

**ANALYSIS OF MINORITY AND WOMEN-OWNED BUSINESSES
IN THE DENVER METROPOLITAN AREA
GOODS AND SERVICES MARKETPLACE**

- Prepared for -

The City and County of Denver

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1995

ANALYSIS OF MBE/WBEs IN THE DENVER METROPOLITAN AREA GOODS AND SERVICES MARKETPLACE

This document provides a detailed statistical analysis of minority and women-owned business enterprise utilization and availability in the Denver Metropolitan Area marketplace using data not yet available at the time when the 1991 Denver Disparity Study for Goods, Services and Remodeling was conducted.

The data sources for this analysis are the U.S. Bureau of the Census Survey of Minority-Owned Business Enterprises and related unpublished data.¹ These data were reported in mid-1991 and summarize the utilization and availability of minority and women-owned firms as well as all firms. Through these data sources, BBC Research & Consulting was able to analyze aggregate public and private utilization of minority and women-owned firms and compare this with availability of minority and women-owned firms. The local marketplace is defined as the Denver Primary Metropolitan Statistical Area, a U.S. Bureau of the Census definition that includes Adams, Arapahoe, Denver, Douglas and Jefferson counties.

Approach

The analysis that follows in this document examines the local marketplace as a whole to determine if disparities exist between the utilization and availability of minority-owned firms

¹ U.S. Bureau of the Census, 1987 Economic Census, Surveys of Minority and Women-Owned Business Enterprises, 1991. Results of the 1992 survey will be complete in 1996.

(MBEs) and women-owned firms (WBEs). MBE and WBE utilization is compared with white-male-owned firms ("majority-owned" firms). Several questions are addressed:

1. Are there disparities between utilization and availability of MBE/WBEs in the private marketplace as a whole?
2. Are there disparities between utilization and availability of MBE/WBEs after controlling for industry?
3. Are there disparities between utilization and availability of MBE/WBEs after controlling for industry and whether a firm has paid employees?
4. Are there disparities between utilization and availability of MBE/WBEs after controlling for industry and employment size?
5. In terms of the number of firms, are there disparities in the rate of business ownership by minorities and women compared to white males? In other words, is availability of minority and women-owned firms understated given the size of the pool of potential business formers?

Utilization and Availability of MBE/WBEs in the Denver Marketplace

U.S. Census data for 1987 are used in comparing utilization of MBE/WBEs and majority-owned firms in the local marketplace.² The U.S. Bureau of the Census data used in this analysis were compiled in the Survey of Minority-Owned Business Enterprises and the Survey of Women-Owned Businesses for 1987. These are the most recent data for MBEs and WBEs published by the U.S. Bureau of the Census.³ The data include revenue information for proprietorships, partnerships and Subchapter S corporations with 10 or fewer stockholders.⁴ Only firms reporting at least \$500 in revenues in 1987 are represented. C corporations, which are sometimes publicly traded and are often the highest revenues firms in a market area, are not included in the Census data.

² The City and County of Denver's goods, services and remodeling purchases account for less than 1 percent of total economic activity in the Denver PMSA, the relevant geographical area for City purchases. While some additional local area economic activity is accounted for by the State of Colorado and other public entities, the vast majority of firms' revenues are derived from the private sector. Therefore, analysis of total revenues approximates a measure of private sector utilization of MBE/WBEs.

³ We note these combined data sources as U.S. Bureau of the Census, 1987 Economic Censuses, Surveys of Minority and Women-Owned Business Enterprises, 1991. Complete results of the 1992 survey are expected to be released in 1996.

⁴ Over 98 percent of Subchapter S corporations in the U.S. have 10 or fewer shareholders, although 35 shareholders are legally allowed.

Data for Black-owned, women-owned and total firms are based on a complete census of firms from all income tax returns in 1987. Data for Hispanic, Asian and Native American-owned firms reflect some sampling and undercount Hispanic, Asian and Native American-owned firms.⁵ For this analysis, we make no adjustment for the U.S. Bureau of the Census' undersampling of Hispanic, Asian and Native American-owned businesses. This approach was chosen to enable direct comparisons of revenues for firms reported in the Census data.⁶

Overall local marketplace utilization and availability. When U.S. Bureau of the Census data are used to examine firms in all industry groups in the Denver Primary Metropolitan Statistical Area (PMSA), disparities are found for minority and women-owned firms.⁷ MBEs and WBEs receive substantially less revenues than their majority-owned counterparts. On average, a Black-owned firm in the Denver PMSA had \$38,000 in revenues in 1987, 31 percent of the revenues of the average white-owned firm (\$123,000).⁸ Revenues of the average Hispanic-owned firm (\$47,000) were 38 percent of the average (non-Hispanic) white-owned firm. Average revenues of Asian-owned firms (\$62,000) were one-half of the average for white-owned firms. Average revenues of Native American-owned firms (\$19,000) were 15 percent of the average for white-owned firms in the 1987 Survey of Minority-Owned Business

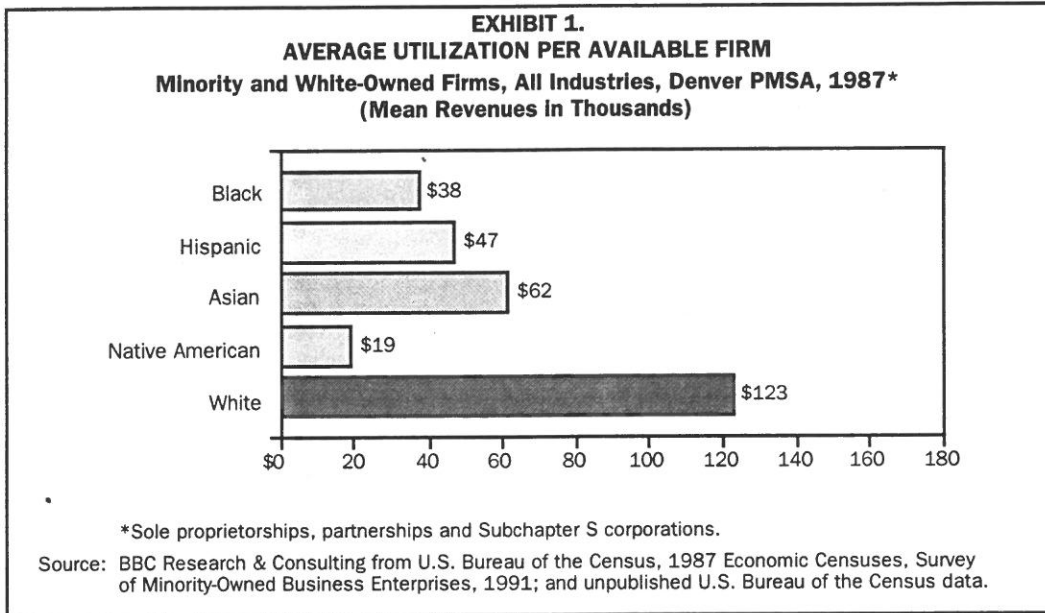
⁵ According to the U.S. Bureau of the Census, its sampling methodology in the 1987 Survey of Minority-Owned Business Enterprises undercounted Hispanic, Asian and Native American-owned firms. Therefore, total marketplace utilization and total availability of Hispanic, Asian and Native American-owned firms (and total MBEs) are underrepresented. However, Census information indicates that the same relationships between utilization and availability presented in this report would also be found if the entire population of Hispanic, Asian and Native American-owned firms were represented. It is also important to note that all C corporations and those Subchapter S corporations with 11 or more shareholders are not included in the Census data. Therefore, the total number of MBEs and WBEs in the Denver Metropolitan Area is greater than what appears in the Surveys of Minority and Women-Owned Business Enterprises.

