Illinois Department of Transportation

2012 DBE Availability Study

Submitted by:

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INTRODUCTION

The Illinois Department of Transportation (IDOT) commissioned Mason Tillman Associates, Ltd. to conduct an Availability Study to identify businesses willing and able to provide the construction and architecture and engineering services that IDOT procures. The businesses identified in the Study will be used for setting an Overall Disadvantaged Business Enterprise (DBE) Goal for FY 2013 to 2015, pursuant to the two-step process outlined in 49 CFR Section 26.45. As a U.S. DOT (USDOT) recipient, IDOT is required to set an Overall DBE goal every three years.

A. Background

Adarand Constructors, Inc. v. Federico Pena[1] decided in 1995, extended the strict scrutiny standard, as set forth in *Croson*[2] for local and state governments' race-specific programs, to the federal government. After the ruling, the USDOT DBE regulations were revised and the amended regulations became effective March 1999. The new regulations significantly altered the DBE program to meet the provisions of *Adarand.* The regulations designated 10 percent as a national aspirational goal for disadvantaged businesses, but mandated actual participation goals at levels based on the local market availability of DBEs, not a set percentage. Additionally, the regulations required recipients to use race-neutral measures, including outreach and technical assistance to meet the maximum feasible portion of the DBE goal.

B. Availability Study Methodology

The methodology used to conduct the Availability Study conforms to the requirements set forth in the DBE regulations and the legal precedent expressed in the 2007 Seventh Circuit decision, *Northern Contracting Inc. v. Illinois Department of Transportation Northern Contracting*.[3] Consistent with the standards, six types of sources were used to

[1] *Adarand Constructors, Inc. v. Federico Pena*, 115 S.Ct. 2097 (1995).

[2] City of Richmond v. J.A. Croson Co., 488 U.S. 469 (1989).

[3] *Northern Contracting Inc. v. Illinois Department of Transportation,* 473 F.3d 715 (2007*); Northern Contracting* challenged IDOT's Disadvantaged Business Enterprise program wherein the Seventh Circuit upheld the district court's ruling that the DBE program complied with the Fourteenth Amendment of the United States Constitution's equal protection requirements. The program was narrowly tailored to the compelling interest identified by the federal government to remedy the effects of racial and gender discrimination in the public highway construction market. The program was also in compliance with 49 C.F.R. sections 26.45(c) and 26.51, in calculating the relative availability of DBEs in Illinois by properly adjusted its base figure based on local market conditions, and applying race-neutral means to meet its overall DBE participation goal.

identify businesses in the relevant market area that provided construction and architecture and engineering services procured by IDOT. IDOT records provided the utilized prime contractors, the IDOT pre-qualified businesses, and other bidders on IDOT projects. Additional sources were government certification lists, business association lists, vendors lists, and attendees of community meetings. Businesses interested in performing on IDOT contracts were determined to be willing. Willing businesses were those that were found on a government listing or certification list, or those who affirmed their willingness through Mason Tillman's willingness survey.

C. Study Components

The Availability Study is presented in four chapters. The contents of each chapter are briefly described below:

Chapter One – Market Area Analysis presents the legal basis for a geographical market area determination and defines IDOT's market area

Chapter Two – Prime and Subcontractor Availability Analysis presents the distribution of available businesses in IDOT's market area

Chapter Three – Anecdotal Analysis presents the business community's experiences and perceptions of barriers encountered in contracting or attempting to contract with IDOT

Chapter Four – Regression and Private Sector Analysis examines the affects of socio-economic factors, as well as race and gender-neutral characteristics on M/WBE business formation rates, business earnings, and access to capital.

CHAPTER 1: MARKET AREA ANALYSIS

I. MARKET AREA DEFINITION

A. Legal Criteria for Geographic Market Area

The Supreme Court's decision in City *of Richmond v. J.A. Croson Co. (Croson)*[1] held that programs established by local governments to set goals for the participation of minority and woman-owned firms must be supported by evidence of past discrimination in the awarding of their contracts. Prior to the *Croson* decision, local agencies could implement race-conscious programs without developing a detailed public record to document the underutilization of minority and women-owned business enterprises in their awarding of contracts. Instead, they relied on widely-recognized societal patterns of discrimination.[2]

Croson established that a local government could not rely on society-wide discrimination as the basis for a race-based program but, instead, was required to identify discrimination within its own contracting jurisdiction.[3] In *Croson*, the Court found the City of Richmond's Minority Business Enterprise (MBE) construction program to be unconstitutional because there was insufficient evidence of discrimination in the local construction market.

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[1] *City of Richmond v. J.A. Croson Co., 488 U.S. 469 (1989).*

[2] *United Steelworkers v. Weber*, 433 U.S. 193, 198, n. 1 (1979).

[3] *Croson*, 488 U.S. at 497 (1989).

Croson was explicit in saying that the local construction market was the appropriate geographical framework within which to perform statistical comparisons of business availability and business utilization. Therefore, the identification of the local market area is particularly important because that factor establishes the parameters within which to conduct a disparity study.

B. Application of the Croson Standard

While *Croson* emphasized the importance of the local market area, it provided little assistance in defining its parameters.[4] However, it is informative to review the Court's definition of the City of Richmond's market area. In discussing the geographic parameters of the constitutional violation that must be investigated, the Court interchangeably used the terms "relevant market,"[5] "Richmond construction industry,"[6] and "city's construction industry."[7] Thus, these terms were used to define the proper scope for examining the existence of discrimination within the City. This interchangeable use of terms lends support to a definition of market area that coincides with the boundaries of a contracting jurisdiction.

An analysis of the cases following *Croson* reveals a pattern that provides additional guidance for defining the market area. The body of cases examining *reasonable* market area definition is *fact based*, rather than dictated by a specific formula.[8] In *Cone Corporation v. Hillsborough County*,[9] the Eleventh Circuit Court of Appeals considered a study in support of Florida's Hillsborough County MBE Program, which used minority contractors located in the County as the measure of available firms. The Program was found to be constitutional under the compelling governmental interest element of the strict scrutiny standard.

Hillsborough County's program was based on statistics indicating that specific discrimination existed in the construction contracts awarded by the County, not in the construction industry in general. Hillsborough County had extracted data from within its own jurisdictional boundaries and assessed the percentage of minority businesses

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[4] *Adarand*, which extended *Croson's* strict scrutiny standard to federal programs, did not change *Croson's* approach to market area where federal funds are involved.

[5] *Croson, 488 U.S. at 471 (1989).*

[6] *Id. at 500.*

[7] *Id. at 470.*

[8] *See e.g., Concrete Works of Colorado v. City of Denver, Colorado, 36 F.3d 1513, 1528 (10th Cir. 1994).*

[9] *Cone Corporation v. Hillsborough County, 908 F.2d 908 (11th Cir. 1990).*

available in Hillsborough County. The Court stated that the study was properly conducted within the "local construction industry."[10]

Similarly, in *Associated General Contractors v. Coalition for Economic Equity (AGCCII),*[11] the Ninth Circuit Court of Appeals found the City and County of San Francisco's MBE Program to have the factual predicate necessary to survive strict scrutiny. The San Francisco MBE Program was supported by a study that assessed the number of available MBE contractors within the City and County of San Francisco. The Court found it appropriate to use the City and County as the relevant market area within which to conduct a disparity study.[12]

In *Coral Construction v. King County*, the Ninth Circuit Court of Appeals held that "a set-aside program is valid only if actual, identifiable discrimination has occurred within the local industry affected by the program."[13] In support of its MBE Program, King County offered studies compiled by other jurisdictions, including entities completely within the County or coterminous with the boundaries of the County, as well as a separate jurisdiction completely outside of the County. The plaintiffs contended that *Croson* required King County to compile its own data, and cited *Croson* as prohibiting data sharing.

The Court found that data sharing could potentially lead to the improper use of societal discrimination data as the factual basis for a local MBE program, and that innocent third parties could be unnecessarily burdened if an MBE program were based on outside data. However, the Court also found that the data from entities within the County and from coterminous jurisdictions was relevant to discrimination in the County. They also found that the data posed no risk of unfairly burdening innocent third parties.

The Court concluded that data gathered by a neighboring county could not be used to support King County's MBE Program. The Court noted:

> It is vital that a race-conscious program align itself as closely to the scope of the problem legitimately sought to be rectified by the governmental entity. To prevent overbreadth, the enacting jurisdiction should limit its factual inquiry to the presence of discrimination within its own boundaries.[14]

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[10] *Id. at 915.*

[11] *Associated General Contractors of California v. Coalition for Economic Equity and City and County of San Francisco, 950 F.2d 1401 (9th Cir. 1991).*

[12] *Id. at 1415.*

[13] *Coral Construction Co. v. King County, 941 F.2d 910 (9th Cir. 1991), cert. denied, 112 S.Ct. 875 (1992).*

However, the Court did note that the "world of contracting does not conform itself neatly to jurisdictional boundaries."[15]

There are other situations where courts have approved a definition of market area that extends beyond a jurisdiction's geographic boundaries. In *Concrete Works v. City and County of Denver*,[16] the Tenth Circuit Court of Appeals directly addressed the issue of whether extra-jurisdictional evidence of discrimination can be used to determine the "local market area" for a disparity study. In *Concrete Works*, the defendant relied on evidence of discrimination in the six-county Denver Metropolitan Statistical Area (MSA) to support its MBE program. Plaintiffs argued that the federal constitution prohibited consideration of evidence beyond jurisdictional boundaries. The Court of Appeals disagreed.

Critical to the Court's acceptance of the Denver MSA as the relevant local market was the finding that more than 80 percent of construction and design contracts awarded by Denver were awarded to contractors within the MSA. Another consideration was that Denver's analysis was based on U.S. Census data, which was available for the Denver MSA but not for the city itself. There was no undue burden placed on nonculpable parties, as Denver had conducted a majority of its construction contracts within the area defined as the local market. Citing *AGCCII*,[17] the Court noted:

> [t]hat any plan that extends race-conscious remedies beyond territorial boundaries must be based on very specific findings that actions that the city has taken in the past have visited racial discrimination on such individuals.[18]

Similarly, New York State conducted a disparity study in which the geographic market consisted of New York State and eight counties in northern New Jersey. The geographic market was defined as the area encompassing the location of businesses which received more than 90 percent of the dollar value of all contracts awarded by the agency.[19]

State and local governments must pay special attention to the geographical scope of their disparity studies. *Croson* determined that the statistical analysis should focus on the

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[14] *Id. at 917.*

[15] *Id.*

[16] *Concrete Works, 36 F.3d 1513, 1528 (10th Cir. 1994).*

[17] *AGCCII, 950 F.2d 1401 (9th Cir. 1991).*

[18] *Concrete Works, 36 F.3d at 1528 (10th Cir. 1994).*

[19] *Opportunity Denied! New York State's Study, 26 Urban Lawyer No. 3, Summer 1994.*

number of qualified minority business owners in the government's marketplace.[20] The text of *Croson* itself suggests that the geographical boundaries of the government entity comprise an appropriate market area, and other courts have agreed with this finding. In addition, other cases have approved the use of a percentage of the dollars spent by an agency on contracting.

It follows then that an entity may limit consideration of evidence of discrimination to discrimination occurring within its own jurisdiction. Under certain circumstances, extra-jurisdictional evidence can be used if the percentage of governmental dollars supports such boundaries.

II. MARKET AREA ANALYSIS

Although *Croson* and its progeny do not provide a bright line rule for the delineation of the local market area, taken collectively, the case law supports a definition of market area as within the geographic area where the jurisdiction spends a majority of its dollars. It is within its market area where the Illinois Department of Transportation (IDOT) may consider evidence of discrimination.

A review of the contracts awarded by IDOT revealed that the jurisdiction where the prime contractors received most of its 1,236 contracts and the majority of the contract dollars was the State of Illinois. Therefore, the State is the market area for this Study.

1. Summary of the Distribution of All Contracts Awarded

IDOT awarded 1,236 contracts valued at $2,151,919,462.53 during the July 1, 2010 through June 30, 2011 study period. Prime contractors located in IDOT's market area received 94.74 percent of these contracts and 94.06 percent of the dollars. The distribution of all contracts awarded and dollars received by all contractors within and outside of IDOT's market area is depicted below in Table 1.01.

[20] *Croson, 488 U.S. at 501 (1989).*

Table 1.01: Distribution of All Contracts Awarded
July 1, 2010 through June 30, 2011

Market Area	Number of Contracts	Percent of Contracts	Amount of Dollars	Percent of Dollars
Market Area	1,171	94.74%	$2,024,124,970.18	94.06%
Outside Market Area	65	5.26%	$127,794,492.35	5.94%
Total	1,236	100%	$2,151,919,462.53	100%

2. Distribution of Construction Contracts

IDOT awarded 1,040 construction contracts valued at $1,911,090,313.61 during the July 1, 2010 through June 30, 2011 study period. Prime contractors located in IDOT's market area received 94.9 percent of the construction contracts and 93.75 percent of the dollars. The distribution of the construction contracts awarded and dollars received by all contractors within and outside of IDOT's market area is depicted below in Table 1.02.

Table 1.02: Distribution of Construction Contracts Awarded
July 1, 2010 through June 30, 2011

Market Area	Number of Contracts	Percent of Contracts	Amount of Dollars	Percent of Dollars
Market Area	987	94.9%	$1,791,606,888.65	93.75%
Outside Market Area	53	5.1%	$119,483,424.96	6.25%
Total	1,040	100%	$1,911,090,313.61	100%

3. Distribution of Architecture and Engineering Contracts

IDOT awarded 196 architecture and engineering contracts valued at $240,829,148.92 during the July 1, 2010 through June 30, 2011 study period. Prime contractors located in IDOT's market area received 93.88 percent of the architecture and engineering contracts and 96.55 percent of the dollars. The distribution of the architecture and engineering contracts awarded and dollars received by all contractors within and outside of IDOT's market area is depicted below in Table 1.03.

Table 1.03: Distribution of Architecture and Engineering Contracts Awarded July 1, 2010 through June 30, 2011

Market Area	Number of Contracts	Percent of Contracts	Amount of Dollars	Percent of Dollars
Market Area	184	93.88%	$232,518,081.53	96.55%
Outside Market Area	12	6.12%	$8,311,067.39	3.45%
Total	196	100%	$240,829,148.92	100%

III. ILLINOIS DEPARTMENT OF TRANSPORTATION'S MARKET AREA

During the study period IDOT awarded 1,236 construction and architecture and engineering contracts valued at $2,151,919,462.53. IDOT awarded 94.74 percent of these contracts and 94.06 percent of dollars to businesses located in the market area. Given the distribution of the contracts awarded by IDOT and the conditions in the applicable case law, the Study's market area is determined to be the State of Illinois. The analysis of discrimination has been limited to an examination of contracts awarded to available market area businesses.

Table 1.06 below presents an overview of the number of construction and architecture and engineering contracts IDOT awarded, and the dollars spent in the market area during the July 1, 2010 through June 30, 2011 study period.

Construction Contracts: Nine hundred eighty-seven, or 94.9 percent of these contracts, were awarded to market area businesses. The dollar value of those contracts was $1,791,606,888.65, or 93.75 percent of the total construction dollars.

Architecture and Engineering Contracts: One hundred eighty-four, or 93.88 percent of these contracts, were awarded to market area businesses. The dollar value of those contracts was $232,518,081.53, or 96.55 percent of the total architecture and engineering dollars.

Table 1.04: IDOT's Market Area Contract Distribution - All Industries Awarded July 1, 2010 through June 30, 2011

Market Area	Number of Contracts	Percent of Contracts	Amount of Dollars	Percent of Dollars
Combined Industries				
Market Area	1,171	94.74%	$2,024,124,970.18	94.06%
Outside Market Area	65	5.26%	$127,794,492.35	5.94%
Total	1,236	100%	$2,151,919,462.53	100%
Construction				
Market Area	987	94.9%	$1,791,606,888.65	93.75%
Outside Market Area	53	5.1%	$119,483,424.96	6.25%
Total	1,040	100%	$1,911,090,313.61	100%
Architecture and Engineering				
Market Area	184	93.88%	$232,518,081.53	96.55%
Outside Market Area	12	6.12%	$8,311,067.39	3.45%
Total	196	100%	$240,829,148.92	100%

CHAPTER 2: PRIME AND SUBCONTRACTOR AVAILABILITY ANALYSIS

I. INTRODUCTION

Availability is defined, according to *Croson*, as the number of qualified businesses in the jurisdiction's market area that are willing and able to provide goods or services.[1] To determine availability, qualified disadvantaged business enterprises (DBEs) and non-DBEs within the jurisdiction's market area that are ready, willing, and able to provide the goods and services need to be enumerated. The Illinois Department of Transportation's (IDOT) market area for the two industries—construction and architecture and engineering—as defined in *Chapter 4*: *Market Area Analysis* is the State of Illinois.

