the south along the highway are an exception (Figure 21). There are only 47 shop, service and food venues in census tracts with a population whose median age is 40 years or higher. About half of these are retail venues, though the most popular ones are dining locations, suggesting that more people use Foursquare for restaurants than for shopping. Again these are

predominately chain locations; ten of the eleven food establishments are national chains and one is a Missouri chain, and three of the remaining venues are gas stations. The final retail location is a Menard's. It is worth noting that of the Foursquare venues located in older census tracts, none are grocery stores, a potential problem because of the increasing difficulty people have traveling to obtain groceries as they age (Shaw 2006).

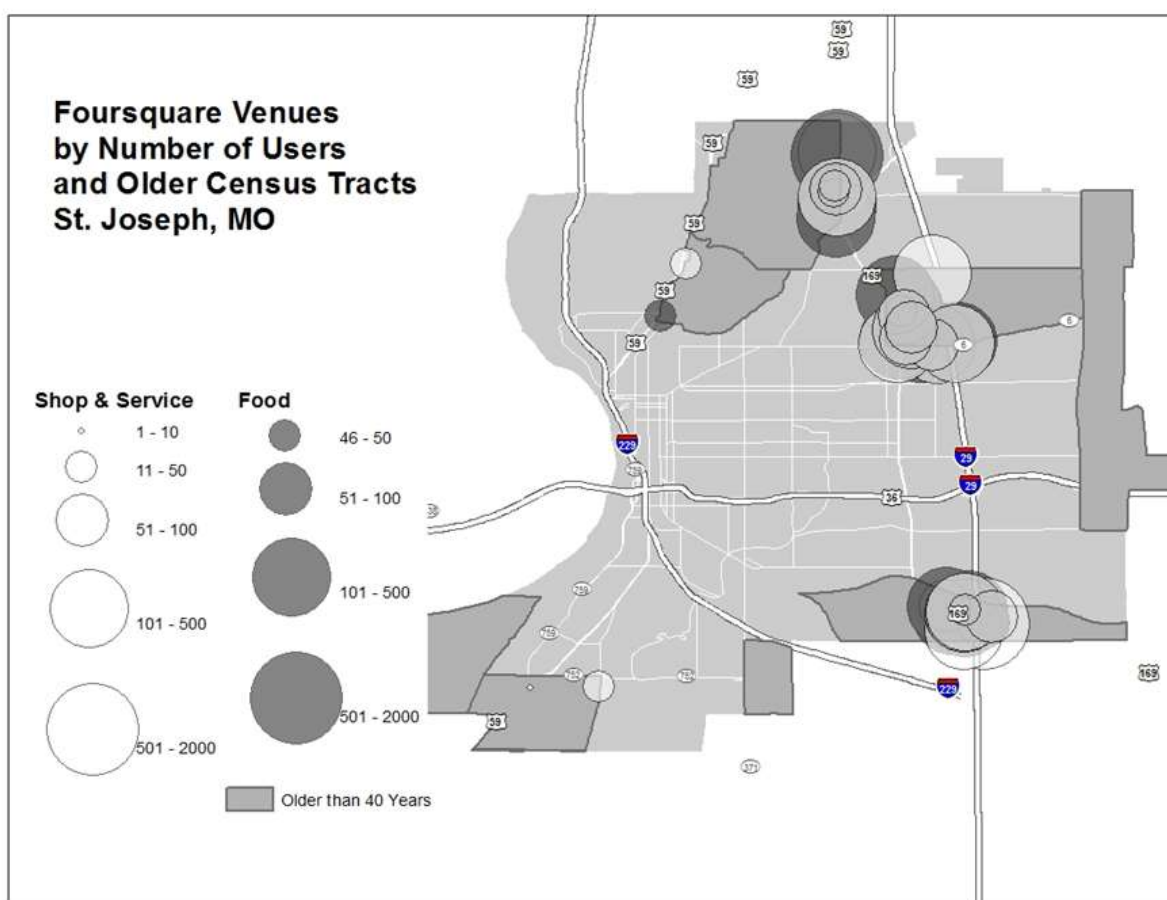


Figure 111: Shop, Service, and Food Venues in St. Joseph, MO by Number of Users in Census Tracts with a Median Age of 40 Years or Older.

The correlations between the number of locations found on Foursquare and socioeconomic characteristics in St. Joseph represent those that would be expected based on knowledge of the digital divide and smartphone use (Table 9). In St. Joseph there is a significant

relationship between number of Foursquare venues and median income and percent of the population with a bachelor's degree or higher. There is a negative relationship between businesses on Foursquare and percent Hispanic and percent African American. As a college town with a sizable social media presence, Lawrence probably is an outlier in terms of Foursquare use, reflecting the fact that there were not many correlations between Foursquare locations and specific demographic characteristics.

Table 9: Correlations between Number of Foursquare Venues and Select Demographic Characteristics.

Variable	Lawrence		St. Joseph	
	Probability Value	Pearson Correlation	Probability Value	Pearson Correlation
Median Age	.447	.035	.126	.255
Percent white	.457	-.028	.343	.092
Percent African American	.336	.090	.419	-.046
Percent Hispanic	.014*	.530	.057	-.346
Median Income	.336	.111	.004*	.549
Percent Bachelor's degree or higher	.120	.301	.000*	.655

*Significant at the .05 level

Ethnicity and the Foursquare Digital Divide

From analyzing the most popular venues in specific areas with varied demographic characteristics, Foursquare use patterns for particular types of cities are identified. Wealthier locations like Bethesda clearly have different retail habits from other locations in the US by not only eschewing chain restaurants and box stores, but keeping the commercial and residential areas distinct from one another. However, most middle income urban areas seem to be fairly similar in terms of the types of retail establishments they offer. Retail locations in El Paso, Owensboro, Lawrence, and St. Joseph are remarkably similar, favoring large national chain

stores like Target, Wal-Mart, and Home Depot. There is more variance in restaurant options through the types of restaurants available in these locations; however the prevalence of chain restaurants in most of these places is evident. For many people living in the US, choices for obtaining food and other retail goods and services appear to be similar nationwide.

This chapter is also concerned with the digital divide and what populations in the US are using location-based social media platforms like Foursquare. The digital divide in the US largely favors the young, educated, wealthy, and white population (Smith 2012; Fox and Rainies 2014). It could easily be assumed that Foursquare use also aligns itself with this pattern. However, looking at specific cities in this chapter to test whether or not Foursquare and the digital divide are linked has provided some interesting results. There are areas where there is a significant correlation between the number of Foursquare venues and median income (St. Joseph, Baltimore, Denver) and those where education is an important factor for Foursquare use (St. Joseph, Denver, Baltimore). However the factor that stands out the most in this chapter is ethnicity.

In looking at the patterns of Foursquare use outlined above, it appears that the application appeals mostly to a white population. The propensity of Foursquare users to be white is evident in both the location of venues found in Denver as well as the lack of businesses on Foursquare in African American neighborhoods of Baltimore. There are serious real world implications for the lack of representation of businesses in African American census tracts on Foursquare. With the Explore feature on the application, only businesses listed online will show up to Foursquare users. People using explore to find a retail location will not have the opportunity to see businesses in predominantly African American areas of a city. Similar to the divide found on Google maps by Zook and Graham (2007a, 2007b) or in New Orleans by Crutcher and Zook

(2009), Foursquare presents a specific version of a city to its users, one that largely overlooks the ethnic composition of businesses. This is not to say that African Americans should or need to start using Foursquare. However, it does establish the political position that Foursquare presents to its users. Overlooking an entire ethnic category of the population does not create an ideal environment for people to “discover new places and explore what is nearby” as the service claims (foursquare.com). Instead it is a biased production of retail locations based on a specific sector of the US population who visit these establishments. The places that are viewed as the most popular on Foursquare to eat or shop in a given location may in fact not be as popular when looking at the ethnic character of a city.