⁶ While this tends to lower the percentage of firms reported as Hispanic, Asian and Native American-owned compared to the actual availability of these firms, it doesn't impact the marketplace analysis. The marketplace analysis focuses on *relative* utilization and availability; the fact that actual revenues and availability of Hispanic, Asian and Native American-owned firms are somewhat higher than reported in these data does not affect the analysis.

⁷ The Denver PMSA corresponds to Adams, Arapahoe, Denver, Douglas and Jefferson Counties. Data for the Boulder PMSA was not examined due to disclosure issues in the U.S. Bureau of the Census data.

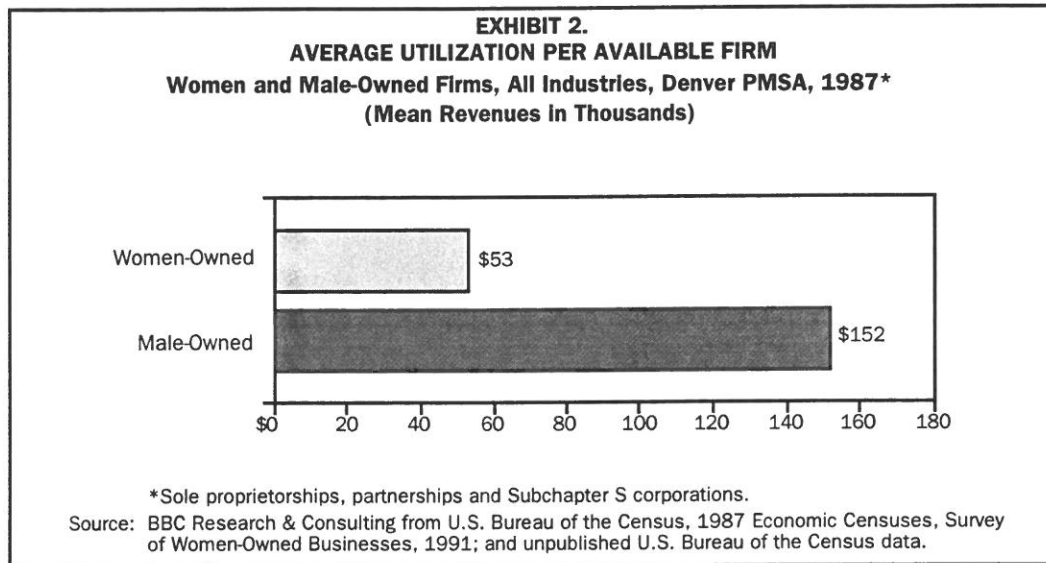
⁸ Estimates on revenues and number of white-owned firms are derived by subtracting MBE totals from the data for all firms provided by the U.S. Bureau of the Census. Estimates for male-owned firms are derived by subtracting WBE totals from the data for all firms.

Enterprises. These are the only data reported individually for Denver area Asian and Native American-owned firms. For the balance of the analysis of the U.S. Bureau of the Census data, statistics for these two groups are combined.⁹ Exhibit 1 shows the mean revenues by race and ethnicity of ownership.



⁹ Utilization and availability of Asian and Native American-owned firms are only reported by the U.S. Bureau of the Census for all industries as a whole. No sector-by-sector detail is reported. In the Denver PMSA, 93 percent of the total of Asian and Native American-owned firms identified in the 1987 Survey of Minority-Owned Business Enterprises were Asian-owned; 7 percent were Native American-owned.

Average revenues of women-owned businesses were compared with male-owned businesses. (The WBE statistics include firms owned by minority women; the male-owned business statistics include firms owned by minority men.) As shown in Exhibit 2, women-owned firms in the Denver PMSA had average revenues of \$53,000 in 1987, 35 percent of the level found for male-owned firms.



Exhibits 3 and 4 present another view of these same data. Exhibit 3 shows the difference between the percentage of all revenues that each minority group received and what would be expected based upon their representation among all firms (sole proprietorships, partnerships and Subchapter S corporations) in the Denver PMSA. Substantial disparities were found between actual utilization of MBEs and the level of utilization that would be expected based on availability. For example, Hispanic-owned firms comprised 3.69 percent of all firms in 1987, but they received 1.46 percent of the total utilization in the Denver marketplace. Putting this difference of over 2 percentage points into economic terms, total revenues of Hispanic-owned firms in Denver in 1987 were \$336 million less than what would have been expected if there had been no disparities between marketplace utilization and availability.

Disparities between utilization and availability for Black-owned firms in the Denver area (0.55 percent utilization versus 1.70 percent availability) amounted to \$174 million revenues not received in 1987. The disparity for Asian-owned firms (0.96 percent utilization and 1.82 percent availability) can be quantified as a \$129 million gap between utilization and availability. While Native American-owned firms accounted for 0.14 percent of the firms in the U.S. Bureau of the Census data for the Denver area, only 0.02 percent of revenues went to these firms. This

difference amounted to \$18 million in revenues not received by Denver area Native American-owned firms in 1987 compared with utilization absent any disparities. It is important to note that this quantification of the economic implications of the disparities pertains only to sole proprietorships, partnerships and Subchapter S corporations. The quantification of total foregone revenues does not include any disparities in revenues for C corporations.

Exhibit 3.
Marketplace Utilization vs. Availability
Minority and White-Owned Firms
(All Firms, All Industries, Denver PMSA, 1987)

	Black	Hispanic	Asian	Native American	Total MBE	White	All Firms
Utilization	0.55%	1.46%	0.96%	0.02%	3.00%	97.00%	100.00%
Availability	<u>1.70</u>	<u>3.69</u>	<u>1.82</u>	<u>0.14</u>	<u>7.34</u>	<u>92.66</u>	<u>100.00</u>
Difference	(1.15%)	(2.22%)	(0.85%)	(0.12%)	(4.34%)	4.34%	100.00%
Disparity Ratio	0.32	0.40	0.53	0.16	0.41	1.05	1.00

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Minority-Owned Business Enterprises, U.S. Department of Commerce, 1991; and unpublished U.S. Bureau of the Census data.

“Disparity ratios” were also calculated to portray the extent of disparities between marketplace utilization and availability of minority and women-owned firms. The disparity ratio is calculated by dividing percentage utilization by percentage availability. A ratio of 1.0 indicates “parity,” or absence of any disparity between utilization and availability. A ratio between 0.0 and 1.0 denotes underutilization and may be evidence of discrimination. A ratio greater than 1.0 is found when utilization exceeds availability. As shown in Exhibit 3, disparity ratios for each racial/ethnic group are less than 1.0 when examining all firms for all economic sectors in the Denver area. The ratio was lowest for Native American-owned firms: 0.16. Disparity ratios were in the range of 0.3 to 0.4 for Black and Hispanic-owned firms. The ratio was 0.53 for Asian-owned firms.

Because the U.S. Bureau of the Census generated data for Hispanic, Asian and Native American-owned firms from sampling, the study team conducted statistical significance tests to determine the degree of confidence one should have in inferring that disparities found for the sample would exist for the entire population of these firms. A standard statistical approach is to consider a difference to be “statistically significant” if there is at least a 95 percent probability

that it did not occur because of chance.¹⁰ Based on this level of statistical confidence and the standard errors presented in the U.S. Bureau of the Census reports, we conclude that the disparities are statistically significant for Hispanic, Asian and Native American-owned firms. No such statistical tests are required for the results for Black and women-owned firms because these data did not involve sampling.¹¹ As such, one can immediately reject the hypothesis that chance in sampling could explain any observed disparities because there was no sampling for these firms.