When considering sources for determining the number of willing and able DBEs and non-DBEs in the market area, the selection must be based on whether two aspects about the population in question can be gauged from the sources. One consideration is a business' interest in doing business with the jurisdiction, as implied by the term "willing," and the other is the business's ability or capacity to provide a service or good, as implied by the term "able."

The compiled list of available businesses includes DBEs and non-DBEs in the construction and architecture and engineering industries. IDOT and other government agencies' records, government certification records and business association membership listings were the sources used to compile a list of available market area businesses. Separate availability lists were compiled by industry for prime contractors and subcontractors. A distribution of the available businesses is presented in this chapter by ethnicity, gender and industry.

[1] *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 509 (1989).

II. PRIME CONTRACTOR AVAILABILITY DATA SOURCES

A. Identification of Willing Businesses within the Market Area

Six types of sources were used to identify businesses in the relevant market area that provided construction and architecture and engineering services that IDOT procures. Government listings provided the utilized prime contractors, the IDOT pre-qualified businesses, and other bidders on IDOT projects. Additional sources were certification lists, business association lists, vendor's lists and attendees of community meetings.

From the six sources, 2,296 unique market area businesses were identified. An accounting of the willing businesses derived by source is listed below:

B. Prime Contractor Sources

Table 2.01 lists the sources from which the list of willing businesses was compiled.

Table 2.01: Prime Contractor Availability Data Sources

Source
Sources of Government Listings: Utilized Prime Contractors
Illinois Department of Transportation Utilized Prime Contractors
Sources of Government Listings: Pre-Qualified Businesses
Illinois Department of Transportation Prequalification List
Sources of Government Listings: Bidders
Illinois Department of Transportation Bidders List
Sources of Certification Listings
Illinois Government Purchasing Program Business Enterprise Program
Illinois Small Business Set-Aside Program
Illinois Business Enterprise Program

Source
Metro Certification List
Cook County Certified MWBE
United States Small Business Administration – Dynamic Small Business Search
Sources of Business Association Listings
Illinois Valley Chamber of Commerce
Fox Valley Associated General Contractors
American Institute of Architects Illinois Member List
Consulting Engineer Council
East Peoria Chamber of Commerce
Gibson Area Chamber of Commerce, Member Directory
Greater Springfield Chamber
Home Builders Association of Kankanee
Home Builders Association of East Central Illinois
American Council of Engineering Companies of Illinois
Home Builders Association of Illinois
Kankakee Regional Chamber of Commerce
Lincoln-Logam County Chamber of Commerce
Metro East Black Contractors Organization
Northern Illinois Building Contractors Association
Pekin Chamber
Peoria County Purchasing Division Contractor List
Rantoul Area Chamber of Commerce
Southern Illinois Builder's Association

Source
Home Builders Association of Greater Chicago
Illinois Valley Chamber of Commerce
Sources of Vendor Listings
Arlington Heights Vendor List
City of Bloomington Contractor List
IGPS Vendor List from Central Management Services

An account of the willing businesses derived by source is listed below.

1. Utilized Prime Contractors

All businesses identified through IDOT's utilized prime contractors lists were determined to be willing. There were 391 utilized construction and architecture and engineering prime contractors located within the market area and all were included in the availability list.

2. Bidders Lists

All businesses identified through IDOT's unsuccessful bidders lists were determined to be willing. There were 25 construction and architecture and engineering bidders located within the market area and added to the availability list.

3. Pre-Qualified Business Lists

All businesses identified through the Illinois Contractor Prequalification List and the Illinois Engineer Consultant Prequalification List was determined to be willing. There were 168 pre-qualified businesses located within the market area and the unique businesses were added to the availability list.

4. Vendors Lists

All businesses identified through other agencies' vendor lists were determined to be willing. There were no unique businesses located within the market area to be added to the availability list.

5. Certification Lists

All certified small, local, disadvantaged, minority, and woman-owned business enterprises identified through federal, state, or local agencies were determined to be willing. There were 1,597 unique certified construction and architecture and engineering businesses located within the market area and added to the availability list.

6. Community Meeting Attendees

All businesses who attended a community meeting regarding the disparity study were determined to be willing. There was one unique business located within the market area and added to the availability list.

7. Business Association Lists

Membership lists were obtained from 21 business associations located in the market area. From the business association membership lists, Mason Tillman compiled a list of businesses that had neither bid on IDOT contracts nor were certified. These businesses were surveyed to determine their willingness to contract with IDOT. There were 114 unique willing businesses from the membership lists added to the availability list.

C. Distribution of Available Prime Contractors by Source, Ethnicity, and Gender

Tables 5.02 and 5.03 present the distribution of willing prime contractors by source. The highest ranked source was the prime contractors utilized by IDOT. Each ranked business is *counted only once*. For example, a utilized prime contractor counted in the prime contractor utilization source was not counted a second time when identified as a bidder, certified business, or company on a business association list.

Table 2.02: Distribution of Prime Contractor Availability Data Sources, Construction

Sources	DBE Percentage	Non-DBE Percentage	Source Percentage
Prime Contractor Utilization	5.53%	22.80%	14.08%
Bidders Lists	0.23%	2.00%	1.11%
Pre-Qualified Firms	2.30%	12.46%	7.33%
Certification Lists	90.67%	58.28%	74.64%
Subtotal	**98.73%**	**95.53%**	**97.15%**
Community Meeting Attendees	0.12%	0.00%	0.06%
Business Association Lists	1.15%	4.47%	2.79%
Subtotal	**1.27%**	**4.47%**	**2.85%**
Grand Total	**100.00%**	**100.00%**	**100.00%**

Table 2.03 depicts the data sources for the available architecture and engineering prime contractors.

Table 2.03: Distribution of Prime Contractor Availability Data Sources, Architecture and Engineering

Sources	DBE Percentage	Non-DBE Percentage	Source Percentage
Prime Contractor Utilization	20.60%	28.61%	26.05%
Bidders Lists	0.00%	2.60%	1.77%
Pre-Qualified Firms	0.50%	10.17%	7.07%
Certification Lists	78.89%	43.03%	54.50%
Subtotal	**100.00%**	**84.40%**	**89.39%**
Willingness Survey	0.00%	15.60%	10.61%
Subtotal	**0.00%**	**15.60%**	**10.61%**
Grand Total	**100.00%**	**100.00%**	**100.00%**

III. CAPACITY

The second component of the availability requirement set forth in *Croson* is a business' capacity or ability to work on the contracts awarded by the jurisdiction.[2] Capacity requirements are not delineated in *Croson*. In fact, a standard for capacity has only been addressed in a few United States Courts of Appeals cases. However, each case where capacity has been considered has involved large, competitively bid construction prime contracts.

In the case law there is very little guidance on how to determine "qualified" or "able" and no clear methods on how to obtain such information. Revenue can only measure the value of contracts that a firm received. A firm's revenue, business size, and bonding limits are factors that can be used to determine its capacity. However in the presence of marketplace discrimination, the revenues of DBEs could be restricted even when they possess the technical capability to perform significant contracts. Relative capacity, the ability of a firm to handle more than one contract, is another consideration for measuring availability as mentioned in *Rothe*.[3] The *Rothe* court opined that a regression analysis could be used to control for relative capacity.

In view of the case law the capacity of willing market area businesses to contract with IDOT was assessed using the following five approaches:

- An analysis of the size of all prime contracts awarded by IDOT to determine the capacity needed to perform the average awarded contract.

- The identification of the largest contracts awarded to DBEs by IDOT to determine the demonstrated ability to win large, competitively bid contracts.

- An assessment of IDOT's certification process to determine if it meets the standard set in *Contractors Ass'n of Eastern Pennsylvania v. City of Philadelphia (Philadelphia),*[4] which found the US DOT certification standards were an appropriate measure of capacity.

- A weighted availability of DBE businesses in the market area was calculated. Within each sub-industry (delineated by a six-digit NAICS code), the availability of DBE businesses was weighted by the fraction of IDOT award dollars to businesses in that sub-industry. The overall availability for an industry is then the

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2 *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 509 (1989).

3 *Rothe Dev. Corp., Inc. v. United States Dep't. of Def.*, 324 F.Supp.2d. 840 (Fed. Cir., 2005).

4 *Contractors Ass'n of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990 (3d Cir. 1993), on remand, 893 F. Supp. 419 (E.D. Penn. 1995), affd, 91 F.3d 586 (3d Cir. 1996).

summation of the weighted availability from each sub-industry. Within a sub-industry, business capacity will be more uniform than within an industry as a whole. This weighting thus results in an availability percentage which takes into account the disparate business types and business capacities within a given industry.

- To restrict the disparity analysis to an examination of the prime contracts valued under $500,000, where the capacity required to perform the contracts subjected to the statistical analysis was limited.

A. Size of Prime Contracts Analyzed

In *Associated General Contractors of America v. City of Columbus* and *Engineering Contractors Ass'n of South Florida v. Metropolitan Dade City*, the courts were concerned with the capacity of available businesses to bid on large, competitively bid contracts. It should be noted that the focus in both cases was on the bidder's size and ability to perform on large, competitively bid construction contracts.[5]

IDOT's construction and architecture and engineering contracts were analyzed to determine the size of awarded contracts. The size distribution illustrates the fact that 50 percent of IDOT's construction prime contracts were less than $500,000 and 60 percent of IDOT's architecture and engineering prime contracts were less than $1,000,000.

For the contract size analysis, IDOT's contracts were grouped into eight dollar ranges.[6] Each award was analyzed to determine the number and percentage of contracts that fell within each of the eight size categories. The size distribution of contracts awarded to Non-Disadvantaged Businesses (Non-Minority) was compared to the size distribution of contracts awarded to Disadvantaged Businesses (Minority).

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[5] *Associated General Contractors of America v. City of Columbus*, 936 F. Supp. 1363 (S.D. Ohio Eastern Division, decided August 26, 1996), and *Engineering Contractors Ass'n of South Florida v. Metropolitan Dade City*, 943 F. Supp. 1546 (S.D. Fla. 1996), aff'd 122 F.3d 895 (11th Cir. 1997). Writ of certiorari denied *Metropolitan Dade County v. Engineering Contrs. Ass'n*, 523 U.S. 1004, 140 L. Ed. 2d 317, 118 S. Ct. 1186, (1998); Related proceeding at *Hershell Gill Consulting Eng'Rs, Inc. v. Miami-Dade County*, 2004 U.S. Dist. LEXIS 17197 (S.D. Fla., Aug. 24, 2004). Decision was vacated by the 6th Circuit Court of Appeals.

[6] The eight dollar ranges are $1 to $24,999, $25,000 to $49,999, $50,000 to $99,999, $100,000 to $249,999, $250,000 to $499,999, $500,000 to $999,999, $1,000,000 to $2,999,999, and $3,000,000 and greater.

1. Construction Contracts by Size

Table 2.04 depicts IDOT's construction prime contracts awarded within the eight dollar ranges. Contracts valued at less than $25,000 were 0.67 percent of all construction prime contracts awarded; those valued less than $100,000 were 10.48 percent; those less than $500,000 were 49.33 percent; and those less than $1,000,000 were 67.5 percent. Construction prime contracts valued at $3,000,000 or more were just 12.5 percent.

2. Architecture and Engineering Contracts by Size

Table 2.05 depicts IDOT's architecture and engineering prime contracts awarded within the eight dollar ranges. There were no contracts valued at less than $25,000. Only 1.02 percent of the prime contracts awarded were valued at less than $100,000. Those valued at less than $500,000 were 26.02 percent; and those less than $1,000,000 were 60.2 percent. Architecture and engineering prime contracts valued at $3,000,000 or more were 7.65 percent.

Table 2.04: Construction Contracts by Size, July 1, 2010 to June 30, 2011

Size	Non-Minority				Minority					
	Females		Males		Females		Males		Total	
	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
$1 - $25,000	1	1.61%	6	0.64%	0	0.00%	0	0.00%	7	0.67%
$25,001 - $49,999	3	4.84%	21	2.23%	0	0.00%	3	8.82%	27	2.60%
$50,000 - $99,999	7	11.29%	65	6.90%	1	50.00%	2	5.88%	75	7.21%
$100,000 - $249,999	21	33.87%	166	17.62%	0	0.00%	10	29.41%	197	18.94%
$250,000 - $499,999	14	22.58%	179	19.00%	1	50.00%	13	38.24%	207	19.90%
$500,000 - $999,999	9	14.52%	177	18.79%	0	0.00%	3	8.82%	189	18.17%
$1,000,000 - $2,999,999	6	9.68%	200	21.23%	0	0.00%	2	5.88%	208	20.00%
$3,000,000 and greater	1	1.61%	128	13.59%	0	0.00%	1	2.94%	130	12.50%
Total	62	100.00%	942	100.00%	2	100.00%	34	100.00%	1040	100.00%

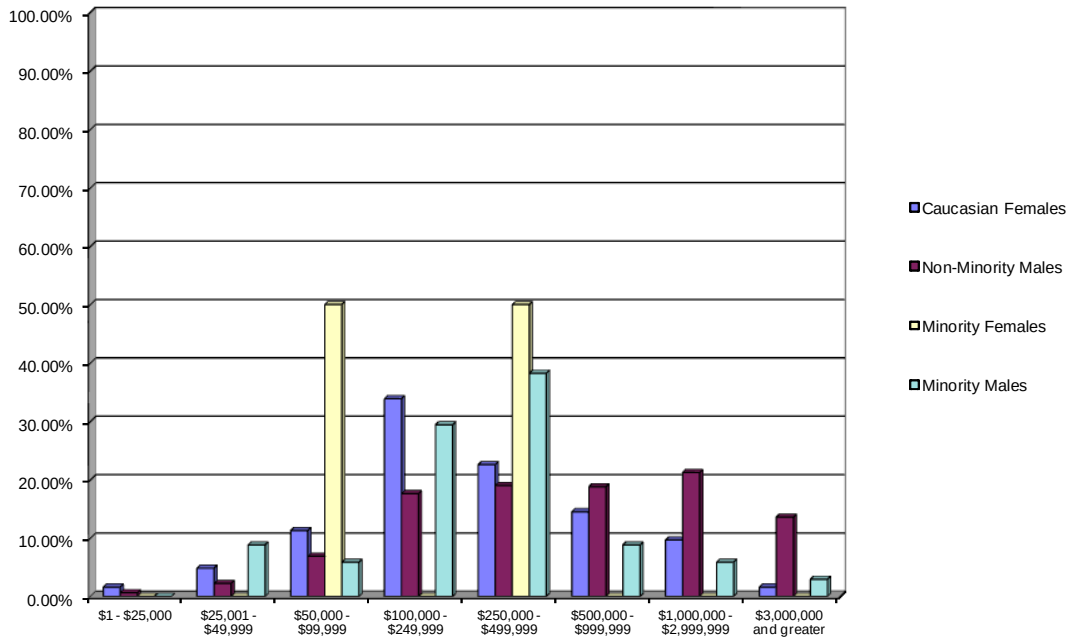
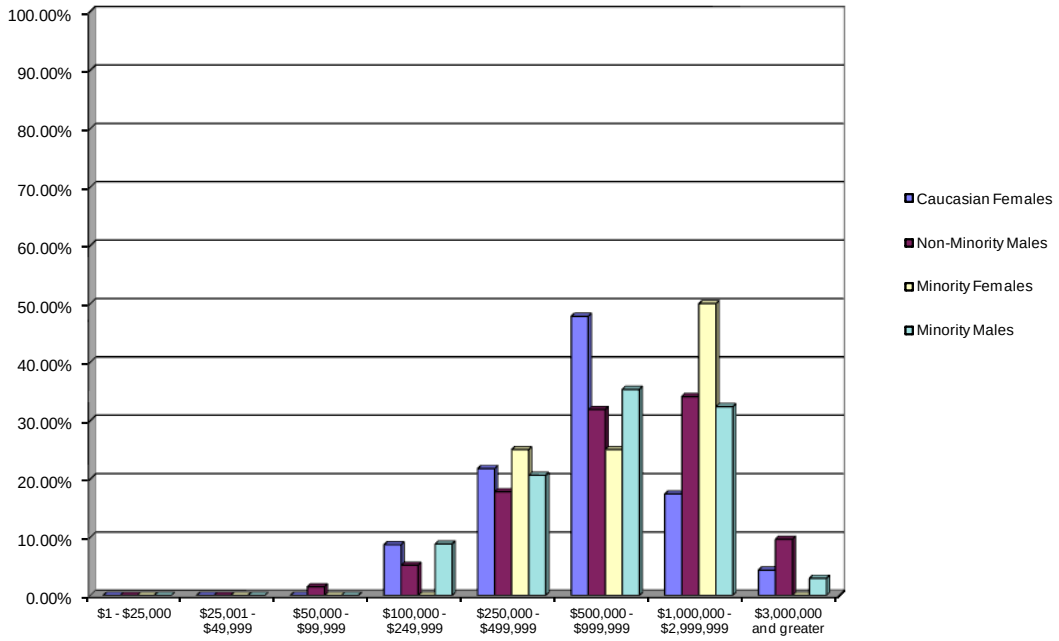


