DIVERSITY, ENTREPRENEURSHIP, AND THE URBAN ENVIRONMENT

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ABSTRACT: *In recent years, the field of regional economic analysis has focused on the social and cultural environment of a place to explain variations in innovation activity, entrepreneurial dynamics, and economic growth. Prominent among these studies is Richard Florida's creative class theory. He argues that urban economies grow because they are tolerant, diverse, and open to creativity, which in turn attracts certain groups of people, the so-called creative class. Lee, Florida, and Acs expand the theory into the realm of entrepreneurship. They argue that new firm formation is positively associated with a creative and diverse social environment. In other words, those regions that are alluring to creative talent, open to newcomers, and tolerant of those who are different, will also have more people taking the risk of founding a firm, leading to increased economic growth. The creative class theories, however, contrast with explanations that consider structural factors such as access to financial resources and markets, among others, as important markers of entrepreneurial success. In this article, we are interested in examining the ways in which a region's creative milieu and its opportunity structures may help or hinder different kinds of entrepreneurs, in particular nontraditional entrepreneurs. We examine the effect of regional opportunity structures and creative milieu on women, Black, and Hispanic business ownership for the 50 largest metropolitan statistical areas (MSAs) in the United States in 2002. We find that opportunity structures, whether opportunity or barrier, better explain the dynamics for these entrepreneurs. They benefit from a regional environment that builds human capital and skill base, enables access to a variety of financial resources, and facilitates market access. Given the growth of women and minority businesses and their potential effect on regions, policymakers are well advised to tailor their policies to these groups.*

Entrepreneurship plays an important role in stimulating a region's economic development and growth. When we think of business owners and entrepreneurs, we typically imagine the high-technology entrepreneur in Silicon Valley, who started and bootstrapped his business in the basement or in the garage. The notion that the entrepreneur is a white male, who is operating a high-technology business in a region that is known for its entrepreneurial milieu, often dominates the public discourse on entrepreneurship and is corroborated by evidence about those most likely to enter entrepreneurship (Bates, 1993) as well as the regions that are known for being

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entrepreneurial (Saxenian, 1994). Such a perspective, however, is very limited and does not take into account that business owners come from diverse backgrounds and that entrepreneurship is a multifaceted and changing phenomenon. In fact, some observers claim that "entrepreneurs in the next decade will be far more diverse than their predecessors in age, origin, and gender" and that retirees, members of Generation Y, women, and immigrants will constitute this new and diverse group of entrepreneurs (Intuit & Institute for the Future, 2007, p. 2).

We are already seeing evidence of these developments. For example, women and Hispanic entrepreneurs are among the fastest growing groups of business owners. The number of women-owned businesses has grown 19.8% between 1997 and 2002, almost twice the national rate for all businesses, which was 10.3% (Lowrey, 2006). The Center for Women's Business Research estimates that there are 10.4 million privately held firms, where women own 50% or more in the United States in 2006. Hispanic-owned businesses grew at an even higher rate. Between 1997 and 2002, they increased by 31%, three times the national average of all businesses in the United States (U.S. Census, 2006a). Other minority groups also play an important role as business owners; there are more than 1.2 million Black-owned businesses in the United States whose revenues increased by 25% between 1997 and 2002 (U.S. Census, 2006b). More recent figures about the number of women and minority-owned businesses are hard to come by because the Census conducts the Survey of Business Ownership (SBO) as part of the Economic Census only every five years, and the data are released about four years after their collection (Census, 2007). The most recent data are for 2002 and were only released in 2006. SBO is one of a few data sources that provide insights into the demographic characteristics of business owners in the United States.[1]

While the group of entrepreneurs is growing more diverse, women and minority business owners are also changing in terms of their business orientation and entrepreneurial preparation. Brush et al. (2004) have shown how women entrepreneurs are moving into fast-growing industry sectors describing some of them as the "new generation of women entrepreneurs" (p. 151). Bates demonstrates how Black-owned business ownership and success has changed, and that these changes are illustrated by the emergence of these firms into new sectors, gains in higher education, and decreases in discriminatory barriers (Bates, 2006).

In addition to the differences between entrepreneurial groups, there is regional variation in the level and type of entrepreneurship (Lee et al., 2004; Mayer, Hackler, & McFarland, 2007). Some regions may host more women business owners than others. Some may be less attractive to Black entrepreneurs, and others see high levels of Hispanic business ownership. Tables 1–3 rank the 50 largest metropolitan areas by business ownership relative to metropolitan population (intensity) for the three groups we examine. Miami, Denver, San Francisco, Atlanta, and Washington, D.C. rank at the top of the 50 metropolitan areas that we examine for the intensity of women-owned businesses. For Black-owned businesses, Atlanta, Washington D.C., Memphis, and New Orleans are the top four metro areas.[2] Miami, San Antonio, Los Angeles, and Houston are the metropolitan areas with the highest intensity of Hispanic-owned firms. However, in our data set, regional variation is statistically significant only for Black-owned businesses relative to metropolitan population with Southern metropolitan statistical areas (MSAs) having a mean 0.0076 Black-owned businesses per 1,000 people versus the means for the regions of the Midwest (0.0046), Northeast (0.0033), and West (0.0024). For women-owned businesses, industry intensity is fairly consistent across regions; however, although the means are not significantly different, average Hispanic-owned business industry intensity is less in the Midwest (0.0013) and Northeast (0.0032) than in the South (0.0072) and West (0.0075). In this article, we are interested in explaining the factors that contribute to such regional variation.

A region's support infrastructure and milieu may play an important role in the success of business owners. Entrepreneurs who are part of an ethnic or minority group may be especially sensitive to the ways in which they are supported regionally. Florida's creative class theory

TABLE 1

Metropolitan Rankings of Women-Owned Businesses

Population rank	2000 geography	Intensity of women-owned firms, employer and nonemployer	Number of all types of women-owned firms, employer and nonemployer	Location quotient of women-owned firms	Location quotient of women-owned firms with paid employees	Sales and receipts ($1,000) of women-owned firms with paid employees	Annual payroll ($1,000) of women-owned firms with paid employees
6	Miami-Fort Lauderdale-Miami Beach, FL	0.0361	180,797	1.09	1.05	17,749,024	3,704,681
22	Denver-Aurora, CO	0.0313	68,110	1.02	1.14	8,541,450	1,809,139
12	San Francisco-Oakland-Fremont, CA	0.0309	127,385	1.07	1.05	17,235,554	3,918,937
11	Atlanta-Sandy Springs-Marietta, GA	0.0304	129,240	1.12	1.04	19,117,491	3,646,324
7	Washington-Arlington-Alexandria, DC-VA-MD	0.0293	140,630	1.08	1.01	16,283,180	4,770,356
2	Los Angeles-Long Beach-Santa Ana, CA	0.0279	345,436	1.06	1.03	49,604,560	10,633,903
1	New York-Newark-Edison, NY-NJ-PA	0.0279	510,692	0.98	0.94	67,246,381	15,330,785
25	Portland-Vancouver-Beaverton, OR-WA	0.0276	53,205	1.00	1.03	5,722,451	1,220,725
16	Minneapolis-St. Paul, MN-WI MSA	0.0275	81,607	0.98	0.95	10,232,589	2,200,935
10	Boston-Cambridge-Quincy, MA-NH	0.0268	117,540	0.97	0.92	14,310,514	3,580,738
40	Austin-Round Rock, TX	0.0267	33,387	1.03	1.03	3,144,679	850,025
17	San Diego-Carlsbad-San Marcos, CA	0.0261	73,475	1.04	1.01	8,629,428	2,179,556
27	Sacramento-Arden-Arcade-Roseville, CA	0.0257	46,266	1.15	0.92	3,592,828	1,008,999
15	Seattle-Tacoma-Bellevue, WA	0.0256	77,784	0.92	1.01	9,323,031	2,009,621
8	Houston-Baytown-Sugar Land, TX	0.0249	117,516	1.09	1.03	15,520,029	3,693,420
39	Nashville-Davidson-Murfreesboro, TN	0.0248	32,544	1.00	0.85	5,813,724	826,972
5	Dallas-Fort Worth-Arlington, TX	0.0247	127,339	1.02	0.97	16,653,178	4,193,615
30	Orlando, FL	0.0245	40,270	0.90	1.03	9,051,231	1,000,837
31	Columbus, OH	0.0240	38,766	1.04	0.86	6,108,840	1,113,642
47	Oklahoma City, OK	0.0238	26,091	0.93	1.00	2,510,866	654,618
26	Kansas City, MO-KS	0.0238	43,725	0.94	0.97	5,117,675	1,095,839
3	Chicago-Naperville-Joliet, IL-IN-WI	0.0236	215,066	0.97	0.99	32,799,993	7,817,601
19	Baltimore-Towson, MD	0.0235	60,089	0.99	1.00	6,941,529	1,793,459
45	Jacksonville, FL	0.0233	26,107	0.92	1.08	2,921,717	632,922
37	Charlotte-Gastonia-Concord, NC-SC	0.0232	30,932	0.86	0.96	3,903,512	1,158,158
38	New Orleans-Metairie-Kenner, LA	0.0232	30,546	0.99	1.08	4,270,780	906,330

Continued

TABLE 1

Continued

Population rank	2000 geography	Intensity of women-owned firms, employer and nonemployer	Number of all types of women-owned firms, employer and nonemployer	Location quotient of women-owned firms	Location quotient of women-owned firms with paid employees	Sales and receipts ($1,000) of women-owned firms with paid employees	Annual payroll ($1,000) of women-owned firms with paid employees
43	Louisville, KY-IN	0.0229	26,569	0.97	0.92	3,416,434	688,817
21	Tampa-St. Petersburg-Clearwater, FL	0.0227	54,473	0.87	0.98	7,067,987	1,340,873
36	Las Vegas-Paradise, NV	0.0227	31,259	1.01	0.97	5,336,535	894,954
44	Hartford-West Hartford-East Hartford, CT	0.0227	26,050	0.92	0.89	2,697,655	761,297
50	Salt Lake City-Ogden, UT MSA	0.0223	21,619	0.81	0.76	2,624,332	558,729
18	St. Louis, MO-IL	0.0221	60,207	0.94	1.00	9,522,375	2,144,525
28	San Jose-Sunnyvale-Santa Clara, CA	0.0221	38,386	0.83	1.09	6,733,103	2,173,595
34	Indianapolis, IN	0.0218	33,260	0.87	0.88	4,591,366	1,000,724
14	Phoenix-Mesa-Scottsdale, AZ	0.0218	70,816	0.96	0.97	9,767,245	2,125,292
9	Detroit-Warren-Livonia, MI	0.0216	96,268	0.96	0.90	12,856,330	2,741,178
13	Riverside-San Bernardino-Ontario, CA	0.0216	70,259	1.33	0.90	9,012,455	1,353,034
32	Providence-New Bedford-Fall River, RI-MA	0.0216	34,142	0.88	1.01	5,387,872	887,967
49	Rochester, NY	0.0214	22,261	1.03	0.91	2,340,788	592,589
23	Cleveland-Elyria-Mentor, OH	0.0202	43,336	0.81	0.87	4,887,027	1,200,693
24	Cincinnati-Middletown, OH-KY-IN	0.0199	40,008	0.91	0.83	5,477,634	1,266,363
29	San Antonio, TX	0.0198	33,859	0.96	1.02	5,128,885	871,732
46	Richmond, VA	0.0196	21,529	0.82	0.89	2,227,113	605,760
35	Milwaukee-Waukesha-West Allis, WI	0.0191	28,720	0.76	0.89	4,580,028	1,157,275
4	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	0.0191	108,384	0.79	0.92	16,048,749	3,540,921
48	Birmingham-Hoover, AL	0.0191	20,049	0.85	0.86	2,566,932	474,891
33	Virginia Beach-Norfolk-Newport News, VA-NC	0.0185	29,157	0.92	1.04	3,501,795	856,811
41	Memphis, TN-MS-AR	0.0183	22,102	0.91	0.75	2,143,179	561,446
20	Pittsburgh, PA	0.0182	44,287	0.76	0.89	7,224,520	1,310,708
42	Buffalo-Niagara Falls, NY	0.0169	19,770	0.77	0.95	2,355,893	501,323