Women-owned firms accounted for over one-third of the sole proprietorships, partnerships and Subchapter S corporations reported in the Census data for the Denver PMSA. Utilization of 15.77 percent was slightly less than one-half the level of availability (disparity ratio of 0.45). Exhibit 4 portrays these results. In economic terms, the disparities found for women-owned firms indicate \$2.9 billion in revenues not received in 1987 compared with WBE utilization absent any disparities.

Exhibit 4.
Marketplace Utilization vs. Availability
Women and Male-Owned Firms
(All Industries, Denver PMSA, 1987)

	Women- Owned	Male- Owned	All Firms
Utilization	15.77%	84.23%	100.00%
Availability	<u>35.19</u>	<u>64.81</u>	<u>100.00</u>
Difference	(19.42%)	19.42%	100.00%
Disparity Ratio	0.45	1.30	1.00

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Women-Owned Businesses, U.S. Department of Commerce, 1991; and unpublished U.S. Bureau of the Census data.

¹⁰ The first step is to construct the hypothesis that no differences exist between percentage utilization and availability for the population as a whole, and then determine whether the data from the sample would allow one to reject this hypothesis with a high level of confidence. A 95 percent confidence level is applied for the statistical tests in this study.

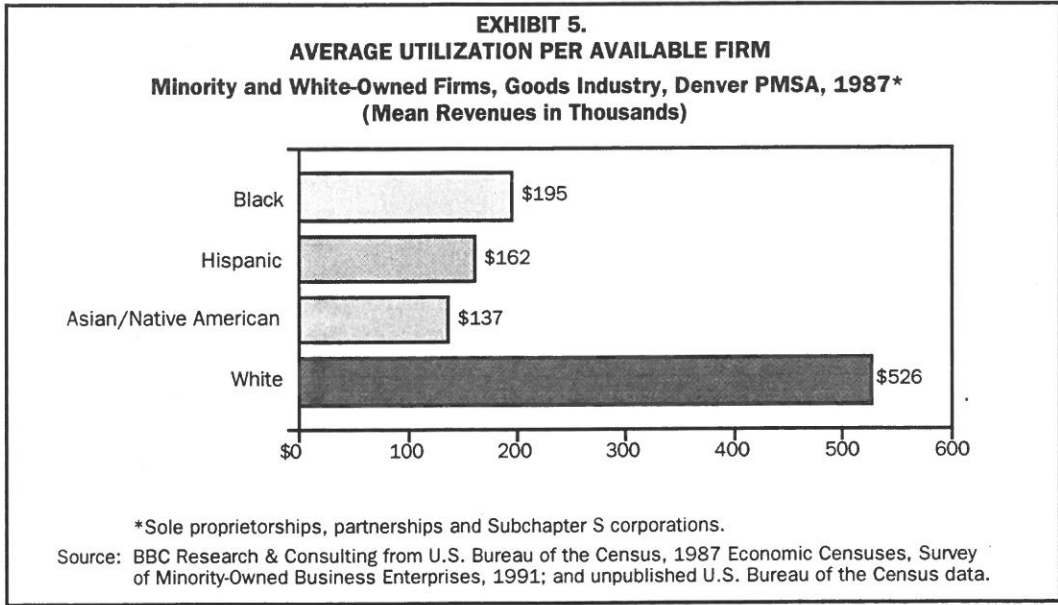
¹¹ Further, because of the very large number of business transactions in the marketplace that are the underlying basis for these utilization figures, there is little possibility that the results could have occurred by chance. The number of observations is so high (multiple purchases from each firm in the industry) that statistical tests would almost certainly show any difference between utilization and availability to be statistically significant.

Utilization and availability of MBEs and WBEs in the goods and services industry.

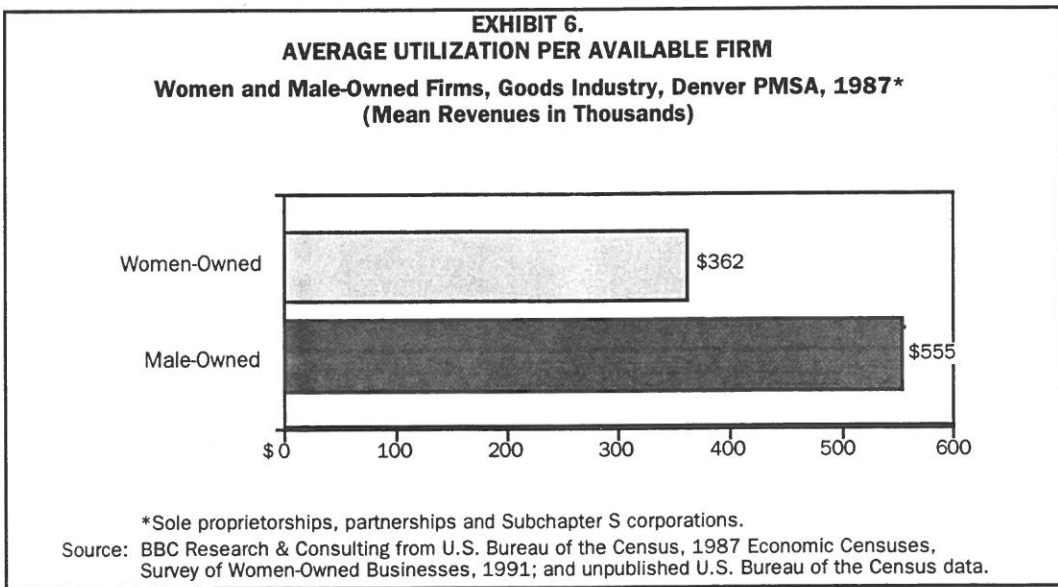
One explanation for why MBEs and WBEs overall receive less revenue per firm is that they are concentrated in industries with generally relatively low revenues per firm. For example, a higher proportion of Denver area MBEs and WBEs is found in the services sector than expected based upon the distribution of majority-owned firms. In terms of revenues per firm, this sector ranks lowest within the local economy. In most of the higher revenue per firm industries, MBEs and WBEs are underrepresented relative to majority-owned firms. For example, a lower proportion of MBEs and WBEs are found in the wholesale trade industry than expected based on distribution of majority-owned firms. Since overall underutilization of MBEs and WBEs is due, in part, to a skewed distribution of MBEs and WBEs among sectors within the Denver economy, it is important to examine utilization and availability while controlling for economic sector. The goods (wholesale trade) and services industries were selected for analysis because they are the sectors from which the Denver Department of General Services primarily purchases.

Exhibit 5 presents average utilization per available goods firm owned by Blacks, Hispanics, Asians/Native Americans (combining these two groups), and whites. MBE data pertain to both minority women-owned and male-owned firms, and statistics for white-owned firms include white women-owned firms. The data represent average revenues per firm in the Denver PMSA for 1987 and include both prime contracting and subcontracting revenues. As with the previous comparisons, data only include sole proprietorships, partnerships and Subchapter S corporations.