Table 2.05: Architecture and Engineering Contracts by Size, July 1, 2010 to June 30, 2011

Size	Non-Minority				Minority					
	Females		Males		Females		Males		Total	
	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
$1 - $25,000	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
$25,001 - $49,999	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
$50,000 - $99,999	0	0.00%	2	1.48%	0	0.00%	0	0.00%	2	1.02%
$100,000 - $249,999	2	8.70%	7	5.19%	0	0.00%	3	8.82%	12	6.12%
$250,000 - $499,999	5	21.74%	24	17.78%	1	25.00%	7	20.59%	37	18.88%
$500,000 - $999,999	11	47.83%	43	31.85%	1	25.00%	12	35.29%	67	34.18%
$1,000,000 - $2,999,999	4	17.39%	46	34.07%	2	50.00%	11	32.35%	63	32.14%
$3,000,000 and greater	1	4.35%	13	9.63%	0	0.00%	1	2.94%	15	7.65%
Total	23	100.00%	135	100.00%	4	100.00%	34	100.00%	196	100.00%



B. Largest DBE Contract Awarded by IDOT, by Industry

DBEs were awarded large contracts in each industry. The distribution of the largest contracts IDOT awarded to DBEs is depicted in Table 2.06. In each industry, DBEs were awarded very large, competitively bid contracts. The utilization analysis shows that DBEs demonstrated the capacity to successfully compete for contracts as large as $4.6 million in construction and $5 million in architecture and engineering.

Table 2.06: Largest DBE Contracts Awarded by Industry

Group	Construction	Architecture and Engineering
Disadvantaged Business Enterprise	$4,645,156	$5,000,000

IV. WEIGHTED AVAILABILITY

The availability of willing market area businesses was weighted according to NAICS code to more accurately reflect IDOT's contracting patterns. The availability analysis includes the:

- Calculation of Weighted Construction Availability
- Calculation of Weighted Architecture and Engineering Availability
- Calculation of Weighted Combined Availability

All federally funded contracts awarded during the study period were assigned a NAICS code based on the description of the contract. Weights were assigned based on the percentage of the total award amount in each NAICS code. As a result, the NAICS code with the highest total awarded dollars was assigned the highest weight. The weights reflect the percentage of the total dollars awarded.

The businesses in the availability database, including utilized businesses were classified according to NAICS code. Coding was derived from utilized lists, certification lists and Internet research. Table 2.07 lists the IDOT award dollars by NAICS code, and the resulting industry weight for the weighted availability analysis.
The weights for each NAICS code were used as multipliers. The number of available businesses in each NAICS code was multiplied by the assigned weight. The total represented the percentage of available firms in each NAICS code. The total for each NAICS code was added together to calculate the overall weighted availability. The

ethnicity and gender distribution percentages were then calculated based on the overall weighted availability.

V. PRIME CONTRACTOR AVAILABILITY ANALYSIS

A. Construction Prime Contractor Weighted Availability

Table 2.07 details the industry weights for construction prime contracts. The availability of construction prime contractors was calculated using the weights listed herein.

Table 2.07: Construction Award Prime Dollars by NAICS Code, July 1, 2010 to June 30, 2011

NAICS Code	NAICS Title	Awarded Dollars	Industry Weight
238210	Electrical Contractors	$ 720,448.93	0.04%
238910	Site Preparation Contractors	$ 54,728,343.88	2.86%
237310	Highway, Street, and Bridge Construction	$ 1,805,863,827.83	94.49%
237990	Other Heavy and Civil Engineering Construction	$ 1,980,537.04	0.10%
236210	Industrial Building Construction	$ 2,657,549.77	0.14%
238110	Poured Concrete Foundation and Structure Contractors	$ 45,139,606.16	2.36%
	TOTAL	**$ 1,911,090,313.61**	**100.00%**

The distribution of available construction prime contractors is summarized in Table 2.08 below.

Disadvantaged Business Enterprises account for 16.43 percent of the construction businesses in the IDOT market area.

Non-Disadvantaged Business Enterprises account for 83.57 percent of the construction businesses in the IDOT market area.

Table 2.08: Available Construction Prime Contractors

Group	Percent of Businesses
Disadvantaged Business Enterprises	16.43%
Non-Disadvantaged Business Enterprises	83.57%
TOTAL	**100.00%**

B. Architecture and Engineering Prime Contractor Weighted Availability

Table 2.09 details the industry weights for architecture and engineering prime contracts. The availability of architecture and engineering prime contractors was calculated using the weights listed below.

Table 2.09: Architecture and Engineering Prime Award Dollars by NAICS Code, July 1, 2010 to June 30, 2011

NAICS Code	NAICS Title	Awarded Dollars	Industry Weight
541330	Engineering Services	$ 76,584,533.70	31.80%
541620	Environmental Consulting Services	$ 14,615,694.00	6.07%
541360	Geophysical Surveying and Mapping Services	$ 5,485,509.07	2.28%
541370	Surveying and Mapping (except Geophysical) Services	$ 16,729,326.06	6.95%
541380	Testing Laboratories	$ 80,048,841.39	33.24%
541310	Architectural Services	$ 2,869,773.00	1.19%
541611	Administrative Management and General Management Consulting Services	$ 40,794,836.70	16.94%
541614	Transportation Management Consulting Services	$ 3,700,635.00	1.54%
	TOTAL	**$240,829,148.92**	**100.00%**

The distribution of available architecture and engineering prime contractors is summarized in Table 2.10 below.

Disadvantaged Business Enterprises account for 42.52 percent of the architecture and engineering businesses in IDOT's market area.

Non-Disadvantaged Business Enterprises account for 57.48 percent of the architecture and engineering businesses in IDOT's market area.

Table 2.10: Available Architecture and Engineering Prime Contractors

Group	Percent of Businesses
Disadvantaged Business Enterprises	42.52%
Non-Disadvantaged Business Enterprises	57.48%
TOTAL	**100.00%**

VI. SUBCONTRACTOR AVAILABILITY

A. Source of Potentially Willing and Able Subcontractors

All available prime contractors were included in the calculation of the subcontractor availability. Additional subcontractors in IDOT's market area were identified using the source in Table 2.11.

Table 2.11: Unique Subcontractor Availability Data Source

Type Record	Type Information
Subcontract awards provided by IDOT	DBEs and non-DBEs

B. Determination of Willingness and Capacity

Subcontractor availability was limited to the available prime contractor and businesses utilized as subcontractors. Therefore, the determination of willingness was achieved. *Croson* does not require a measure of subcontractor capacity; therefore, it is not necessary to address capacity issues in the context of subcontractors.

C. Construction Subcontractor Weighted Availability

Table 2.12 details the industry weights for construction subcontractors. The availability of construction subcontractors was calculated using the weights listed below.

Table 2.12: Construction Subcontractor Award Dollars by NAICS Code, July 1, 2010 to June 30, 2011

NAICS Code	NAICS Title	Awarded Dollars	Industry Weight
238340	Tile and Terrazzo Contractors	$ 1,098,680.71	0.32%
238910	Site Preparation Contractors	$160,628,127.29	46.40%
237310	Highway, Street, and Bridge Construction	$124,107,331.41	35.85%
237990	Other Heavy and Civil Engineering Construction	$ 56,755,035.85	16.40%
238110	Poured Concrete Foundation and Structure Contractors	$ 3,556,420.32	1.03%
	TOTAL	**$346,145,595.58**	**100.00%**

The distribution of weighted available construction subcontractors is summarized in Table 2.13.

***Disadvantaged Business Enterprise*s** account for 33.01 percent of the construction firms in IDOT's market area.

Non-Disadvantaged Business Enterprises account for 66.99 percent of the construction firms in IDOT's market area.

Table 2.13: Available Construction Subcontractors

Group	Percent of Businesses
Disadvantaged Business Enterprises	33.01%
Non-Disadvantaged Business Enterprises	66.99%
TOTAL	**100.00%**

D. Architecture and Engineering Subcontractor Weighted Availability

Table 2.14 details the industry weights for architecture and engineering subcontractors. The availability of architecture and engineering subcontractors was calculated using the weights listed below.

Table 2.14: Architecture and Engineering Subcontractor Award Dollars by NAICS Code, July 1, 2010 to June 30, 2011

NAICS Code	NAICS Title	Awarded Dollars	Industry Weight
541330	Engineering Services	$ 3,296,590.44	26.31%
541620	Environmental Consulting Services	$ 5,130,468.41	40.95%
541370	Surveying and Mapping (except Geophysical) Services	$ 63,347.00	0.51%
541380	Testing Laboratories	$ 1,718,554.00	13.72%
541310	Architectural Services	$ 524,631.86	4.19%
541611	Administrative Management and General Management Consulting Services	$ 478,203.44	3.82%
541614	Transportation Management Consulting Services	$ 973,258.94	7.77%
541430	Graphic Design Services	$ 344,825.72	2.75%
	TOTAL	**$12,529,879.81**	**100.00%**

The distribution of available architecture and engineering subcontractors is summarized in Table 2.15.

Disadvantaged Business Enterprises account for 46.32 percent of the architecture and engineering firms in IDOT's market area.

Non-Disadvantaged Business Enterprises account for 53.68 percent of the architecture and engineering firms in IDOT's market area.

Table 2.15: Available Architecture and Engineering Subcontractors

Group	Percent of Businesses
Disadvantaged Business Enterprises	46.32%
Non-Disadvantaged Business Enterprises	53.68%
TOTAL	**100.00%**

VII. COMBINED WEIGHTED AVAILABILITY

A. Combined Weighted Availability, All Industries and Contracts

All available prime and subcontractors were included in the calculation of combined availability. The methodology undertaken combined all prime contract dollars retained. The retained prime dollars equal prime contract awards minus subcontractor awards. The dollars retained by prime plus subcontract dollars equals the total dollar value of the prime contract.

Table 2.16 details the combined industry weights for construction and architecture and engineering prime and subcontractors. The combined availability was calculated using the weights listed below.

Table 2.16: Combined Award Dollars by NAICS Code, July 1, 2010 to June 30, 2011

NAICS Code	Industry	NAICS Title	Awarded Dollars	Industry Weight
238210	Construction	Electrical Contractors	$ 682,611.43	0.03%
238340		Tile and Terrazzo Contractors	$ 1,098,680.71	0.05%
238910		Site Preparation Contractors	$ 208,664,116.49	9.70%
237310		Highway, Street, and Bridge Construction	$ 1,598,540,017.64	74.28%
237990		Other Heavy and Civil Engineering Construction	$ 58,725,899.49	2.73%
236210		Industrial Building Construction	$ 2,657,549.77	0.12%
238110		Poured Concrete Foundation and Structure Contractors	$ 40,721,438.08	1.89%
541330	Architecture and Engineering	Engineering Services	$ 76,799,489.78	3.57%
541620		Environmental Consulting Services	$ 15,441,746.41	0.72%
541360		Geophysical Surveying and Mapping Services	$ 5,485,509.07	0.25%
541370		Surveying and Mapping (except Geophysical) Services	$ 16,729,326.06	0.78%
541380		Testing Laboratories	$ 80,048,841.39	3.72%

NAICS Code	Industry	NAICS Title	Awarded Dollars	Industry Weight
541310		Architectural Services	$ 3,394,404.86	0.16%
541611		Administrative Management and General Management Consulting Services	$ 39,720,209.26	1.85%
541614		Transportation management consulting services	$ 2,864,796.37	0.13%
541430		Graphic Design Services	$ 344,825.72	0.02%
		TOTAL	**$ 2,151,919,462.53**	**100.00%**

The distribution of combined available contractors is summarized in Table 2.17 below.

Disadvantaged Business Enterprises account for 23.07 percent of the all businesses in the IDOT market area.

Non-Disadvantaged Business Enterprises account for 76.93 percent of the all businesses in the IDOT market area.

Table 2.17: Combined Available Contractors

Group	Percent of Businesses
Disadvantaged Business Enterprises	23.07%
Non-Disadvantaged Business Enterprises	76.93%
TOTAL	**100.00%**

CHAPTER 3: ANECDOTAL ANALYSIS

I. INTRODUCTION

The United States Supreme Court in its 1989 decision, *City of Richmond v. J.A. Croson Co.*,[1] specified the use of anecdotal testimony as a means to determine whether remedial, race-conscious relief may be justified in a particular market area. Anecdotal testimony can document the routine practices disadvantaged business enterprises (DBEs) encounter in doing business within IDOT's relevant market area.

II. PURPOSE AND BACKGROUND

The purpose of this anecdotal analysis was to determine if there were patterns of discrimination experienced by DBEs that have worked on IDOT contracts or sought work from IDOT during the July 1, 2010 to June 30, 2011 study period. The anecdotal analysis includes in-depth interviews with business owners, and an E-Survey sent to available market area businesses to solicit their experiences working on or seeking work for IDOT contracts.

III. IN-DEPTH INTERVIEWS

Fifty-five business owners participated in one-on-one, in-depth interviews conducted in 2011. The business owners were African American, Asian American, Hispanic American, and Caucasian males and females domiciled in the State of Illinois.[2]

A. In-Depth Interviews Summary

The DBEs reported on their personal knowledge of barriers that can prevent contractors from competing for public contracts in the state of Illinois. Accounts included descriptions of racial and gender barriers. Some DBEs reported on their difficulties

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[1] *City of Richmond v. J.A. Croson Co*., 488 U.S. at 509 (1989).

[2] The fifty-five interviews are part of the Anecdotal Analysis for the 2011 State of Illinois Disparity Study. .

breaking into the contractor community and obtaining payments from prime contractors. Others offered recommendations to increase contracting opportunities for DBEs. A description of the general market conditions encountered by DBEs attempting to do business in the state of Illinois is described below.

1. Racial and Gender Barriers

A minority male owner of a construction company reported certain dump facilities charge minorities a higher price than other business owners:

> ***You have some dump facilities that say you can dump here for $50 a ton, and they charge other people $30 a ton.***

A minority male owner of an architecture and engineering firm believes that his work is judged at a higher standard than his non-minority counterparts:

> ***Sometimes we feel that we are being scrutinized more closely than maybe a majority firm. We also feel that sometimes we are treated a little more harshly.***

A minority male owner of an architecture and engineering company believes that racism and sexism still exist in his industry:

> ***I believe racism and sexism still exists. White folks have been doing this for a long time; their networks are well-established, and we are the new guys on the block. If they could take everything, it seems as though they would take everything.***

2. Difficulty Breaking into the Contractor Community

A Caucasian male owner of an architecture and engineering company reported that personal relationships are necessary to break into the contractor community:

> ***You could make your own opportunities, and I have done that with other local companies. It depends on how much time you have and how much focus you put out to meet the people that make the choices. Like anything when you are new in an industry, I think you are always looked at with suspicion as to whether that person is able to carry the work. In a town like Chicago, which is male-dominated, trying to break through is not necessarily an easy thing to do. It's nothing personal, it's just culture. A prime would not consider you as a sub[contractor] unless you are part of the group that normally***

works together. So, you can't break into a team that has done these for years and years.

A minority male owner of architecture and engineering company reported that he believes certain contractors are aware of upcoming projects prior to the public notice:

I hate to call it ole boys, because I don't even know what that means. But there is the issue that by the time a project comes down it's not so much that it's spoken for, but other people who have known about it can position themselves better. But when I hear about it electronically, they of course have a good lead time because they have known about it long before us. African Americans, my colleagues, we do talk about that.

