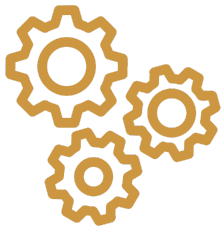
Analysis Plan



Project name: Boost the Made in America Manufacturing Initiative by identifying bottlenecks in the small manufacturer pipeline

Project code: 2501

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Project description

In March 2025, the Small Business Administration (SBA) announced the Made in America Manufacturing Initiative. This initiative will provide a range of services for small manufacturers:

- Cut $100 billion in regulation through the Office of Advocacy, which is empowered by law to work across federal agencies to identify and eliminate rules, policies, and procedures that disproportionately burden small businesses and manufacturers.
- Launch a Red Tape Hotline for small business owners and manufacturers to share feedback and submit onerous regulations for review.
- Deploy the newly announced Office of Manufacturing and Trade to offer small manufacturers dedicated resources and training in partnership with SBA field offices across the country.
- Reduce barriers to access for the 504 loan program, a zero-subsidy program which provides capital for real estate, construction, and equipment purchases.
- Expand the use of the 7(a) Working Capital Pilot program, which provides financing to fund inventory purchases and export-related expenses for international markets.
- Promote a skilled manufacturing workforce by partnering with agencies, trade schools and private sector stakeholders to create a pipeline of skilled workers to support manufacturing.
- Support President Trump's manufacturing agenda, including tariffs to restore fair and reciprocal trade, tax cuts on domestic production, and 100% expensing retroactive to Jan. 20, 2025, for manufacturers.

This evaluation was developed to support the Made in America Manufacturing Initiative through descriptive analysis of the small manufacturing sector.

Objectives

The primary objective of this project is to provide actionable descriptive information to the SBA surrounding the scope of U.S. small business manufacturing, especially regarding opportunities for expansion of small manufacturers into the federal marketplace and for expansion of SBA programs to small manufacturers. A secondary objective is to understand how such gaps differ between small manufacturers awarded prime contracts versus those awarded subcontracts.

Anticipated utilization of results

The findings from this study can assist the SBA in targeting specific areas for growth and improvement by identifying manufacturing sectors in which small manufacturers are undersupplied in the federal marketplace and SBA contracting programs that are underutilized among small manufacturing firms. With these findings, the SBA can focus its outreach and programming efforts on manufacturing sectors and firms who are not yet represented in the federal marketplace, allowing for more efficient support of the resurgence of small business manufacturing via the Made in America Manufacturing Initiative. For example, once this evaluation identifies undersupplied manufacturing sectors, a future evaluation could examine how targeted outreach to businesses in these sectors could amplify the work of the newly announced Office of Manufacturing and Trade or the 504 loan program.

Research questions

In order to fulfill the objectives delineated above, this project will answer four general research questions:

1. What proportion of U.S. small manufacturing firms are registered to do business with the federal government? Which industries (i.e., NAICS codes) have higher or lower rates of small manufacturer participation in the federal marketplace?
2. How does the supply of small manufacturing align with federal buyer demand? Which industries have more federal contract opportunities but fewer registered small manufacturing firms?
3. What are the rates of federal prime awards vs. subcontract awards to small manufacturing firms, and how do these rates vary by industry?
4. What proportion of small manufacturing firms are utilizing the various SBA contracting assistance programs? Compared to potential eligibility, which programs are underutilized?

Target estimands

In this section, we describe the target estimands we would like to be able to estimate, in line with the four research questions described above. However, not all of these will be directly estimable, due to data constraints. We will thus use proxies where necessary. Our proxies (estimates) for these estimands are described in the "Descriptive Statistics" section below.

Definitions:

- Let N be the set of 21 3-digit NAICS codes[1] associated with manufacturing, N={311, 312, 313, 314, 315, 316, 321, 322, 323, 324, 325, 326, 327, 331, 332, 333, 334, 335, 336, 337, 339}. See appendix for descriptions of each code.
- Assume we observe the population of businesses in the United States. The unit of observation is a business, denoted by B.