Chapter 7

Foursquare in the City of Fountains

Kansas City, located on the border of Kansas and Missouri, has a history of redefining itself economically to maintain its presence as an important urban center in the US. Imbedded in the context of Kansas City is a history of ethnic and economic segregation that can still be seen today by looking at census tract data and Foursquare venue locations.

This chapter seeks to gain a deeper understanding of a local economic environment amid social media outreach and engagement. The primary objective is to observe how local businesses use Foursquare and the ways that location-based social media platforms are changing the economic environment. It will be shown that while Foursquare itself may not be fully utilized by the business community, similar applications that can be completely controlled by business owners have been embraced. After a brief discussion of Kansas City's history and development, it turns to the data from Foursquare in Kansas City, MO. Shop and Service venues and Food venues were mapped and drawn proportionally based on the number of visitors each location had received to date. Only the Foursquare locations in the central city were used. A Pearson's correlation was run to test if there was a significant relationship between the number of Foursquare venues in a census tract and the demographic information for that tract. The number of Foursquare venues was correlated with the following variables: total population, ethnic composition (white, African American, Hispanic), median family income, and median age. These correlations were then tested for significance. Lastly, interviews with businesses in Kansas City were conducted to get a sense of how they use Foursquare for encouraging consumption. As

will be illustrated, many businesses do not engage with Foursquare possibly because of a lack of control they have over the platform.

Though some would argue that Kansas City, MO cannot be separated from its counterpart of Kansas City, KS (Shortridge 2012), the scope of this chapter is to look at the Missouri side of the city with regards to the recent developments in the area. As a new technology hub in the US, Kansas City, MO is positioned well for engaging with hybrid spaces of the physical and online worlds. Kansas City, MO is also fairly diverse demographically among its 464,310 residents. According to the 2010 census, the median age of the city was 34.6 years, median income was \$45,150, and the population had an ethnic profile of 54.9% white, 29.9% African American, and 10% Hispanic. Almost 31% of the population had a bachelor's degree or higher (census.gov).

Historical Development

Kansas City, MO has deep historic roots in the rural central United States. Being located close to Independence, MO, Kansas City was founded by early fur traders moving through the state and trading along the Missouri River (Historic Kansas City 2011). The location of Kansas City at a bend in the Missouri River and the intersection of the Kansas River as well as several smaller creek beds established the city as a center for transportation. Despite the lack of natural resources for early industrialization as was found in places such as Pittsburgh, PA, Kansas City's proximity to farm and ranch lands allowed for the urban area to grow as a center of meatpacking and milling (Historic Kansas City 2011). Because the city did not rely on a particular industry, Kansas City has not fallen prey to the intense waves of deindustrialization found in other cities such as Detroit, Youngstown, or Cleveland. Instead the city has maintained its position as a

transportation hub, changing from that of a river trading town to a railroad terminus to a center for trucking and wholesale distribution (Shortridge 2012).

Rather late to industrial growth compared to other cities in the United States, Kansas City did not attract immigrant diversity until much later in its history. After Reconstruction, a number of African Americans moved northward and settled in the relatively unsegregated metropolis (Gotham 2000). During the 1930s and 1940s, however, the city made the decision to concentrate public housing in one inner-city location pushed by the increasing belief that the presence of African Americans was causing a drop in property values and a rise in crime (Gotham 2000). As a result, many African American families settled on the eastern side of the city where public housing projects were available; private housing was often not available due to the unattainable nature of loans at the time. The public housing locations also matched the later segregation of schools, solidifying a distinctive African American core of the downtown. Unlike other cities in the 1960s and 1970s, Kansas City avoided major race riots in spite of the obvious segregation. Some of the most distinctive elements of Kansas City culture, jazz and barbeque, were products of these neighborhoods (Shortridge 2012). Recently there has been a sizable Hispanic immigrant population that has begun to settle in Kansas City, though this group is fairly spatially diverse.

Being an urban location with markedly rural zones has led to most of the expansion throughout Kansas City, MO. At the beginning of the 1900s, urban development and planning was driven by a desire for green space and accommodation of the automobile (Kay 2001). The architectural work of J.C. Nichols, notably the Country Club Plaza and Country Club District (the largest contiguous master-planned urban area in the US), aided in the division of the city in terms of economic means by creating desirable racially segregated neighborhoods for wealthy families along the KS-MO border (Gotham 2000). His work, and others, gave rise to nicknames

for the city such as Paris of the Plains and the City of Fountains for residents to combat the notion of living in a backwoods, rural society (Kansas City Convention and Visitors Association 2014). According to Shortridge (2012), however, though economic and ethnic segregation is obvious on the ground, the city itself does not seem to feel the tension much. Much of the tension that does exist is found on the state border that continues to divide greater Kansas City (Shortridge 2012).

An Emerging Technology Center?

Recently Kansas City has become a center for technology. The development of the Sprint Campus and World Headquarters in 1997 outside of the city helped bring in new businesses. The latest downsizing of the Sprint Corporation left a large amount of affordable office spaces for new technology firms to take over. Another reason for the growth of the tech industry in the area has to do with the geological nature of Kansas City's location. In the 1960s old mines began to be converted into warehousing space. The old mine shafts are located in a layer of limestone surrounded by a layer of shale and offer continuous temperatures of 55 degrees (Shortridge 2012). Several of these locations have been rented out as ideal spaces to house computer server rooms (Cavern Technologies 2014). A third wave of technology came to Kansas City in 2011 with the announcement that Google had chosen the location as a test site to launch its new internet and television service, Google Fiber. Recently there has been growth in the technology industry in Kansas City with the building of the Sprint Campus as well as becoming a test market for new products and services like Google Fiber. The success of implementing the high speed fiber network in Kansas City has led Google to publicize its increased availability into 34 other locations across the country.

With the expansion of Kansas City enterprise to include several corporations focused on technology, it seems plausible that location-based social media platforms like Foursquare would be widely known and used. Subsequent sections of this chapter discuss the vitality of such applications; however, it is worth noting that within the past few years, several loyalty applications similar to Foursquare have been developed in the Kansas City area. The first is Front Flip (<http://www.frontflip.com/>). Started in 2012 in Lenexa (a Kansas suburb of Kansas City), Front Flip passed the one million user mark on January 15, 2014. The application initially paired with national chains to gain users, but now also caters to local establishments. To use Front Flip, a business must first set up the platform and display a QR code in their store. Users of the application scan the code when they enter the store, which checks them in and also allows them to potentially earn rewards by displaying a virtual lottery scratch off ticket on their phones. The rewards are set up by the business and can be anything from discounts to free upgrades. Also incorporated into Front Flip is a loyalty program. For people who opt to join a business's loyalty program on Front Flip, the owner can send frequent customers instant rewards or can send gifts to encourage customers to return, such as a coupon for someone who has not been to the retail space for over 60 or 90 days. As a benefit to the business owner, Front Flip offers detailed analytics on their customers including home zip code, age, gender, time of day of visits, and the ability to create feedback surveys. The service is not free (the price is based on how many people click on promotions from an establishment), but boasts a larger data profile than Foursquare currently does with more options for the business owners.

A similar program called Lantern was also created in Kansas City (<http://lanternsoftware.com/>). Currently this service is available to business owners in Kansas City, South Carolina, and Denver. Lantern is similar to Front Flip in that it provides detailed

demographic information on customers to business owners; however, it has a set fee for this information of \$49 per month. Lantern offers a loyalty rewards program for its users who check in to a business with Lantern, similar to a physical punch card one might find in a coffee house. The service allows for businesses to put forward promotions to those who are using their loyalty program as well as reward customers who post about them on other social media platforms. Lantern is not as popular as Front Flip because of the limited availability of cities in which it is found. What both of the services have in common is the ability for the business owner to “opt in” to the service. Unlike Foursquare and Yelp where the business profile is often generated by users, Front Flip and Lantern are business-generated services. The business decides whether or not to have a presence on the platform instead of being pressured by clients (sometimes unknowingly) to exist online. Allowing businesses to opt in to platforms such as Front Flip and Lantern illustrates a clear difference between the platforms, with Foursquare starting from the bottom up, and Front Flip and Lantern being from the top down. As shown in the interview section of this chapter, it is important to mark this distinction because of the way business owners view their online situations.