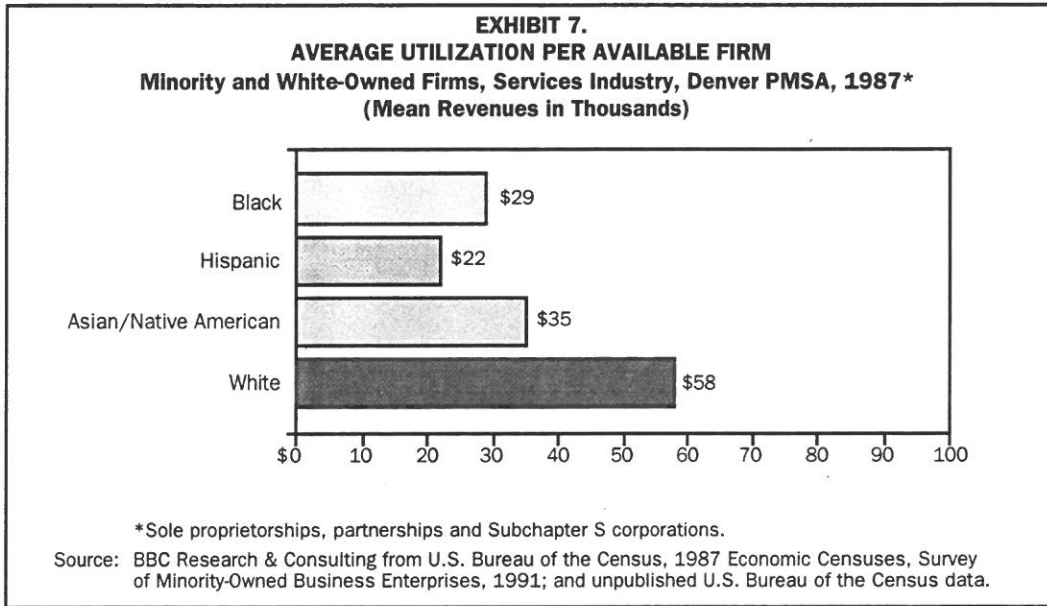
Average revenues for Black-owned goods firms were \$195,000, 37 percent of the average for white-owned goods firms (\$526,000). Mean utilization of Hispanic-owned goods firms (\$162,000) was 31 percent of the average for white-owned firms. Utilization of Asian/Native American-owned goods firms (\$137,000) was 26 percent the average for white-owned firms.



Similar analyses were performed for women and male-owned firms. U.S. Bureau of the Census data indicated that average revenues of male-owned goods firms (\$555,000) exceeded women-owned firms (\$362,000). Again, these data pertain only to sole proprietorships, partnerships and Subchapter S corporations.



Similar statistics are presented in Exhibit 7 for Denver area services firms. Black-owned services firms had average revenues of \$29,000, half the average for white-owned services firms (\$58,000). For Hispanic-owned services firms, utilization averaged \$22,000, 38 percent of the level of white-owned services firms. Asian/Native American-owned services firms had average revenues of \$35,000, 61 percent of the average of white-owned services firms.



As indicated in Exhibit 8, average revenues for women-owned services firms (\$23,000) corresponded to 28 percent of the average for male-owned services firms (\$81,000).

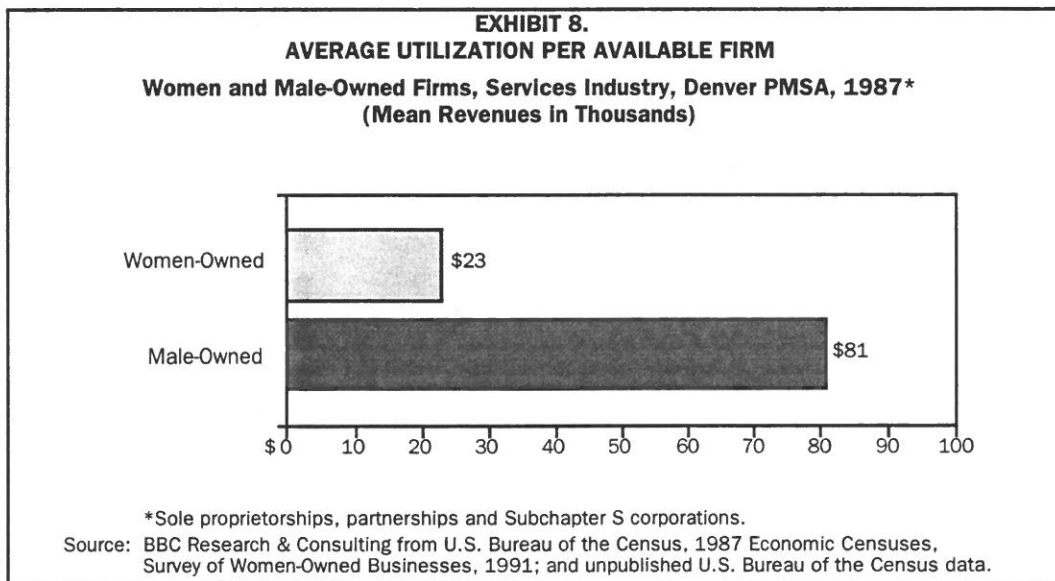


Exhibit 9 compares utilization and availability of MBEs in the goods and services industry on a percentage basis. For example, the percentage of total revenues of Denver PMSA goods firms (sole proprietorships, partnerships and Subchapter S corporations) that went to Black-owned firms was 0.31 percent in 1987. This was below the availability of Black-owned goods firms in that year (0.81 percent), resulting in a disparity equal to 0.50 percentage points. The disparity ratio for Black-owned goods firms was 0.38. Results for Hispanic-owned goods firms were similar: utilization of 0.60 percent and availability of 1.90 percent, resulting in a disparity ratio of 0.32. For Asian/Native American-owned goods firms, utilization (0.39 percent) was also lower than availability (1.45 percent), indicating a disparity ratio of 0.27. Combined, the disparities for minority-owned goods firms represented over \$68 million in revenues not received in 1987. Further statistical tests demonstrated that the disparities for Hispanic and Asian/Native American-owned firms are statistically significant. (Again, Census results for these groups involved sampling; such statistical tests are not required for Black and women-owned firms since these data reflect entire populations.)

Exhibit 9.
Marketplace Utilization vs. Availability
Goods and Services Industries
Minority and White-Owned Firms
(Denver PMSA, 1987)

	Black	Hispanic	Asian/ Native Am.	Total MBE	White	All Firms
Goods						
Utilization	0.31%	0.60%	0.39%	1.30%	98.70%	100.00%
Availability	<u>0.81</u>	<u>1.90</u>	<u>1.45</u>	<u>4.16</u>	<u>95.84</u>	<u>100.00</u>
Difference	(0.50%)	(1.29%)	(1.06%)	(2.85%)	2.85%	100.00%
Disparity Ratio	0.38	0.32	0.27	0.31	1.03	1.00
Services						
Utilization	1.05%	1.59%	1.43%	4.07%	95.93%	100.00%
Availability	<u>1.98%</u>	<u>4.05</u>	<u>2.26</u>	<u>8.30</u>	<u>91.70</u>	<u>100.00</u>
Difference	(0.94%)	(2.46%)	(0.83%)	(4.22%)	4.22%	100.00%
Disparity Ratio	0.53	0.39	0.63	0.49	1.05	1.00

Note: Data might not add to 100 percent due to rounding.

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Minority-Owned Business Enterprises, U.S. Department of Commerce, 1991; and unpublished U.S. Bureau of the Census data.

As shown in Exhibit 9, utilization was also below availability for Black, Hispanic and Asian/Native American-owned services firms. Disparities are statistically significant for Hispanic and Asian/Native American-owned firms.