A minority male owner of an architecture and engineering company reported that inadequate capacity is used to justify excluding minority companies:

A lot of times when they want to talk to African Americans about contracts, particularly giving them an opportunity to increase the size of their business, the issue of capacity comes up. It can be used as a reason not to do something with you, and sometimes it's legitimate. So, making that call or making that decision requires balance, but at the same time firms must be given an opportunity to grow, to stretch beyond their current capabilities. I still believe in affirmative action, and I think that African American firms must be given the opportunity to grow and stretch beyond their current capabilities.

3. Inadequate Lead Time to Respond to a Bid or Request for Proposal

A minority male owner of a construction company reported that oftentimes prime contractors do not provide adequate time to respond to their solicitations:

A lot of times they don't give you enough time to bid the job. They are usually coming from the prime contractor, and then they will say they need me for minority participation.

4. Difficulty Obtaining Financing and Late Payments by Prime Contractors

A Caucasian female owner of an architecture and engineering company reported that she was required to add her spouse as a co-signatory on an SBA-backed loan:

> ***We had a situation where our spouses needed to sign our loans. We should not have needed to have our spouses do that. We also had a request to put up our house as collateral. The financial institution was [financial institution name withheld], and it was actually on an SBA-backed loan. And most recently, [financial institution name withheld] said the same thing because they were exercising what they call an abundance of caution.***

A Caucasian female owner of a construction company reported that a prime contractor refused to pay the total amount due on her invoice and instead opted to pay her in installments:

> ***I'm still waiting for payment from a prime contractor. They still owe me, and I have a lawsuit against them. Their name is [company name withheld]. They only wanted to give me $12,000 down and $4,000 a month, when they owed me $110,000.***

A Caucasian female owner of an architecture and engineering company reported that the prime contractors she typically works for are at least 140 days late in their payments:

> ***Prime contractors are about 140 days late. I ran my cash receipt forecast that allows me to determine the averages for the length of payments.***

A Caucasian female owner of an architecture and engineering company reported that one prime contractor took two years to pay an invoice:

> ***I worked with one prime contractor who was two years late. It's just a struggle when you are a small business enterprise, because I have to pay my vendors in thirty days.***

A minority male owner of an architecture and engineering company reported that a prime contractor went out of business owing him $100,000:

> ***I'm dealing with a situation now where a prime contractor has basically went out of business, and they owe us about $100,000.***

A minority male owner of a construction company reported that prime contractors are late with their payments:

> ***They are late all the time. I do not want to identify any of the general contractors because in the future there might be a project I can do with them and they might not give it to me. But, most general contractors always find a reason not to pay you or try to cut your payments short.***

5. Experiences Working in the Public Sector Compared to the Private Sector

A minority male owner of a construction company believes that the public sector is more advantageous for minorities because of participation goals:

> ***The private sector is a little bit harder to penetrate than the public sector, because the public sector has more government intervention. They have to try to meet their goals. The private does not have to do that.***

A Caucasian female owner of an architecture and engineering firm believes that the procurement process is more equitable in the public sector:

> ***I think the public sector works much harder at being fair than the private sector. Overall, I feel very positive about the public sector versus the private.***

A Caucasian female owner of an architecture and engineering company reported that the public sector is much more willing to work with M/WBEs than the private sector:

> ***I would say the public sector is more open to working with WBEs and MBEs.***

A minority male owner of a construction company prefers working in the private sector, because he gets paid in a timely manner and receives mobilization payments:

> ***I love the private sector because we get paid on time, or I can ask for a down payment for mobilization money.***

A Caucasian female owner of an architecture and engineering company reported that there is less work in the private sector in her industry:

> ***In the private sector we don't have nearly as much work in our industry. We rely on the public sector to promote us.***

A minority male owner of an architecture and engineering company believes that obtaining work in the private sector is more straightforward and less political:

> ***In the private sector work is pretty much based on your expertise, capabilities, and how well you can deliver a quality product. Whereas, the public sector is more about how many forms you fill out and who you know.***

A Caucasian male owner of an architecture and engineering company also reported that private sector companies pay in a more timely manner than in the public sector:

> ***The private sector has timely payments. And it is much less cumbersome.***

A Caucasian male owner of an architecture and engineering company explained why he prefers the public sector:

> ***I would much rather work in the public than the private sector. The public sector is supposed to be more duty bound to employ good business practices and fair play. The private sector is subject to interpretation. Sometimes, good business practices do not enter the situation.***

6. Recommendations to Increase the Participation of DBEs on Public Contracts

A minority male owner of a construction company recommends bonding assistance and mobilization payments as tools to help his company succeed:

> ***If I had the financing, I would be able to afford to meet my payroll. Two, if I had the proper bonding, I could go after good jobs. And, three, would be the payment schedules—if they were able to pay my mobilization or costs that is incurred in getting the job started in a timely manner.***

IV. WEB BASED DBE SURVEY

A. Identification of the Survey Pool

The survey was emailed to 2,240 African American, Asian American, Hispanic American, Native American, Caucasian Female, and Non-DBE construction and architecture and engineering firms willing to perform IDOT prime contracts and subcontracts. Two reminder emails were sent to the 2,240 businesses encouraging them to complete the survey. A profile of the surveyed businesses, by ethnicity and gender is presented in Table 3.01.

Table 3.01: Profile of Survey Pool by Ethnicity and Gender

Ethnicity / Gender	Number	Percent
African American	296	13.2%
Asian American	119	5.3%
Hispanic American	258	11.5%
Native American	10	0.5%
Caucasian Female	388	17.3%
Non-DBE Male	1169	52.2%
TOTAL	**2240**	**100.0%**

B. Survey Instrument

The survey included 26 questions yielding a yes or no, multiple-choice, or rating scale response, as well as ten open-ended questions. Fourteen of the 36 questions were designated as "required." Survey Monkey™, a web based format, was used to elicit responses to the 36 questions. A copy of the E-survey is attached as Appendix A.

The survey questions were designed to elicit information about the following: (1) business profile; (2) perceptions of IDOT, other public agencies, and private sector contracting; (3) experience with DBE program; and (4) recommendations to help businesses obtain work from IDOT.

C. Profile of Respondents

The survey respondents are categorized into the construction, and architecture and engineering industries. Construction consists of heavy construction, special trade contractors, trucking, and material supply. Table 3.02 presents a profile of the type of industries and sectors serviced by the respondents. Since many of the businesses' services intersect, respondents were given the opportunity to select more than one industry or sector.

Table 3.02: Profile of Respondents by Industry

Self-Reported Business Category	Number	Percent
Heavy Construction	56	32%
Special Trade Contractors	22	12.6%
Architecture and Engineering	50	28.6%
Construction-Related Services	9	5.1%
Trucking	9	5.1%
Material Supply	0	0%
Other	12	6.9%
Industries or Sectors Serviced	**Number**	**Percent**
Construction (Transportation)	91	52%
Specialty Trades (Electrical, Plumbing, Site Preparation)	22	12.6%
Urban Planning (Urban design, Land Use, Drafting, etc.)	14	8%
Land Survey	23	13.1%
Industries or Sectors Serviced	**Number**	**Percent**
Landscaping	15	8.6%
Trucking	14	8%
Environmental Consulting	15	8.6%

Self-Reported Business Category	Number	Percent
Architecture	21	12%
Engineering (Structural, Mechanical, Electrical, Civil)	53	30.3%
Geophysical Surveying and Mapping	9	5.1%
Other	26	14.9%

Table 3.03 presents the number of respondents working in IDOT by ethnicity and gender. It should be noted that no Native American business owners responded to the survey; therefore, they are not represented in the tables. A total of 175 surveys were received. The 175 responses represent 7.8 percent of the 2,240 businesses that received an email invitation to complete the survey. Of the 175 businesses that responded to the survey, 13.14 percent are African Americans, 6.3 percent are Asian Americans, 6.86 percent are Hispanic Americans, 24 percent are Caucasian Females, and 49.71 percent are Non-DBEs.

Table 3.03: Profile of Respondents by Ethnicity and Gender

Ethnicity / Gender	Number	Percent
African American	23	13.14%
Asian American	11	6.3%
Hispanic American	12	6.86%
Caucasian Female	42	24%
Non-DBE	87	49.71%
TOTAL	**175**	**100.00%**

Table 3.04 presents the IDOT districts where the respondents work by ethnicity and gender. Respondents were allowed to select multiple districts. The majority of the businesses reported working in Districts 1, 2, and 3.

Table 3.04: IDOT Districts – Profile of where Respondents Work by Ethnicity and Gender

District	African American	Asian American	Hispanic American	Caucasian Female	Non-Minority Male	Total
1	17	9	11	26	56	**119**
2	7	3	3	17	38	**68**
3	8	6	4	20	43	**81**

District	African American	Asian American	Hispanic American	Caucasian Female	Non-Minority Male	Total
4	3	3	1	13	26	**46**
5	3	0	1	12	27	**43**
6	4	2	1	13	23	**43**
7	5	1	3	14	25	**48**
8	8	2	3	17	26	**56**
9	5	1	3	13	20	**42**
TOTAL	**60**	**27**	**30**	**145**	**284**	**546**

Table 3.05 presents the IDOT districts where the respondents are located by ethnicity and gender. Respondents were allowed to select multiple districts. Large pluralities of businesses are located in District 1.

Table 3.05: IDOT Districts – Profile of Respondents' Business Location by Ethnicity and Gender

District	African American	Asian American	Hispanic American	Caucasian Female	Non-Minority Male	Total
1	15	9	11	24	47	**106**
2	1	1	1	5	9	**17**
3	0	0	1	5	6	**12**
4	1	1	0	4	10	**16**
5	1	0	1	3	10	**15**
6	1	0	0	6	11	**18**
7	1	0	0	3	2	**6**
8	5	0	2	8	11	**26**
9	1	0	0	3	4	**8**
TOTAL	**26**	**11**	**16**	**61**	**110**	**224**

Table 3.06 presents the IDOT districts where construction business owners work by ethnicity and gender. The majority of prime contractors reported working in Districts 1, 2, and 3.

Table 3.06: IDOT Districts – Profile of where Construction Business Owners Work by Ethnicity and Gender

District	African American	Asian American	Hispanic American	Caucasian Female	Non-Minority Male	Total
1	6	3	4	10	20	**43**
2	1	0	2	8	14	**25**
3	2	1	2	8	19	**32**
4	0	0	0	5	10	**15**
5	0	0	0	4	11	**15**
6	0	0	0	4	9	**13**
7	0	0	1	6	11	**18**
8	2	0	1	8	7	**18**
9	0	0	1	6	6	**13**
TOTAL	**11**	**4**	**11**	**59**	**107**	**192**

1. Profile of Respondents' Financial Information

The following tables present financial information for the 175 respondents according to gross revenue, expenditures, legal form, and income source during fiscal years 2010 and 2011.

a. Gross Revenue

Tables 7.07 to 6.12 present gross revenue information for the 175 respondents according to ethnicity, gender, industry, and fiscal year. Due to the sensitive nature of these questions, respondents were not required to respond. However, of the 75 businesses that did respond to these questions, 49 reported their gross revenue as $1 million or greater for fiscal year 2010.

Table 3.07: Gross Revenue for All Respondents by Ethnicity and Gender in Fiscal Year 2010

Revenue	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
Under $250,000	5	0	1	5	4	**15**
$250,000 - $499,999	0	0	1	1	0	**2**
$500,000 - $999,999	1	2	3	1	2	**9**
$1M – $4.9M	5	1	2	7	9	**24**
$5M and above	2	2	1	2	18	**25**
Did not respond	10	6	4	26	54	**100**
TOTAL	**23**	**11**	**12**	**42**	**87**	**175**

As presented in Table 3.08 below, the majority of the construction business owners who responded reported their gross revenue as below $5 million for fiscal year 2010.

Table 3.08: Gross Revenue for Construction Business Owners by Ethnicity and Gender in Fiscal Year 2010

Revenue	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
Under $250,000	4	0	0	3	0	**7**
$250,000-$499,999	0	0	1	0	0	**1**
$500,000-$999,999	1	1	1	0	1	**4**
$1M- $4.9M	1	0	1	4	5	**11**
$5M and above	2	1	1	2	15	**21**
Did not respond	5	1	1	15	21	**43**
TOTAL	**13**	**3**	**5**	**24**	**42**	**87**

As presented in Table 3.09, the majority of the architecture and engineering business owners who responded reported their gross revenue between $1 and $4.9 million for fiscal year 2010.

Table 3.09: Gross Revenue for Architecture and Engineering Business Owners by Ethnicity and Gender in Fiscal Year 2010

Revenue	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
Under $250,000	1	0	0	0	1	**2**
$250,000-$499,999	0	0	0	1	0	**1**
$500,000-$999,999	0	0	2	0	1	**3**
$1M – $4.9M	4	1	1	3	2	**11**
$5M and above	0	1	0	0	3	**4**
Did not respond	3	3	3	6	23	**38**
TOTAL	**8**	**5**	**6**	**10**	**30**	**59**

As presented in Table 3.10, the majority of the all the respondents reported their gross revenue as $1 million or greater for fiscal year 2011.

Table 3.10: Gross Revenue for All Respondents by Ethnicity and Gender in Fiscal Year 2011

Revenue	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
Under $250,000	4	1	1	6	4	**16**
$250,000 - $499,999	0	0	1	1	0	**2**
$500,000 - $999,999	2	1	3	1	1	**8**
$1M – $4.9M	5	1	3	5	11	**25**
$5M and above	2	2	0	3	17	**24**
Did not respond	10	6	4	26	54	**100**
TOTAL	**23**	**11**	**12**	**42**	**87**	**175**

As presented in Table 3.11, the majority of the construction business owners who responded reported their gross revenue at below $5 million for fiscal year 2011.

Table 3.11: Gross Revenue for Construction Business Owners by Ethnicity and Gender in Fiscal Year 2011

Revenue	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
Under $250,000	4	1	0	3	0	**8**
$250,000 - $499,999	0	0	1	0	0	**1**
$500,000 - $999,999	2	0	1	0	0	**3**
$1M – $4.9M	1	0	2	3	7	**13**
$5M and above	2	1	0	3	14	**20**
Did not respond	4	1	1	15	21	**42**
TOTAL	**13**	**3**	**5**	**24**	**42**	**87**

As presented in Table 3.12, the majority of architecture and engineering business owners who responded reported their gross revenue as under $5 million for fiscal year 2011.

Table 3.12: Gross Revenue for Architecture and Engineering Business Owners by Ethnicity and Gender in Fiscal Year 2011

Revenue	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
Under $250,000	0	0	0	1	1	**2**
$250,000 - $499,999	0	0	0	0	0	**0**
$500,000 - $999,999	0	0	2	1	1	**4**
$1M – $4.9M	4	1	1	2	2	**10**
$5M and above	0	1	0	0	3	**4**
Did not respond	4	3	3	6	23	**39**
TOTAL	**8**	**5**	**6**	**10**	**30**	**59**

2. Profile of Respondents' Workforce

The following table present workforce profile information for the 175 respondents according to industry, ethnicity, gender, and fiscal year. Table 3.13 presents the workforce size for construction businesses by ethnicity and gender in fiscal year 2011.

Twenty-two businesses had 9 or fewer employees, while 29 reported having 50 or greater.

Table 3.13: Workforce Size for Construction Business Owners by Ethnicity and Gender in FY 2011

Number of Employees	African American	Asian American	Hispanic American	Caucasian Female	Non-DBE	Total
0-9	7	1	2	6	6	**22**
10-19	1	0	0	7	4	**12**
20-29	0	2	3	0	4	**9**
30-39	3	0	0	4	3	**10**
40-49	1	0	0	1	1	**3**
50 and over	1	0	0	5	23	**29**
TOTAL	**13**	**3**	**5**	**23**	**41**	**85**

Table 3.14 presents the workforce size for architecture and engineering businesses by ethnicity and gender in fiscal year 2011. Twenty businesses reported having 9 or fewer employees, while 18 reported having 50 or more.