Mapping the Venues

Kansas City boasts a relatively high percentage of businesses represented on Foursquare. With 1,558 retail venues and 1,110 accommodations and food venues (a total of 2,668) listed in the economic census and 835 Foursquare Food and Shop & Service locations, approximately 31 percent of establishments in Kansas City have online counterparts found on Foursquare. As seen in Figure 22, the majority of the Foursquare venues in Kansas City are located along the western edge of the city on the border with Kansas City, Kansas. One explanation for this trend could be

the historical efforts by developer J.C. Nichols and his push to develop shopping plazas in the southwest corner of the city (Gotham 2000). The venues here also align with demographic characteristics, as demonstrated later, as this area contains the largest percentages of white, high income, and older populations. Other hotspots for venue locations are along major highways or at highway intersections.

The ten most popular Foursquare venues in Kansas City are found mainly in the areas near J.C. Nichols' Country Club plaza. Most of these venues are local restaurant locations such as McCoy's Public House, Fiorella's Jack Stack Barbeque (one of the more well-known barbeque establishments in the city), Grinders, Zona Rosa, The Cheesecake Factory, Beer Kitchen No. 1, Brio Tuscan Grille, and Blanc Burgers + Bottles. The Crown Center shopping mall holds the top spot for having the largest number of users check in and the local City Market farmers' market holds the fourth spot. From the scale of all of Kansas City it seems it is similar in consumption to a city such as Denver, with a mix of local food venues and higher end chain restaurants. However, when Kansas City is broken down into different demographic categories, a different picture is painted.

As can be seen in Table 10, there is a significant correlation between the number of venues found on Foursquare and the number of people who identify as ethnically white or African American. While the white identified areas have a significantly positive relationship with the number of businesses listed on Foursquare, the African American areas have a significantly negative relationship, something that has been shown in previous chapters in cities such as Atlanta and Baltimore. The number of Foursquare venues is also significantly positively correlated with median family income, a relationship that is likely tied to ethnic characteristics.

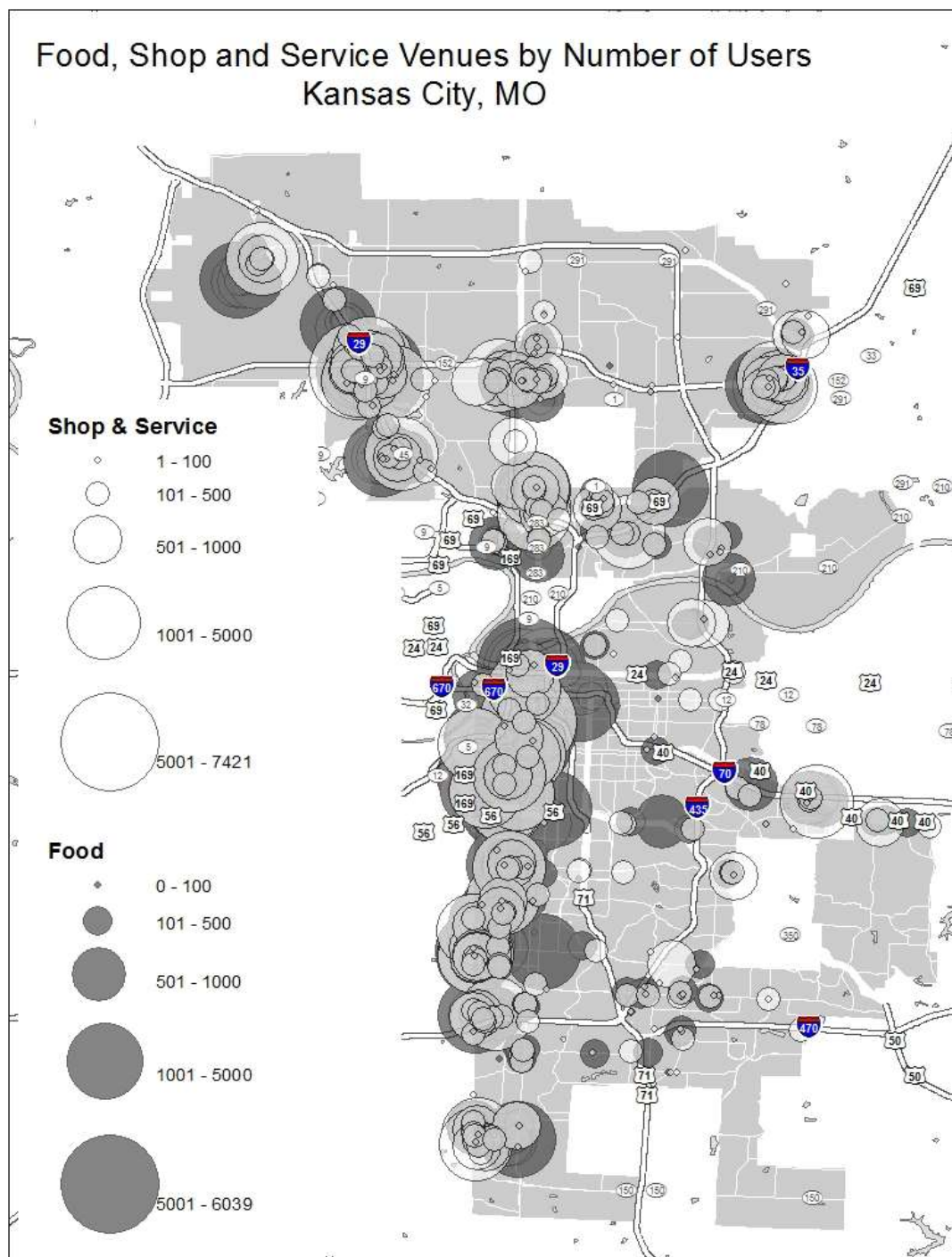


Figure 122: Foursquare Food and Shop & Service Venues in Kansas City, MO by the Number of Users.

Table 10: Correlations between Number of Foursquare Venues and Selected Demographic Characteristics in Kansas City, MO.

	Probability Value	Pearson Correlation
Total Population	.286	.106
Median Age	.379	.087
% White	.000*	.418
% African American	.001*	-.309
% Hispanic	.114	-.156
Median Family Income	.011*	.249

*significant at the .05 level.

Looking at the census tracts in Kansas City where the median age is either over 45 or under 25 shows different trends in the number of Foursquare venues (Figure 23). While some of the older census tracts are located along the Kansas-Missouri border where the highest concentration of venues is located, there are several tracts where the median age is over 45 that do not have any Foursquare venues, notably in the southeast. Within the older census tracts there are 43 Foursquare venues. Of the top ten most commonly visited venues only three are Shop & Service venues, with the remainder being restaurants. The most checked in venue in older census tracts is a Quik Trip gas station and convenience store. Other shopping locations include a Price Chopper and Royal Liquors. The restaurants are mainly fast food chains and include Panera Bread, Applebee's Bar and Grill, McDonald's, and Taco Bell. The remaining three restaurants are Trezo Mare Restaurant and Lounge, Jasper's Italian Restaurant and the Café in Briarcliff.