TABLE 2

Metropolitan Rankings of Black-Owned Businesses

Population rank	2000 geography	Intensity of Black-owned firms, employer and non-employer	Number of all types of Black-owned firms, employer and nonemployer	Location quotient of Black-owned firms	Location quotient of Black-owned firms with paid employees	Sales and receipts ($1,000) of Black-owned firms with paid employees	Annual payroll ($1,000) of Black-owned firms with paid employees
11	Atlanta-Sandy Springs-Marietta, GA	0.0151	63,940	3.02	2.28	2,754,645	672,975
7	Washington-Arlington-Alexandria, DC-VA-MD	0.0140	67,213	2.79	2.52	5,045,025	1,745,315
41	Memphis, TN-MS-AR	0.0133	16,075	3.59	2.99	566,360	165,816
38	New Orleans-Metairie-Kenner, LA	0.0121	15,982	2.80	2.39	609,235	200,165
6	Miami-Fort Lauderdale-Miami Beach, FL	0.0117	58,559	1.91	1.32	1,872,946	444,843
19	Baltimore-Towson, MD	0.0096	24,536	2.19	1.97	A	A
46	Richmond, VA	0.0086	9,393	1.93	2.69	413,592	128,141
37	Charlotte-Gastonia-Concord, NC-SC	0.0081	10,767	1.62	1.93	702,415	137,695
1	New York-Newark-Edison, NY-NJ-PA	0.0079	145,517	1.99	1.25	6,003,216	1,613,868
8	Houston-Baytown-Sugar Land, TX	0.0076	35,846	1.80	1.30	A	A
33	Virginia Beach-Norfolk-Newport News, VA-NC	0.0073	11,572	1.98	3.05	589,687	202,843
3	Chicago-Naperville-Joliet, IL-IN-WI Metropolitan Statistical Area	0.0071	64,380	1.57	1.25	3,720,199	1,077,756
9	Detroit-Warren-Livonia, MI	0.0070	31,208	1.69	1.57	2,690,283	672,609
30	Orlando, FL	0.0067	11,051	1.34	1.13	A	A
48	Birmingham-Hoover, AL	0.0066	6,964	1.60	1.56	A	A
45	Jacksonville, FL	0.0061	6,799	1.30	1.67	279,200	80,886
31	Columbus, OH	0.0054	8,771	1.27	1.06	564,882	115,969
5	Dallas-Fort Worth-Arlington, TX	0.0053	27,514	1.19	1.02	1,574,266	463,109
23	Cleveland-Elyria-Mentor, OH	0.0049	10,505	1.05	1.27	1,044,282	223,915
39	Nashville-Davidson-Murfreesboro, TN	0.0046	5,970	.99	1.24	341,604	105,055
2	Los Angeles-Long Beach-Santa Ana, CA	0.0045	56,228	.94	.97	4,143,313	981,036
18	St. Louis, MO-IL	0.0045	12,067	1.02	1.45	750,640	215,445
4	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	0.0043	24,286	.95	1.21	1,567,034	433,592
34	Indianapolis, IN	0.0042	6,453	.91	1.20	A	A
12	San Francisco-Oakland-Fremont, CA	0.0042	17,352	.79	.90	827,469	313,634

TABLE 2

Continued

Population rank	2000 geography	Intensity of Black-owned firms, employer and non-employer	Number of all types of Black-owned firms, employer and nonemployer	Location quotient of Black-owned firms	Location quotient of Black-owned firms with paid employees	Sales and receipts ($1,000) of Black-owned firms with paid employees	Annual payroll ($1,000) of Black-owned firms with paid employees
13	Riverside-San Bernardino-Ontario, CA	0.0040	13,013	1.33	1.12	508,386	108,568
26	Kansas City, MO-KS	0.0037	6,797	.80	1.06	A	A
44	Hartford-West Hartford-East Hartford, CT	0.0037	4,246	.81	0.53	200,448	38,105
40	Austin-Round Rock, TX	0.0035	4,409	.74	1.05	299,566	66,687
24	Cincinnati-Middletown, OH-KY-IN	0.0035	6,941	.85	0.81	324,291	98,312
35	Milwaukee-Waukesha-West Allis, WI	0.0034	5,069	.72	1.28	375,607	110,748
21	Tampa-St. Petersburg-Clearwater, FL	0.0033	7,959	.69	0.76	277,577	71,671
47	Oklahoma City, OK	0.0032	3,505	.68	0.87	A	A
43	Louisville, KY-IN	0.0031	3,639	.72	0.93	600,848	88,876
49	Rochester, NY	0.0029	3,021	.75	0.47	A	A
36	Las Vegas-Paradise, NV	0.0028	3,823	.67	0.83	264,050	93,574
27	Sacramento-Arden-Arcade-Roseville, CA	0.0026	4,716	.64	0.57	119,973	27,575
16	Minneapolis-St. Paul, MN-WI MSA	0.0025	7,419	.48	0.38	A	169,064
22	Denver-Aurora, CO	0.0024	5,269	.43	0.59	438,019	95,472
10	Boston-Cambridge-Quincy, MA-NH	0.0023	10,177	.45	0.55	670,569	211,197
17	San Diego-Carlsbad-San Marcos, CA	0.0023	6,509	.50	0.58	360,136	96,413
42	Buffalo-Niagara Falls, NY	0.0020	2,392	.50	0.62	100,346	35,471
15	Seattle-Tacoma-Bellevue, WA	0.0019	5,799	.37	0.75	692,318	165,809
29	San Antonio, TX	0.0019	3,193	.49	A	A	A
20	Pittsburgh, PA	0.0018	4,363	.41	0.54	A	A
28	San Jose-Sunnyvale-Santa Clara, CA	0.0017	2,891	.34	0.80	330,089	93,887
14	Phoenix-Mesa-Scottsdale, AZ	0.0015	4,776	.35	0.44	316,083	103,761
32	Providence-New Bedford-Fall River, RI-MA	0.0014	2,219	.31	0.42	381,912	51,988
25	Portland-Vancouver-Beaverton, OR-WA	0.0010	1,967	.20	0.37	195,960	37,856
50	Salt Lake City-Ogden, UT MSA	0.0004	387	.08	0.09	153,504	11,728

Note: "A" indicates data suppression due to reporting or privacy concerns as reported in the Survey of Business Owners.

TABLE 3

Metropolitan Rankings of Hispanic-Owned Businesses

Population rank	2000 geography	Intensity of Hispanic-owned firms, employer and nonemployer	Number of all types of Hispanic-owned firms, employer and nonemployer	Location quotient of Hispanic-owned firms	Location quotient of Hispanic-owned firms with paid employees	Sales and receipts ($1,000) of Hispanic-owned firms with paid employees	Annual payroll ($1,000) of Hispanic-owned firms with paid employees
6	Miami-Fort Lauderdale-Miami Beach, FL	0.0411	206,047	5.11	5.88	25,907,439	4,294,448
29	San Antonio, TX	0.0221	37,745	4.42	5.10	5,500,066	861,227
2	Los Angeles-Long Beach-Santa Ana, CA	0.0177	218,530	2.77	2.02	22,856,553	4,744,512
8	Houston-Baytown-Sugar Land, TX	0.0159	75,165	2.87	1.57	9,541,339	1,556,079
13	Riverside-San Bernardino-Ontario, CA	0.0150	48,756	3.81	2.74	3,368,006	703,929
30	Orlando, FL	0.0119	19,602	1.80	1.76	A	A
17	San Diego-Carlsbad-San Marcos, CA	0.0116	32,761	1.92	1.80	2,497,221	560,936
40	Austin-Round Rock, TX	0.0111	13,889	1.77	1.80	1,705,279	347,624
1	New York-Newark-Edison, NY-NJ-PA	0.0110	201,129	1.59	1.18	13,971,656	2,777,590
5	Dallas-Fort Worth-Arlington, TX	0.0086	44,211	1.26	1.15	4,156,085	980,416
28	San Jose-Sunnyvale-Santa Clara, CA	0.0080	13,911	1.24	1.61	2,381,128	689,675
12	San Francisco-Oakland-Fremont, CA	0.0078	31,986	1.11	1.39	5,702,443	1,424,342
21	Tampa-St. Petersburg-Clearwater, FL	0.0063	15,075	.99	1.50	2,152,515	530,656
27	Sacramento-Arden-Arcade-Roseville, CA	0.0062	11,183	1.15	1.22	911,051	217,716
7	Washington-Arlington-Alexandria, DC-VA-MD	0.0060	28,943	.91	.80	3,443,282	981,905
22	Denver-Aurora, CO	0.0060	13,041	.81	1.03	3,208,760	521,262
14	Phoenix-Mesa-Scottsdale, AZ	0.0059	19,136	1.07	1.18	1,922,456	499,766
36	Las Vegas-Paradise, NV	0.0054	7,463	.99	.98	1,073,186	242,385
3	Chicago-Naperville-Joliet, IL-IN-WI	0.0042	38,623	.72	.90	5,668,811	1,455,074
38	New Orleans-Metairie-Kenner, LA	0.0037	4,897	.65	.65	A	A
11	Atlanta-Sandy Springs-Marietta, GA	0.0034	14,354	.52	.54	2,475,448	369,653
50	Salt Lake City-Ogden, UT MSA	0.0030	2,911	.45	.66	343,015	74,240
10	Boston-Cambridge-Quincy, MA-NH	0.0028	12,222	.41	.42	1,266,488	318,089
45	Jacksonville, FL	0.0027	2,979	.43	.71	416,400	133,346
32	Providence-New Bedford-Fall River, RI-MA	0.0024	3,865	.41	.36	251,989	42,880
44	Hartford-West Hartford-East Hartford, CT	0.0023	2,649	.39	.49	A	A

