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Abstract

Purpose – The purpose of this study is to examine the impact of program strategy on the implementation of the efficacy of a procurement set-aside program at the state level.

Design/methodology/approach – This study examines the impact of program implementation strategy across two administrations considering the most compelling alternative arguments for what drives agency purchasing through contracts with MBEs.

Findings – The results of mixed effects linear regression models on the procurement expenditures of 70 state agencies in Ohio from 2008-2015 show significantly higher rates of procurement expenditures with MBEs under the Kasich administration.

Originality/value – These results provide support for the argument that changes in program implementation strategy led to substantive increases in the use of MBEs by state agencies in Ohio.

Keywords Public sector, Government, Impact strategy

Paper type Research paper

1. Introduction

Governments around the globe have proliferated set-aside programs to diversify their supplier base (Brammer and Walker, 2011; Ram and Jones, 2008; Ram and Smallbone, 2003; Wong and Ng, 1998). These programs generally establish a percentage target of public purchasing for categories of firms that are disadvantaged in the public sector procurement market (e.g. small-, minority-, female-, veteran- and disabled-owned firms). By setting aside a portion of procurement spending, targeted categories of firms are sheltered from competing with firms that have incumbent advantages. A complementary purpose of set-aside programs is to create conditions for disadvantaged firms to eventually "graduate" from preferential treatment and successfully compete in open competitions.

The track-record of set-aside programs is mixed. Some governments have succeeded in meeting percentage goals and graduating targeted categories of firms, but many have not (Barrett *et al.*, 1996; LaNoue, 1994; Zehrt, 2008; Nakabayashi, 2013). This paper examines minority business enterprise (MBE) set-aside programs, as they represent the largest category of such programs in the public and private sectors (Adobor and McMullen, 2007).

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Specifically, it focuses on the performance of an MBE set-aside program in a large US state to assess the impact of factors likely to inhibit or promote success.

In 2008, the Governor of the State of Ohio, Democrat Ted Strickland, promulgated an executive order to increase the percentage of state purchasing devoted to MBEs across all state agencies. While state agencies failed to meet percentage targets under Governor Strickland's leadership, most agencies achieved the targets under his successor, Republican John Kasich (Ohio DAS, 2015). This paper compares changes in the program and the implementation context between the two administrations to identify factors which explain the variation in performance. Analysis of agency procurement data from 2008 to 2015 with a clustered mixed effects linear regression model suggests that operational strategy changes in program implementation drove the success of the program under the Kasich administration in comparison to the Strickland administration. The analysis assesses the impact of program strategy relative to other potentially influential factors including leadership diversity, organizational size, MBE supply, organizational structure and organizational culture and history.

The paper is divided into five sections beyond this introduction. The first section presents a brief history of MBE set-aside programs in the USA and the State of Ohio. The second section provides a review of the literature on the factors that potentially affect set-aside program success. The third and fourth sections describe the research design, data and methods and present the results. The fifth section concludes the manuscript; a discussion of the results is presented, as well as implications for future research and practice.

1.1. History and context

The impetus for procurement set-aside programs stem from governmental efforts to respond to historical, institutional and systematic discriminatory practices in the USA. Initially, the federal government used procurement to achieve social goals by providing access to employment for minorities, in particular, African Americans (McCrudden, 2004). In 1941, President Franklin D. Roosevelt signed Executive Order 8802, which prevented race discrimination by government prime contractors. President Roosevelt used the executive order to enable African Americans a role in Second World War as employee subcontractors with majority companies selling goods and services to the federal government. Additional programs followed over the next two presidential administrations: in 1951, President Harry S. Truman issued Executive Order 10308 which established the Antidiscrimination Committee on Government Contract Compliance, and in 1953, President Dwight D. Eisenhower promulgated Executive Order 10479 which created the Committee on Government Contracts.