Surprisingly, given the adoption of social media technology among younger groups, there are only six Foursquare venues listed in census tracts with a median age of less than 25. The only shopping option in these tracts is a Hy-vee Gas station, possibly because of a lack of clientele with substantial incomes in the area. The five restaurants represented are a Gates Bar-B-Q (popular local barbeque with several locations throughout Kansas City), a SONIC Drive-In, a Dairy Queen, and two local places – Go Chicken Go, a car service station-turned-fried-chicken

restaurant, and Pho Hoa, a Vietnamese restaurant. It may be that the younger census tracts do not appeal to potential business owners as places to establish themselves, that young people cannot afford the rents in more developed census tracts, or that young people are more mobile and more likely to leave their place of residence for consumption.

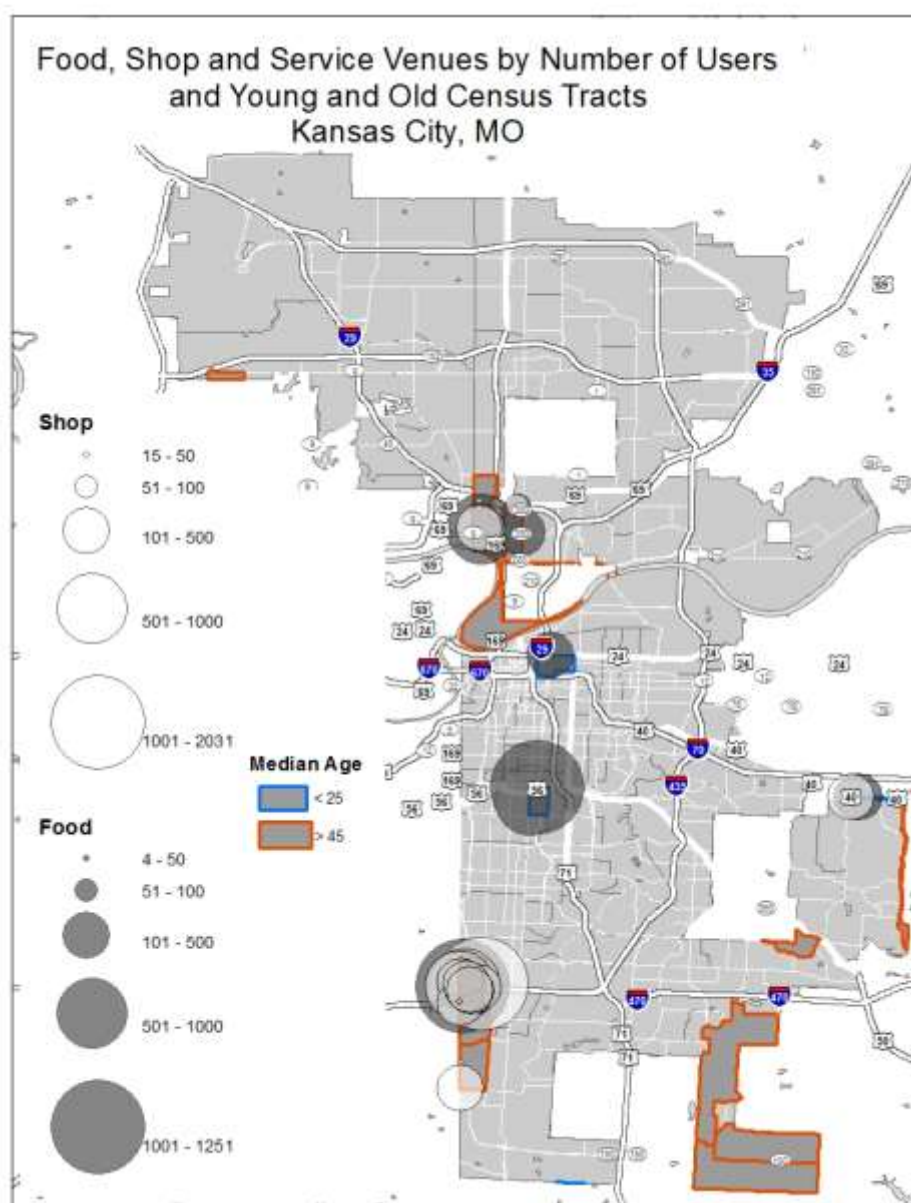


Figure 133: Foursquare Food and Shop & Service venues in Kansas City, MO by the Number of Users in Census Tracts where the Median Age is either Less than 25 or Greater than 45.

There is a sharp contrast between areas of high income (census tracts where median family income is greater than \$100,000) and areas of low income (census tracts where median family income is less than \$20,000) in Kansas City, Missouri (Figure 24). Of the 48 total venues in high income census tracts, many are similarly dispersed to those found in older census tracts on the Missouri-Kansas border. Within the top ten most popular venues, three are shopping areas, including a Target, a Best Buy, and Cosentino's Brookside Market, a high end grocery store. The food venues that are present in the area do not necessarily reflect the higher earnings of the local population. Food venues included The Roasterie Café (a local coffee roaster and shop), Avenues Bistro, Julian's, Steak 'n Shake, Panera Bread, Aixois, and Chipotle Mexican Grill. The dynamic of these retail locations in high income areas is a product of the two distinct locations of high income census tracts. The Target, Best Buy, Steak 'n Shake, Panera, and Chipotle are in a shopping plaza in northeast Kansas City while the higher end Roasterie Café, Julian, Avenues Bistro, Aixois, and Cosentino's are near the Country Club District on the Kansas-Missouri border. The difference probably reflects the distinct types of high income earners in each of these locations.

Low income areas in Kansas City do not have many Foursquare venues as only three are found in census tracts with a median family income of less than \$20,000, one in north central Kansas City and two in south central. The lack of venues could be due to the fact that lower income families do not have smartphones and cannot use Foursquare. It could also be a reflection of a lack of retail trade outlets in areas with little affluence. Of the three venues in the area, one is the Vietnamese restaurant Pho Hoa found in the census tracts with a lower median age. The other two are a Fast Stop gas station and a McDonald's.