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TABLE 3

Continued

Population rank	2000 geography	Intensity of Hispanic-owned firms, employer and nonemployer	Number of all types of Hispanic-owned firms, employer and nonemployer	Location quotient of Hispanic-owned firms	Location quotient of Hispanic-owned firms with paid employees	Sales and receipts ($1,000) of Hispanic-owned firms with paid employees	Annual payroll ($1,000) of Hispanic-owned firms with paid employees
37	Charlotte-Gastonia-Concord, NC-SC	0.0020	2,657	.30	0.40	449,979	78,461
47	Oklahoma City, OK	0.0020	2,178	.32	0.43	A	A
25	Portland-Vancouver-Beaverton, OR-WA	0.0018	3,405	.26	0.41	581,673	119,900
15	Seattle-Tacoma-Bellevue, WA	0.0016	4,939	.24	0.42	701,447	196,994
4	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	0.0016	8,963	.27	0.32	A	A
49	Rochester, NY	0.0014	1,442	.27	0.27	67,891	10,914
19	Baltimore-Towson, MD	0.0013	3,316	.22	0.33	934,106	293,854
26	Kansas City, MO-KS	0.0012	2,252	.20	0.33	356,828	88,274
35	Milwaukee-Waukesha-West Allis, WI	0.0012	1,784	.19	0.38	570,770	153,063
39	Nashville-Davidson-Murfreesboro, TN	0.0012	1,544	.19	0.26	397,460	60,134
9	Detroit-Warren-Livonia, MI	0.0011	4,742	.20	0.29	2,195,178	410,959
16	Minneapolis-St. Paul, MN-WI MSA	0.0010	2,966	.15	0.18	275,981	80,028
46	Richmond, VA	0.0010	1,057	.17	0.28	136,683	35,368
33	Virginia Beach-Norfolk-Newport News, VA-NC	0.0009	1,467	.19	0.42	480,705	123,107
42	Buffalo-Niagara Falls, NY	0.0008	983	.16	0.21	193,697	27,369
34	Indianapolis, IN	0.0008	1,261	.14	0.17	182,809	38,495
23	Cleveland-Elyria-Mentor, OH	0.0008	1,766	.14	0.16	A	A
48	Birmingham-Hoover, AL	0.0008	790	.14	0.31	111,173	31,828
31	Columbus, OH	0.0007	1,102	.12	0.16	A	A
43	Louisville, KY-IN	0.0007	768	.12	0.20	A	A
18	St. Louis, MO-IL	0.0007	1,777	.11	0.18	A	A
41	Memphis, TN-MS-AR	0.0006	691	.12	0.20	113,120	27,924
24	Cincinnati-Middletown, OH-KY-IN	A	A	A	A	A	A
20	Pittsburgh, PA	A	A	A	A	A	A

Note: "A" indicates data suppression due to reporting or privacy concerns as reported in the Survey of Business Owners.

suggests that intangible factors such as tolerance and openness toward minority, ethnic, and women entrepreneurs may influence their success. On the other hand, proponents of opportunity structures theories consider tangible factors such as the entrepreneur's ability to gain access to markets, skills, and institutional support.

In this article, we engage in a debate about the type of regional entrepreneurial support and its effect on different kinds of entrepreneurs. Specifically, we explore whether the creative class theories' (Florida, 2002, 2004; Lee et al., 2004) proposition that a crucial link exists between new firm formation and a region's creative milieu also explains the level and intensity of women, Hispanic, and Black business ownership. We contrast the creative class approach with theories about a region's opportunity structures that may help or hinder business ownership by the aforementioned demographic groups (Aldrich & Waldinger, 1990; Bates, 1997, 2006; Fischer & Massey, 2000). We use the same measures of regional creativity and tolerance as creative class theorists and contrast those to measures of regional opportunity structures. We hypothesize that a region's opportunity structures are more important than its creative milieu to women, Hispanic, and Black entrepreneurs.

We focus on women, Hispanic, and Black-owned businesses because they represent minority entrepreneurship from a racial, gender, and ethnic perspective. These demographic groups may experience higher barriers of entry and greater structural obstacles when entering the world of self-employment and may be especially sensitive to what the region's support infrastructure has or does not have to offer.[3] Black-owned businesses, for example, are only one-tenth the size of the average U.S. business. The small size of these firms is due to the lack of financial capital, which is often hard to access due to "racial inequalities in earnings and in wealth as well as the discriminatory practices of lenders" (Conrad, 2005, p. 242). While Blacks have one of the highest rates of loan application denial, Hispanics have a higher rate than Whites (Blanchflower, Levine, & Zimmerman, 2003). Women have experienced similar barriers to access to capital (Blake, 2006). Thus, our analysis examines the regional environment and support factors of the most vulnerable entrepreneurs.

THEORIES OF ENTREPRENEURSHIP: CREATIVITY VERSUS OPPORTUNITY

There are a variety of theories that explain women, ethnic, and minority entrepreneurship. Most theories focus primarily on the individual entrepreneur and his or her motivations, constraints, and predispositions to start a firm (Bates, 1993; Brush, 1992). A few others can be applied when we link observations about the regional environment to the level and intensity of business ownership. Our focus on the environment accounts for the ways in which an entrepreneur is embedded in a social, political, and cultural structure. Such a view is especially important for urban and regional policymakers and economic development practitioners. Scott (2006b) notes that entrepreneurs do not exist in a vacuum, and Malecki describes how "the 'environment for entrepreneurship' in a region or locale is a critical part of the entrepreneurial process itself, as well as of the chances for local economic development" (Malecki, 1997, p. 164). Theories focusing on the environment of entrepreneurship highlight interesting debates about the factors influencing the creation of new firms in a metropolitan region. On one hand, research showed how a region's creative milieu supports entrepreneurial development (Lee et al., 2004). Somewhat contrasting is the research on opportunity structures, which highlights the crucial role of tangible factors such as the entrepreneur's access to markets, financial resources, critical capabilities and skills, and institutional support. In the following, we compare the two lines of thinking and highlight each theory's conceptualization of the factors that support a region's ability to foster minority entrepreneurship.

Creative Class and Entrepreneurship

The propensity of new firm formation and entrepreneurship at the regional level is influenced by region's intangible social characteristics or its "social habitat" (Lee et al., 2004). In recent years, the theory of the creative class has received a lot of attention for its explanations of why regions differ in economic growth and success. Florida, the theory's main proponent, postulates that those cities and regions that provide a welcoming and open environment to creative people will benefit economically. The underlying assumption is that creative individuals (ranging from supercreative occupations such as computer programmers, engineers, life scientists, and artists to creative professionals like managers, lawyers, and high-end sales professionals) choose certain places to live because they are tolerant, diverse, and open to creativity, which in turn translates into innovation, job, and new firm creation (Florida, 2002, 2004). Thus, it is argued that the location choice of this creative class in turn leads to regional economic competitiveness.

Florida and others (Lee et al., 2004) expanded creative class theory into the realm of entrepreneurship and found a relationship between new firm formation and a region's cultural creativity (as measured by the concentration of artistic occupations) and diversity (as measured by the concentration of same-sex male unmarried partners). They argue that a region's creativity and diversity "generate entrepreneurial activity" (p. 882) because of lower barriers to entry for human capital and the resulting ideal environment for individuals who might be nascent entrepreneurs. Furthermore, they note that human capital, income change, and population growth rates influence a region's firm formation. Their findings suggest that the regions that are open, tolerant, and creative attract human capital and as a result produce high levels of entrepreneurship (Lee et al., 2004).

A major point of critique is that creative class explanations of entrepreneurship do not address structural opportunities and barriers for minority entrepreneurs. The aforementioned study does not take the varying needs and perspectives of different kinds of entrepreneurs into account. Lee et al. (2004) also demonstrate that firm formation is *insignificantly* related with the percentage of population that is foreign born (melting pot index), also a measure of diversity in Florida's work (2002). They hypothesized that the presence of immigrants has a positive effect on firm formation. Explaining this finding, they argue that their measure does not differentiate between the well-educated and wealthy immigrants and their less-educated and poor counterparts and thus the effect of the index may become negated. Another explanation, however, may be that by overemphasizing the creative milieu as a social habitat of entrepreneurs, the creative class theories fail to take into account the importance of the region's opportunity structures. This may especially be important for those types of entrepreneurs that might be more sensitive to entry barriers. For example, the ability to access financial capital, markets, and gain critical entrepreneurial skills may be more important success factors for minority business owners than merely how hip or cool the region is. Thus, the creative class theories of entrepreneurship do not consider the specific needs of certain types of entrepreneurial groups that may depend on a very different social environment. Women, Black, and Hispanic entrepreneurs might experience a region's social characteristics in very different ways than White business owners.

Creative class theories have been widely criticized and refined (Fainstein, 2005; Markusen, 2006; Peck, 2005; Scott, 2006a; Thomas & Darnton, 2006). Peck notes that a focus on attracting the creative class allows policymakers to follow a neoliberal agenda by diverting their attention away from more difficult policies that address redistribution issues and urban problems (Peck, 2005). Findings about the link between a creative class milieu and entrepreneurship might distract policymakers from a focus on important structural factors that need to be in place to support business owners (i.e., procurement programs, small business loans, etc.). Scott's research indicates that a region's economic system with its networks of producers, suppliers, and customers may play

a more important role in developing creative cities than simply attracting and retaining creative class people (Scott, 2006a). His observation may be especially relevant in studies of regional entrepreneurship because a region's economic structure and the ability of business owners to link into markets can be an important determinant of entrepreneurial success. Rausch and Negrey (2006) also examine the relationship between creative class theories and a region's economic strength or growth. They find that some parts of the creative class theories are indeed related to a region's economic development, primarily that human capital and high technology predict current gross metropolitan product, while immigrants in the population and tolerance predict growth. However, the portion of the population that belongs to the creative class is not related to growth or output. Together these studies point to the role of factors outside of the social milieu or habitat that are important in explaining regional economic growth and entrepreneurship.

Opportunity Structures and Entrepreneurship

Theories explaining the ways in which a region's socioeconomic structure may help or hinder the formation of businesses might be more useful in trying to assess spatial variation in women and minority entrepreneurship. These theories (Aldrich, Carter, Jones, McEvoy, & Velleman, 1985; Aldrich & Waldinger, 1990; Light, 1972) examine the influence of structural constraints, like market conditions, group size, and discrimination. It is generally assumed that push and pull factors as well as contextual factors influence the likelihood and propensity of ethnic and minority entrepreneurship (Basu, 2006). Within the opportunity structures of a region, there may be positive and negative structural factors that influence entry of minority groups into entrepreneurship. For example, the ability to cater to an ethnic enclave (a pull factor) may allow the business owner to access a certain market while difficulties in accessing financial capital and accumulating entrepreneurial skills due to discrimination or labor market segmentation may inhibit business ownership in a region (a structural constraint) or might even encourage self-employment entry (a push factor).