Results of the disparity analysis for women-owned firms in the goods and services industries are examined in Exhibit 10. Marketplace utilization for WBEs was below availability for both the goods and services industries. The disparities for women-owned goods firms represented over \$16 million in revenues not received in 1987. Similarly, women-owned services firms were also underrepresented with over \$904 million in revenues not received during 1987.

Exhibit 10.
Marketplace Utilization vs. Availability
Goods and Services Industries
Women and Male-Owned Firms
(Denver PMSA, 1987)

	Women- Owned	Male- Owned	All Firms
Goods			
Utilization	16.27%	83.73%	100.00%
Availability	<u>22.95</u>	<u>77.05</u>	<u>100.00</u>
Difference	(6.68%)	6.68%	100.00%
Disparity Ratio	0.71	1.09	1.00
Services			
Utilization	18.47%	81.53%	100.00%
Availability	<u>43.91</u>	<u>56.09</u>	<u>100.00</u>
Difference	(25.45%)	25.45%	100.00%
Disparity Ratio	0.42	1.45	1.00

Note: Data might not add to 100 percent due to rounding.

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Women-Owned Businesses, U.S. Department of Commerce, 1991; and unpublished U.S. Bureau of the Census data.

Utilization and availability of MBEs and WBEs in goods and services for firms with paid employees. Another factor possibly explaining overall marketplace disparities between utilization and availability might be that MBEs and WBEs are more likely to be one person or family-run businesses. Census data allowed examination of this research question. We found that most minority, women and majority-owned firms fit the description of one person or family-run businesses. However, minority and women-owned firms were more likely to not have paid employees than were majority-owned firms. This finding represents further evidence of statistical disparities. (The U.S. Bureau of the Census did not report utilization for Black-owned firms with paid employees, so for this analysis, these firms had to be included in the figures for white-owned firms.)

Based upon these results, we examined utilization and availability separately for those firms reporting paid employment and those firms without paid employees (see Exhibit 11). The patterns of disparities found for all goods firms persisted when analyzing only those firms with paid employees. Hispanic-owned firms with paid employees had utilization of 0.56 percent and availability of 2.09 percent (disparity ratio of 0.27). Asian/Native American-owned firms with paid employees had utilization of 0.29 percent and availability of 0.94 percent. The resulting disparity ratio was 0.31. Statistical tests confirmed that the disparities found for Hispanic and Asian/Native American-owned firms are statistically significant. Again, because of the relatively small number of Black-owned goods firms with paid employees reported in the Census data, the U.S. Bureau of the Census did not disclose total revenues for those firms.

Exhibit 11.
Marketplace Utilization vs. Availability
Goods and Services Industries
Minority and White-Owned Firms
(Denver PMSA, 1987)

	Black	Hispanic	Asian/ Native Am.	Total MBE	White	All Firms
Goods						
Firms With Paid Employees						
Utilization	n/a	0.56%	0.29%	0.85%	99.15%	100.00%
Availability	<u>n/a</u>	<u>2.09</u>	<u>0.94</u>	<u>3.03</u>	<u>96.97</u>	<u>100.00</u>
Difference	n/a	(1.53%)	(0.65%)	(2.18%)	2.18%	100.00%
Disparity Ratio	n/a	0.27	0.31	0.28	1.02	1.00
Firms With No Paid Employees						
Utilization	n/a	1.14%	1.74%	2.88%	97.12%	100.00%
Availability	<u>n/a</u>	<u>1.82</u>	<u>1.66</u>	<u>3.48</u>	<u>96.52</u>	<u>100.00</u>
Difference	n/a	(0.67%)	0.07%	(0.60%)	0.60%	100.00%
Disparity Ratio	n/a	0.63	1.04	0.83	1.01	1.00
Services						
Firms With Paid Employees						
Utilization	0.79%	1.26%	1.24%	3.29%	96.71%	100.00%
Availability	<u>1.46</u>	<u>3.21</u>	<u>2.57</u>	<u>7.24</u>	<u>92.76</u>	<u>100.00</u>
Difference	0.67%	(1.95%)	(1.33%)	(3.96%)	3.96%	100.00%
Disparity Ratio	0.54	0.39	0.48	0.45	1.04	1.00
Firms With No Paid Employees						
Utilization	1.76%	2.53%	1.96%	4.49%	95.51%	100.00%
Availability	<u>2.09</u>	<u>4.22</u>	<u>2.20</u>	<u>6.42</u>	<u>93.58</u>	<u>100.00</u>
Difference	(0.33%)	(1.69%)	(0.24%)	(1.93%)	1.93%	100.00%
Disparity Ratio	0.84	0.60	0.89	0.70	1.02	1.00

Note: Data might not add to 100 percent due to rounding.

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Minority-Owned Business Enterprises, U.S. Department of Commerce, 1991; and unpublished U.S. Bureau of the Census data.

Exhibit 11 also examines utilization and availability of goods firms without paid employees (e.g., one person firms or firms consisting entirely of family members). Hispanic-owned firms with no paid employees had utilization of 1.14 percent and availability of 1.82 percent (disparity ratio of 0.63). For Asian/Native American-owned goods firms with no paid employees, utilization was slightly above availability (disparity ratio of 1.04). (No revenues data were disclosed for Denver area Black-owned firms without paid employees.)

For services firms with paid employees, disparities were found for Black, Hispanic and Native American-owned firms. Disparity ratios ranged from 0.39 to 0.54. Statistical tests indicated that the disparities found for Hispanic and Asian/Native American-owned firms are statistically significant.

Examination of Denver area services firms with no paid employees shows that disparities are evident for Black, Hispanic and Asian/Native American-owned firms. Disparity ratios were in the range of 0.60 to 0.89.

We next examine utilization of women-owned goods firms. Utilization of WBEs with paid employees was below availability. While WBEs represented 20.03 percent of goods firms with paid employees, revenues of women-owned firms accounted for 16.39 percent of revenues for all goods firms with paid employees (disparity ratio of 0.82). Disparities were also found for women-owned goods firms without paid employees. Utilization of women-owned firms without paid employees was 14.73 percent compared with 24.18 percent availability (disparity ratio of 0.61). Exhibit 12 portrays these results.

For women-owned services firms with paid employees, percentage utilization (14.73) fell below availability (24.18). The resulting disparity ratio was 0.62. In addition, the analysis indicated that women-owned services firms with no paid employees had lower utilization (28.77 percent) than availability (48.07 percent). The disparity ratio was 0.60.