Table 3.14: Workforce Size for Architecture and Engineering Business Owners by Ethnicity and Gender in FY 2011

Number of Employees	African American	Asian American	Hispanic American	Caucasian Female	Non-Minority Male	Total
0-9	5	1	3	6	5	**20**
10-19	0	1	1	0	5	**7**
20-29	0	0	0	2	2	**4**
30-39	1	0	1	0	2	**4**
40-49	0	1	1	0	1	**3**
50 and over	1	2	0	2	13	**18**
TOTAL	**7**	**5**	**6**	**10**	**28**	**56**

3. Profile of Respondent's Experience Submitting Bids or Request for Proposals

The following tables present the respondents' experience submitting bids or request for proposals. Table 3.15 presents information on whether a business had submitted a bid or proposal to IDOT between FY 2010 and 2011 by the business's ethnicity and gender. Twenty-five respondents did not answer. Of the 150 businesses that responded to this question, 90 businesses submitted bids or proposals to IDOT, while 60 businesses did not submit a bid or proposal.

Table 3.15: IDOT Bid or Proposal Submission by Ethnicity and Gender from FY 2010 to June 2011

Ethnicity / Gender	Submitted Bids or Proposal	Did Not Submit Proposal
African American	10	11
Asian American	5	5
Hispanic American	6	5
Caucasian Female	22	14
Non-DBE	47	25
TOTAL	**90**	**60**

Table 3.16 presents information on whether a business had submitted a bid or proposal to a public agency other than IDOT between 2010 and 2011, according to the business's ethnicity and gender. Of the 150 businesses that responded to this question, 125 submitted bids or proposals to public agencies other than IDOT, a significantly larger total than those that submitted a bid or proposal to IDOT.

Table 3.16: Public Sector (excluding IDOT) Proposal Submission by Ethnicity and Gender from FY 2010 to 2011

Ethnicity / Gender	Submitted Proposal	Did Not Submit Proposal
African American	14	7
Asian American	7	3
Hispanic American	8	3
Caucasian Female	32	4
Non-DBE Male	64	8
TOTAL	**125**	**25**

Table 3.17 presents information on whether a construction business submitted a bid to IDOT between FY 2010 and 2011. Of the 78 construction businesses that responded to this question, 51 construction businesses submitted a bid on an IDOT construction project, while 27 construction businesses did not submit a bid on an IDOT construction project.

Table 3.17: IDOT Bid Submission of Construction Businesses by Ethnicity and Gender from FY 2010 to 2011

Ethnicity / Gender	Submitted Proposal	Did Not Submit Proposal
African American	6	6
Asian American	0	3
Hispanic American	2	3
Caucasian Female	15	7
Non-DBE Male	28	8
TOTAL	**51**	**27**

Table 3.18 presents information on whether architecture and engineering businesses submitted a proposal to IDOT between FY 2010 and 2011. Of the 47 architecture and engineering businesses responding to this question, 30 architecture and engineering businesses submitted proposals.

Table 3.18: IDOT Proposal of Architecture and Engineering Businesses by Ethnicity and Gender from FY 2010 to 2011

Ethnicity / Gender	Submitted Proposal	Did Not Submit Proposal
African American	4	3
Asian American	2	2
Hispanic American	4	1
Caucasian Female	6	2
Non-DBE Male	14	9
TOTAL	**30**	**17**

4. Profile of Respondents' Experience with the DBE Program

The following tables present information on businesses' experiences with the DBE Program, including familiarity with the program, DBE certification, opinions about the program, and participation in training initiatives. Businesses were asked to gauge their familiarity with the DBE Program. The responses are displayed in Table 3.19. Only ten minority contractors were very familiar with the DBE program, while the majority of Caucasian Female and the plurality of Non-DBE businesses were very familiar with the DBE program.

Table 3.19: Familiarity with the DBE Program by Ethnicity and Gender

Ethnicity / Gender	Never Heard	Somewhat Familiar	Familiar	Very Familiar
African American	16	2	1	1
Asian American	0	2	2	5
Hispanic American	1	4	2	4
Caucasian Female	1	3	8	16
Non-DBE Male	2	13	22	27
TOTAL	**20**	**24**	**35**	**53**

Table 3.20 and 7.21 present information regarding DBE certification and whether the business has had experience with the DBE program by ethnicity and gender. The large majority of minority ethnic and gender groups reported being DBE certified, and a large majority of all contractors reported having experience with the DBE program.

Table 3.20: DBE-Certified Businesses by Ethnicity and Gender

Ethnicity / Gender	DBE-Certified	Not DBE-Certified
African American	16	4
Asian American	7	2
Hispanic American	8	3
Caucasian Female	23	4
Non-DBE Male	2	62
TOTAL	**56**	**75**

Table 3.21: Businesses with DBE Program Experience by Ethnicity and Gender

Ethnicity / Gender	DBE Program Experience	No DBE Program Experience
African American	16	4
Asian American	7	2
Hispanic American	10	1
Caucasian Female	25	3
Non-DBE Male	42	22
TOTAL	**100**	**32**

Businesses were then asked whether they believed that the DBE Program facilitated their bid or proposal for an IDOT contract. Their responses are recorded in Table 3.22 according to the company's ethnicity and gender. The majority of minority ethnic and gender groups reported affirmatively that the DBE program facilitated their bid or proposal for an IDOT contract.

Table 3.22: DBE Program Facilitation of a Business Respondents' Bid or Proposal for an IDOT Contract Question, by Ethnicity and Gender

Ethnicity/ Gender	Yes	No
African American	10	4
Asian American	3	4
Hispanic American	6	5
Caucasian Female	17	8
Non-DBE Male	4	38
TOTAL	**40**	**59**

Businesses were also asked whether they believed that discrimination affected their ability to compete for IDOT contracts in fiscal year 2011. Their responses are recorded in Table 3.23 according the company's ethnicity and gender. The majority of minority ethnic and gender groups reported that they did believe discrimination affected or may have affected their ability to compete for IDOT contracts in fiscal year 2011

Table 3.23: Responses to Discrimination Affecting Competition for IDOT Contracts Question, by Ethnicity and Gender

Ethnicity /Gender	Yes	No	Maybe	I Don't Know
African American	10	1	0	7
Asian American	2	1	2	3
Hispanic American	0	2	5	3
Caucasian Female	9	6	4	8
Non-DBE Male	3	40	3	15
TOTAL	**24**	**50**	**14**	**36**

Businesses were asked whether they participated in IDOT's Mentor-Protégé Program for sectors of highway construction and engineering consulting. Their responses are recorded in Table 3.24 according to the respondent's ethnicity and gender. The majority of respondents have not participated in IDOT's Mentor-Protégé Program.

Table 3.24: Businesses That Have Participated in IDOT's Mentor-Protégé Program by Ethnicity and Gender

Ethnicity/ Gender	Yes	No
African American	4	14
Asian American	1	7
Hispanic American	1	7
Caucasian Female	3	20
Non-DBE Male	8	36
TOTAL	**17**	**84**

Businesses were asked whether they participated in any training initiatives that IDOT has created, such as Model Contractor Development Program, for specific procurement opportunities. Their responses are recorded in Table 3.25 according to the company's ethnicity and gender. The majority of respondents have not participated in any of IDOT's training initiatives.

Table 3.25: Businesses That Have Participated In IDOT Training Initiatives by Ethnicity and Gender

Ethnicity/ Gender	Yes	No
African American	2	13
Asian American	1	6
Hispanic American	2	6

Ethnicity/ Gender	Yes	No
Caucasian Female	3	16
Non-DBE Male	7	38
TOTAL	**15**	**79**

Businesses were asked whether they believed that information is disseminated and shared equally by IDOT upon a project's request for proposal. Their responses are recorded in Table 3.26 according to the company's ethnicity and gender. The majority of respondents believe that IDOT disseminates and shares information equally.

Table 3.26: Businesses That Believe That IDOT Information Distribution is Equal, by Ethnicity and Gender

Ethnicity/ Gender	Yes	No
African American	7	4
Asian American	3	1
Hispanic American	4	4
Caucasian Female	17	5
Non-DBE Male	42	4
TOTAL	**73**	**18**

5. Recommended Best Management Practices

The business owners were solicited for recommendations that would improve their access to IDOT's construction and architecture and engineering contracts.

Tables 7.27 through 7.32 present recommended best management practices which construction contractors report would support their efforts to obtain work with IDOT. The data is reported according the contractor's ethnicity and gender. Timely payments, access to credit services, and unbundling of contract services were frequently suggested as management practices that IDOT should adopt.

6. Access to Credit

Table 3.27 describes the frequency that respondents reported that access to credit would help their business obtain work from IDOT. Of the 57 businesses that responded to this question, 34 stated that access to credit would either sometimes or frequently help their business obtain work from IDOT.

Table 3.27: Access to Credit Services

Ethnicity/Gender	Frequently	Sometimes	Rarely	Total
African American	10	2	0	**12**
Asian American	1	0	1	**2**
Hispanic American	2	1	1	**4**
Caucasian Female	3	5	6	**14**
Non-DBE Male	6	4	15	**25**
TOTAL	**22**	**12**	**23**	**57**

7. Unbundling of Contract

Table 3.28 describes the frequency that respondents reported that unbundling contracts would help their business obtain work from IDOT. Of the 72 businesses that responded, 57 stated that the unbundling of contracts would either sometimes or frequently help their business obtain work from IDOT.

Table 3.28 Unbundling of Contract Services

Ethnicity/Gender	Frequently	Sometimes	Rarely	Total
African American	8	1	1	**10**
Asian American	2	0	1	**3**
Hispanic American	1	1	0	**2**
Caucasian Female	9	4	2	**15**
Non-DBE Male	8	23	11	**42**
TOTAL	**28**	**29**	**15**	**72**

8. Assistance with Bonding and Insurance

Table 3.29 describes the frequency that respondents reported that assistance with bonding and insurance would help their business obtain work from IDOT. Of the 57 businesses that responded, 29 stated that assistance with bonding and insurance would either sometimes or frequently help their business obtain work from IDOT.

Table 3.29: Assistance with Bonding and Insurance Services

Ethnicity/Gender	Frequently	Sometimes	Rarely	Total
African American	7	4	1	**12**
Asian American	0	1	1	**2**
Hispanic American	1	1	1	**3**
Caucasian Female	4	5	6	**15**
Non-DBE Male	4	2	19	**25**
TOTAL	**16**	**13**	**28**	**57**

9. Timely Payments from Prime Contractors

Table 3.30 describes the frequency that respondents reported that timely payments from prime contractors would help their business obtain work from IDOT. Of the 62 businesses that responded, 45 stated that timely payments from prime contractors would either sometimes or frequently help their business obtain work from IDOT.

Table 3.30: Timely Payments from Prime Contractors

Ethnicity/Gender	Frequently	Sometimes	Rarely	Total
African American	10	0	1	**11**
Asian American	1	1	1	**3**
Hispanic American	3	0	1	**4**
Caucasian Female	12	1	3	**16**
Non-DBE Male	14	3	11	**28**
TOTAL	**40**	**5**	**17**	**62**

D. Survey Findings

1. DBE Program

Of the 175 total respondents, 132 provided insight on the nature of their experiences and familiarity with the IDOT DBE Program, and 33.33 percent of the respondents reported that they have either never heard of or were minimally familiar with the DBE Program. However, the percentage of companies that indicated that they are DBE-certified was 42.74 percent.

Respondents were asked whether the DBE Program aided in a business' ability to offer a bid or proposal for an IDOT contract. Forty businesses, or 40.4 percent of business responding to that question, reported that the program did facilitate the bid or proposal process. Additionally, 40.32 percent of respondents expressed that discrimination did not affect bid competition, while the remaining either believed that discrimination plays a role in the bid and proposal process, were somewhat convinced, or did not know the affects discrimination had on the bid and proposal process. Nonetheless, 80.21 percent of respondents reported that they believe that information is distributed fairly and equally by IDOT during the bidding and proposal process.

Finally, the survey showed that the majority of businesses are not utilizing IDOT's business assistance programs. Approximately 17 percent of respondents have participated in the Mentor-Protégé Program, and 16 percent reported that they have participated in IDOT training initiatives.

2. Recommended Best Management Practices

Best management practices were recommended by respondents to support their effort to obtain work from IDOT. The recommendations included revamping the pre-qualifications requirements, increase transparency in the procurement process, and expand the DBE training initiatives for start-ups.

CHAPTER 4: REGRESSION AND PRIVATE SECTOR ANALYSIS

I. INTRODUCTION

Private sector business practices which are not subject to government minority and woman-owned business enterprise (M/WBE) or disadvantaged business enterprise (DBE) requirements are indicators of marketplace conditions that could adversely affect the formation and growth of M/WBEs, thereby depressing the current availability of M/WBEs. *Concrete Works of Colorado v. City of Denver (Concrete Works II)*[1] sets forth a framework for considering a passive participant model for an analysis of discrimination in private sector business practices. In accordance with *Concrete Works II*, regression analyses were conducted to examine three outcome variables—business ownership rates, business earnings, and business loan approval. Each regression analysis compared minority group members[2] and Caucasian females to Caucasian males by controlling for race and gender-neutral explanatory variables such as age, education, marital status, and access to capital. The impact of the explanatory variables on the outcome variables is described in this chapter. These findings elucidate the socio-economic conditions in IDOT's market area that should be considered when measuring the relative availability of M/WBEs and Caucasian male-owned businesses.

The U.S. Census Public Use Microdata Sample (PUMS) data was used to compare minority and Caucasian females' probability of owning a business to the probability of Caucasian males owning a business. Logistic regression was used to determine if race and gender have a statistically significant effect on the probability of business ownership. The PUMS data was also used to compare the business earnings of M/WBEs to Caucasian male-owned businesses. An Ordinary Least Squares (OLS) regression was utilized to analyze the PUMS data for disparities in business earnings after controlling for race and gender-neutral factors. The Federal Reserve Board's National Survey of Small Business Finances (NSSBF) dataset was used to compare M/WBEs' business loan approval probabilities to Caucasian male-owned businesses' loan approval probabilities, while controlling for other business explanatory variables.

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[1] Concrete Works of Colo., Inc. v. City of Denver, *86 F. Supp. 2d 1042, 1073 (D. Colo. 2000), rev'd on other grounds, 321 F.3d 950 (10th Cir. 2003), cert. denied, 540 U.S. 1027 (2003).*

[2] *Minority group members include both males and females.*

The applicable limits of the private sector discrimination findings are set forth in *Builders Association of Greater Chicago v. City of Chicago*[3] *(City of Chicago)*, where the court established that even when there is evidence of private sector discrimination, the findings cannot be used as the factual predicate for a government-sponsored, race-conscious M/WBE or DBE program unless there is a nexus between the private sector data and the public agency actions. The private sector findings, however, can be used to develop race-neutral programs to address barriers to the formation and development of M/WBEs. The findings can be applied in the Step Two phase of DBE goal setting. Given the case law, caution must be exercised in the interpretation and application of the regression findings. Case law regarding the application of private sector discrimination is discussed below in detail.

II. LEGAL ANALYSIS

A. Passive Discrimination

The controlling legal precedent set forth in the 1989 *City of Richmond v. J.A. Croson Co.*[4] decision authorized state and local governments to remedy discrimination in the award of subcontracts by its prime contractors on the grounds that the government cannot be a "passive participant" in such discrimination. In January 2003 *Concrete Works II* and *City of Chicago* extended the private sector analysis to the investigation of discriminatory barriers that M/WBEs encountered in the formation and development of businesses and their consequence for state and local remedial programs. *Concrete Works II* set forth a framework for considering such private sector discrimination as a passive participant model for analysis. However, the obligation of presenting an appropriate nexus between the government remedy and the private sector discrimination was first addressed in *City of Chicago*.

The Tenth Circuit Court decided in *Concrete Works II* that business activities conducted in the private sector, if within the government's market area, are also appropriate areas to explore the issue of passive participation. However, the appropriateness of the City's remedy, given the finding of private sector discrimination, was not at issue before the court. The question before the court was whether sufficient facts existed to determine if the private sector business practices under consideration constituted discrimination. For technical legal reasons,[5] the court did not examine whether a consequent public sector remedy, i.e., one involving a goal requirement on the City of Denver's contracts, was

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[3] Builders Association of Greater Chicago v. City of Chicago, *298 F.Supp.2d 725 (N.D. III. 2003).*

[4] *488 U.S. 469 (1989).*

[5] *Plaintiff had not preserved the issue on appeal. Therefore, it was no longer part of the case.*

"narrowly tailored" or otherwise supported by the City's private sector findings of discrimination.