The subset of opportunity structure theories is the disadvantage theory. The theory suggests that becoming an entrepreneur is a survival strategy, particularly when minorities encounter barriers that deny advancement in the formal labor market (Fischer & Massey, 2000). Poor English skills, nontransferable training from the entrepreneur's homeland, limited educational attainment, limited employment opportunities, and discrimination represent some disadvantages immigrant entrepreneurs experience (Light, 1980). To counter them, small business ownership enables an income stream that may be higher than in the formal market. Saxenian has found similar dynamics for immigrant entrepreneurs in Silicon Valley (Saxenian, 2002). Disadvantage theory may also be used to explain women's entry into business ownership. Women often face difficulties in advancing in their corporate careers due to the so-called "glass ceiling" that prevents them from entering high-level executive positions (Fagenson & Jackson, 1993; Weiler & Bernasek, 2001). Factors like the glass ceiling are often considered entrepreneurial push factors rather than pull factors (Orhan & Scott, 2001). For Black entrepreneurs, the period between 1970 and 1980 represented a major transition time with regard to their advantages and disadvantages in the labor and entrepreneurial market. Boyd found that "black workers who became self-employed in 1980 were drawn into independent business enterprise rather than pushed into it by lack of opportunity, as they were in 1970" (Boyd, 1991, p. 423). In 1970, Black entrepreneurs were dependent on niches as a result of racial disadvantages. Starting in the 1980s, however, Black entrepreneurship began to change (Conrad, 2005).

In contrast to disadvantage theories that describe push factors, theories that focus on pull factors examine why certain groups of people are more likely to enter self-employment than others. Cultural theories, for example, suggest that cultural elements such as shared beliefs, values, and

norms will increase the likelihood of members engaging in entrepreneurial activities (Fischer & Massey, 2000, p. 409). Basu reviews Sombart's observations of Jewish entrepreneurialism and Weber's treatment of the Protestant work ethic and its implications for entrepreneurship (Basu, 2006). These elements could be factors that are inherent in the member's culture (so-called orthodox cultural theory) or a response of the member's immigrant status in society (reactive theory). The reactive variant of the theory incorporates a community element and takes the concepts beyond the individual entrepreneur. Light (1980), for example, distinguishes between individual and collective actions and determines that entrepreneurial success also depends on the engagement of the individual in the group. Thus, the group, or the broader regional economy in which the entrepreneur acts, may influence the business owner, suggesting that a region's support infrastructure is critical for entrepreneurial success (Malecki, 1997).

One type of support infrastructure is the network. The ways in which minority entrepreneurs engage in formal and informal networks to gain important information and knowledge are different from other types of entrepreneurs. Women entrepreneurs, for example, are engaged in different types of social networks than their male counterparts. Women's networks differ from men's networks in terms of their activity level, density, and with whom they network (Aldrich, 1989; Aldrich, Reese, & Dubini, 1989). Women, for example, have fewer men and more women in their networks. These social network differences may translate into certain spatial business location patterns. Women-owned high-technology firms, for example, exhibit different types of spatial location patterns and those firms that are located in the high-technology core of regions like Silicon Valley perform better than those in decentralized locations (Mayer, Forthcoming). This may be the result of different opportunities to engage in the high-technology community due to residential spatial location.

Speaking specifically to immigrant entrepreneurs and their networks, the middleman minority theory suggests that immigrant groups "occupy the structural position of middlemen" (Fischer & Massey, 2000, p. 409) in narrow economic niches with high solidarity within groups, but ignoring connections to the host society. They are likely to be self-segregated, insulated, and save monies for future investments (Bonacich, 1973). This theory suggests that the entrepreneur is isolated from the broader regional environment and may not receive the necessary support that a region may be able to offer them. The theory may also imply that the process of self-segregation further distances the entrepreneur from the mainstream society to the point that the cultural/creative milieu might not help the entrepreneur. In the case of women, segmentation patterns are observed from both a social network and a geographic perspective. Hanson and Pratt (1988, 1991) argue that the labor market for women is characterized by spatial segmentation, which may influence women business ownership.

Market access can also play an important role as a structural factor. It is assumed that ethnic and minority entrepreneurs cater to the demands of their enclave. The entrepreneur understands this market's tastes, preferences, and language. Typically, residential concentration (or also regional concentration) of the same group helps, but the drawback is that this may be a limited growth market, with high business turnover and greater risk of failure because such specialized goods and services may have limited appeal outside of the enclave. In addition, an area's concentrated poverty can further limit demand and heighten effects of economic downturns (Massey & Denton, 1993). Entrepreneurial firms are more prosperous when supplanting sectors that majority firms have abandoned and where economies of scale are low, demand fluctuates greatly, and/or the goods and services are unusual or specialized (Aldrich & Waldinger, 1990).

Various other structural factors such as financial capacity, skills, and institutional support are important structural determinants. It is suggested that the propensity toward entrepreneurship—especially among disadvantaged groups—depends on personal, household, and structural factors, as well as human and social capital factors (Bates, 1997, 2006). Bates notes that "viable small businesses capable of expanding their operations and generating jobs commonly possess three

traits: (1) involvement of skilled and capable entrepreneurs who have (2) access to financial capital to invest in their business ventures, and (3) access to markets for the products of their enterprises" (Bates, 2006, p. 231). In earlier work, Bates highlights the importance of a similar set of variables to business success: human capital, financial resources, and institutional support. Institutional support or assistance can take the form of government set asides, procurement programs, or venture capital from the private sector. A region's environment may offer the entrepreneurs better or worse opportunities for gaining skills and capabilities, market access, financial resources, and institutional support. A region may also develop policies and strategies that offer opportunities and lower entry barriers to minority entrepreneurs.

WHAT MATTERS? CREATIVE CLASS VERSUS OPPORTUNITY STRUCTURES

The review of the literature illustrates an interesting debate between those theories that highlight the importance of structural forces operating at the regional level that may help or hinder entrepreneurs and theories that describe intangible characteristics such as a region's creative and cultural milieu. For the purpose of this research, creative class theories suggest that the level of business ownership by women, Hispanics, and Blacks will be higher in those regions that have a social habitat that is characterized by creativity, diversity, and the high levels of human capital and innovation that these characteristics attract. In contrast, opportunity structure theories postulate that entrepreneurship in these groups will be higher in regions that afford greater opportunity in accessing financial resources, markets, entrepreneurial capabilities, and skills, where ethnic and minority groups are integrated throughout the metropolitan population, and offer greater institutional support. The debate between opportunity structure and creative class lies at the heart of the critique of Florida's argument. It is important to know whether it matters more if a region is cool and hip or whether a region provides tangible support and low structural barriers for various types of entrepreneurs and in particular for women and minority business owners. Developing a creative milieu might be more difficult to achieve for urban planners and policymakers than developing programs and policies that facilitate market access, provide capital resources, or contribute to education and skill development.

WHAT DO WE KNOW ABOUT WOMEN, HISPANIC, AND BLACK BUSINESS OWNERS?

As mentioned earlier, the groups discussed represent business owners that have traditionally not been in the spotlight. Women business owners are often concentrated in female-typed industry sectors such as retail, personal services, or education (Loscocco & Robinson, 1991). Increasingly, however, women enter nontraditional sectors such as high technology, construction, and manufacturing. This new generation of women entrepreneurs brings with them work experiences, financial capital, and other capacities that they gained throughout their work histories, and they see entrepreneurship as a viable career option (Brush, 1997; Brush et al., 2004). The trend in women entrepreneurship is a reflection of broader developments of the extent and nature of women's labor force participation (Goldin, 2006; Goldin, Katz, & Kuziemko, 2006). Women are also mobilizing institutional support in form of networking and social capital through groups such as Women in Technology International (WITI) or Ladies Who Launch (Ladies Who Launch, 2007; WITI, 2007).

The trends in Black entrepreneurship are similar to those for women. Bates notes that "traditional Black businesses catered to a minority clientele, tended to be small, generated few jobs, and were rarely owned by college graduates" (Bates, 2006, p. 230). He further notes that Blacks typically owned businesses in personal services and retail, which is similar to the historical pattern for women entrepreneurs. Black-owned businesses were located in Black residential areas

and served neighborhood clientele, a pattern that fits the middleman minority theory (Bonacich, 1973). Historically, constraints on educational opportunities and social attitudes limited Black entrepreneurship. This, as Bates argues, has changed and the Black business community looks very different from the past. Boston and Ross (1997) find that this new generation of Black entrepreneurs (using the case of Atlanta, Georgia) are now represented in fields such as finance, business, and professional services. Boston attributes this shift to the fact that Blacks "accumulated a greater endowment of experiences, skills, and human capital attributes that are associated with successful self-employment activity" (Boston, 2005, p. 374). Even though Black entrepreneurs have seen these changes, they are still disadvantaged. Robb and Fairlie (2006) note their lower sales, smaller payrolls, lower profits, and higher closure rates, and Blanchflower et al. (2003) find that Blacks experience racial discrimination in credit availability.

There is less research about Hispanic entrepreneurship patterns. Hispanics, like Blacks, are less likely to own firms than Whites (Lofstrom & Wang, 2006), even though Hispanics are the fastest growing ethnic group in the United States, and business ownership grew three times faster than the national average for all businesses between 1997 and 2002 (U.S. Census, 2006a). Hispanic business owners are generally overrepresented in industries with lower educational attainment levels and business equity (Lofstrom & Wang, 2006), such as construction and other services like personal services and repair and maintenance. The concentration in these types of industries may be a reflection of employment patterns and the opportunity Hispanics have to accumulate specialized skills and knowledge of the sectors.[4] Among the entrepreneurial groups examined here, Hispanic entrepreneurs are more likely to fit the reactive cultural, middleman minority, and/or disadvantage theories because of their immigrant status and the associated disadvantages. Research, however, has shown that immigrants integrate over time. For example, in Washington, DC, and Maryland, Hispanic businesses are entering nontraditional sectors in response to government procurement opportunities (Williams & Kang, 2006).