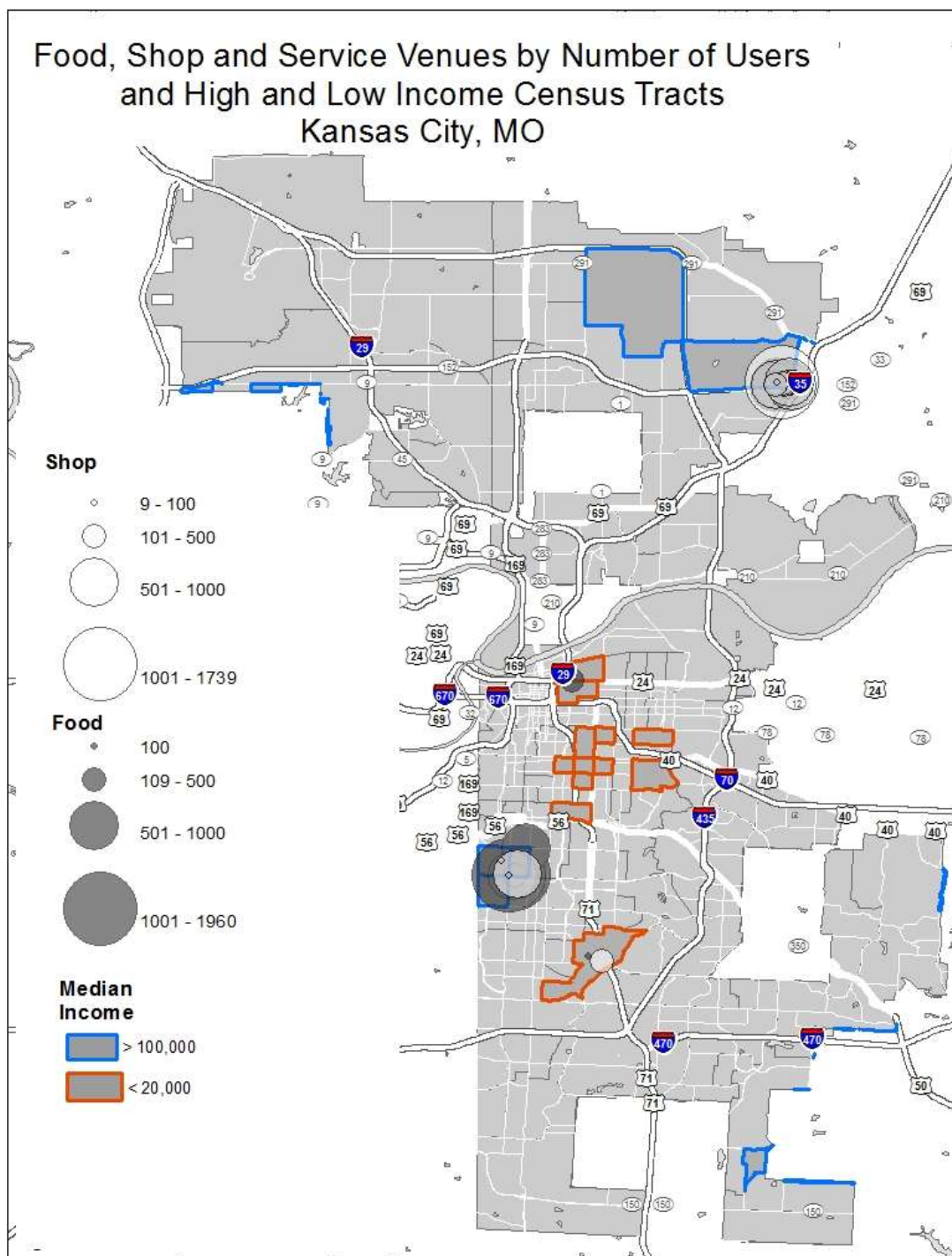


Figure 144: Foursquare Food and Shop & Service Venues in Kansas City, MO by Number of User in Census Tracts where the Median Family Income is either Less than \$20,000 or Greater than \$100,000 (unclosed blue lines mark edges of census tracts outside of Kansas City).

Figure 25 is possibly the most telling of the distinct historical ethnic divide that still exists in Kansas City. While there were no census tracts that had a population that was 75% or higher Hispanic, there are three where the majority population (greater than 50%) is Hispanic. There also are numerous census tracts in the inner city where the population is 75% or greater African American, largely reflecting the historic pattern of settlement due to subsidized housing availability. The historical development of Kansas City is most clear in the locations of census tracts where the white population comprises 75% or more of the total population in the area. These areas are located along the state line between Kansas and Missouri. The white census tracts also contain most of the retail trade and food found in Kansas City with 584 Foursquare venues. The top ten most popular Foursquare venues in Kansas City as a whole are the exact same venues as the top ten most popular Foursquare locations in predominantly white census tracts: Crown Center, McCoy's Public House, Fiorella's Jack Stack Barbeque, City Market, Grinders, Zona Rosa, The Cheesecake Factory, Beer Kitchen No. 1, Brio Tuscan Grille, and Blanc Burgers + Bottles. The development of the city spurred by J.C. Nichols is still obviously present in the pattern of retail and ethnic segregation.

Within the predominantly African American census tracts found in central Kansas City, there were only nine Foursquare venues, a reflection similar to that found in Baltimore. Of the nine, the top two most frequently visited are the original locations of two Kansas City barbeque staples, Arthur Bryant's Barbeque and Gates' Bar-B-Q. It is likely not locals who are checking in to these two locations on Foursquare, but rather barbeque enthusiasts and tourists who are artificially driving up the number of users who have checked in. There are three other restaurants in the African American census tracts that include Niece's Restaurant (a local diner), SONIC Drive In, and a Taco Bell. There is one option for shopping, a CVS Pharmacy, two banks, Bank

of America and Mazuma Credit Union, and the Southeast Community Center. Again similar to Baltimore the lack of Foursquare venues in these areas could either be a product of a lack of engagement with Foursquare by African Americans or by the fact that there are not any venues in these areas in which to check in.

Census tracts with a majority Hispanic population have more Foursquare venues than do African American census tracts, but these venues might also exist because of people coming in to the tracts for specific types of food or for work. Though there are 19 Foursquare venues listed in these areas in the northeast central city, only three of them are Shop & Service venues (with one grocery store, a Price Chopper) with the rest being restaurants or bars. The popular venues in Hispanic tracts reflect the nature of these census tracts as having a history as an old industrial area of the city. Both Boulevard Brewing Company and the Roasterie Coffee Plant have their operations in these census tracts and are among the top ten most visited venues. The Boulevard Tasting Room also made the top ten venue list. There are two local farm to table restaurants, Westside Local and Blue Bird Bistro, and a creperie, Chez Elle, in these census tracts and the remaining four restaurants are local Mexican places, Ponak's Mexican Kitchen & Bar, El Patron, Margarita's, and Los Tules. It would be worth investigating gentrification in these census tracts as they are located in old industrial areas and seem to have a mix of hipster and Hispanic culture.