Exhibit 12.
Marketplace Utilization vs. Availability
Goods and Services Industries
Women and Male-Owned Firms
(Denver PMSA, 1987)

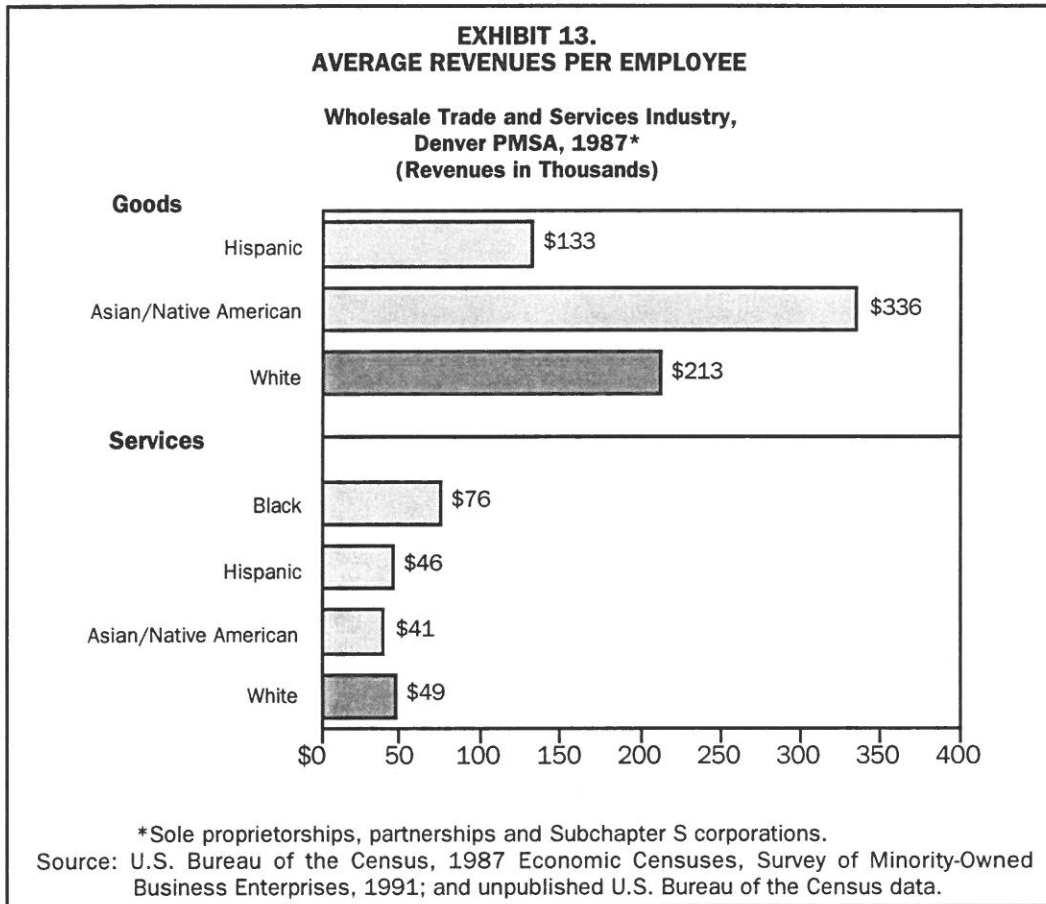
	Women- Owned	Male- Owned	All Firms
Goods			
Firms With Paid Employees			
Utilization	16.39%	83.61%	100.00%
Availability	<u>20.03</u>	<u>79.97</u>	<u>100.00</u>
Difference	(3.64%)	3.64%	100.00%
Disparity Ratio	0.82	1.05	1.00
Firms With No Paid Employees			
Utilization	14.73%	85.27%	100.00%
Availability	<u>24.18</u>	<u>75.82</u>	<u>100.00</u>
Difference	(9.44%)	9.44%	100.00%
Disparity Ratio	0.61	1.12	1.00
Services			
Firms With Paid Employees			
Utilization	14.74%	85.26%	100.00%
Availability	<u>23.71</u>	<u>76.29</u>	<u>100.00</u>
Difference	(8.97%)	8.97%	100.00%
Disparity Ratio	0.62	1.12	1.00
Firms With No Paid Employees			
Utilization	28.77%	71.23%	100.00%
Availability	<u>48.07</u>	<u>51.93</u>	<u>100.00</u>
Difference	(19.30%)	19.30	1.00
Disparity Ratio	0.60	1.37	1.00

Note: Data might not add to 100 percent due to rounding.

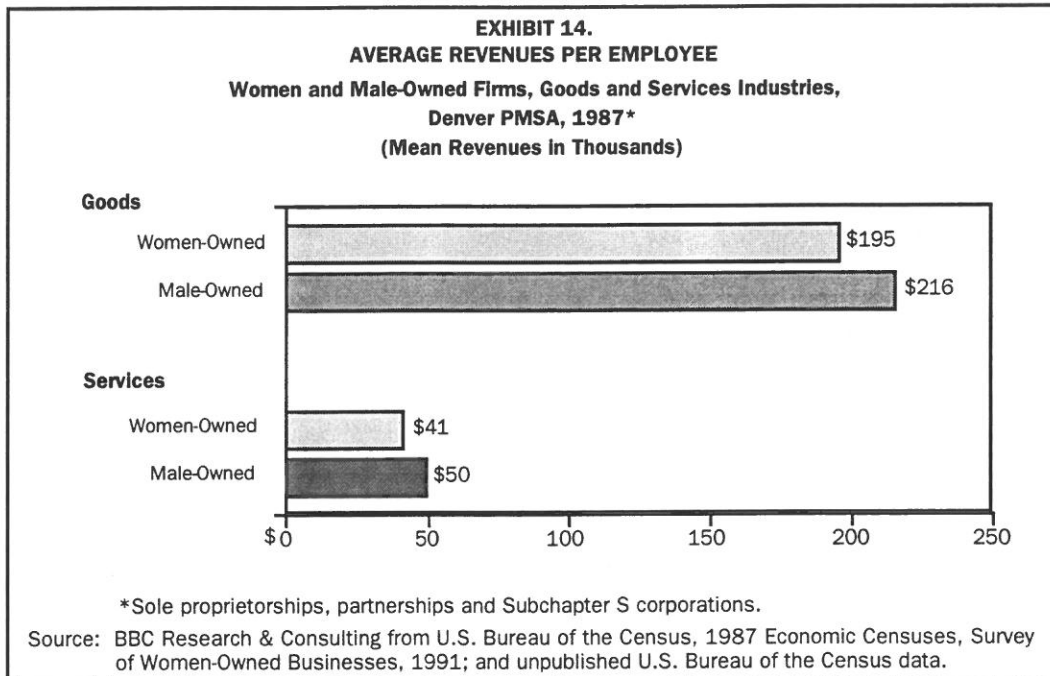
Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Women-Owned Businesses, U.S. Department of Commerce, 1991; and unpublished U.S. Bureau of the Census data.

Revenues per employee. To better understand the disparities identified in this report, the study team controlled not only for whether goods and services firms had paid employees, but also for the number of employees. Average revenues for firms with paid employees was divided by the average number of employees in order to account for the varying employment size of firms. That division produced a dollar figure representing the average firm revenues received per employee. As illustrated in Exhibit 13, mean revenues per employee were \$133,000 for Hispanic-owned goods firms and \$213,000 for white-owned firms. This implies that the disparities between utilization and availability of Hispanic-owned goods firms with paid employees was due not only to disparities in the employment size of Hispanic-owned firms, but also to disparities in utilization per employee. For Asian/Native American-owned firms, utilization per employee exceeded the average for white-owned goods firms. While a disparity between utilization and availability of Asian/Native American-owned goods firms (with paid employees) was identified (see Exhibit 11), the disparity was somewhat mitigated by higher revenues per employee for these firms. Utilization data for Black-owned goods firms with paid employees were not disclosed by the U.S. Bureau of the Census and are included in the data for white-owned firms.

For the services industry, revenues per employee were lower for Hispanic and Asian/Native American compared with white-owned firms. Revenues per employee were highest for Black-owned firms. This implies that the disparities in utilization of Black-owned services firms with paid employees identified in Exhibit 11 primarily reflect disparities in employment size of Black-owned services firms compared with white-owned firms. This follows, because employers usually scale the number of paid employees to the revenues of the firm.