[1] The NAICS code is a 6-digit code indicating the industry of a business. Each subset of leading digits (i.e., the first three, or four, or five) indicates a more general industry, and NAICS codes beginning with 31, 32, or 33 indicate manufacturing.

- Let R_B denote a binary variable where a value of 1 indicates that the business is registered to do business with the federal government in SAM.gov.[2]
- Let S_B denote a binary variable where a value of 1 indicates that the business is a small business.[3]
- Let N_B be the 3-digit NAICS code of the business.
- Let $SBAI_B$ denote a series of binary variables where a value of 1 indicates that the business has participated in SBA contracting assistance program I, where $I \in I$ and I is the set of all SBA contracting assistance programs.
- Let SBA_B denote a binary variable where a value of 1 indicates that the business has participated in at least one SBA contracting assistance program.
- Let EI_B denote a series of binary variables where a value of 1 indicates that the business is likely eligible for SBA contracting assistance program I, where $I \in I$. (See the table under "Statistics, Tables, and Graphs" for details on how likely eligibility will be assessed for each SBA program.)
- Let E_B denote a binary variable where a value of 1 indicates that the business is likely eligible for one or more SBA contracting assistance programs.
- Assume we observe the population of federal contracting opportunities. In this data, the unit of observation is the opportunity, denoted by F.
- Let N_F be the 3-digit NAICS code associated with the opportunity.
- Assume we observe the population of federal contracting awards. In this data, the unit of observation is the award, denoted by A.
- Let N_A be the 3-digit NAICS code associated with the award.
- Let P_A denote a binary variable where a value of one indicates that the award is a primary award.
- Let $C_A = 1\text{-}P_A$ denote a binary variable where a value of one indicates that the award is a subtract award.
- Let B_A be the business awarded the opportunity. With some abuse of notation, let B_A=S denote a binary variable indicating that B_A is a small manufacturing firm (i.e., S_B=1, $N_B \in N$), as defined above.

Research question	**Target estimand(s)**
1. What proportion of U.S. small manufacturing firms are registered to do business with the federal government?	$E[R_B \mid S_B=1, N_B \in N]$
1a. Which industries (i.e., NAICS codes) have higher or lower rates of small manufacturer participation in the federal marketplace?	$E[R_B \mid S_B=1, N_B=n]$ for each n in N

[2] As some states require SAM.gov registration in order to obtain state contracts, it is possible that not all businesses from these states registered in SAM.gov intend to do business with the federal government. The number of businesses may be overestimated for these states. We will note this possibility when we present our findings.
[3] The definition of a "small" business per the SBA varies depending on the 6 digit NAICS code (see https://www.sba.gov/document/support-table-size-standards). For the manufacturing NAICS codes, businesses qualify as small based on the number of employees, ranging from 500 to 1,500. More information on this is in the section on descriptive statistics, below.

2. How does the supply of small manufacturing align with federal buyer demand? Which industries have more federal contract opportunities and awards but fewer registered small manufacturing firms? What proportion of manufacturing awards are going to small manufacturing firms?	Count of all [B | S_B=1, R_B=1, N_B=n] for each n in N Count of all [F | N_F=n] for each n in N Count of all [A | N_A=n] for each n in N E[B_A=S | N_A=n] for each n in N
3. What are the rates of federal prime awards vs. subcontract awards to small manufacturing firms, and how do these rates vary by industry?	E[B_A=S | P_A=1] E[B_A=S | P_A=1, N_A=n] for each n in N E[B_A=S | C_A=1] E[B_A=S | C_A=1, N_A=n] for each n in N
4. What proportion of small manufacturing firms are utilizing the various SBA contracting assistance programs? Compared to potential eligibility, which programs are underutilized?	E[SBA_B | S_B=1, R_B=1, $N_B \in$ N] E[$SBAI_B$ | S_B=1, R_B=1, $N_B \in$ N] for each I in I E[SBA_B | S_B=1, R_B=1] E[$SBAI_B$ | S_B=1, R_B=1] for each I in I E[E_B | S_B=1, R_B=1, $N_B \in$ N] E[EI_B | S_B=1, R_B=1, $N_B \in$ N] for each I in I

Data and data structure

This section describes variables that will be analyzed, as well as changes that will be made to the raw data with respect to data structure and variables.