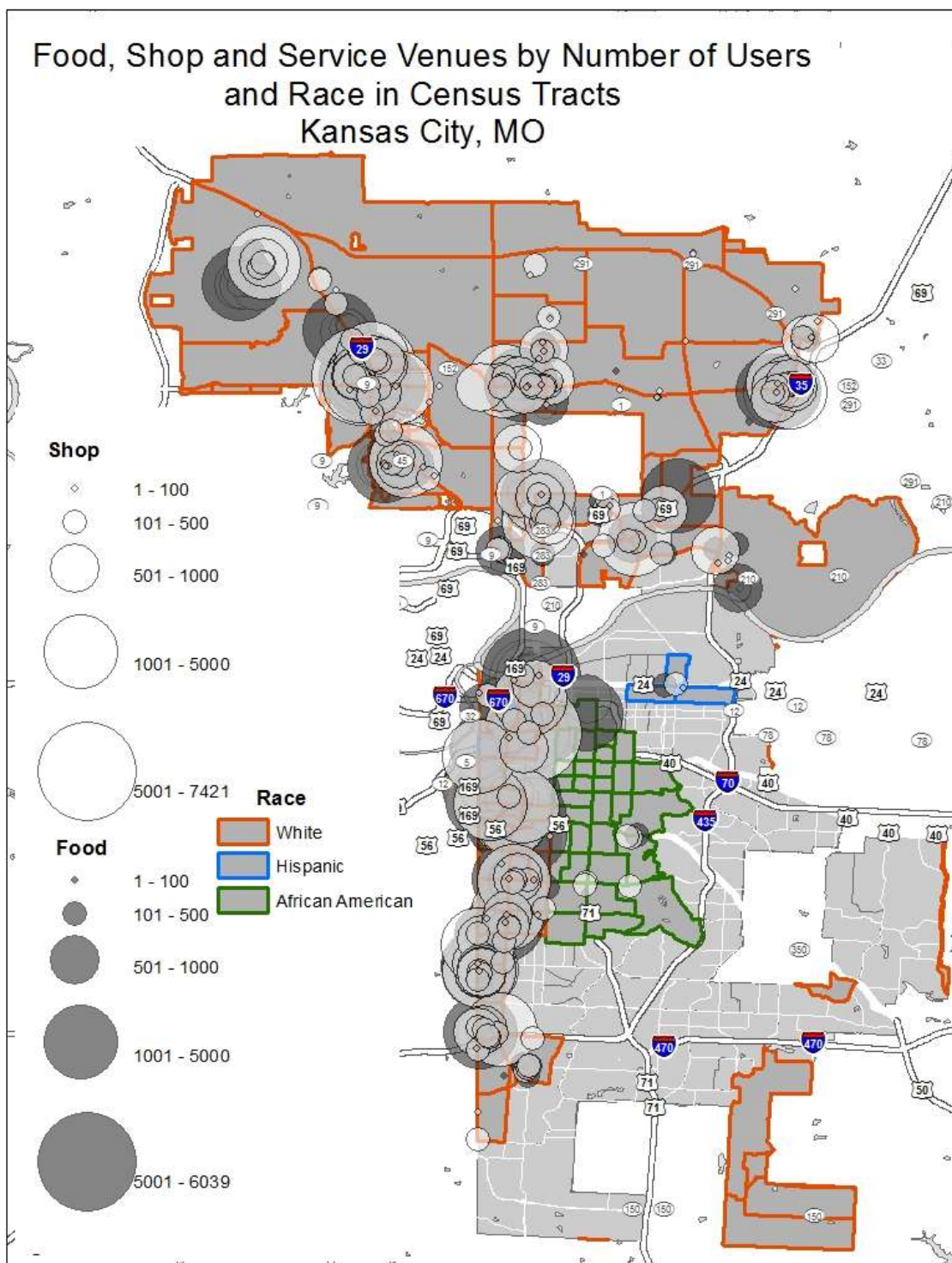


Figure 155: Foursquare Food and Shop & Service Venues in Kansas City, MO by the Number of Users in Census Tracts where the Majority Race is either White (greater than 75%), African American (greater than 75%), or Hispanic (greater than 50%).

Business Owners' Perspectives

To obtain a more detailed perspective on how Foursquare is understood and utilized by business owners, I conducted interviews with local retail establishments in Kansas City, MO. Currently, there has not been any published research on the use of Foursquare from the viewpoint of the business owner. Through these interviews the hope was to gather information about how Foursquare was either aiding or hindering consumption in various local companies. Instead, most interviewees discussed their lack of engagement with Foursquare (for a variety of reasons) and the limitations of online platforms for customer outreach. The core issue for these entrepreneurs appear to be the ability, or lack thereof, to control the messages being distributed through “their” online space. What develops from these comments is tied to tensions of power between the patron and the proprietor and how to successfully connect with consumers without relinquishing authority.

Interview Methods

The interview has been recognized as an important methodology for economic geographers (Schoenberger 1991; Clark 1998; Tickell et al. 2007). Matching the changes that occurred theoretically in economic geography with the cultural turn in the early 2000s, methods in economic geography have been opened up to include interviews, ethnographic studies, and participant observation, among others, in a move away from the statistical analysis common in the discipline of economics (Tickell, Sheppard, Peck, and Barnes 2007). By conducting interviews with corporate actors, geographers can not only compare the actions of companies with respondents of employees, but also gain access to knowledge about the inner workings of firms that may have previously been unavailable (Schoenberger 1991; Clark 1998). As open-

ended interviews are less rigid than surveys, they open up a dialogue that circumvents the inherent problems associated with the language of survey questions, allowing for richer details about corporate concerns (Schoenberger 1991).

Semi-structured interviews were conducted with eight local business owners or the employee responsible for managing social media accounts between September 2013 and November 2013. In conducting qualitative interviews, “each respondent is expected to provide a great deal of information;” thus, “the qualitative interview study is likely to rely on a sample very much smaller than the samples interviewed by a reasonably ambitious survey study” (Weiss 1994, p. 3). Interviewees were chosen from the list of 835 local and national chain businesses found on Foursquare in Kansas City, MO and were picked based on similar business types for comparative purposes. It was necessary to contact comparable businesses to address their individual needs and concerns related to the type of retail trade conducted. Local coffee shops, landscaping companies, and car dealerships were contacted because of the large numbers of each present on Foursquare in Kansas City and because these businesses are more likely to not be national chains. The decision to not include chain stores was made specifically to address smaller scale consumption and how businesses that do not rely on national ad campaigns reach their customers. Only contacting local businesses also offers an understanding of how owners connect with their communities and their customers and how they might tailor their social media use to a more nuanced audience than that of a nationwide retailer.

Contacting shops and restaurants proved to be more difficult than anticipated. The plan to have face-to-face interviews had to be modified due to the hectic schedules of small business owners. Therefore, discussions were conducted either face-to-face or over the phone depending on the availability of the interviewee. Setting up the meetings also proved to be a challenge

because the employee who is held accountable for the social media content is not always the manager or owner of the establishment. After unsuccessful attempts to locate several social media managers by calling the retail locations multiple times, it made more sense to reach out to these people through the medium they were most familiar, social media. Many of the interviews were scheduled through Facebook messages directly from my own account to the accounts of the businesses.

Either in person or over the phone, the interviews were conducted using a semi-structured approach and all lasted between 15 and 30 minutes. The interviews worked off of a basic set of questions:

1. Are you familiar with the social network Foursquare?
 - a. Do you use Foursquare to promote your business?
 - b. Do you use their analytics?
 - c. Have you offered a special before? What sort of thing? Do you think it was effective?
2. Why or why not?
3. If you do not, have you ever considered using Foursquare?
4. Do you use other social media for business promotion (i.e., Yelp, Facebook, Twitter)? If no, have you considered it or might you in the future? If yes, which one? Why?
5. Do you think social media has an impact on where people go to consume goods and services? Why or why not?
6. Do you think social media will have more of an impact on where people will go to consume goods and services in the future?
7. Do you feel social media impacts your business directly and the amount of business you do?
8. How do you feel Foursquare may or may not affect your business?
9. What is your job? As a business owner, what do you feel your role is in business promotion? What other means do you use besides social media for business promotion?

10. How do you think most of your customers find out about your business?
11. Which social network is the most effective?
12. What sort of things do you do on other social networks (pictures, promotions, etc.)?

All of these questions were asked, and the interviewees were also encouraged to discuss other information outside of these queries to gain a better appreciation of how they interact with various social media platforms. After discovering a limited engagement with Foursquare by most of the people interviewed, the main subject of the interviews turned to media creation use in general to gain an understanding of why Foursquare might not be the preferred choice of businesses for promotion.

Power, Patrons, and Proprietors

All of the interviewees were aware that Foursquare existed as a social network; however, not all of them actively engaged with the site. While all eight commercial locations were listed on Foursquare, only six of the people in charge of the social media accounts had spent time claiming their venues and looking at the Foursquare site. One coffee shop owner who is active on other social media sites specifically mentioned that he chose not to use Foursquare with the business. Another coffee shop owner admitted “Yeah. I guess we’re on there. I know I didn’t actually put myself on there or do anything.” When asked why Foursquare was not a priority for her store she explained how she believed the application to be a fad:

Foursquare is like all those apps that happen for a little bit and then kind of fades away. You know I feel like everyone was worrying about being mayors a year or two ago and now you very rarely ever hear about it...It seems like most people put an app on their phone and use it for about 6 months and then forget about it.

Even businesses that had claimed their locations on Foursquare did not seem to be impressed with the service. A local landscape company mentioned that “Yes [the business is] verified [claimed] ... our numbers [of check-ins] are so low, it doesn’t seem to be a very popular thing for us.” A coffee shop owner agreed with the lack of use of Foursquare:

Foursquare we, I confirmed the account and put business information, hours of operation, make sure it’s all legitimate and representative of what we are, but then its user populated like through reviews. ... Foursquare doesn’t get a lot of use around here.

The exception was a high end car dealership owner who commented “we have a lot of people check in here, because they like to say that they are here looking at cars;” however, he also found that Foursquare as a service is difficult to use for expensive purchases like cars and believed it to be a more beneficial social network for places like restaurants where there are lower priced goods.