B. Narrow Tailoring

The question of whether a particular public sector remedy is narrowly tailored when it is based solely on business practices within the private sector was at issue in *City of Chicago*. *City of Chicago,* decided ten months after *Concrete Works II,* found that certain private sector business practices constituted discrimination against minorities in the Chicago market area. However, the District Court did not find the City of Chicago's M/WBE subcontracting goal to be a remedy "narrowly tailored" to address the documented private sector discriminatory business practices that had been discovered within the City's market area. The court explicitly stated that certain discriminatory business practices documented by regression analyses constituted private sector discrimination. It is also notable that the documented discriminatory business practices reviewed by the court in the *City of Chicago* were similar to those reviewed in *Concrete Works II*. Notwithstanding the fact that discrimination in the City of Chicago's market area was documented, the court determined that the evidence was insufficient to support the City's race-based subcontracting goals. The court ordered an injunction to invalidate the City of Chicago's race-based program.

We note the following statements from that opinion:

> Racial preferences are, by their nature, highly suspect, and they cannot be used to benefit one group that, by definition, is not either individually or collectively the present victim of discrimination. There may well also be (and the evidence suggests that there are) minorities and women who do not enter the industry because they perceive barriers to entry. If there is none, and their perception is in error, that false perception cannot be used to provide additional opportunities to M/WBEs already in the market to the detriment of other firms who, again by definition, neither individually nor collectively are engaged in discriminatory practices.[6]
>
> Given these distortions of the market and these barriers, is the City's program narrowly tailored as a remedy? It is here that I believe the program fails. There is no "meaningful individualized review" of M/WBEs, *Gratz v. Bollinger*, 539 U.S. 244, 156 L. Ed. 2d 257, 123 S.Ct. 2411, 2431 (2003) (Justice O'Connor concurring). Chicago's program is more expansive and more rigid than plans that have been sustained by the

[6] Builders Association of Greater Chicago v. City of Chicago, *298 F.Supp.2d 725 (N.D. III. 2003).*

courts. It has no termination date, nor has it any means for determining a termination date. The 'graduation' revenue amount is very high, $27,500,000, and very few have graduated. There is no net worth threshold. A third-generation Japanese-American from a wealthy family, with a graduate degree from MIT, qualifies (and an Iraqi immigrant does not). Waivers are rarely or never granted on construction contracts, but "regarding the availability of waivers is of particular importance... a 'rigid numerical quota' particularly disserves the cause of narrow tailoring" *Adarand Constructors v. Slater*, *supra*, at 1177. The City's program is "rigid numerical quota," a quota not related to the number of available, willing and able firms but to concepts of how many of those firms there should be. Formalistic points did not survive strict scrutiny in *Gratz v. Bollinger, supra,* and formalistic percentages cannot survive scrutiny.[7]

C. Capacity to Perform Contracts

The federal circuit appellate decision in *Rothe Development Corp. v. U.S. Department of Defense*[8] involved the issue of capacity. There were two earlier appeals prior to the appellate court's holding in November 2008 that the Department of Defense's (DOD) small disadvantaged business program was unconstitutional on its face.

One of the arguments proffered by *Rothe* on appeal was that the district court erred by relying on six disparity studies that failed to establish that the DOD played any role in the discriminatory exclusion of minority-owned contractors.

The court acknowledged that two of the studies relied upon by Congress attempted to deal with capacity. The New York City study limited prime contracts to those valued at $1 million and under, and the firms in the Dallas study had a "demonstrated capacity to win large competitively bid contracts." Thus, the court concluded that several studies that were relied upon demonstrated that the firms had the capacity to perform a contract. The court expressed an additional concern as to whether the firms could do *more than one contract a time* and deduced that a regression analysis was recommended as the corrective for going forward.[9]

Caution should also be exercised when determining which minority or gender group is appropriate for race-conscious or gender-conscious remedies. For a local government's M/WBE program to be narrowly tailored there must be a statistical finding that available

[7] Id.

[8] *545 F.3d 1023 (Fed. Cir. 2008).*

[9] Id.

minority subcontractors are underutilized. Where the underutilization of a minority group is not found to be statistically significant, the minority group should not be included in race-conscious remedies. [10]

D. Conclusion

As established in *City of Chicago*, private sector discrimination cannot be used as the factual basis for a government sponsored, race-based M/WBE program without a nexus to the government's actions. Therefore, the discrimination that might be revealed in the regression analysis is not a sufficient factual predicate for a IDOT race-based M/WBE Program unless a nexus is established between IDOT and the private sector data. These economic indicators, albeit not a measure of passive discrimination, are illustrative of private sector discrimination and can support IDOT-sponsored, race-neutral programs.

III. REGRESSION ANALYSIS METHODOLOGY

A regression analysis is the methodology employed to ascertain whether there are private sector economic indicators of discrimination in IDOT's market area that could impact the formation and development of M/WBEs. The three regression analyses focus on the construction, goods and services, miscellaneous and other professional services, and architecture and engineering industries. The data sets used for the regression analyses did not allow for an exact match of the industries used in IDOT's Availability Study. Therefore, the four industries were selected to most closely mirror the industries used in IDOT's Study.

As noted, three separate regression analyses are used. They are the Business Ownership Analysis, the Earnings Disparity Analysis, and the Business Loan Approval Analysis. All analyses takes into consideration race and gender-neutral factors, such as age, education, and creditworthiness in assessing whether the explanatory factors examined are disproportionately affecting minorities and females when compared to similarly situated Caucasian males.

IV. DATASETS ANALYZED

Two datasets produced by the United States Census Bureau were used. The 2008 One-Year PUMS data was used to analyze business ownership and earnings disparities in the Likelihood of Business Ownership Model and the Earnings Disparity Model within the State of Illinois. The PUMS data allowed for an analysis by an individual's race, gender,

[10] H.B. Rowe Company v. Tippett, *615 F.3d 233, Court of Appeals, Fourth Circuit (N.C.), July 22, 2010 (NO. 09-1050). The* Rowe *Court also ruled that statistical evidence of overutilization of women business enterprises that is not statistically significant is sufficient factual predicate for gender-based remedies.*

and disability status. The dataset includes observations regarding personal profile, industry, work characteristics, and family structure.

The 2003 NSSBF was utilized to analyze business loan denial rates in the Likelihood of Business Loan Denial Model. The NSSBF dataset includes observations for business and owner characteristics, the business's credit and financial status, and the lender environment and loan characteristics. The 2003 NSSBF contains the most recent available data on access to credit for the East North Central States, which include Illinois, Indiana, Michigan, Ohio, and Wisconsin. The dataset only allowed for an analysis of the four industries combined by race and gender within the five-state region.

V. REGRESSION MODELS DEFINED

A. Likelihood of Business Ownership Model

The Likelihood of Business Ownership Model examines the relationship between the likelihood of being a business owner and socio-economic variables. The dependent variable, business ownership, includes business owners of incorporated and non-incorporated firms. The business ownership variable takes only two values. A value of "1" indicates that a person is a business owner, whereas a value of "0" indicates that a person is not a business owner. When the dependent variable is defined this way it is called a binary variable.[11] In this case a Probit model is utilized to predict the likelihood of business ownership on the basis of independent socio-economic variables. Each regression uses only data from one industry. Categories of the independent variables analyzed include educational level, citizenship status, employment classifications, education, and race/gender.

A disparity finding is denoted by an asterisk (*) on the tables below when the independent variable is significant at or above the 95 percent level. A finding of disparity indicates that there is a non-random relationship between the likelihood of owning a business and the independent variable. Tables of regression results indicate the sign of each variable's coefficient from the regression output. If the coefficient sign is positive, it means there is a positive relationship between the two variables. For example, having an advanced degree is positively related to the likelihood of being a business owner, holding all other variables constant. If the coefficient sign for the independent variable is negative, this implies an inverse relationship between the two variables. For example, as the number of years a firm has been in operation increases, the likelihood of being denied a business loan decreases, holding all other variables constant.

[11] In this case, the standard Ordinary Least Squares (OLS) Regression model cannot be employed and a Probit model is utilized to predict the likelihood of business ownership

B. Earnings Disparity Analysis

The Earnings Disparity Model examines the relationship between the annual self-employment income and socio-economic variables. Wages are defined as the individual's total dollar income earned in the previous twelve months. Categories of independent variables analyzed include educational level, citizenship status, personal characteristics, and race and gender.

All of the independent variables are regressed against wages in a standard Ordinary Least Squares regression model (OLS). The OLS model estimates a linear relationship between the independent variables and the dependent variable. This multivariate regression model estimates a line similar to the standard $y= mx+b$ format but with additional independent variables. The mathematical purpose of a regression analysis is to estimate a linear line for all observations and explain if the findings are statistically significant.

A disparity finding is denoted by an asterisk (*) on the tables below when the independent variable is significant at or above the 95 percent level. A finding of disparity indicates that there is a non-random relationship between wages and the independent variable. Tables of regression results indicate the sign of each variable's coefficient from the regression output. If the coefficient sign is positive, it means there is a positive relationship between the two variables. For example, age is positively related to wages. Therefore, older business owners tend to have higher business earnings, holding all other variables constant. If the coefficient sign for the independent variable is negative, this implies an inverse relationship between the two variables. For example, business owners who have children under the age of six tend to have lower business earnings.

C. Likelihood of Business Loan Denial Model

The Likelihood of Business Loan Denial Model examines the relationship between the likelihood of being denied a business loan and variables related to socioeconomics and business. The model is a Probit model where the dependent variable is the reported probability of experiencing loan denial. The dependent variable is a binary variable where "1" denotes sometimes or always denied a loan, and "0" signifies never denied a loan.[12] Independent variable categories include race and gender, business owners' credit and resources, business credit and financial health, and business/lender environment and loan characteristics.

[12] An ordered Probit model could also be used for this model. This allows for three distinct answers: 1= always denied a loan, 2= sometimes denied a loan, and 3= never denied a loan. However, in this case all business owners who reported "always denied a loan" or "sometimes denied a loan" were coded as 1.

A disparity finding is denoted by an asterisk (*) on the tables below when the independent variable is significant at or above the 95 percent level. A finding of disparity indicates that there is a non-random relationship between being denied a business loan and each independent variable. The tables containing the regression results also indicate the sign of each variable's coefficient from the regression output. If the coefficient sign is positive, it means there is a positive relationship between the two variables. For example, if having a college degree has a positive coefficient, then business owners with a college degree are more likely to be denied a business loan, holding all other variables constant. If the coefficient sign for the independent variable is negative, this implies an inverse relationship between the two variables. For example, as a business owner's credit score increases, the likelihood of being denied a business loan decreases.

VI. FINDINGS

A. Likelihood of Business Ownership Model

The business ownership variable is identified by the number of business owners in the four industries. The analysis considered incorporated and non-incorporated businesses. The data in this section comes from the Illinois 2008 PUMS dataset.[13] Previous studies have shown that many non-discriminatory factors such as education, age, and marital status are associated with self-employment. In this analysis, race and gender-neutral factors are combined with race and gender-specific factors in a Probit regression model to determine whether observed race or gender disparities are independent of the race and gender-neutral factors known to be associated with self-employment. It has to be noted that many of these variables such as having an advanced degree, while seeming to be race and gender-neutral, may be in fact correlated with race and gender.

[13] The PUMS data were collected by the U.S. Census Bureau from a five percent sample of U.S. households. The observations were weighted to preserve the representative nature of the sample in relation to the population as a whole.

The PUMS data for the State of Illinois included a total of 51,157 individuals in the non-highway construction, architecture and engineering, professional services, and goods and other services industries. Table 4.01 provides a summary of the number of individuals in all four industries.

Table 4.01: Summary of Occupational Industry

Industry	Number of Individuals	Female	African American	Asian-Pacific American	Hispanic American	Native American	Other Minority Group
Non-Highway Construction	5,301	8.70%	4.81%	0.72%	13.00%	0.08%	1.00%
Architecture and Engineering	601	20.47%	2.66%	4.99%	4.99%	0.00%	1.00%
Professional Services	37,090	31.02%	8.61%	3.67%	10.88%	0.23%	1.29%
Goods and Other Services	8,165	47.50%	8.29%	5.71%	6.32%	0.28%	1.19%
Total	51,157	31.21%	8.10%	3.70%	10.31%	0.22%	1.24%

Table 4.02 summarizes the composition of racial and gender composition of business owners in each of the four industries.

Table 4.02: Minority and Female Business Ownership Rates

Industry	Female	African American	Asian-Pacific American	Hispanic American	Native American	Other Minority Group
Non-Highway Construction	7.57%	3.91%	0.73%	6.35%	0.00%	0.49%
Architecture and Engineering	11.43%	5.71%	1.43%	4.29%	0.00%	4.29%
Professional Services	29.31%	4.67%	4.92%	4.86%	0.16%	0.87%
Goods and Other Services	35.62%	4.52%	5.09%	3.39%	0.14%	0.92%

For each of the four industries, the Probit regression is used to identify the probability that an individual owns a business given his or her background, including ethnicity, gender, and race and gender-neutral factors. The dependent variables in all regressions are binary variables coded as "1" for individuals who are self-employed and "0" for individuals who are not self-employed. The independent variables used are as follows:

Personal Characteristics	Educational Attainment	Race	Gender
– Age – Marital Status – Citizenship – Disability – Speaking English at Home – Number of Children under the Age of Six in the Household	– A Bachelor's Degree – An Advanced Degree	– African American – Asian-Pacific American – Hispanic American – Native American – Other Minority Group	– Female

1. Probit Model Results for Non-Highway Construction Business Ownership Probabilities

Table 4.03 presents the Probit regression results for the likelihood or probability[58] of owning a business in the non-highway construction industry based on the 14 variables analyzed in this model.[59]

Table 4.03: Non-Highway Construction Industry Probit Model

Variable	Coefficient	Z-score	P-value
Constant	-1.659234	-6.8*	0
Age	0.0303318	2.97*	0.003
Bachelor's Degree (1)	0.1540273	1.95	0.052
Advanced Degree	0.1665286	1.23	0.219
Foreign-born Citizen (2)	0.2407857	1.68	0.094
Non-U.S. Citizen	0.1010698	0.74	0.46
Disability	-0.021322	-0.24	0.812
Speaking English at Home	-0.1278878	-1.04	0.299
Children under Age 6	0.0098637	0.04	0.972
Married	0.0487295	0.05742	0.396
African American	-0.1048991	-0.87	0.383
Asian-Pacific American	-0.3271344	-1.21	0.226
Hispanic American	-0.6668054	-6.27*	0
Other Minority Group	-0.725053	-2.91*	0.004
Caucasian Female	-0.3954743	-4.4*	0

[58] The terms "probability" and "likelihood" are used interchangeably throughout the chapter.

[59] There are no observations of self-employed Native Americans in this industry

The findings of business ownership probabilities in the non-highway construction industry are as follows:

a. The probability of non-highway construction business ownership is positively associated with increased age. Older individuals are significantly3 more likely to be non-highway construction business owners.

b. Persons with disabilities are less likely to be business owners in the non-highway construction industry but not at a statistically significant level.

c. Hispanic Americans are significantly less likely to be self-employed4 in the non-highway construction industry.

d. Other minority groups are significantly less likely to be business owners in the non-highway construction industry.

e. The probability of non-highway construction business ownership is negatively associated with the African American and Asian-Pacific American variables. However, the relationship between each of these independent variables and the dependent variable, business ownership in the non-highway construction industry, is not a statistically significant relationship.

f. Caucasian females are significantly less likely to be business owners in the non-highway construction industry.

g. It is important to note that besides the age variable, no other race and gender-neutral variable impacts the probability of non-highway construction business ownership at a statistically significant level.

[3] Throughout this chapter, significance refers to statistical significance.

[4] Note: The terms business owner and self-employed are used interchangeably throughout the chapter.

2. Probit Model Results for Architecture and Engineering Business Ownership Probabilities

Table 4.04 presents the Probit regression results for the likelihood of owning a business in the architecture and engineering industry using the 14 variables analyzed in this model.[5]

Table 4.04: Architecture and Engineering Probit Model

Variable	Coefficient	Z-score	P-value
Constant	-4.286441	-4.49*	0
Age	0.0830617	2.2*	0.028
Bachelor's Degree	0.2842864	1.5	0.135
Advanced Degree	0.6094879	2.73*	0.006
Foreign-born Citizen	-0.3646633	-0.96	0.336
Non-U.S. Citizen	-0.0620636	-0.15	0.881
Disability	0.3772053	1.08	0.278
Speaking English at Home	0.3091614	0.94	0.348
Children under Age 6	0.0425307	0.08	0.935
Married	-0.2754745	-1.45	0.148
African American	0.5658357	1.34	0.181
Asian-Pacific American	-0.3056624	-0.52	0.6
Hispanic American	0.0711975	0.19	0.851
Other Minority Group	1.462839	2.82*	0.005
Caucasian Female	-0.1102125	-0.46	0.647

[5] There are no self-employed observations for Native Americans in this industry.