Population and expected number of observations:
There are four relevant populations for this study:

- ***Population 1*, *B***: Businesses in the United States
- ***Population 2*, R_B**: Businesses registered to compete for federal government contracts
- ***Population 3*, *F***: Federal contracting opportunities
- ***Population 4*, *A***: Federal contract opportunities awarded to firms
    - Prime awards, P_A, are those made directly by the government to one of R_B, where awarded businesses are represented by B_A.
    - Subcontract awards, C_A, are when a prime award recipient, B_A, themselves hires another firm to perform some of the work required by P_A.

Though we are not intentionally sampling from these populations, data limitations mean that we cannot necessarily observe any of these entire populations in a given year (see “Data Sources” below). We are primarily drawing on data that is readily and freely available to the public

(specifically, Census data, SAM.gov data, and USASPending data). The FOUO entity data (specifically, the number of employees field) is freely available to federal employees.

Data source(s):

Population 1, B:

- Using the Census Bureau's Statistics of US Businesses (SUSB) data, specifically the Annual Datasets by Establishment Industry files, we can tally the number of businesses with paid employees registered in the United States in 2022 by industry and number of employees. Note that 2022 is the most recent year for which SUSB data are available. To ensure the most relevant comparison, we will compare the 2022 SUSB data to the FY2022 data from other sources (see below).
    - The Census Bureau sorts businesses into industries based on six-digit numbers called NAICS codes, also used by the federal government to categorize firms/opportunities into different industries.[4]
- Using the Census Bureau's Nonemployer Statistics (NES) data, we can tally the number of businesses with no paid employees in the United States in 2022 by industry.
- Both sources should provide relatively complete estimates of the size of this population, putting aside an unavoidable (small) degree of error in the Census Bureau's counts. The expected magnitude of error is flagged in these sources.

***Population 2*, R_B**:

- Firms register to do business with the federal government in SAM.gov, yielding a Unique Entity Identifier (UEI) that identifies firms across the federal procurement sphere. SAM.gov provides access to a variety of information about firms registered to do business with the government, including their states of incorporation, office address, self-attestations regarding whether they fall into categories like "veteran-owned," the industries (NAICS) they report working in, and their number of employees.
    - When firms register in SAM they report the reason they are doing so, tracked in a "purpose of registration" field in the SAM entity data. Firms interested in pursuing federal contracts are required to provide information on the NAICS codes they work in (they also report a "primary" NAICS out of those listed).
    - We plan to download a SAM entity data extract from FY 2022 for Research Question 1 (for analysis with 2022 SUSB data), and from FY 2024 for the other Research Questions.
- The Small Business Administration's (SBA) Dynamic Small Business Search (DSBS) tool allows looking up the UEIs of firms actively participating in government certification programs (e.g.: certifying that a firm is a service-disabled veteran-owned business).