Disparities were also evident from data on average revenues per employee for women-owned goods firms. As with the analysis of MBEs, total revenues for women-owned goods firms with paid employees were divided by number of employees in these firms to determine average revenues per employee. As shown in Exhibit 14, mean revenues per employee for WBEs in the goods industry were \$195,000 compared with \$216,000 for male-owned firms. Similarly, examination of firms in the services industry shows that WBEs averaged \$41,000 per employee, 82 percent of the revenues of the average male-owned firm (\$50,000).



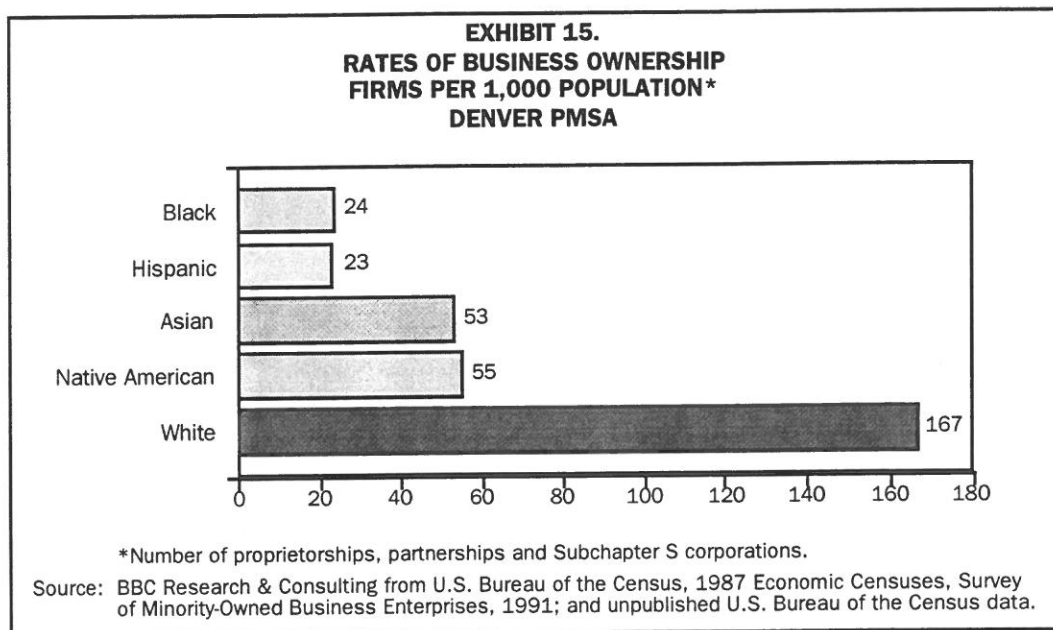
Disparities in Business Ownership

Disparities in the rates of business ownership for minorities and women were examined in the 1991 Denver Disparity Study for Goods, Services and Remodeling. That analysis drew upon the number of MBEs and WBEs identified within certain sectors from the 1991 Survey of Procurement Firms in the Denver Metropolitan Area. Because results of the 1987 U.S. Bureau of the Census Surveys of Minority and Women-Owned Business Enterprises are now available, this update also considers rates of business ownership from these new data. Relative numbers of MBEs, WBEs and majority-owned firms are examined from several different perspectives. First, we review statistics on the number of businesses per 1,000 population. Further analysis focuses on the number of self-employed people by economic sector relative to the number of people employed within that sector.

Rates of business ownership. Rates of business ownership were calculated by race and gender for the Denver PMSA. These rates were calculated using data from the 1987 Surveys of Minority and Women-Owned Business Enterprises and the 1990 Census of Population, both U.S. Bureau of the Census documents. As such, these rates pertain only to proprietorships, partnerships and Subchapter S corporations. Rates are expressed on a per capita basis, one standard for this type of research.

Overall, the Denver PMSA averages 80 businesses per 1,000 population. However, white males own businesses at the rate of 174 per population of 1,000 white males, while Blacks and Hispanics own businesses at rates of 24 and 23 per 1,000 people of their respective populations. Black and Hispanic rates of business ownership are roughly one-eighth the rates for white males. Asians and women own businesses at roughly twice the rate of Blacks and Hispanics, though still far below the rate for white males.

Exhibit 15 compares these rates of business ownership for the Denver PMSA. Disparities are apparent for Blacks, Hispanics, Asians and Native Americans and women.



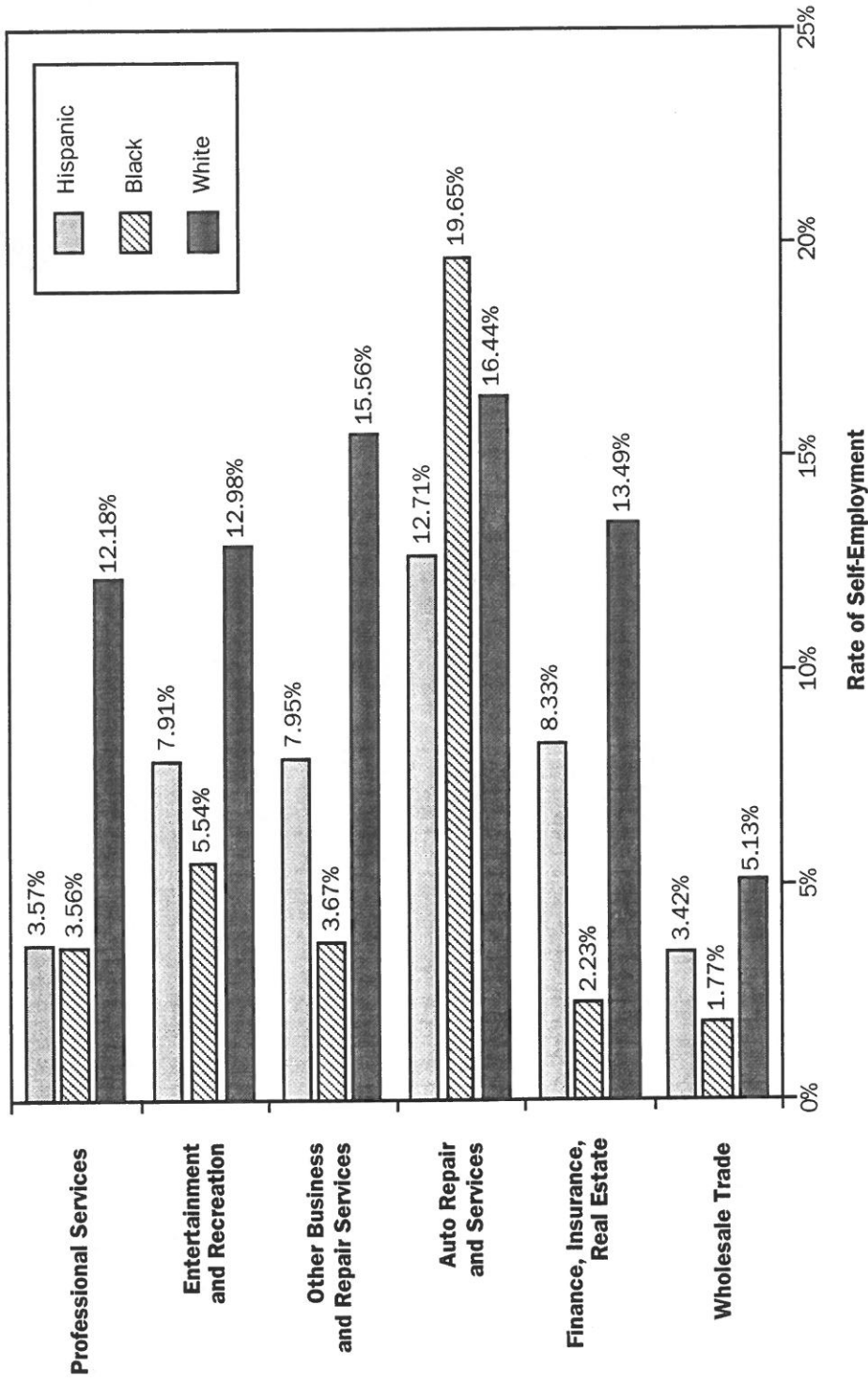
Rates of self-employment. Data on the race and ethnicity of self-employed people (a proxy for business owners) come from the 1980 U.S. Census of Population. Using these data, the study team compared the number of self-employed people to the total number of people employed within specific economic sectors to gauge the rate of business formation among different race and gender groups. Statistics show the likelihood that an individual employed within a particular industry would be working for his or her own firm. The data are for the Denver PMSA, and while they only reflect people who had started businesses by 1980, historical rates of entrepreneurship have a lasting effect on the number of MBE and WBE businesses through today.