EXPLAINING VARIATION IN ENTREPRENEURSHIP

We examine the effects of the regional urban environment on entrepreneurship for women, Black, and Hispanic businesses. In particular, we are interested in understanding how the creative class and opportunity structure theories can help explain how regional social, cultural, and economic characteristics affect different types of owners' entrepreneurial ventures. We examine the effects of these theories on the industry intensity of each type of ownership; that is, we separately model the effects of regional creative class attributes and opportunity structures on all women-owned firms, all Black-owned firms, and all Hispanic-owned firms in the 50 most populous metropolitan areas (MSAs), according to the 2000 Census.[5] To compare the impact of these different business owners from a metropolitan perspective, we do not use the count of firms. Instead, for each type of business ownership, we adjust the total number of firms for its MSA population; that is, we divide the total number of women-, Hispanic-, or Black-owned firms in each MSA by the total MSA population (in thousands) to create three distinct dependent variables. The data for business ownership are derived from the 2002 Economic Census of SBO,[6] as reported in August 2006.[7]

The SBO defines firm ownership based on 51% or more of its stock or equity in the hands of a single owner. For example, a woman-owned firm in this data set is a business of which a woman owns 51% or more of its stock or equity. We choose to include all firms whether they have employees or not to fully account for entrepreneurship in the region. Summary statistics for the three measures of industry intensity by type of ownership indicate not only the magnitude of ownership overall but also hint at some regional variation (Table 4). For example, in the sample of the 50 largest MSAs, the mean industry intensity of women-owned firms is about 24 firms per

TABLE 4

Summary Statistics

Variable	Observed	Mean (* denotes mode)	SD	Minimum	Maximum
Industry intensity of women-owned firms, employer and nonemployer	50	0.024	0.004	0.017	0.036
Industry intensity of Black-owned firms, employer and nonemployer	50	0.005	0.004	0.001	0.015
Industry intensity of Hispanic-owned firms, employer and nonemployer	48	0.006	0.007	0.001	0.041
Women's earnings as a percentage of men's	50	53.970	3.250	46.610	61.290
Average size of establishment in metro	50	13.810	1.860	9.800	17.720
Industry intensity of all metro establishments	50	0.032	0.004	0.020	0.040
Percentage of women of total officials and managers	50	39.840	1.710	36.170	44.180
Presence of entrepreneurial networking or social capital building opportunities	50	0*	N/A	N/A	N/A
Black household aggregate income relative to White	50	0.120	0.083	0.010	0.400
Average sales and receipts of Black-owned firms (thousands)	43	87.190	32.789	42.070	190.960
Percentage of Black of total officials and managers	50	7.490	4.780	1.020	18.770
Integration index	50	0.520	0.148	0.150	0.790
Hispanic household aggregate income relative to White	50	0.080	0.092	0.010	0.410
Percentage of Hispanic of total officials and managers	50	5.540	6.510	0.570	30.290
Percentage of workforce in supercreative core	50	0.120	0.033	0.038	0.210
Melting pot index	50	0.120	0.102	0.023	0.510
Percentage of population with bachelor's degree or higher	50	0.270	0.054	0.160	0.420
Tech pole index	49	1.880	3.694	0.060	23.690
Aggregate earnings per person	50	18,951.650	2,878.770	14,077.010	27,792.630
Percentage of population change	50	17.250	15.078	−1.600	85.500
Percentage of workforce in creative class	50	0.310	0.044	0.170	0.420
Percentage of nonwhite	50	0.270	0.105	0.105	0.510
Percentage of Hispanic population with bachelor's degree or higher	50	0.147	0.057	0.060	0.320

1,000 people. The Buffalo-Niagara Falls, New York MSA, with only 17 firms per 1,000 people, has the lowest concentration, and the Miami-Ft. Lauderdale MSA, with 36 women-owned firms per 1,000 people, has the highest. In comparison, the mean industry intensity of Black-owned firms is considerably lower at approximately 5 firms per 1,000 people. The Salt Lake City-Ogden, Utah MSA, with 0.4 firms per 1,000 people, has the lowest concentration, but a Southern MSA, the Atlanta-Sandy Springs-Marietta, has the highest concentration with 15 firms for every 1,000 people. Finally, the mean industry intensity of Hispanic-owned firms is similar to that found with Black ownership at about 5.5 firms per 1,000 people. Hispanic ownership is also higher in a metropolitan area known for its Hispanic population with Miami-Ft. Lauderdale having 41 firms per 1,000 people in comparison to the Memphis MSA with only 0.6 firms per 1,000 people. The variation suggests that the regional urban environment should have consequence for different types of entrepreneurship.

Our analysis of creative class theories examines whether these entrepreneurs benefit from the regional social characteristics that define the creative class: human capital, social diversity, and creativity—or commonly referred to as the "creative class" milieu—where tolerance of a region encourages innovation from different types of business owners. More specifically, we model the creative class regional effects by its stated dimensions of creativity, diversity, human capital, high-tech innovation, while controlling for income and population growth rates on each type of industry intensity (women, Black, and Hispanic). We measure these concepts in the same manner and utilize the same data sources as past creative class studies have used, with all data from 2000, as reported by Florida (2002). However, the creative class independent variables deserve further explanation (see Table 5 for details on measurement and sources).

In particular, we measure three of the creative class concepts somewhat differently in each of the industry intensity models due to high levels of multicollinearity. We employ a series of statistical tests to determine robustness of each and make the following adjustments. To measure the effect of creativity, we utilize the percentage of the workforce classified as supercreative in the models for women and Hispanics industry intensities, but the percentage of the workforce classified as creative class in the model for Black industry intensity. The creative class is defined as "purveyors of creativity," including occupations such as scientists, engineers, architects, designers, writers, artists, and musicians. Florida also includes people who use creativity as a key factor in their jobs and work in business, education, health care, law, and other professions. Florida estimates that there are 38 million members of this creative class, making up over 30% of the nation's workforce (Florida, 2004, p. ix). In comparison, the supercreative core is a subset of the creative class, composed of scientists, engineers, university professors, poets, novelists, artists, entertainers, actors, designers, architects, editors, think tank researchers, and other "creative" occupations. Florida collectively defines the supercreative core as those who are "producing new forms or designs that are readily transferable and widely useful" (Florida, 2004). Consequently, both measures capture Florida's idea of creativity.

We make similar adjustments to the concept of diversity in a metropolitan population. We utilize the melting pot index, which is the relative percentage of foreign-born population in a region, for the women and Hispanic models, but the percentage of the population that is nonwhite for the model of Black industry intensity. The rationale for this concept is that "diversity and creativity work together to power innovation and economic growth" (Florida, 2004, p. 262). In Florida's original work (2000, 2002) both measures capture this concept. The measurement of human capital also differs among the models of industry intensity. The measure of human capital is college attainment, or the percentage of the population with a bachelor's degree or higher. For the women and Black models, we utilize college attainment for the entire metropolitan population; however, for the Hispanic model of industry intensity, it utilizes Hispanic college attainment. Again, these adjustments were to correct for high levels of multicollinearity, but the selection of the variable for each concept is representative of other empirical research examining the creative class.

TABLE 5

Concepts, Variables, and Data Sources

Concept	Variable	Opportunity structures model	Creative class model	Source
Dependent variables	Industry intensity of women, Black, or Hispanic-owned firms	X	X	Survey of Business 2002
Creativity	Percentage of workforce creative class		X	See Florida (2002). Data from Bureau of Labor Statistics, Occupational Employment Survey 2000, based on 1998 Standard Occupation Classification system.
	Percentage of workforce supercreative core		X	See above for creative class source.
Diversity	Percentage of nonwhite population		X	Stolarick and Florida, U.S. Census 2000.
	Integration index		X	See Florida (2002), measures the racial/ethnic make-up of census tracts in an MSA compared to racial/ethnic composition of MSA as a whole. See note 1 below.
	Melting pot index		X	See Florida (2002), measures relative percentage of foreign born people in region, 1990 U.S. Decennial Census Public Use Microdata Sample.
Human capital	College educational attainment		X	U.S. Census Summary File 3
Innovation	Tech pole index		X	See Devol and Wong (1999). See note 2 below.
Income	Aggregate earnings per person in metro		X	U.S. Census Summary File 3
Population change	Percentage of population change		X	U.S. Census Summary File 3

TABLE 5

Continued

Concept	Variable	Opportunity Structures Model	Creative Class Model	Source
Financial resources	Percentage of Black or Hispanic household aggregate income as a percentage of white household aggregate income	X		U.S. Census Summary File 3
	Women's earnings as a percentage of men's earnings	X		U.S. Census Summary File 3
Market access	Average business sales and receipts	X		Survey of Business 2002 by women, Black, Hispanic
	Industry intensity	X		Survey of Business 2002 by women, Black, Hispanic
	Average firm size	X		Survey of Business 2002 by women, Black, Hispanic
Entrepreneurial skills	Percentage in management positions	X		Census 2000 Special EEOC File. See note 3 below.
Integration	Integration index	X		Same as above. See note 1 below.
Institutional support	Presence of entrepreneurial networking or social capital building opportunities	X		Measures presence of ladies who launch events and women in technology international chapters in MSA. See note 4 below.

Note: (1) Integration index is 1 minus a segregation index, which is: (1/2) SUM (REi/RE − wi / W; where REi = the racial/ethnic population of the *i*th census tract, RE = the total racial/ethnic population of the MSA, wi = the white population of the *i*th census tract, and W = the total white population of the MSA. Then the index measures the segregation of whites from racial/ethnic minorities. The summation is over the component census tracts. (2) Tech Pole Index is based on two factors, the region's high-tech industrial output as a percentage of the total of the U.S. high-tech industrial output; and the percentage of the region's own total economic output that comes from high-tech industries compared to the nationwide percentage. This composite index is equivalent to the percentage of national high-tech real output multiplied by the high-tech real output location quotient for each metro. The location quotient (LQ) equals the percentage of output in the region divided by the percentage of output in the United States. If the LQ > 1.0, the industry is more concentrated in the region than in the United States on average. (3) Data from Census 2000 Special EEO File can be found at: http://www.eeoc.gov/stats/census/availability.html. We collected the data for counties using the same methodology as described for business ownership in endnote 7 to aggregate the data to the Survey of Business Owners' MSA definition. (4) See http://www.ladieswholaunch.com/incubator-joininfo.cfm, and http://www.witi.com/center/aboutwiti/.

One other concept of importance to creative class theories is the measure of innovation. Florida predicts that creative and diverse regions should have greater rates of innovation. We employ the same measure of innovation for each model as suggested by Florida (2002), which is the Milken Institute's Tech Pole Index (DeVol & Wong, 1999). The index attempts to quantify how "high tech" a region's economy is. It is calculated by multiplying the percentage of national high-tech real output by the high-tech location quotient for each MSA.

In juxtaposition to creative class theories, we also examine the effect of regional opportunity structures on women, Black, and Hispanic industry intensities to determine how each of the ownership types varies with respect to a set of variables derived from the literature discussed above. Those are: metropolitan financial resources, institutional support, market access, entrepreneurial skills, and segregated metropolitan populations. Given that opportunity structures are individual in nature, we adjust financial resources and entrepreneurial skills in each model for the type of business owner—women's, Hispanic, and Black relative earnings or percentage in management positions. However, due to similar issues with multicollinearity, we model the effect of market access differently across the three models. Three variables attempt to capture the effect of market access: average size of all establishments in the metropolitan area (used in the women and Hispanic models), industry intensity of all metropolitan establishments (also in the women model), and average business sales and receipts (used only in Black model). Our comparison of creative class and opportunity structures theories for 50 MSAs compels us to concentrate on the essential factors proposed by each set of theories due to issues with the degrees of freedom; thus, we do not include some concepts that are often in business location analysis, like transportation costs, in our empirical analysis because they are not relevant to our theories of interest.