***Population 3*, F**:

- We will focus on "open-market" opportunities posted in SAM.gov as our reference data on federal procurement opportunities. We will use FY 2024 for opportunities, as it is the most recent complete fiscal year. Federal officials post contract opportunities here when they

[4] Census Bureau makes NAICS code determinations based on reviews of firms' operational data.

wish to formally solicit bids from firms registered to do business with the federal government (e.g., "solicitation" notices"). They also post opportunities here to conduct preliminary market research (e.g., "pre-solicitation" or "sources sought" notices), to announce award decisions (e.g., "award notices"), and for a variety of other purposes.
    - Given that typical reporting behavior may differ for opportunities at different stages of the procurement process, we will focus on "solicitation notices," representing more concrete requests for bids from firms on SAM. These postings are rarely missing NAICS codes (in FY 2024, none of the archived solicitation listings are missing NAICS codes, and of the 40k FY 2024 listings that were still active by May 2025, only 27 were missing a NAICS code).
- The precise rules are involved and subject to various exceptions and deviations, but per FAR, in general, officials are required to disseminate information on proposed contract actions greater than or equal to $25,000 in the "government-wide point of entry" (GPE), which would often be SAM.gov. Opportunities between $15,000 and $25,000 are subject to similar public notice requirements.
- This source does not provide complete data on all federal contract opportunities given the nuances of how reporting requirements apply in different cases, variation in compliance with those requirements, other locations officials may sometimes post opportunity listings, etc. However, this source provides a useful, high-level overview of the relative frequency of contract opportunities in different industries across the federal government (and it tracks opportunity industries in a way that is consistent with our other sources). We believe it is the best available source for this task.

Population 4, A:

- We will consider two sources of data on federal contract awards, using FY 2024, as it is the most recent complete fiscal year:
    - Prime contract awards, $\boldsymbol{P_A}$, are submitted to the *Federal Procurement Data System* (FPDS). There is an online portal you can use to search it, and FPDS data can be downloaded from either a SAM.gov report builder (by federal employees), or in bulk from USA Spending (by members of the public; select fields only). There are a variety of conditions determining which awards need to be reported to FPDS, including the dollar amount: awards of $10,000 or more must generally be reported, all else equal. Note that some agencies, like DOD, report awards on a several month delay for security reasons.
    - Subcontract awards, $\boldsymbol{C_A}$, were historically submitted to the *Federal Subaward Reporting System*, but as of 5/8/2025 this is being moved to SAM.gov. In practice, these data can also be downloaded from USA Spending. Again, there are a variety of conditions influencing whether a subcontract award must be reported. Among them is the dollar amount: only subcontracts of $30,000 or more are required to be reported. This means that there will be prime awards in FPDS with subcontracts that are simply too small in terms of dollar value to appear in our data.
- Both sources provide information on the recipient of the prime/subcontract award and the corresponding industry (NAICS code). Again, these sources are not an exhaustive list of all contracts awarded across the federal government, but they are the best available sources

for this study, representing a vast majority of contracts awarded across executive branch agencies (and a reasonable share of subcontract awards). The USA Spending website has useful guides on various sources of federal spending data, and which kinds of line items may (not) show up in their data downloads.

Datasets and variables:
This project will combine the data sources described above to generate three datasets. One will be drawn from SAM.gov and DSBS at the level of the business (BUSINESS), and will be used to answer research questions 1 and 4. The second will be drawn from FPDS/FSRS data in USA Spending at the level of the award (AWARDS), and, once merged on entity with the BUSINESS dataset, will be used to answer research questions 2 and 3. The third, OPPORTUNITY, will be drawn from SAM.gov and eBuy contract opportunity listings and used to help answer research questions 2. The variables in these datasets will be as follows:

Dataset	Variable name	Variable description	Original source
BUSINESS	entity	Unique entity ID	SAM.gov entity data
BUSINESS	employees	Number of employees	SAM.gov entity data
BUSINESS	primary_naics	6-digit NAICS code the firm lists as their "primary" NAICS code	SAM.gov entity data
BUSINESS	all_naics	All NAICS codes a firm lists in SAM, concatenated by "~". Including a flag for whether the business is small in each NAICS.	SAM.gov entity data
BUSINESS	primary_manuf	Whether a firm is a manufacturer according to the primary_naics field.	SAM.gov entity data
BUSINESS	all_manuf	Whether a firm is a manufacturer according to the all_naics field.	SAM.gov entity data
BUSINESS	primary_naics3	First three digits of the firm's primary NAICS code	SAM.gov entity data
BUSINESS	small_criteria	Maximum number of employees for small business designation in a firm's primary NAICS	"Table of Size Standards" in Footnote 1
BUSINESS	small	Binary indicator for	SAM.gov entity data