The Probit regression results for the architecture and engineering industry show:

a. The likelihood of architecture and engineering business ownership is positively associated with the increase of age. Older individuals are significantly more likely to be business owners in the architecture and engineering industry.

b. Individuals with an advanced degree, beyond the baccalaureate level, have a significantly higher probability of being business owners in the architecture and engineering industry.

c. Persons with disabilities are more likely to be business owners in the architecture and engineering industry, but not at a statistically significant level.

d. Asian-Pacific Americans and Caucasian females are less likely to be self-employed in the architecture and engineering industry, but not at a statistically significant level.

e. Other minority groups are significantly more likely to be self-employed in the architecture and engineering industry. However, one must note that due to the small number of business owners in the architecture and engineering industry, this result do not hold as much weight.

3. Probit Model Results for Professional Services Business Ownership Probabilities

Table 4.05 presents the Probit regression results for the likelihood of owning a business in the professional services industry using the 15 variables analyzed in this model.

Table 4.05: Professional Services Probit Model

Variable	Coefficient	Z-score	P-value
Constant	-2.422941	-10.19*	0
Age	0.0413653	4.25*	0
Bachelor's Degree	0.2818841	5.14*	0
Advanced Degree	0.6543929	12.49*	0
Foreign-born Citizen	0.0307197	0.34	0.737
Non-U.S. Citizen	0.0201058	0.17	0.866
Disability	0.1026777	1.1	0.272
Speaking English at Home	-0.0035269	-0.04	0.968
Children under Age 6	0.1707575	1.8	0.072
Married	0.0824497	1.75	0.081
African American	-0.411501	-4.3*	0
Asian-Pacific American	-0.4838125	-4.3*	0
Hispanic American	-0.3459939	-3.07*	0.002
Native American	-0.3714467	-0.94	0.346
Other Minority Group	-0.2006813	-1.03	0.301
Caucasian Female	-0.3968516	-8.39*	0

The professional services industry Probit regression results indicate:

a. The likelihood of business ownership significantly increases as age increases; older individuals are significantly more likely to be business owners in the professional services industry.

b. Individuals with a bachelor's degree or an advanced degree are significantly more likely to be business owners in the professional services industry.

c. Persons with disabilities are more likely to be business owners in the professional services industry, but not at a statistically significant level.

d. African Americans, Asian-Pacific Americans, and Hispanic Americans are significantly less likely to be business owners in the professional services industry.

e. Caucasian females are significantly less likely to be business owners in the professional services industry.

4. Probit Model Results for Goods and Other Services Business Ownership Probabilities

Table 4.06 depicts the Probit regression results for the likelihood of owning a business in the goods and other services industry using the 15 variables analyzed in this model.

Table 4.06: Goods and Other Services Probit Model

Variable	Coefficient	Z-score	P-value
Constant	-2.569072	-22.2*	0
Age	0.0359872	8.02*	0
Bachelor's Degree	0.1728991	5.88*	0
Advanced Degree	0.1162138	2.49*	0.013
Foreign-born Citizen	0.1237554	1.92	0.055
Non-U.S. Citizen	0.0318618	0.43	0.671
Disability	-0.07383	-1.69	0.091
Speaking English at Home	-0.1455015	-2.46*	0.014
Children under Age 6	0.0478549	0.67	0.506
Married	0.2185702	7.75*	0
African American	-0.2484091	-4.78*	0
Asian-Pacific American	-0.1767785	-2.56*	0.011
Hispanic American	-0.5454879	-8.98*	0
Native American	-0.2799747	-0.86	0.388
Other Minority Group	-0.1719615	-1.45	0.147
Caucasian Female	-0.1099905	-4.05*	0

The goods and other services industry Probit regression results indicate:

a. The likelihood of business ownership is positively associated with an increase in age; older individuals are significantly more likely to be self-employed in the goods and other services industry.

b. Having a bachelor's degree or an advanced degree significantly increases the likelihood of being a business owner in the goods and other services industry.

c. Persons with disabilities are less likely to own a business in the goods and other services industry but not a statistically significant level.

d. Individuals who speak only English at home are significantly less likely to own a business in the goods and other services industry.

e. Married individuals are significantly more likely to be business owners than unmarried individuals in the goods and other services industry.

f. African Americans, Asian-Pacific Americans, and Hispanic Americans are significantly less likely to be business owners in the goods and other services industry.

g. Caucasian females are significantly less likely to own a business in the goods and other services industry.

B. Summary of the Likelihood of Business Ownership Model Results

The regression analysis examined the different variables' impact on an individual's likelihood of owning a business in the non-highway construction, architecture and engineering, professional services, and goods and other services industries. Controlling for race and gender-neutral factors, the Likelihood of Business Ownership Model results show that statistically significant disparities in the likelihood of owning a business exist for minorities and females.

Caucasian females and Hispanic Americans experience the greatest disparity as they are significantly less likely to own a business in the non-highway construction, professional services, and goods and other services industries. Caucasian females are also less likely to own a business in the architecture and engineering industry, but not at a statistically significant level. African Americans and Asian-Pacific Americans have a statistically significant business ownership disparity in the professional services and goods and other services industries. Asian-Pacific Americans are also less likely to own a business in the architecture and engineering industry, but not at a statistically significant level. Native Americans had a lower likelihood of owning a business in the professional services and goods and other services industries, but not at a statistically significant level. Other minority groups have a statistically significant lower probability of owning a business in the non-highway construction and architecture and engineering industries. They also have a lower likelihood of owning a business in the professional services and goods and other services industries, but not at a statistically significant level. In the architecture and engineering industry, other minority groups have a statistically significant higher probability of owning a business; however this result is not as substantive due to the few observations in this industry. In addition, persons with disabilities a lower likelihood of owning a business in the non-highway construction, architecture and engineering, and goods and other services industries but not at a statistically significant level.

C. Business Earnings Disparity Analysis

The business earnings variable is identified by self-employment income[1] within the year 2008 for the four industries: non-highway construction, architecture and engineering, professional services, and goods and other services. The analysis considered incorporated and non-incorporated businesses.

Previous studies have shown that many non-discriminatory factors, such as education, age, and marital status, are associated with self-employment income. In this analysis, race and gender-neutral factors are combined with race and gender groups in an OLS regression model to determine whether observed race or gender disparities were independent of the race and gender-neutral factors known to be associated with self-employment income.

An OLS regression analysis is used to assess the presence of business earning disparities. The 2008 PUMS dataset used in this analysis contains a total of 51,157 observations in the four occupational industries. OLS regressions have been conducted separately for each industry. A set of 15 independent variables are used for all regressions, which includes the following:[2]

Personal characteristics	**Educational attainment**	**Race**	Gender
– Age – Marital Status – U.S. Citizenship – Being a Foreign-born U.S. Citizen – Disability Status – Not Speaking English at Home – Number of Children under Age Six in the Household	– A Bachelor's Degree – An Advanced Degree	– African American – Asian-Pacific American – Native American – Hispanic American – Other Minority Groups	– Female

[1] The terms "business earnings" and "self-employment income" are used interchangeably.

[2] Each independent variable is a binary variable coded as "1" if the individual has that variable present and "0" if otherwise (i.e. for the Hispanic American variable, it is coded as "1" if the individual is Hispanic American and "0" if otherwise).

1. OLS Regression Results for Business Earnings in the Non-Highway Construction Industry

Table 4.07 depicts the results of the OLS regression for business earnings in the non-highway construction industry based on the 14 variables analyzed in this model.[3]

Table 4.07: Non-Highway Construction Industry OLS Regression

Variable	Coefficient	T-score	P-value
Constant	-9657.671	-1.39	0.165
Age	1309.967	3.58*	0
Bachelor's Degree	3560.333	0.78	0.438
Advanced Degree	2426.111	0.53	0.599
Foreign-born Citizen	-2394.637	-0.49	0.626
Non-U.S. Citizen	-5642.26	-1.47	0.141
Disability	-14139.21	-5.95*	0
Speaking English at Home	-4773.797	-1.31	0.19
Children under Age 6	-7232.74	-1.85	0.065
Married	1607.39	0.67	0.504
African American	1634.745	0.27	0.784
Asian-Pacific American	-10012.54	-1.7	0.089
Hispanic American	-2832.15	-0.64	0.525
Other Minority Group	-10190.61	-2.62*	0.009
Caucasian Female	-9542.34	-3.1*	0.002

[3] There are no observations for Native Americans in this industry.

The OLS regression results for business earnings in the non-highway construction industry show the following:

a. Older business owners have significantly higher business earnings in the non-highway construction industry.

b. Persons with disabilities have significantly lower business earnings in the non-highway construction industry.

c. Asian-Pacific Americans and Hispanic Americans have lower business earnings in the non-highway construction industry but not at a statistically significant level.

d. Other minority groups have significantly lower business earnings in the non-highway construction industry.

e. Caucasian females have significantly lower business earnings in the non-highway construction industry.

2. OLS Regression Results for Business Earnings in the Architecture and Engineering Industry

The OLS regression results for business earnings in the architecture and engineering industry based on the 14 variables analyzed in this model are depicted in Table 4.08.[4]

Table 4.08: Architecture and Engineering Industry OLS Regression

Variable	Coefficient	T-score	P-value
Constant	-103758.7	-1.46	0.151
Age	4322.424	1.79	0.079
Bachelor's Degree	-6662.955	-0.55	0.586
Advanced Degree	19546	0.95	0.345
Foreign-born Citizen	-1547.078	-0.07	0.943
Non-U.S. Citizen	-89801.02	-1.9	0.062
Disability	-11076.28	-0.87	0.389
Speaking English at Home	3165.301	0.17	0.864
Children under Age 6	10817.35	0.53	0.602
Married	-9374.247	-0.77	0.444
African American	14472.1	0.68	0.497
Asian-Pacific American	93714.34	4.93*	0
Hispanic American	139072.1	1.26	0.212
Other Minority Group	76649.85	3.86*	0
Caucasian Female	-17188.68	-1.04	0.301

[4] There are no observations for Native Americans in this industry.

The OLS regression results for business earnings in the architecture and engineering industry indicate the following:

a. Persons with disabilities have lower business earnings in the architecture and engineering industry but not at a statistically significant level.

b. Asian-Pacific Americans and other minority groups have significantly higher business earnings in the architecture and engineering industry. However, one must note that due to the small number of business owners in the architecture and engineering industry, this result do not hold as much weight.

c. Caucasian females have lower business earnings in the architecture and engineering industry but not at a statistically significant level.

3. OLS Regression Results for Business Earnings in the Professional Services Industry

The OLS regression results for business earnings in the professional services industry based on the 15 variables analyzed in this model are depicted in Table 4.09.

Table 4.09: Professional Services OLS Regression

Variable	Coefficient	T-score	P-value
Constant	-10237.49	-0.64	0.525
Age	1803.818	2.55*	0.011
Bachelor's Degree	4071.579	1.2	0.229
Advanced Degree	30691.19	6.97*	0
Foreign-born Citizen	-3186.464	-0.41	0.683
Non-U.S. Citizen	-1046.631	-0.12	0.908
Disability	-15889.66	-3.16*	0.002
Speaking English at Home	-2321.002	-0.34	0.737
Children under Age 6	-5929.746	-0.84	0.401
Married	1633.04	0.36	0.721
African American	-12296.63	-1.05	0.293
Asian-Pacific American	-219.6247	-0.02	0.987
Hispanic American	-19537.61	-2.52*	0.012
Native American	-34579.36	-7.73*	0
Other Minority Group	-19870.42	-1.79	0.074
Caucasian Female	-15052.36	-3.71*	0

The OLS regression results for business earnings in the professional services industry show the following:

a. Older business owners have significantly higher business earnings in the professional services industry.

b. Business owners with an advanced degree have significantly higher business earnings in the professional services industry.

c. Persons with disabilities have significantly lower business earnings in the professional services industry.

d. African Americans, Asian-Pacific Americans, and other minority groups have lower business earnings in the professional services industry, but not at a statistically significant level.

e. Hispanic Americans and Native Americans have significantly lower business earnings in the professional services industry.

f. Caucasian females have significantly lower business earnings in the professional services industry.

4. OLS Regression Results for Business Earnings in the Goods and Other Services Industry

The OLS regression results for business earnings in the goods and other services industry based on the 15 variables analyzed in this model are depicted in Table 4.10.

Table 4.10: Goods and Other Services OLS Regression

Variable	Coefficient	T-score	P-value
Constant	-9004.95	-1.2	0.229
Age	1146.018	4*	0
Bachelor's Degree	3435.117	1.28	0.2
Advanced Degree	18482.03	3.28*	0.001
Foreign-born Citizen	-1275.263	-0.34	0.731
Non-U.S. Citizen	-171.2604	-0.04	0.969
Disability	-1564.245	-0.32	0.753
Speaking English at Home	4942.227	1.61	0.108
Children under Age 6	-6368.041	-1.96	0.05
Married	4814.49	2.53*	0.011
African American	-6053.226	-2.14*	0.033
Asian-Pacific American	-8973.856	-1.89	0.059
Hispanic American	-1507.016	-0.32	0.753
Native American	-5769.981	-0.33	0.738
Other Minority Group	-19411.36	-6.39*	0
Caucasian Female	-11143.48	-5.79*	0

The OLS regression results for business earnings in the goods and other services industry show the following:

a. Older business owners have significantly higher business earnings in the goods and other services industry.

b. Business owners with an advanced degree have significantly higher business earnings in the goods and other services industry.

c. Persons with disabilities have lower business earnings in the goods and other services industry but not at a statistically significant level.

d. Business owners with children under the age of six have significantly lower business earnings in the goods and other services industry.

e. Married business owners have significantly higher business earnings in the goods and other services industry.

f. African Americans have significantly lower business earnings in the goods and other services industry.

g. Asian-Pacific Americans, Hispanic Americans, and Native Americans have lower business earnings in the goods and other services industry but not at a statistically significant level.

h. Other minority groups have significantly lower business earnings in the goods and other services industry.

Caucasian females have significantly lower business earnings in the goods and other services industry.

D. Business Earnings Disparity Analysis Conclusion

The Earnings Disparity Model regression analysis documented statistically significant disparities in business earnings for minorities, females, and persons with disabilities. Caucasian females experience the greatest business earnings disparity as they have statistically significant lower business earnings in the non-highway construction, professional services, and goods and other services industries. African Americans have a statistically significant business earnings disparity in the goods and other services industry. They also have lower business earnings in the professional services industry, but not at a statistically significant level. While Asian Americans have lower business earnings in the non-highway construction, professional services, and goods

and other services industries, these disparities are not statistically significant. Asian Americans also have statistically significant higher business earnings in the architecture and engineering industry. However, one must note that due to the small number of business owners in the architecture and engineering industry, this result do not hold as much weight. Hispanic Americans and Native Americans face statistically significant business earnings disparities in the professional services industry. They also have lower business earnings in the goods and other services industry, but not at a statistically significant level. In addition, Hispanic Americans have lower business earnings in the non-highway construction industry, but this disparity is also not statistically significant. Other minority groups have statistically significant business earnings disparities in the non-highway construction and goods and other services industries. In the professional services industry, other minority groups have lower business earnings, but not at a statistically significant level. Additionally, other minority groups have statistically significant higher business earnings in the architecture and engineering industry. Persons with disabilities face statistically significant business earnings disparities in the non-highway construction and professional services industries. In addition, they have lower business earnings in the architecture and engineering and goods and other services industries, but not at a statistically significant level.

E. Likelihood of Business Loan Denial Analysis

Access to business capital in the form of loans is measured by the Likelihood of Business Loan Denial. The Likelihood of Business Loan Denial variable is a score that reflects the reported probability of experiencing loan denial. The data in this section comes from the 2003 NSSBF dataset.[1] Previous studies have shown that many non-discriminatory factors such as education, experience of the firm owner, and firm characteristics could lead to differences in a business owner's loan denial rate. In this analysis, race and gender-neutral factors are combined with race and gender groups in a Probit regression model to determine whether observed race or gender disparities were independent of the race and gender-neutral factors known to be associated with self-employment.