As indicated in the literature on opportunity structures, we also examine a metropolitan area's institutional support, or the creation of networks and social capital. Given the difficulty in measuring these concepts, we only examine this variable for women entrepreneurs. Our institutional support variable reflects the presence (or lack thereof) of organizations that assist women business owners. For this research, we documented the metropolitan areas that had "Ladies Who Launch" events and/or a "Women in Technology International" (WITI) chapter.[8] From these data, we developed an ordinal dummy variable ranging from values of zero to two in order to reflect whether or not the metropolitan area hosts "Ladies Who Launch" events and/or has a WITI chapter. Although the modal category for presence of networking and social capital is zero (40% of the MSAs neither hosted a Ladies Who Launch Event or had a WITI chapter), 60% of the metros in our sample hosted a Ladies Who Launch event and/or had a WITI chapter (34% had one and 26% had both), noted as a value of one for the dummy variable.

We report the summary statistics for all dependent and independent variables that represent regional creative class milieu and opportunity structures we test in Tables 4–5, which provides greater detail on each of the variables, including the sources of these data and the model in which the variables appear. We report the bivariate relationships among the independent and dependent variables for creative class and opportunity structures in Table 6. However, our understanding of the regional environment's influence on entrepreneurship from a gender, race, and ethnicity perspective cannot solely rely on these bivariate relationships because of the interdependent and integrated nature of this environment. Thus, we test creative class theories and opportunity structures separately for women-, Hispanic-, and Black-owned businesses for a total of six regression models to predict industry intensity for each owner type. These methods enable us to determine how metropolitan areas can affect the existence of firms relative to the region's population. We estimate the regression models with OLS, using White's standard errors correction for heteroskedasticity where appropriate.[9] The final results show no evidence of serial correlation based on the Durbin Watson test statistics, and condition indices and variance decomposition proportions indicate that a minimal but acceptable level of multicollinearity exists due to the

TABLE 6

Correlation Matrices

Creative Class Regression Models:

Women-Owned Businesses

Variable	Industry intensity of women-owned firms, employer and nonemployer	Percentage of workforce in super-creative core	Melting pot index	College educational attainment (male and female)	Tech pole index	Aggregate earnings per person in metro	Percentage of population change
Industry intensity of women-owned firms, employer and nonemployer	1						
Percentage of workforce in supercreative core	0.180	1					
Melting pot index	0.647**	0.163	1				
College educational attainment (male and female)	0.508**	0.726**	0.298*	1			
Tech pole index	0.163	0.515**	0.480**	0.550**	1		
Aggregate earnings per person in metro	0.469**	0.618**	0.346*	0.900**	0.629**	1	
Percentage of population change	0.296*	−0.184	0.172	−0.061	−0.004	0.020	1

Hispanic-Owned Businesses

Variable	Industry intensity of hispanic-owned firms, employer and nonemployer	Percentage of workforce in super creative core	Melting pot index	College educational attainment (Hispanic)	Tech pole index	Aggregate earnings per person in metro	Percentage of population change
Industry intensity of Hispanic-owned firms, employer and nonemployer	1						
Percentage of workforce in supercreative core	−0.015	1					
Melting pot index	0.782**	0.163	1				
College educational attainment (Hispanic)	−0.210	0.059	−0.347*	1			
Tech pole index	0.116	0.515**	0.480**	−0.180	1		
Aggregate earnings per person in metro	−0.116	0.618**	0.346*	−0.022	0.629**	1	
Percentage of population change	0.232	−0.184	0.172	−0.350*	−0.004	0.020	1

Continued

TABLE 6

Continued

Black-Owned Businesses

Variable	Industry intensity of Black-owned firms, employer and nonemployer	Percentage of workforce in creative class	Percentage of nonwhite	College educational attainment (male and female)	Tech pole index	Aggregate earnings per person in metro	Percentage of population change
Industry intensity of Black-owned firms, employer and nonemployer	1						
Percentage of workforce in creative class	0.091	1					
Percentage of nonwhite	0.588**	0.158	1				
College educational attainment (male and female)	0.042	0.888**	0.143	1			
Tech pole index	−0.088	0.539**	0.378**	0.550**	1		
Aggregate earnings per person in metro	0.077	0.795**	0.207	0.900**	0.629**	1	
Percentage of population change	−0.011	−0.293*	0.033	−0.061	−0.004	0.020	1

Opportunity Structures Regression Models:

Women-Owned Businesses

Variable	Industry intensity of women-owned firms, employer and nonemployer	Women's earnings as a percentage of men's earnings	Average size of establishment in metro	Industry intensity of all metro establishments	Percentage of women of total officials and managers	Integration index	Presence of entrepreneurial networking or social capital building opportunities
Industry intensity of women-owned firms, employer and nonemployer	1						
Women's earnings as a percentage of men's earnings	0.059	1					
Average size of establishment in metro	−0.332*	0.106	1				
Industry intensity of all metro establishments	0.742**	0.005	−0.237	1			
Percentage of women of total officials and managers	0.170	0.686**	0.115	−0.004	1		
Integration index	−0.153	−0.068	0.171	0.026	0.053	1	
Presence of entrepreneurial networking or social capital building opportunities	0.440**	−0.003	−0.099	0.429**	0.095	−0.164	1

TABLE 6

Continued

Hispanic-Owned Businesses

Variable	Industry intensity of Hispanic-owned firms, employer and nonemployer	Percentage of hispanic household aggregate income as a percentage of white's	Average size of establishment in metro	Percentage of Hispanic of total officials and managers	Integration index
Industry intensity of Hispanic-owned firms, employer and nonemployer	1				
Percentage of Hispanic household aggregate income as a percentage of White's	0.866**	1			
Average size of establishment in metro	−0.294*	−0.190	1		
Percentage of Hispanic of total officials and managers	0.933**	0.966**	0.200	1	
Integration index	−0.372**	−0.359***	0.171	−0.323*	1

Black-Owned Businesses

Variable	Industry intensity of Black-owned firms, employer and nonemployer	Percentage of Black household aggregate income as a percentage of white's	Average sales and receipts of Black-owned firms	Percentage of Black of total officials and managers	Integration index
Industry intensity of Black-owned firms, employer and nonemployer	1				
Percentage of Black household aggregate income as a percentage of White's	0.878**	1			
Average sales and receipts of Black-owned firms	−0.426**	−394**	1		
Percentage of Black of total officials and managers	0.900**	0.990**	−0.392*	1	
Integration index	−0.653**	−0.588**	0.334*	−0.606**	1

Note: *Correlation is significant at the 00.05 level (2-tailed). **Correlation is significant at the 00.01 level (2-tailed).

variable substitutions discussed above.[10] In the following sections, we discuss of the results of women, Hispanic, and Black business ownership within the context of the regional creative class and opportunity structures theories. We begin with a comparison of the results for women business ownership (Table 7) and continue in a similar fashion for Hispanic (Table 8) and Black (Table 9) business ownership.

WOMEN ENTREPRENEURSHIP

The Creative Regional Milieu for Women

In examining the effect of a region's creative and cultural milieu on women business ownership, we uncover how these intangible characteristics of a region may support women entrepreneurship. The creative class model for the industry intensity of women-owned firms (Table 7) indicates that metropolitan areas with more women-owned firms relative to their population are more likely those where the percentage of foreign born (melting pot index) is greater, percentage of the population with a bachelor's degree or higher (educational attainment or "human capital") is greater, the economy is less "high-tech" (tech pole index), and there has been population growth.

Of the creative class theoretical predictions, only diversity and human capital have the expected relationship to female entrepreneurship. The role of diversity in the region, as the melting pot index depicts, plays a strong role in explaining the intensity of women-owned businesses. Unlike the findings of Lee et al. (2004) with regard to overall MSA entrepreneurship, this diversity measure indicates that the tolerance of these places is important for female entrepreneurs. Educational attainment, or the human capital of a region, also has a significantly positive effect on the dependent variable. This is to be expected given the findings by Goldin (2006) that women have changed their educational enrollment from majors focused on consumption to those focused on investment today, and women have surpassed their male counterparts in terms of educational attainment. However, the tech pole innovation measure has a significantly negative effect. This result, in addition to the insignificant effect of the supercreative workforce presence, may reflect a structural fact in the U.S. economy. That is, high-tech firms—often capital-intensive industries—and their supercreative core occupations—scientists and engineers—are often male-dominated (Massey, 1995). Perhaps an occupational definition to portray creativity is too restrictive, particularly in relation to gender and business ownership. Analysis of the Current Population Survey in 2000 data on self-employed individuals indicates that men are more likely to be in technical occupations and in industries more high-tech in nature.[11] Some traditional occupations for women in education and health services, like a home-care worker dealing with clients, are not captured in the definition of creative class jobs, but require just as much creativity in addressing patient needs (Markusen, 2006).

Of the control variables in the model, income (aggregate earnings per person) is insignificant, but metropolitan areas with greater population change are churning business growth. Growth in population requires the building of roads, schools, and general services, with established business growth following. Population growth's effect also makes intuitive sense given the positive effect of the melting pot index. Growing areas are often the home to the first wave of immigration. It may indicate that regional growth provides potential for additional nontraditional entrepreneurship, especially when it comes to opening businesses in the service and retail sectors where women have traditionally been concentrated as business owners.

In regard to how a region's creative and cultural milieu affects women business ownership, only diversity and human capital are important. The insignificance of creativity and innovation indicates that there are still structural economic impediments. Florida (2002) also recognizes this when he qualifies the effect of diversity on regional growth.

TABLE 7

OLS Analysis: Women-Owned Business Industry Intensity by Creative Class and Opportunity Structures Theories

Creative class			Opportunity structures		
Concept	Variable	B Coefficient	Concept	Variable	B Coefficient
	Constant	0.0092*** (0.0029)		Constant	−0.0096 (0.0093)
Creativity	Percentage of workforce super creative core	−0.0184 (0.01)	Financial resources	Women's earnings as a percentage of men's	−0.0144 (0.0164)
Diversity	Melting pot index	0.0243*** (0.0044)	Market access	Average size of establishment in metro	−0.0003* (0.0002)
Human capital	College educational attainment (male & female)	0.0494*** (0.0153)	Entrepreneurial skills	Industry intensity	0.6874*** (0.1589)
Innovation	Tech pole index	−0.0047*** (0.0001)	Integration	Percentage of women in management positions	0.0632** (0.0306)
Income	Aggregate earnings per person in the metro	1.31E−08 (2.86E−07)	Institutional support	Integration index	−0.0036* (0.0021)
Population change	Percentage of population change	5.06E−05* (2.74E−05)		Presence of entrepreneurial networking or social capital building opportunities	0.0004 (0.0005)
	Adjusted *R*-squared	0.6859		Adjusted *R*-squared	0.6016
	F-statistic	18.4774***		*F*-statistic	13.3321***

Note: Significance levels ***at 0.01, **at 0.05, and *at 0.10. Standard errors of the unstandardized coefficients are in parentheses.