		whether employees < small_criteria in their primary NAICS	
BUSINESS	mailing_zip	Zip code of firm's mailing address	SAM.gov entity data
BUSINESS	physical_zip	Zip code of firm's physical address	SAM.gov entity data
BUSINESS	cert_8a	Binary indicator for 8(a) certification	DSBS certification data
BUSINESS	cert_HUB	Binary indicator for HUBZone certification	DSBS certification data
BUSINESS	cert_vet	Binary indicator for VOSB or SDVOSB certification	DSBS certification data
BUSINESS	cert_wosb	Binary indicator for WOSB or EDWOSB certification	DSBS certification data
BUSINESS	self_SDB	Binary indicator for SDB self-certification	SAM.gov entity data
BUSINESS	self_woman	Binary indicator for women-owned self-certification	SAM.gov entity data
BUSINESS	self_vet	Binary indicator for veteran-owned self-certification	SAM.gov entity data
OPPORTUNITY	oppID	OpportunityID	SAM.gov opportunity data
OPPORTUNITY	opp_naics	6-digit NAICS code	SAM.gov opportunity data
OPPORTUNITY	opp_naics3	3-digit NAICS code	SAM.gov opportunity data
OPPORTUNITY	opp_set-aside	Binary indicator for anticipated small set-aside	SAM.gov opportunity data
AWARDS	awardID	AwardID	FPDS/FSRS (via USA Spending).
AWARDS	award_naics	6-digit NAICS code	FPDS/FSRS (via USA Spending).

AWARDS	award_naics3	3-digit NAICS code	FPDS/FSRS (via USA Spending).
AWARDS	award_amount	Amount of the award	FPDS/FSRS (via USA Spending).
AWARDS	award_set-aside	Small business set-aside utilization	FPDS/FSRS (via USA Spending).
AWARDS	prime	Binary indicator for prime award	FPDS/FSRS (via USA Spending).
AWARDS	entity	Unique entity ID of the awarded business	FPDS/FSRS (via USA Spending).

Data exclusion:
We will not exclude any data from our analysis.

Treatment of missing data:
We do not anticipate significant missingness on the key variables for this study: 1. those needed to classify firms as small businesses in different industries, 2. those needed to count awards/opportunities in different industries and determine which firms are receiving awards, or 3. the dollar value of awards. We provide more context in the next paragraph. In the minority of cases where observations could be missing data for key variables, or when any other variables are missing, we will determine whether missingness is plausibly "missing-at-random" (as-if-random, at least after conditioning on covariates). If so, it will be listwise deleted from analyses relying on these variables, with appropriate changes to our interpretation where necessary. If we encounter a missingness pattern that is substantial and not plausibly missing-at-random, we will review relevant methods guidance and justify our solution in the Record of Analysis.

For instance, In the BUSINESS data, we need to measure whether a firm is a small business in different industries (naics and employees). All entities indicating interest in contract awards alone when registering in SAM are required to fill out the fields we use to classify them as a small business. There are a small number of firms indicating registration for multiple purposes that do not always provide this information, but in 2024 for instance they still do in ~97% of cases (only 25 exceptions). The only entities we cannot classify as small businesses are those registering only to apply for federal grant assistance, which we exclude from our analyses.[5] Similarly, the most important fields we need from the AWARDS data, entity and award_naics, are either required or automatically propagated for different kinds of awards records. In FY 2022, for instance, only .0023% of awardIDs do not have a NAICS code, and all have both entity and award_amount. Missingness in NAICS codes in the OPPORTUNITY data is also very rare.