Congress also followed suit by passing Section 8(a) of the Small Business Act of 1953 to create the Small Business Administration (SBA). The primary function of the SBA is to "aid, counsel, assist and protect, insofar as is possible, the interests of small business concerns" [Small Business Act, 1953, § 631(a), para. 1]. Additionally, Section 8(a) provides the SBA authority to enter into subcontracts with small businesses for the acquisition of goods and services, "whenever it determines such action is necessary" (US Small Business Administration, 2012). The Act strongly encourages federal, state and city government agencies to use MBEs whenever possible.

In 1969, President Richard Nixon created the USA Office of MBE within the Department of Commerce to mobilize federal resources to aid minorities in business ventures. The Office of MBE program evolved into the Minority Business Development Agency (MBDA) whose goal is to expand entrepreneurship among underrepresented minority groups by affording MBEs the opportunity to use various education, business networking and government bid contract notification services at little or no cost. Consequently, the MBDA is the only federal agency whose sole purpose is to increase the number of viable MBEs in the USA (US Department of Commerce, 2012).

In response to federal mandates for MBE inclusion in public procurement, city and state legislatures began to enact similar set-aside programs. In the State of Ohio – the jurisdictional focus of the research in this paper – House Bill 584 (HB 584) was signed into law in 1980 by then-Governor James A. Rhodes (R) to ensure MBE participation and equitable treatment in contracts awarded by state agencies. In 1991, then-Governor George Voinovich (R) extended HB 584 by formally recognizing minority assistance programs offered by the state through the creation of the Equal Opportunity Center within the Division of Equal Employment Opportunity (Minority Business and Resource Symposium, 2010). A decade later in 2002, the Ohio legislature passed HB 58 in an effort to dismantle the set-aside system. However, a judicial review board overturned the bill and reinstated the programs, but with stricter and more defined rules. In response to judicial action, then-Governor Taft (R) reestablished and re-funded all of the minority set-aside programs that had been dismantled under HB 58.

At the time of Governor Taft's decision to reconstruct the set-aside system, evidence pointed to disparities between minority and non-minority contractors (DJ Miller and Associates, 2001; Griffin and Strong Consulting, 2002; MGT of America, 2008). These studies concluded that the current set-aside policies were insufficient to substantially address the disparity gap in a meaningful way. In response, then-Governor Ted Strickland (D) introduced Executive Order 2008-S13 in 2008 which required state agencies to expend 15 per cent of their contract expenditures on MBEs. This was a significant requirement since up to that point state agency procurement expenditures with MBEs never rose above 3.1 per cent on an annual basis (Carter, 2008). Strickland's executive order established the position of State Equal Employment Opportunity Officer to report the outcomes of each state agency's efforts to achieve the goals set by their budget for expenditures with MBEs and to report these results to the governor and the majority and minority leadership of the legislature. Strickland also provided technical, financial and outreach resources for MBEs to support agency efforts to meet the 15 per cent set-aside goal. Under the executive order, the State's Equal Opportunity Division, in cooperation with the State's Department of Administrative Services (DAS), became responsible for coordinating training, assisting and monitoring the set-aside efforts of each state agency.

Governor Strickland lost his bid to serve a second term and was replaced by Governor John Kasich in 2012. Because Strickland had made the 15 per cent set-aside target a top priority for his administration and had failed to achieve the target during his term, expectations were that Kasich would de-emphasize MBE contract programs to focus on other policy priorities. Instead, Kasich affirmed the 15 per cent set-aside goal for all state agencies and made improving the system a top priority of the administration (Perkins, 2013). In 2013, the Kasich administration convened meetings of agency procurement officials and MBEs to identify ways to improve the process of certifying MBEs and securing MBE access to bids (Williams, 2015). Based on recommendations from these meetings, the Kasich administration reduced the number of steps required for certification and bidding, while also continuing to provide technical, financial and outreach support to MBEs. In fiscal year 2011, the last year of Strickland's administration, the set-aside rate for state agencies was 9.93 per cent; an increase of 6 per cent over three years. By fiscal year 2015, two years after Kasich had launched his efforts to streamline the set-aside program, the rate stood at 19.41 per cent; an increase of 10 per cent since Strickland.