Access to business capital in the form of loans is measured by the likelihood of loan denial among 3,260 business owners in all industries. The dataset does not contain sufficient information on all four industries to allow for a separate examination of each industry. Therefore, the estimation is based on the entire sample from the 2003 NSSBF for the East North Central States region. The NSSBF records the geographic location of the firm by Census

[1] The National Survey of Small Business Finances (NSSBF) data were collected by the U.S. Federal Reserve. The NSSBF collects information on small businesses (fewer than 500 employees) in the United States such as owner characteristics, firm size, use of financial services, and the income and balance sheets of the firm. The 2003 NSSBF dataset is the most recently released dataset yet to date.

Division, not city, county, or state. Illinois is located within the East North Central States Division.

A Probit regression is used to examine the factors that might explain loan denials for the business owners. The dependent variable is a binary variable where "1" denotes being denied a business loan, and "0" signifies being approved for a business loan. The independent variables describe four sets of factors:

1. **The business owner's minority and gender group classification**
2. **The business owner's credit and resources**
3. **The business's credit and financial health**
4. **The environment in which the business and lender operate, such as the number of institutions the business owner dealt with, and whether the business is a sole trader or a partnership**

Within each set, variables with no recorded observations are deleted from the dataset. For example, among all denied loans, no observations are found for Native Americans, Asian-Pacific Americans, or PBEs; therefore, the regression did not include these three groups. The results of the Probit regression for each set of factors are presented in Table 4.11.

Table 4.2: Probit Model for the Likelihood of Business Loan Denial

Variable	Coefficient	Z-score	P-value
Constant	-1.789	-23.49*	0.000
Business Owner's Minority Group and Gender Classification			
African American	0.532	2.190*	0.028
Hispanic American	0.783	4.090*	0.000
Female	-0.355	-2.580*	0.010
Business Owner's Credit and Resources			
Age	-0.028	-4.370*	0.000
Years of Experience	0.015	2.410*	0.016
Less than High School	0.180	1.220	0.223
High School Education	0.413	2.640*	0.008
Some College	0.129	0.830	0.408
Use of Owner's Personal Credit Card for Business	0.159	1.570	0.116
Average Monthly New Business Expense	0.000	-0.470	0.639
Owner Delinquent Obligations in Past 3 Years	0.977	8.360*	0.000
Firm's Credit and Financial Health			
Number of Employees	0.002	2.660*	0.008
Age of Firm	-0.008	-2.010*	0.045
Checking Account Balance	0.000	-2.560*	0.010
Savings Account Balance	0.000	-2.020*	0.044
Firm Has a Savings Account	0.004	0.030	0.979
Collateral Required for Credit Line	0.034	0.150	0.878
Firm Has a Business Mortgage	0.574	2.610*	0.009
Firm Has a Vehicle Loan	0.628	2.650*	0.008
Firm Has an Equipment Loan	0.058	0.250	0.803
Number of Stockholder Loans	0.016	0.440	0.659

Variable	Coefficient	Z-score	P-value
Firm Has Capital Leases	-0.190	-0.770	0.443
Total Sales	0.000	-0.860	0.390
Total Cost of Doing Business	0.000	0.850	0.398
Yearly Profit	0.000	1.010	0.313
Cash on Hand	0.000	-2.590*	0.010
Total Assets	0.000	2.330*	0.020
Total Principal Amount of All Outstanding Loans	0.000	-0.750	0.451
Total Equity	0.000	-3.880*	0.000
More than 60 Days Delinquent in Last 3 Years	0.571	5.750*	0.000
Lender Environment and Loan Characteristics			
Partnership	0.444	2.090*	0.037
Sole Proprietor	0.330	1.610	0.107
Incorporation	0.365	1.750	0.080
Number of Institutions	0.159	7.420*	0.000
100% Bank Deposits	-0.023	-0.150	0.882
100% Bank Deposits, 50% Thrift Deposits	0.069	0.360	0.717
100% Bank Deposits, 100% Thrift Deposits	-0.246	-1.680	0.093

The Probit regression results for the Likelihood of Business Loan Denial Model indicate the following:

a. Business Owner's Minority Group and Gender Classification

- African Americans and Hispanic Americans have a significantly higher probability of being denied a business loan.
- Females have a significantly lower probability of being denied a business loan.

b. Business Owner's Credit and Resources

- Older business owners are significantly less likely to be rejected for a business loan.
- Business owners with more years of working experience have a significantly higher probability of being rejected for a business loan.
- Business owners with only a high school education have a significantly higher probability of being denied a business loan.
- Business owners with delinquent obligations in the past three years have a significantly higher probability of being denied a business loan.

c. Firm's Credit and Financial Health

- Firms with more employees have a significantly higher probability of being denied a business loan.
- Firms with more years of business operations have a significantly lower probability of being denied a business loan.
- Firms with a checking account balance or a savings account balance have a significantly lower probability of being denied a business loan.
- Firms with a business mortgage have a significantly higher probability of being denied a business loan.
- Firms with a vehicle loan are significantly more likely to be denied a business loan.
- Firms with cash on hand are significantly less likely to be denied a business loan.

- Firms with higher total assets are significantly less likely to be denied a business loan.

- Firms with higher total equity are significantly less likely to be denied a business loan.

- Firms with more than 60 days of delinquent history in the past three years are significantly more likely to be denied a business loan.

d. The Environment in which the Firm and Lender Operate

- Firms that are a Partnership are significantly more likely to be denied a business loan.

- The more financial institutions a business owner contacts to apply for a loan, the more likely the owner will be denied a business loan.

1. Business Interest Rates among Minorities and Females

The relationship between the business interest rates among different ethnic groups and females have been tested and compared using OLS regression. Data on interest rates was analyzed using the 2003 NSSBF dataset. The results are shown in Table 4.12.

Table 4.3: Business Interest Rates among Minorities and Females

Variable	Coefficient	T-score	P-value
Constant	12.353	106.330*	0.000
African American	0.629	0.910	0.360
Hispanic American	1.511	2.340*	0.019
Native American	-1.117	-1.100	0.271
Caucasian	0.0001	1.560	0.119
Female	0.289	0.990	0.323

The findings indicate that Hispanic Americans are significantly more likely to get charged higher interest rates on a business loan than female, Caucasian, African American, and Native American business owners.

a. Summary of the Likelihood of Business Loan Denial Model Results

The Likelihood of Business Loan Denial Model reveals that statistically significant disparities exist for African American and Hispanic American-owned businesses. Even after controlling for race and gender-neutral factors, the regression analysis reveals that African American and Hispanic American businesses have a significantly higher probability of being denied a business loan. In addition, Hispanic Americans are more likely to pay higher interest rates on business loans when compared to similarly situated female, Caucasian, African American, and Native American business owners.

F. GROWTH INDICATORS FOR MINORITY-OWNED BUSINESSES

The minority-owned business survival, expansion, and contraction rates are reported in the U.S. Small Business Administration's (SBA) Office of Advocacy report published in 2005. The report tracks minority-owned businesses over the period 1997 to 2001.[2]

1. Datasets Analyzed

The statistical tabulations, extracted from the responses to the 1997 Survey of Minority-Owned Business Enterprises (SMOBE),[3] were provided to the Small Business Administration's Office of Advocacy by the U. S. Census Bureau. The SMOBE only contains information on employer establishments, not firms, which are a better measure of business ownership. It also only contains information on establishments in existence in 1997, not establishments that opened after 1997.

2. Findings

a. Business Survival Rates

The report examined the survival rates of business enterprises with paid employees other than the owner's family members. Between 1997 and 2001, the survival rate of all MBEs was lower than that of Caucasian-owned business enterprises. The survival rate for Caucasian-owned employer establishments was 72.6 percent. The survival rates of five ethnic groups are presented in Table 4.13.[4]

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[2] This was the most recently released report at the time the regression analysis was performed.

[3] Lowery, Ying. 2005. "Dynamics of Minority-Owned Employer Establishments, 1997-2001." U.S. Small Business Administration Office of Advocacy. Washington D.C.

[4] These classifications reflect those used in Ying Lowery's 2005 report, "Dynamics of Minority-Owned Employer Establishments, 1997-2001." For the 2011 State of Illinois Department of Central Management Services Disparity and Availability Study, Pacific Islanders are included under Asian American, and American Indians and Alaska Natives are included under Native American.

Table 4.13: Business Survival Rates

Ethnicity	Business Survival Rate
African American	61%
American Indian and Alaska Native	67%
Asian American and Pacific Islander	72.1%
Caucasian	72.6%
Hispanic American	68.6%

These results demonstrate that MBEs have a lower probability of succeeding, and thus a higher probability of closure, as compared to Caucasian-owned businesses.

b. Business Expansion Rates

During the four year period, Caucasian-owned business enterprises' expansion rate was 27.4 percent. The business expansion rate measures the increase in the number of employees. The expansion rates reported for five ethnic groups are depicted in Table 4.14.

Table 4.4: Business Expansion Rates

Ethnicity	Business Expansion Rate
African American	25.7%
American Indian and Alaska Native	27.8%
Asian American and Pacific Islander	32.1%
Caucasian	27.4%
Hispanic American	34%

The business expansion rate results indicate that Hispanic American, Asian American and Pacific Islander, and American Indian and Alaska Native business enterprises' expansion rates exceeded that of Caucasian-owned business enterprises. However, African American businesses experienced lower expansion rates than Caucasian-owned businesses.

c. Business Contraction Rates

Business contraction measures the rate at which a business enterprise reduces the number of employees. The contraction rate of Caucasian-owned businesses was 21.1 percent. Table 4.15 depicts the business contraction rates reported for five ethnic groups.

Table 4.15: Business Contraction Rates

Ethnicity	Business Contraction Rates
African American	19.9%
American Indian and Alaska Native	22.4%
Asian American and Pacific Islander	22.9%
Caucasian	21.1%
Hispanic American	17.8%

Table 4.15 shows that African American and Hispanic American business enterprises have a lower probability of reducing their total number of employees compared to Caucasian-owned businesses. Nonetheless, Asian American and Pacific Islander and American Indian and Alaska Native business enterprises have a higher contraction rate than that of Caucasian-owned businesses.

VII. CONCLUSION

This chapter used three regression models to determine whether there are factors in the private sector which might account for statistical disparities between M/WBE availability and utilization in the three outcome variables of business ownership, business earnings, and business loan denial. Disability status was also examined in two of the three outcome variables -- business ownership and business earnings. Furthermore, this chapter examined growth indicators for various ethnic groups from the findings of a U.S. Small Business Administration Office of Advocacy report.

The three regression models used for this analysis were the Likelihood of Business Ownership Model, the Earnings Disparity Model, and the Likelihood of Business Loan Denial Model. The regression analysis examined the effect of race and gender on the three outcome variables. This analysis was performed for the four industries – non-highway construction, architecture and engineering, professional services, and goods and other services – which are included in the Disparity Study. The Business Ownership Model and the Earnings Disparity Model used data

from the 2008 PUMS dataset for the State of Illinois. The Business Loan Denial Model used data from the 2003 NSSBF dataset for all industries within the East North Central States region.

The regression analysis examined the different explanatory variables' impact on an individual's likelihood of owning a business in the non-highway construction, architecture and engineering, professional services, and goods and other services industries. Controlling for race and gender-neutral factors, the Likelihood of Business Ownership Model results show that statistically significant disparities in the likelihood of owning a business exist for minorities and females. Caucasian females and Hispanic Americans experience the greatest disparity as they are significantly less likely to own a business in the non-highway construction, professional services, and goods and other services industries. Caucasian females are also less likely to own a business in the architecture and engineering industry, but not at a statistically significant level. African Americans and Asian-Pacific Americans have a statistically significant business ownership disparity in the professional services and goods and other services industries. Asian-Pacific Americans are also less likely to own a business in the architecture and engineering industry, but not at a statistically significant level. Native Americans had a lower likelihood of owning a business in the professional services and goods and other services industries, but not at a statistically significant level. Other minority groups have a statistically significant lower probability of owning a business in the non-highway construction and architecture and engineering industries. They also have a lower likelihood of owning a business in the professional services and goods and other services industries, but not at a statistically significant level. In the architecture and engineering industry, other minority groups have a statistically significant higher probability of owning a business; however this results is not as substantive due to the few observations in this industry. In addition, persons with disabilities a lower likelihood of owning a business in the non-highway construction, architecture and engineering, and goods and other services industries but not at a statistically significant level.

The Earnings Disparity Model regression analysis documented statistically significant disparities in business earnings for minorities, females, and persons with disabilities. Caucasian females experience the greatest business earnings disparity as they have statistically significant lower business earnings in the non-highway construction, professional services, and goods and other services industries. African Americans have a statistically significant business earnings disparity in the goods and other services industry. They also have lower business earnings in the professional services industry, but not at a statistically significant level. While Asian Americans have lower business earnings in the non-highway construction, professional services, and goods and other services industries, these disparities are not statistically significant. Asian Americans also have statistically significant higher business earnings in the architecture and engineering industry. However, one must note that due to the small number of business owners in the architecture and engineering industry, this result do not hold as much weight. Hispanic Americans and Native Americans face statistically significant business earnings disparities in the professional services industry. They also have lower business earnings in the goods and other

services industry, but not at a statistically significant level. In addition, Hispanic Americans have lower business earnings in the non-highway construction industry, but this disparity is also not statistically significant. Other minority groups have statistically significant business earnings disparities in the non-highway construction and goods and other services industries. In the professional services industry, other minority groups have lower business earnings, but not at a statistically significant level. Additionally, other minority groups have statistically significant higher business earnings in the architecture and engineering industry. Persons with disabilities face statistically significant business earnings disparities in the non-highway construction and professional services industries. In addition, they have lower business earnings in the architecture and engineering and goods and other services industries, but not at a statistically significant level.

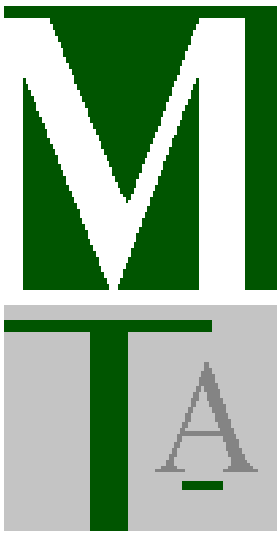
The Likelihood of Business Loan Denial Model reveals that statistically significant disparities exist for African American and Hispanic American-owned businesses. Controlling for race and gender-neutral factors, the regression analysis reveals that African American and Hispanic American businesses have a higher probability of being denied a business loan at a statistically significant level. In addition, Hispanic Americans are more likely to pay higher interest rates on business loans when compared to similarly situated female, Caucasian, African American, and Native American business owners.

The statistically significant disparity documented for African American and Hispanic American business owners points to the presence of race and gender disparity as a factor in their access to business capital. Access to business capital in the private sector constitutes a major factor in business development and continuity. The documented disparity in African American and Hispanic American business owners' access to business capital may have adversely impacted the number of these businesses in the non-highway construction, architecture and engineering, professional services, and goods and other services industries.

The analysis of business growth indicators examined for various racial groups showed that MBEs have a lower probability of succeeding and a higher probability of closure, as compared to their Caucasian counterparts. The MBE survival, expansion, and contraction rates also demonstrate African American business enterprises experience lower expansion rates than their Caucasian counterparts. Furthermore, Asian American and Pacific Islander and American Indian and Alaska Native business enterprises have a higher contraction rate than that of similarly situated Caucasian-owned businesses.

Analyses of these three outcome variables documented disparities that could adversely affect the formation and growth of M/W/DBEs within the non-highway construction, architectural and engineering, professional services, and goods and other services industries. In the absence of a race and gender-neutral explanation for the disparities, the regression findings document racial and gender discrimination in business ownership rates, business earnings, and business loan denial rates. Such discrimination creates economic conditions in the private sector that deter minorities, females, and persons with disabilities from creating businesses as manifested in their lower formation rates, and disadvantage M/W/DBEs by depressing their earnings and limiting their access to business capital in the State of Illinois.

It is important to note there are limitations to the application of the regression findings in that no matter how discriminatory the private sector may be, the findings cannot be used as the factual basis for a government-sponsored, race-based M/WBE program. They can, however, be a formula for developing race-neutral programs to eliminate any identified barriers to the formation and development of M/W/DBEs. Therefore, caution must be exercised in the interpretation and application of the regression findings.



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