[5] The FPDS data dictionary, page 115, indicates that an award entry cannot be registered in FPDS if the recipient firm's UEI has an incomplete SAM registration, including fields in the "Assertions" section we rely on for small business measurement. We take this as evidence that firms cannot be awarded contracts if they are in the "grants only" category in SAM entity data that does not provide fields we need.

Statistics, tables, and graphs

Anticipated descriptive statistics, tables, and graphs:
As mentioned above in the section on Target Estimands, we do not have access to data that would allow us to exactly calculate each estimand. This section thus describes the proxies we will use as estimators for each estimand, given data limitations.

In particular, we do not have data at the level of the individual business for the universe of businesses in the United States. Instead, as described in the Data section, we make use of the Statistics of U.S. Businesses (SUSB) and Non-Employer Statistics (NES) provided by the Census. These data are current as of 2022. They provide information aggregated by NAICS code (2, 3, 4, 5, and 6 digit versions), business size (defined as a categorical variable), and geography (state or the full US). Thus (as an example) it is possible to give the Census Bureau's estimated number of businesses in the US with a 3-digit NAICS code of 311 and fewer than 500 employees. We can also observe the number of businesses with the same attributes that are registered in SAM.gov. From this, we can infer the percent of businesses with these attributes that are registered in SAM.gov, but there is error introduced into this estimate by the fact that we do not know whether a business we observe being registered in SAM.gov was included in the enumeration of all businesses in the SUSB/NES. The same applies to businesses who have taken advantage of SBA contracting assistance programs.

We create the following estimates for our estimands of interest:

RQ	Estimand	Estimator
1	$E[R_B \mid S_B=1, N_B \in N]$	Number of small manufacturing firms registered in SAM / Number of small manufacturing firms in SUSB plus NES
1a	$E[R_B \mid S_B=1, N_B=n]$ for each n in N	Number of small manufacturing firms with NAICS code n registered in SAM / Number of small manufacturing firms with NAICS code n in SUSB plus NES - for each n in N
2	Count of all $[B \mid S_B=1, R_B=1, N_B=n]$ for each n in N	Number of small manufacturing firms with NAICS code n registered in SAM - for each n in N
2	Count of all $[F \mid N_F=n]$ for each n in N	Number of opportunities in SAM with NAICS code n - for each n in N
2	Count of all $[A \mid N_A=n]$ for each n in N	Number of awards with NAICS code n - for each n in N
2	$E[B_A=S \mid N_A=n]$ for each n in N	Number of awards with NAICS code n made to small manufacturing firms / Number of awards with NAICS code n - for each n in N
3	$E[B_A=S \mid P_A=1]$	Number of prime awards made to small manufacturing firms /

		Total number of prime awards
3	$E[B_A=S \mid P_A=1, N_A \in N]$	Number of prime awards made to small manufacturing firms / Total number of prime awards to manufacturing firms
3	$E[B_A=S \mid P_A=1, N_A=n]$ for each n in N	Number of prime awards with NAICS code n made to small manufacturing firms / Total number of prime awards with NAICS code n - for each n in N
3	$E[B_A=S \mid C_A=1]$	Number of subcontract awards made to small manufacturing firms / Total number of subcontract awards
3	$E[B_A=S \mid C_A=1, N_A \in N]$	Number of subcontract awards made to small manufacturing firms / Total number of subcontract awards to manufacturing firms
3	$E[B_A=S \mid C_A=1, N_A=n]$ for each n in N	Number of subcontract awards with NAICS code n made to small manufacturing firms / Total number of subcontract awards with NAICS code n - for each n in N
4	$E[SBA_B \mid S_B=1, R_B=1, N_B \in N]$	Number of small manufacturing firms in SBA data that have participated in at least one SBA contracting assistance program / Number of small manufacturing firms registered in SAM
4	$E[SBA_{\mathit{I}_B} \mid S_B=1, R_B=1, N_B \in N]$ for each *I* in I	Number of small manufacturing firms in SBA data that have participated SBA contracting assistance program *I* / Number of small manufacturing firms registered in SAM for each *I* in I
4	$E[E_B \mid S_B=1, R_B=1, N_B \in N]$	Number of small manufacturing firms registered in SAM and categorized as likely eligible for at least one SBA contracting assistance program / Number of small manufacturing firms registered in SAM
4	$E[E_{\mathit{I}_B} \mid S_B=1, R_B=1, N_B \in N]$ for each *I* in I	Number of small manufacturing firms registered in SAM and categorized as likely eligible for SBA contracting assistance program *I* / Number of small manufacturing firms registered in SAM for each *I* in I