The question that drives the research presented here is what explains the differential performance across these two administrations for the same program. The two administrations shared the same goal – a 15 per cent set-aside rate – and provided many of the same resources to MBEs. They differed, however, in their program management strategy with Kasich applying principals from the operation of private organizations to make the process less cumbersome for procurement officials and MBEs. This core of the implementation strategy was the regulatory requirements that MBEs faced in acquiring contracts. The next section reviews the literature on set-aside programs to identify potential explanations for the variation in performance including program management strategy.

2. Potential program success factors

The success of program implementation is potentially influenced by an array of factors. This section provides a brief review of the literature to identify testable hypotheses for each of these factors.

2.1 Program strategy

Traditional approaches to organizing and running government agencies have been criticized for favoring adherence to rules and procedures over effective and efficient performance (Labonte and Makinen, 2002). Bureaucratic organizational forms are thought to restrict the discretion of government managers and instead promote a "one-size fits all" approach to delivering public programs (Lessmann and Markwardt, 2010). In response, scholars and reformers began to investigate the practicality of implementing private sector approaches to improve government agency performance. The most recent efforts to inject private sector practices into public agencies started under Prime Minister Margaret Thatcher in Britain and President Ronald Reagan in the USA. These efforts accelerated in the USA under Reagan's successors – President George H.W. Bush and President Bill Clinton – and ultimately culminated in the National Performance Review and the signing into law of the Government Performance and Results Act of 1993.

In the procurement arena, research by Kaboolian (1998) described how the incorporation of business practices would potentially improve transparency of government purchases, increase competition and enhance procurement manager accountability. She argued that there is a benefit to implementing these practices, especially if managers are provided proper discretion to make the appropriate decisions. This paper compares the traditional rule-driven program strategy of former Ohio governor Ted Strickland with the more streamlined program strategy of his successor John Kasich; Kasich's administration focused on reducing the bureaucratic rules MBEs faced in competing for contracts. A key principal of Kasich's campaign was bringing efficiency and private sector practices to the State of Ohio for the benefit of Ohio citizens and businesses. Under Kasich, agencies began forecasting their annual purchasing with an eye toward setting aside contracts for MBEs to bid on. And during the year, DAS workers met regularly with procurement and purchasing officers in those offices to see how closely they were hitting the spending plan (Williams, 2015). Evidence of this was apparent in 2015 when 325 certified vendors did business with the state, up from 282 in 2014 and 207 in 2013. The turnaround time for certifying those businesses was reduced from an average of 45 days to 19 days (Williams, 2015). These program strategy steps underlie the first hypothesis:

H1. State agencies operating under the Kasich administration's set-aside program are more likely to spend a higher percentage of their procurement expenditures through contracts with MBEs than state agencies operating under the Strickland administration's set-aside program.

2.2 Agency leadership diversity

Scholars of representative bureaucracy argue that when agency leaders from underrepresented groups (e.g. minorities and women) have discretion in decision-making, they will be more likely to make decisions that are favorable to the underrepresented group with which they most identify (Rhys *et al.*, 2005; Bradbury and Kellough, 2008; Hindera, 1993). Alternatively, when agency leaders operate in decision-making environments that are highly constrained by well-established statutes, rules and procedures and thereby have less opportunity to exercise discretion, their race, gender or ethnicity will have less of an impact on their decision-making. In the context of federal procurement, Smith and Fernandez (2010) argue that while procurement is a regulated activity, agency leaders have some discretion in determining contract award recipients. Their analysis of federal agency contract awards from 2004 to 2006 finds that as the proportion of minorities in senior executive positions increases in an agency, the percentage of contracts awarded by that agency to minority firms also increases. The hypothesis below extends this line of reasoning to the state level.

H2. State agencies headed by a leader from an underrepresented minority group are more likely to spend a higher percentage of their procurement expenditures through contracts with MBEs than state agencies not headed by a leader from an underrepresented minority group.