Exhibit 16 illustrates disparities in the rates of self-employment between white males and Black and Hispanic males. (Data were not reported for other minority groups.) For example, 5.1 percent of white males employed in wholesale trade in the Denver PMSA in 1980 were self-employed; only 1.8 percent of Black males in wholesale trade were self-employed and only 3.4 percent of Hispanic males were self-employed. In three of the four service subsectors analyzed, Black males had lower self-employment rates than white males. Only in automotive repair and services did Black males have a higher self-employment rate. In all four services subsectors, Hispanic males' rates of self-employment were lower than white males' rates.

Rates of self-employment for women were also compared to rates for white males. The results are displayed in Exhibit 17. Women are less likely to be self-employed for the goods industry and four subsectors of the services industry.

Summary of business ownership analysis. Together, these analyses of business ownership and self-employment rates add support to the findings of disparities in rates of business ownership reported in the Denver Disparity Study for Goods, Services and Remodeling. These analyses indicate that actual availability of MBEs and WBEs has been constrained from what would be expected absent disparities in the rates of business ownership. That is, the availability figures presented here understate potential availability absent disparities.

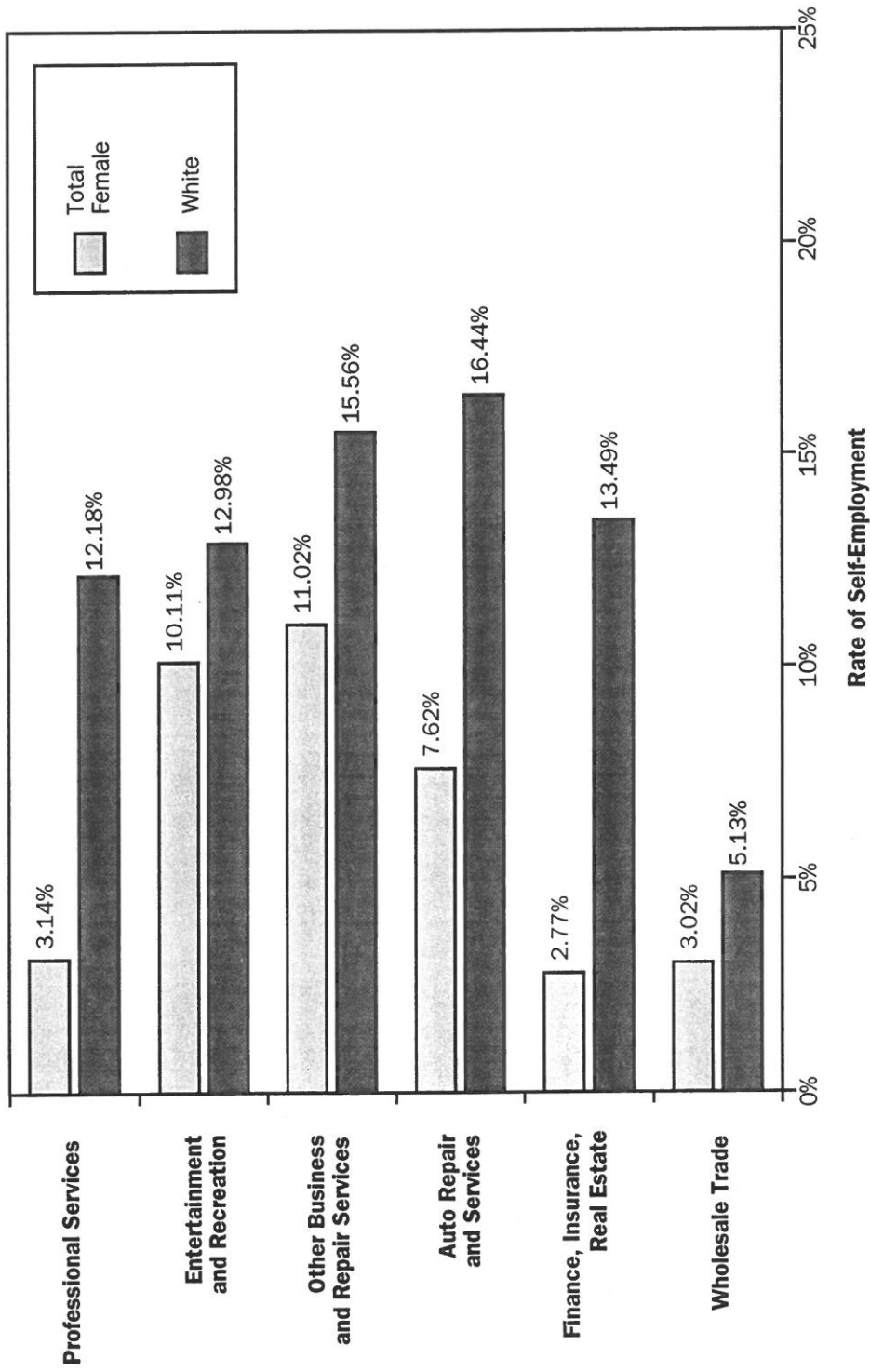
EXHIBIT 16.
RATE OF SELF-EMPLOYMENT FOR GOODS AND SERVICES INDUSTRIES
WHITE, BLACK AND HISPANIC MALES
DENVER MSA, 1980



*Sole proprietorships, partnerships and Subchapter S corporations.

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Women-Owned Businesses, 1991; and unpublished U.S. Bureau of the Census data.

EXHIBIT 17.
RATE OF SELF-EMPLOYMENT FOR GOODS AND SERVICES INDUSTRIES
WHITE MALES AND TOTAL FEMALES
DENVER MSA, 1980



*Sole proprietorships, partnerships and Subchapter S corporations.

Source: BBC Research & Consulting from U.S. Bureau of the Census, 1987 Economic Censuses, Survey of Women-Owned Businesses, 1991; and unpublished U.S. Bureau of the Census data.

Conclusions

As mentioned in the introduction of this document, several research questions were posed in analyzing the Denver marketplace. Available data clearly demonstrate significant statistical disparities in marketplace utilization of minority and women-owned firms as compared to availability of minority and women-owned firms within the Denver PMSA. A pattern of disparities was found after controlling for sector, presence of paid employees and size of work force. Further, MBEs and WBEs were shown to own businesses at rates lower than majority-owned firms.

Together, these findings show significant statistical disparities within the Denver PMSA goods and services marketplace, which is evidence of race and gender-based discrimination. This evidence augments that already reported in the 1991 Denver Disparity Study for Goods, Services and Remodeling.