Notes on definitions:

Small business: The definition of "small" varies by subindustry at the 6-digit NAICS code level. Each 6-digit NAICS code has an associated cutoff ranging from 500 to 1,500 indicating the maximum number of employees a business can have to qualify as small.[6] To calculate the number of small businesses in SUSB, we will first categorize how many businesses, identified at the level of

[6] Within some NAICS codes, businesses can obtain an exception to be categorized as small, even if their number of employees is greater than the cutoff. We will conduct our analysis assuming there are no exceptions, which could underestimate the number of small businesses in the affected NAICS codes. We will note the affected NAICS codes and discuss how this underestimation could affect our findings.

6-digit NAICS code and size category, qualify as small. If the size category is smaller than the cutoff size for that NAICS code, all of the businesses in that category will be designated as small. If the cutoff falls in the middle of a size category, we will assume that the actual sizes of the businesses are evenly distributed across the category, and will find the percent of the category that falls below the cutoff, then multiply this percent by the number of businesses, to get an estimate of the number of businesses in that category that fall below the cutoff. We will then sum across rows to generate a total at the level of the 3-digit NAICS code. As an example, the table below shows the size categorizations for NAICS code 311119. For this NAICS code, the maximum number of employees to be considered a small business is 650. Therefore, all the businesses that have an establishment size of less than 500 are categorized as small, 60% of the businesses with an establishment size of 500-749 are categorized as small, and none of the businesses with an establishment size of 750 or larger are categorized as small. This gives a total of 1048 small businesses for NAICS code 311119. This would be done for the remaining NAICS codes beginning with 311, and then the subtotals for each would be added together to give a total number of small businesses within the 3-digit NAICS code 311.

NAICS	**Establishment size**	**Number of establishments**	**Number of small businesses**
311119	<500	1017	1017
311119	500-749	51	(650-500)/(749-500) = 0.6 0.6*51 = 31
311119	750-999	40	0
311119	1,000-1,499	14	0
311119	1,500-1,999	25	0
311119	2,000-2,499	0	0
311119	2,500-4,999	9	0
311119	5,000+	273	0
		Total Small Businesses	1048

Eligibility for and participation in SBA Contracting Assistance Programs: There are eight SBA contracting assistance programs. However, we do not include the SBA Mentor-Protege program, the Joint Ventures program, or the Natural Resources program, due to the nature of the programs. Additionally, because there is no SBA certification for Small Disadvantaged Businesses, we exclude that program as well. The table below lists each program and its eligibility criteria. It also defines how we will categorize the businesses in our data as "likely eligible" for each program. Since we do not directly observe true eligibility, we use these as proxies. Lastly, it defines program participation.