TABLE 8

OLS Analysis: Hispanic-Owned Business Industry Intensity by Creative Class and Opportunity Structure Theories

	Creative class			Opportunity structures	
Concept	Variable	B Coefficient	Concept	Variable	B Coefficient
	Constant	0.0123**		Constant	0.0250***
		(0.0052)			(0.0040)
Creativity	Percentage of workforce super creative core	0.0512**	Financial resources	Percentage of hispanic household aggregate income as a percentage of White's	−0.0610***
		(0.0234)			(0.0130)
Diversity	Melting pot index	0.0708***	Market access	Average size of establishment in metro	−0.0010***
		(0.0072)			(0.0000)
Human capital	College educational attainment (Hispanic)	0.0188*	Entrepreneurial skills	Percentage of Hispanic in management positions	0.1670***
		(0.0153)			(0.0160)
Innovation	Tech pole index	−0.0003*	Integration	Integration index	−0.0130***
		(0.0001)			(0.0040)
Income	Aggregate earnings per person in the metro	−1.32E−06***			
		(3.66E−07)			
Population change	Percentage of population change	8.07E−05**			
		(4.05E−05)			
	Adjusted *R*-squared	0.8047		Adjusted *R*-squared	0.9170
	F-statistic	32.5943***		*F*-statistic	130.1540***

Note: Significance levels ***at 0.01, **at 0.05, and *at 0.10. Standard errors of the unstandardized coefficients are in parentheses.

TABLE 9

OLS Analysis: Black-Owned Business Industry Intensity by Creative Class and Opportunity Structures Theories

Creative class			Opportunity structures		
Concept	Variable	B Coefficient	Concept	Variable	B Coefficient
	Constant	0.0103* (0.0053)		Constant	0.0027* (0.0015)
Creativity	Percentage of workforce creative class	−0.0257 (0.0211)	Financial resources	Percentage of Black households aggregate income as a percentage of White's	−0.0334* (0.0194)
Diversity	Percentage of nonwhite population	0.0246*** (0.0045)	Market access	Average Black-owned business sales and receipts	−7.88E−06 (7.65E−06)
Human capital	College educational attainment (male & female)	−0.0195 (0.0184)	Entrepreneurial skills	Percentage of Black in management positions	0.1176*** (0.0347)
Innovation	Tech pole index	−0.0005*** (0.0001)	Integration	Integration index	−0.0036* (0.0019)
Income	Aggregate earnings per person in the metro	3.57E−07 (3.51E−07)			
Population change	Percentage of population change	7.89E−07 (3.28E−05)			
	Adjusted *R*-squared	0.4430		Adjusted *R*-squared	0.8295
	F-statistic	7.3621***		*F*-statistic	52.0766***

Note: Significance levels ***at 0.01, **at 0.05, and *at 0.10. Standard errors of the unstandardized coefficients are in parentheses.

> While the Creative Class favors openness and diversity, to some degree it is a diversity of elites, limited to highly educated, creative people. Even though the rise of the Creative Class has opened up new avenues of advancement for women and members of ethnic minorities, its existence has certainly failed to put an end to the long-standing divisions of race and gender. Within high-tech industries in particular these divisions still seem to hold. (pp. 79–80)

Consequently, the importance of economic structure and power relationships may be displaying such an effect in this model of women-owned businesses.

Regional Opportunity Structures for Women

Moving from the intangible characteristics to the aggregate opportunity structures of a region, we find the presence of several structural forces operating at the regional level that may help or hinder female entrepreneurs. The opportunity structures model for the industry intensity all women-owned firms (Table 7) indicates that metropolitan areas with more women-owned firms relative to their population are more likely those where more women are employed as managers and the area is less integrated. In regard to market access, on average, larger intensities of women-owned firms occur in metropolitan areas where there are lower barriers to entry with the average firm having fewer employees, yet there are a large number of all firms in the economy relative to the metropolitan population (industry intensity). This model provides a better understanding of the dynamics facing a woman business owner that may be low-tech or less creative, as the region itself may be.

A region's entrepreneurial capacity (as measured by the presence of women in managerial, official, and professional positions) has a strong effect on women-owned industry intensity. Metropolitan areas with higher percentages of women in professional and management positions have significantly greater representation of women-owned firms relative to their population. This suggests that metropolitan areas have greater female entrepreneurship when women have greater opportunities to gain entrepreneurial skills and capabilities through experience in management positions. This is particularly interesting given the effect of women's earnings. Surprisingly, access to financial resources (female earnings relative to male) is not relevant to the intensity of women-owned businesses; as we describe later, although insignificant, the negative sign that represents the sample is repeated for Black and Hispanic models. Personal earnings may only be part of the financial support that an entrepreneur needs to begin and sustain a business; as we work further on these relationships, collection of data for other financial instruments (loans, grants, and wealth as measured by homeownership) may engender results that support the theory. In fact, for women, we were able to collect a measure to proxy other types of support, particularly social capital and entrepreneurial networking. However, metropolitan areas with organizations that provide entrepreneurial assistance as well as networking opportunities did not have a significant effect, but for the sample, areas with more support had greater firm intensity of women-owned businesses. Female entrepreneurs, not unlike other entrepreneurs, may benefit from groups that provide training but also offer critical networking opportunities.

The opportunity structures model for women business ownership suggest that beyond an environment that is open to women advancing in the workplace into management, the size and scope of the existing market structure can greatly affect the presence of such firms.

Overall, we see that both theories impart explanations of female entrepreneurship. Regions that provide opportunity are vital, particularly on the demand side of market. The Fulton (2007) recently suggested that a city's responsibility should be to take a more "risky" role in funding businesses that need the most help given governments' desires to enter the venture capital market. We discuss some cities' attempts to increase the number and the performance of minority-owned

firms in our conclusion as they are relevant to each group of entrepreneurs. However, the creative class model suggests that the supply side is also critical in terms of human capital and diversity.

HISPANIC ENTREPRENEURSHIP

The Creative Regional Milieu for Hispanics

For Hispanic business owners, the effect of a region's creative and cultural milieu is more varied than for women (Table 8). Metropolitan areas with more Hispanic-owned firms relative to their population are more likely those where the supercreative core has a greater presence in the workforce, the percentage of foreign born (melting pot index) is greater, the percentage of Hispanics with a bachelor's degree or higher ("ethnic human capital") is greater, the economy is less "high-tech" (tech pole index), aggregate earnings per person are smaller, and there has been population growth.

The same regional environment that supports the Hispanic population in attaining college and graduate degrees creates the milieu that enables business start-ups. These regions are diverse and open to foreign-born populations, possibly indicating market related enclave and preference effects. Again, these are metropolitan areas that are experiencing population growth. However, they are in regions where the income is not a positive factor, suggesting again that earnings are only part of the business ownership financial requirements. Yet, it may also reflect that it does not matter how rich or poor a region is, rather it is more about how the economy is organized. Hispanic business ownership is heavily prevalent in the construction- and service-oriented industries (Lofstrom & Wang, 2006). In fact, an interpretation of the positive effect of the supercreative core workforce in conjunction with the other independent variables may be that the Hispanic businesses are supporting the needs of the supercreative core's service economy as they are more likely to enter low barrier industries (Lofstrom & Wang, 2006, p. 17). Thus, the business structure of the economy may be more important than creativity and innovation.

Regional Opportunity Structures for Hispanics

The effects of regional opportunity structures on Hispanic business owners are similar to that found for women, with the exception of financial resources (Table 8). Metropolitan areas with more Hispanic-owned firms relative to their population are more likely those where more Hispanics are employed as managers, less access to financial resources (Hispanic household earnings as a percentage of White's) exists, and the area is less integrated. In regard to market access, on average, larger intensities of Hispanic-owned firms occur in metropolitan areas where there are lower barriers to entry with the average firm having fewer employees.

This model indicates that financial resources are a barrier, not an opportunity as the theory would predict. And in comparison to women, the significantly negative effect of personal earnings on industry intensity suggests that financial support for entrepreneurial ventures may need to be more diversified for this ethic group. Also of importance is the significantly negative effect of the integration index on Hispanic business ownership. Given the enclave nature of Hispanic settlement, the theory of an ethnic "middleman" filling a structural position in an intermediate market may continue to affect the entrepreneurial opportunity for Hispanics. As Bonacich (1973) suggests, these middleman positions are likely to be self-segregated and insulated. A less-integrated metropolitan area may in fact be an opportunity for the Hispanic entrepreneur.

Both models have strong predictive capacities with respect to industry intensity of Hispanic-business owners. In fact the melting pot and integration indices provide a unique perspective of

Hispanic entrepreneurship—immigration that is highly concentrated in specific areas within a metropolitan area favors the Hispanic-business owner. Human capital and entrepreneurial skill enhancement attained through management positions can reinforce greater growth in such niche markets. The interaction of these factors and markets indicate consequential spatial aspects and provide context to the creative class story.

BLACK ENTREPRENEURSHIP

The Creative Regional Milieu for Blacks

Creative class theories are not as robust in explaining Black entrepreneurship, particularly on two important variables (Table 9). Metropolitan areas with more Black-owned firms relative to their population are more likely those where the relative nonwhite population is greater and the regional economy is less "high-tech" (tech pole index). The positive effect of the diversity measure in this model, percentage of nonwhite population, may at first glance indicate that the immigrant, foreign born population is not as beneficial as it was for women and Hispanic business ownership; however, this measure of diversity relies more on the internal composition and less on external influence of immigrants. Consequently, this result for Black businesses may to a greater degree reflect tastes and preferences in relation to geographic space.

The most disquieting result is that human capital (whether the measure for the race or for the metropolitan population) is not significant, and in fact, it has a negative sign if we only focus on relationships in the sample. This is contradictory to the findings for the other types of entrepreneurs. Consequently, the intangible factors of creative class theories help very little in describing the existence and intensity of Black businesses.

Regional Opportunity Structures for Blacks

The regional opportunity structures for Black-owned businesses provide a better explanation than the above creative milieu factors (Table 9) with similar results to the other two types of entrepreneurs discussed above. Metropolitan areas with more Black-owned firms relative to their population are more likely those where more Blacks are employed as managers, less access to financial resources (Black household earnings as a percentage of Whites') exists, and the area is less integrated. The latter provides greater support for the fact that nontraditional entrepreneurs experience a middleman or enclave effect. Entrepreneurial skills and capabilities are also important for Black business, and given the insignificantly negative finding for educational attainment in the creative class model, perhaps management experience is necessary to compensate for human capital. The combination of these two concepts suggests a decrease in the "push" of highly educated Blacks into entrepreneurship given that other opportunities may be available, including management positions.