The reason why most of the businesses did not engage much with Foursquare largely had to do with the customer base. Many of the Foursquare users did not believe that their customers were on the site. As a social media coordinator at a lawn and garden store commented,

I don’t feel as though our customers are [on Foursquare], I’m kind of testing our customer base, you know what I mean? And I don’t think they’re quite with that yet ... In fact, until I started [as social media manager], it has been an entire, like a graduation of getting to know the fanbase. And adjusting my posts accordingly. I almost felt like foursquare had a limited demograph, maybe a little on age, it just fell a little below what our average age customer fanbase is which is why I haven’t really spent a whole lot of time on that.

A local coffee roasting company agreed that the type of social media for a business to use for promotion is largely dependent on what they think their customers are using:

I do think it’s just dependent on the audience. I do think that a business like ours, if people under 18, teenagers drink a lot of coffee, then we’d probably find a different social channel. We’d be Snapchat or something like that instead of

something else. But given that most of our customers are probably starting to really engage with us in their early 20s and that goes all the way up to people in their 40s and 50s, that for certain age groups, 25 to 35 year olds Facebook is awesome. For 20-25 or 30, twitter is great. And then when you get over 40, it's kind of like it's hit or miss. You never know which people who are engaged in digital and which people are not... So things like Linked-In or, you know, even Google+ for that matter is an entirely different crowd from that standpoint. It's much more a technical crowd, those guys drink a lot of coffee, IT people and people who work at Google I guess, it's great, but the message is not as relevant when you're talking about sponsoring a breast cancer 5K awareness run or something like that. Social media is starting to segment itself down through these channels the same way Food Network on cable is different from Spike TV that situation.

Despite the fact that Foursquare is not seen as a social network where businesses will find their customers, many of those who were interviewed agreed that social media was a necessity in today's business environment. Social media provide an easy and cost efficient method of advertising and promoting business. As a café owner replied, "I mean really now to open especially a restaurant or something like that and not have social media, I mean you can't really have a successful new restaurant I feel and not have some sort of social media presence."

Similarly another café owner responded:

You know several years ago it was the added thing that if you did [have social media] you were ahead of the game. Just like a website, you know ten years ago if you had a website you're doing pretty good on your business, but now if you don't have a website, there's no future if you don't have a website. It's becoming the expected status quo so I think all the social media is the same thing... It's a great time to be in business because this is available, but now it's just part of the thing, it's something you have to do. It's not above and beyond any more.

Many companies even saw some social media as a burden and a challenge to keep up with on their own time. A coffee shop owner commented that he felt that social media is "more just like something you have to do." Another interviewee who owned a coffee shop that has been in business for 17 years protested that she could not delete all of her social media presence and

claimed she would if it were a possibility. Speaking specifically of Foursquare, a coffee roasting company provided an explanation for why he believed the site caused trouble:

I mean Foursquare is probably much more of an example of social media that exists almost as a burden, not a direct connection with the customer but a third party digital space that allows somebody to make decisions on where they want to go.

These businesses are aware of the necessity of having a social media presence, but are primarily concerned with being able to control the message that is going out to their audience and customer base. As a coffee shop owner observed,

I know that if I didn't set up an account on Foursquare then people would be populating things and I wouldn't have any control on it. It's not something that I think drives a lot of business to us but I think it's just kind of a thing that we have to do.

One way to work around the control issue is to make sure your message is crafted in a way to avoid too many messages that detract from your company as this social media coordinator observed:

I believe there's a feeling in probably Twitter and Facebook and Linked-in that that message is very crafted and politically correct sometimes and avenues like Yelp and even any other posting like YouTube. For another fantastic example we have crazy comments that come in through our YouTube channel on our videos we put up there. But we kind of look at it as that's the space and we can't control that message so we try not to put things out there that we would have to worry about in the first place. But at the same time that's an open forum and the more and more you try to control that message then you'll probably shut off everybody that wants to stay in contact.

Controlling content on the internet is a challenge. For the businesses interviewed, discontent with social media sprang from not having the authority to change internet conversation about their establishments.

The businesses interviewed did like the idea of Foursquare analytics to be able to see what types of customers were coming into their stores. However, even in light of Foursquare's

efforts to become more business-friendly, it does not provide enough information to the businesses to make the application worth using. Instead local applications like Front Flip and Lantern are seen as providing better data on customer demographics. Several of the businesses interviewed mentioned that they would like to know more about where in the city they are pulling customers. As one coffee shop owner expressed, “I’m most curious with things that will give you the breakdown of like if they have zip codes available telling you where you are pulling your customers from mainly.”

Foursquare does not provide the level of detail desired by businesses about the demographics of their customers. However, local applications like Front Flip and Lantern do:

from something like Front Flip because the data that you sign up with it allows me to know have you driven more than five miles away from my café, do you typically talk about us once you come there, do you check in, or do you not really push it out there, the age groups, male or female, all those kinds of things. I don’t get personal data because of privacy, but it helps me make a lot of decisions about the things that we might do as far as happy hours and drink menus and dessert menus and things like that.

Or likewise,

there’s a million and a half of these loyalty programs out there now. We’re on Lantern which is a local Kansas City start up and we use Perk-O which is like a punch card app so that kind of stuff. But Lantern is great because I only pay for what they buy. So I have the deal up there but only until someone redeems that coupon do I have to pay them. I don’t have to pay them \$150 a month just off the top.

Foursquare is not widely used by the businesses interviewed here. Though limited in scope, these preliminary interviews suggest that other social networks such as Facebook have been more beneficial in crafting consumer messages. The reason behind the popularity of Facebook is because the message can come directly from the company itself. Applications such as Foursquare or Yelp, where the content is created by the users instead of the business, are looked down upon by corporations because of the lack of central control over comments and

posts. While the businesses owners interviewed here recognize social media as a necessity in today's economic environment, they are concerned with being able to control the messages that are sent to their customers. Local applications like Front Flip and Lantern are more beneficial because they have more detailed analytics that give the businesses information about the demographic of their customer base. Demographic information is then useful for the future creation of content and consumer goods, services, and specials.

The argument for the types of social media preferred by business owners comes down to not only which media can they engage best with their audience, but which networks they have the most power and control over. A user-generated network like Foursquare comes up short when businesses want to have a semblance of ownership and control. Comments on Foursquare cannot be deleted by business owners or social media managers. Therefore, image crafting on social networks like Foursquare is left to the supposed whim of the populace. There is a sense that consumer locations are overwhelmed by the sheer number of social networks available to the public. Those networks that are consumer-driven, like Foursquare, are ones in which companies must participate to maintain some sense of authority over their business ventures.

Unlike Foursquare, Front Flip and Lantern are networks where businesses can choose to opt in or not. Therefore, the establishments are not forced to participate in a network where they do not feel as if they have command. Both of these applications require a user to scan a QR code in the store, meaning the users have to be physically present to check-in and claim rewards, essentially eliminating instances of cheating or "jumping" found in Foursquare. For business owners, user-generated networks are problematic, both from the standpoint of cheating as well as content control. Foursquare cannot combat either of these problems, leaving it to be seen as to whether or not it will become more popular among the business community.

Conclusion

The development of retail trade establishments in Kansas City is largely a reflection of the historical trends put into place by people such as J.C. Nichols and his Country Club Plaza. Tied to the urban development that occurred during the 20th century is a history of ethnic segregation that is still evident through census tract data. There is a clear core area of Kansas City that houses a majority African American community while the border between Kansas and Missouri is largely white. Although there is a growing Hispanic presence, it has not manifested itself predominantly on the ground yet, though there is evidence of this minority population through some of the dining establishments found on Foursquare. The ethnic divisions of the city mirror the availability of goods and services found on Foursquare. Similar to Baltimore and Atlanta, African American census tracts do not have the numbers or diversity of products that other census tracts do. Retail trade is skewed towards the white and the wealthy. While the distortion of available Foursquare venues could be a reflection of the population using Foursquare, it could also point to the lack of businesses that exist in African American communities.