Program	Eligibility[7]	"Likely eligible" definition	"Participated" definition
8(a) Business Development Program	• Small business by SBA standards • At least 51% owned and controlled by one or more persons who are socially and economically disadvantaged (with criteria on net worth, AGI, and assets) • Demonstrates good character and potential for success	Business is small and self-certifies as a Small Disadvantaged Business (SDB)	Business has 8(a) certification from SBA
Women-Owned Small Business (WOSB) and Economically Disadvantaged Women-Owned Small Business (EDWOSB)	• Small business by SBA standards • At least 51% owned and controlled by women who are US citizens • Have women manage day-to-day operations who also make long-term decisions	Business is small and self-certifies as a WOSB or EDWOSB	Business is certified by SBA as a WOSB or EDWOSB
Veteran-Owned Small Business (VOSB) and Service- Disabled Veteran Owned Small Business (SDVOSB)	• Small business by SBA standards • At least 51% owned and controlled by one or more individuals identified by the VA as a veteran or service-disabled veteran	Business is small and self-certifies as a VOSB or SDVOSB	Business is certified by SBA as a VOSB or SDVOSB
HUBZone Program	• Small business by SBA standards • Be at least 51% owned and controlled by US citizens, or be a CDC, agricultural cooperative, ANC, NHO, or Indian tribe • Have its principal office located in a HUB Zone • Have at least 35% of employees living in a HUB Zone	Business is small and main location is in a HUBZone, based on ZIP code. To identify main location, we will use physical address. Where physical address is not provided, we will use the mailing address.	Business has HUBZone certification from SBA

Limitations:

There are three primary limitations to the analysis. First, in answering Research Question 1, due to a lack of business-level data in the Census SUSB, we are unable to precisely match businesses

[7] Source: https://www.sba.gov/federal-contracting/contracting-assistance-programs as of May 13, 2025.

between the SUSB and their registration on SAM.gov. This will limit our ability to answer this research question in a disaggregated, granular way. For example, we might be interested in understanding whether small businesses in certain geographic areas or those led by individuals with certain demographics are more likely to register in SAM.gov. We will be unable to provide such analysis in this study.

Second, in answering Research Question 3, we note that there is significant under-reporting of subcontracts in FPDS, due to, for instance, the lack of requirement to report subcontracts under certain conditions. Since we have reason to believe that subcontracts to small businesses may be particularly vulnerable to under-reporting, we anticipate this omission will result in the underestimation of small businesses receiving subcontracts. We plan to note this in our findings.

The final limitation to this study is that it is descriptive, and we will be unable to say anything about the causal relationships underpinning our findings. For example, Research Question 2 is: "How does the supply of small manufacturing align with federal buyer demand? Which industries have more federal contract opportunities but fewer registered small manufacturing firms?" Perhaps we find that there are ample federal awards in a particular NAICS code, but there are not a lot of small manufacturers within this NAICS code who are registered in SAM.gov. This could be because there is a lack of awareness of the potential for federal contracts, which would suggest a future intervention to raise awareness could be effective. However, it could also be because there are real barriers to entry in this industry that make it infeasible for small firms to compete. It will be critically important to precisely discuss and present our findings to guard against assuming causal relationships that may not exist.

Appendix 1: NAICS industry code definitions and number firms in U.S. (2022 SUSB)

NAICS	NAICS description	Number firms in U.S.
311	Food Manufacturing	25,675
312	Beverage and Tobacco Product Manufacturing	11,382
313	Textile Mills	1,568
314	Textile Product Mills	5,002
315	Apparel Manufacturing	4,638
316	Leather and Allied Product Manufacturing	1,047
321	Wood Product Manufacturing	11,761
322	Paper Manufacturing	2,236
323	Printing and Related Support Activities	21,328
324	Petroleum and Coal Products Manufacturing	870
325	Chemical Manufacturing	10,455
326	Plastics and Rubber Products Manufacturing	8,369
327	Nonmetallic Mineral Product Manufacturing	8,807
331	Primary Metal Manufacturing	2,649
332	Fabricated Metal Product Manufacturing	49,484
333	Machinery Manufacturing6	19.028
334	Computer and Electronic Product Manufacturing6	9,698
335	Electrical Equipment, Appliance and Component Manufacturing	4,593
336	Transportation Equipment Manufacturing	9,145
337	Furniture and Related Product Manufacturing	14,044
339	Miscellaneous Manufacturing	22,418