Although Bates demonstrates that Black business ownership is changing and attributes this to gains in higher education and decreases in discriminatory barriers (Bates, 2006), the results here suggest regional opportunity structures may have a stronger effect on their ownership. The insignificant effects of creativity and human capital on Black business ownership suggest a very different regional environment than found for Hispanics above. The insignificant effect of average Black-owned business sales conveys that even in the sample of the populous metros, doing well in sales does not mean that entrepreneurship is more prevalent. All in all, strong structural impediments seem to be present for Black business owners. As explained above, the only statistically significant regional variation was for Black-owned businesses, where the greatest concentration

of businesses is in the South. The history of race relations and segregation may in fact present the biggest barrier in describing the evolution of Black business ownership in a regional setting.

REGIONS AND ENTREPRENEURSHIP

On the surface, it seems that creative class theories are able to provide perspective on the intangible assets of a region and how they can affect Hispanic and women-owned business. However, much of our conclusions seem to boil these results down to significant structural issues from economic to spatial factors. The thought that gender, race, and ethnicity with respect to business ownership would benefit from integrated populations is clearly not supported in the structural models. In contrast, enclave mechanics seem to indicate spatial and economic market justifications. Markets are of the utmost importance to women-owned businesses. Human capital is defining for all but Blacks, but even more specific is the effect of management experience in predicting business ownership.

We realize that this analysis uses some aggregated individual data to predict regional variation, a step that some may call an ecological fallacy given the variation of ecological factors within geographic space. However, we are trying to uncover how an internal or endogenous source of urban growth, entrepreneurship, is related to regional factors. The embedded opportunity structures in a region seem to trump the importance of the creative class attributes with respect to entrepreneurship. Innovation has a consistently negative effect; the creative workforce only had an effect on Hispanic businesses; and human capital was unable to account for Black business dynamics. Only diversity, as measured by the melting pot index, had a stable and predicted effect on ownership. However, for Hispanics and women, this effect accompanied population growth, where churning of population and increased demand for services are natural partners to regions receiving foreign-born population growth. As for human capital, it has no effect for Black entrepreneurs, and the positive effect for Hispanics is somewhat expected given the second generation of immigrant populations are reported to have significantly greater attainment. The varied results seem to indicate that not all entrepreneurial classes can survive on creative milieu alone.

Our findings point to a more tangible set of policy choices available to economic developers and planners. Even though the creative class theories have become very prominent in the field, there have not been many examples of effective implementation of its policy implications. Michigan's Cool Cities program might be an exception.[12] However, if one takes a closer look at this program, one realizes that it bundles existing place-based urban redevelopment programs and projects such as main street revitalization, downtown redevelopment, and neighborhood development. In fact, some have criticized that the application of policies derived from creative class theories overshadows the more basic (and often redistribution oriented) policy goals a city or a region has to pursue (Peck, 2005).

In contrast, our findings point to the prospect that policymakers should support their city's and region's entrepreneurial opportunity structures. Some cities are already taking such an approach. In the late eighties Littleton, Colorado, for example, has adopted the Economic Gardening approach. Instead of attracting businesses from outside, Littleton's economic developers focused on providing support for entrepreneurial and business development (Small Business Administration, 2006). This approach has been replicated and adopted not only by other cities, but also by states like Georgia. Changing the focus from smokestack chasing to the development of small businesses represents a paradigm change for economic developers.

Given the potential and growth of women and minority businesses, policymakers are well advised to take such a paradigm shift into account and tailor their policies to these groups. More specifically, our results show that these groups benefit from a regional environment that builds

the necessary human capital, enables access to variety of financial resources, and facilitates market access. Among all three groups, human capital—and specifically managerial skills—were a key factor in explaining entrepreneurial intensity. Policymakers should encourage the region's secondary educational institutions, and in particular business schools, to expand their women and minority recruitment programs. Local chapters of mentoring programs such as SCORE "Counselors to America's Small Business,"[13] WITI, and "Ladies Who Launch" should be supported and expanded.

The availability of diverse sources of funding and access to financial capital is another key policy area. The Maryland Small Business Development Finance Authority provides working capital assistance to minority business owners who hold a procurement contract with any government or public utility client (Bates, 2006). This program aids these firms by providing them with the necessary financial resources in situations when the business owners are unable to obtain capital from other sources.

Lastly, market access is critical to women and minority firms and lowering the barriers is key to the success of these firms. Bates describes Chicago's efforts to increase the number and the performance of minority-owned firms (Bates, 2006). City agencies target 25% of their procurement on minority business enterprises (MBEs). In addition, policies such as quick payment and subcontracting requirements on large construction projects allow MBEs to gain capital and enter certain markets niches. Not only access, but also information about markets is important. Littleton's Economic Gardening program provides firms with access to important market information. Economic developers gather intelligence on markets and customers, enabling small firms to compete with large firms. An even more tailored approach is the Rhode Island Economic Development Corporation's "Every Company Counts" program through which it provides technical assistance to small business owners.[14] The Corporation has recognized the potential of its Hispanic population and is providing the assistance not only in English, but also in Spanish. In contrast to creative class policies, policies that address the opportunity structures associated with human capital and skills, financial resources, and market access seem to better address the economic and business development potential of nontraditional groups in a community.

Our analysis of regional creative milieu and opportunity structures suggests a more complex policy agenda for developing minority entrepreneurs. Our approach marries data from the SBO from 2002 with data from the U.S. Census and Florida (2002) in order to measure concepts from two specific points of view—entrepreneurs thrive because of the creative milieu of the region or because of the structural opportunities that the region provides. We present a unique comparison of what regional factors can help or hinder women, Hispanics, and Blacks in their entrepreneurial ventures. However, the data are not without problems because they neither allow for more graduated analysis of specific industries to determine how the effects differ nor do they provide individual business owner characteristics. New data sets promise to have a greater potential for such analysis. In late 2007, The Kauffman Foundation, with the assistance of Mathematica, released firm-level survey data that could assist with these flaws, particularly in relation to the need for more precise financial measures and other development issues for new businesses.[15] These data may provide a more refined understanding of how policymakers can support entrepreneurs because they will detail a variety of business-level characteristics not currently available in the public sphere. Entrepreneurs are a consequential component to our national economy, and the policymakers desiring to strengthen this endogenous source of growth require greater knowledge of the entrepreneur's decision process and strategy formation in order for policies to be able to encourage and nurture a diversity of entrepreneurs.

ENDNOTES

1 The Current Population Survey is another data set that provides information on self-employed individuals. In addition, The Kauffman Foundation and Mathematica recently released firm level survey data that allow for a longitudinal view of the development of new businesses. In its complete form, the survey will include information on approximately 5,000 new businesses formed in 2004, with follow-ups in 2006, 2007, and 2008.

2 We have to note that some metropolitan areas such as San Antonio have suppressed data because they do not have a sufficient number of Black-owned firms.

3 We excluded Asian-owned businesses from the analysis because this group of entrepreneurs has been very successful outperforming their Hispanic and Black counterparts (Basu, 2006). They have also received more scholarly attention in the past than the other groups.

4 Our analysis does not focus on specific industries because the Survey of Business Owners provides the county or metropolitan level data only at the two-digit NAICS level. Thus, a meaningful analysis of these industry sectors that minorities specialize in is not feasible.

5 Census 2000 PHC-T-29. Ranking Tables for Population of Metropolitan Statistical Areas, Micropolitan Statistical Areas, Combined Statistical Areas, New England City and Town Areas, and Combined New England City and Town Areas: 1990 and 2000.

6 The 2002 Survey of Business Owners (SBO) was conducted by mail. One of two census forms was mailed to a random sample of businesses selected from a list of all firms operating during 2002 with receipts of $1,000 or more, except those classified in the following NAICS industries: crop and animal production (NAICS 111, 112); scheduled air transportation (NAICS 4811, part); rail transportation (NAICS 482); postal service (NAICS 491); funds, trusts, and other financial vehicles (NAICS 525), except real estate investment trusts (NAICS 525930); religious, grantmaking, civic, professional, and similar organizations (NAICS 813); private households (NAICS 814); and public administration (NAICS 92).

7 This is the final, updated version of the 2002 Guide to the Economic Census, Women-, Black-, and Hispanic-owned Businesses, http://www.census.gov/prod/ec02/sb0200cswmn.pdf. One other data caveat is important to address. Because the 2000 MSA definitions (and their corresponding counties) in most cases did not match the county by MSA listing in the 2002 SBO, we collected individual county data from the Census and aggregated these to obtain MSA level demographic data that corresponds with the 2002 SBO MSA definition.

8 Ladies Who Launch is designed to provide women with the tools and networking opportunities to help develop their businesses and entrepreneurial goals. It has incubator programs designed to help women expand and clarify their business visions and initiate participants to the concepts of incubating. WITI helps women advance by providing access to and support from other professional women working in all sectors of technology.

9 White's correction adjusts the standard errors for the coefficients of the independent variables enabling proper interpretation of *t*-stats, but it does not change the coefficients themselves. We use the correction in all of the models examining the creative class theory as well as the model assessing women opportunity structures. However, there was no evidence of heteroskedasticity in the model of opportunity structures for Black business ownership. For the model of Hispanic business ownership under the opportunity structures theory, we utilize a weighted least squares correction for the heteroskedastic effect of percentage of Hispanic managers on the standard errors and resulting *t*-stats for the coefficients of the independent variables. The error variance is proportional to the percentage of Hispanic managers; therefore, the model is transformed by dividing the dependent and independent variables and constant by the square root of this variable. This transformation corrects the standard errors for the coefficients on the independent variables, making the error variance homoskedastic, but it does not change the coefficients themselves. In fact, the transformation of the data to reflect this type of heteroskedasticity improves the efficiency of the estimates (Gujarati, 1995, p. 383).

10 The rule of thumb is that if the condition index is between 10 and 30, there is moderate to strong multicollinearity. However, none of the condition indices for the models are greater than this threshold (Gujarati, 1995, p. 338).

11 Analysis is part of the authors' research on human capital and entrepreneurship, funded by the Small Business Administration (Hackler, Harpel, & Mayer, 2008).

12 For more information, see http://www.coolcities.com/.

13 For more information about score, see http://www.score.org/explore_score.html.

14 For more information about the Rhode Island program, see http://www.everycompanycounts.com/.

15 See endnote 1 above. For more information, see The Kauffman Firm Survey at http://www.kauffman.org/kfs/ and http://www.mathematica-mpr.com/surveys/kauffmanfirm.asp.

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