When speaking to business owners in particular about Foursquare as a service to promote their establishments, many felt that their customer base did not use the service, as it is marketed for younger generations. However, in talking to them further it became clear that Foursquare is a contested site where businesses lack power and control over the messages being displayed about their companies. The little authority they have over the creation of a space for their business on Foursquare is a point of contention because it takes the image of the company and puts it into the hands of the public. Businesses then feel as if they are forced to engage with Foursquare, despite the lack of benefit Foursquare provides to them. Local applications like Front Flip and Lantern

seem to be gaining on Foursquare because they provide businesses with a means to control their check-in space and also give back useful information about their customer bases. Future research should look deeper into the connection business owners have with other user-created online spaces such as Yelp or Urban Spoon as well as the desire to use start-ups like Front Flip and Lantern instead.

Chapter 8

Checking Out? A New Foursquare

There is no denying that big data and social media are changing the way research is being conducted, both in and out of the academy. The GeoWeb is being populated with increasing amounts of content provided by users. Mobile phones have opened up the possibility for interacting simultaneously in the material and virtual worlds. Location-based social networks like Foursquare provide records about visits to physical places through a virtual medium. This information can affect where people are choosing to go for consumer activities. Economic geographers can utilize the GeoWeb to get a better picture of the places where people are going to purchase goods and services.

Data from social networks like Foursquare can provide geographers with individual movement and decision patterns. These consumption choices can be linked to foundational concepts in economic geography such as the urban hierarchy. Through an analysis of cities in the Southeastern US, Foursquare data illuminates the ways in which the range of goods and services is limited in cities at the bottom of the urban hierarchy despite the effects of the global economy, addressing the research question: What are the patterns of places that people are more likely to visit on Foursquare at a regional level? Residents of larger cities have access to a wider variety of goods and services than those who live in smaller urban areas. Indeed, lower order cities exhibit the same chain stores and restaurants, establishing not only a lack of variety within these locations but a lack of variety among them as well, a feature of placelessness. Globalization does not affect everyone equally, as is shown by the access to consumer products and retail

establishments in more rural locations. E-tailing is still not prevalent, especially among certain population groups such as the elderly and the rural.

To assume that studies that use these new types of digital data from the GeoWeb are representative and complete would be naïve. This dissertation's research question, how does Foursquare use in different types of venues vary according to race, income, education, or age?, attempts to speak to the divide among different types of Foursquare users. In comparing multiple cities to one another using different demographic identifiers, it is clear that ethnicity does have an impact on the creation of GeoWeb content on Foursquare's network. Areas that are predominately African American do not have the same numbers of places listed on Foursquare as areas with Hispanic or white majorities. In contrast, age and income do not affect the use or availability of Foursquare information as much as ethnicity. The problems associated with an ethnic divide in Foursquare are many. Undeniably, society will become more reliant on web content for decision making in the future. With the further proliferation of augmented reality technology like Google Glass, those places left off of the internet will be increasingly pushed to the side. Like a highway bypassing a rural town, the digital divide that exists within countries and among different groups of people will only widen. For local economies, this could be devastating. If people are not going to certain areas of a city to consume products, those areas will not enjoy the same economic opportunity as others, possibly reinforcing already declining economies. It is likely that the gap between online information about African American and other neighborhoods extends to additional areas of the internet aside from Foursquare (as stated by Crutcher and Zook 2009).

The third research question, how do local business owners interact with Foursquare or use the service as a gateway to their clientele?, is answered with a case study on Kansas City,

Missouri. Business owners recognize the importance of having a presence online to engage with their customers. They see social media as an outlet for starting a dialogue with those who frequent their shops as a way to improve their service and connect on an individual level. However those who run social media accounts for a company are very much concerned with content creation. While they recognize that user-generated sites like Foursquare exist, they only are willing to utilize these services to a small extent by doing minimal activities such as ensuring operating hours are accurate or occasionally checking comments. The limited use of user-generated platforms is problematic as people increasingly conduct neogeographic activities online. If businesses want their physical presence to stay relevant, they need to start taking the GeoWeb seriously by managing their locations online by claiming them, posting relevant information about them, and encouraging their visibility on the internet. While some seem to be doing just that by using new applications like Lantern and Front Flip, the small reach of these platforms may not be enough to combat larger services like Google Maps or Open Street Map.

Finally, what can Foursquare tell us about how virtual and physical spaces of retail trade affect one another? One of the reasons that location-based social media like Foursquare is significant is because it is a service that is neither completely online because of its reliance on physical stores for check-ins, but not completely offline either. There are a multitude of retail services that require an offline space because they deal in provisions that are embodied and necessitate a physical presence, restaurants or movie theaters for example. Certain types of goods and services cannot be wholly consumed online. However, it is clear that businesses need to have an online presence to be able to compete in the consumer market today. Foursquare, and similar applications, allow for these companies that sell embodied products to participate in online consumption by creating a hybrid online space in which to advertise and create a forum for

consumers to meet and share their experiences. The physical nature of some sites of consumption has created a demand for services like Foursquare to grow. Those businesses that cannot exist online are driving the creation of some online services. Conversely, location-based social media like Foursquare is having an effect on the places where consumers who use these types of applications are choosing to visit through features like Explore or other customer tips and reviews. Therefore, physical spaces of retail trade that are embodied are affecting online spaces through the creation of location-based social media platforms at the same time that location-based social media platforms are affecting where users are choosing to consume goods and services offline. It is clear that Foursquare use varies in different places and among different users, but there is an obvious relationship hybrid spaces of consumption have on one another.

On May 1, 2014, Foursquare announced that it would split its application in two. The new app, entitled Swarm, took over the check-in function of Foursquare, essentially removing the social aspect of the application and putting it on a new platform (Hern 2014). Foursquare, which is scheduled to receive a major update in June 2014 will now “focus solely on exploration and discovery, finally positioning itself as a true Yelp-killer in the battle to provide great local search” (Popper and Hamburger 2014). The company believes that having both the explore feature and the check-in feature in one application was holding them back. By making the split, investor Bijon Sabat alleges that Foursquare will “help make it clear to a big audience that you don’t need to check in to find value in Foursquare” (quoted in Popper and Hamburger 2014). After spending half a decade collecting location information for over 60 million venues, the company no longer needs to rely on people checking in to provide what they consider to be better tailored local search capabilities than other services like Google and Yelp. Justifying the split, “it is tacit acknowledgement by Foursquare that checking in may never appeal to more than

a niche audience. Local search, however, is a mainstream activity that anyone with a smartphone is going to want” (Popper and Hamburger 2014). The revamping of Foursquare marks a distinct move by the corporation to focus on the explore feature and to shape how people see the world around them. The founder, Dennis Crowley, sees the new Foursquare as coming close to his vision of being able to arrive in a new neighborhood and have his phone automatically tell him if he has friends nearby, what restaurant to visit, and what dish to order. The reimagined Foursquare pushes people ever closer to influencing our consumption decisions.

The hybrid nature of place is a reality. Though online shopping has not come close to surpassing traditional consumption patterns, the internet has an ever increasing effect on the types of businesses people frequent and where these establishments are located. Those areas that, literally, are left off of the online map will continue to be pushed aside as more people rely on the internet for making decisions about where they will spend their money. Mobile technology has only increased the chances of using the internet as a decision making factor because of the immediate access to services like Foursquare’s Explore function, which lists specific types of places nearby, or the newly implemented Foursquare application that is designed to tell users what venues are in their immediate area. As both the GeoWeb and mobile technology continue to advance and become increasingly used by certain segments of the population, there will be a greater likelihood that consumption trends will be driven by that same unrepresentative group of people. The digital divide exists between those who have access to technology and those who do not. However it also exists between those who are creating web content and those who are not. In the future, the actions of those who are not content creators will be further influenced by those users who are constructing the internet.

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