2.3 Organizational size

The organization and strategy literatures speak to the importance of financial resources and the ability of a firm to innovate and implement new strategies (Cyert and March, 1963). In the public sector, both Sabatier and Mazmanian (1980) and Montjoy and O'Toole (1979) find that financial resources are a key determinant of success for the implementation of a range of governmental policies. Their work is corroborated by May and Burby's (1996) research which finds that state agencies with larger budgets are better able to implement policy initiatives than agencies with smaller budgets. A similar argument can be made about human resources. To implement new technologies and/or policies in any organization, a sufficient number of well-trained employees are required. Hansen and Wernerfelt (1989) found a strong positive relationship between financial performance and organization size. Transaction cost economics (Williamson, 1981), resourced-based theory (Barney, 1991) and human capital theory (Lepak and Snell, 1999) all posit that human resources play an important part of firm success, whether in outsourcing decisions or obtaining a sustainable competitive advantage. However, in the public sector, recent research by Smith and Fernandez (2010) finds that federal agencies with fewer employees were able to provide more contracting opportunities than agencies with more employees. Larger federal agencies with more human and financial resources may be more bureaucratic and rule-driven rather than entrepreneurial and adaptable. Hypothesis three extends this logic to the state level.

H3. Smaller state agencies are more likely to spend a higher percentage of their procurement expenditures through contracts with MBEs than larger state agencies.

2.4 Minority business enterprises supply

MBEs do not exist equally across all types of products. Past history of discriminatory practices within industries can influence an MBE's ability to acquire necessary capital, develop supply-chains and bring products to market for sale (Swearingen and Plank, 1997). Bates (2001) finds that the majority of MBEs are relegated to highly competitive, low margin industries. Through an analysis of US Census Data on firms, Fairlie and Robb (2008) find that MBEs have lower access to finance and are typically led by CEOs with lower levels of higher education with fewer family members with entrepreneurial experience relative to non-MBEs. As a result, they confirm Bates's (2001) findings that MBEs are typically limited to commodity product categories. For public agencies, increasing the percentage of procurement expenditures through contracts with MBEs may be impacted by the presence of MBEs in the product categories they buy (Bangs *et al.*, 2007). Agencies that purchase products in markets where MBEs are plentiful (e.g. commodity-type items: toilet paper, paper towels) will find it easier to increase the percentage of their procurement expenditures with MBEs compared to agencies that purchase products where MBEs are scarce.

H4. State agencies that buy products where there are higher concentrations of MBE suppliers are more likely to spend a higher percentage of their procurement expenditures through contracts with MBEs than state agencies that buy products where there are thinner concentrations of MBE suppliers.

2.5 Organizational design

Sabatier and Mazmanian (1980; 1983) find that in public sector implementation contexts, political sovereigns (e.g. governors and mayors) have significant influence over the effectiveness of policy implementation. Agencies that are more accountable to the sovereign are more likely to pursue the sovereign's policy directives with vigor. Accountability may take the form of statutory authority, fiscal control or personnel appointments. At the state level in the USA, governors as political sovereigns hold great sway over cabinet agencies relative to non-cabinet agencies and more autonomously functioning colleges and universities. In Ohio, state cabinet agencies and departments accounted for more than \$210.5m of the 2015 MBE contract total; cabinet agencies spent nearly 19.5 per cent of their money doing business with MBEs. The fifth hypothesis posits that cabinet agencies are most likely to achieve gubernatorial goals.

H5. State agencies subjected to greater gubernatorial control (i.e. cabinet agencies) are more likely to spend a higher percentage of their procurement expenditures through contracts with MBEs than state agencies with less gubernatorial control (i.e. non-cabinet agencies).

2.6 Organizational culture and history

Prior history of discriminatory practices can become rooted in an organization's culture. Dollinger *et al.* (1991) advanced this argument by examining the cultural dynamics of discriminatory or biased attitudes held within corporate purchasing departments. They found that MBEs faced higher transaction costs in interacting with corporate procurement departments than conventional suppliers. Their findings were corroborated by Min (1999) who determined that purchasing managers traditionally stay with their established supply chain vendors; while not demonstrating outright discrimination, Min's findings suggest that new firms (including minority vendors) are less likely to secure a contract when an incumbent vendor is already in place. Müller-Heidelberg (2003) found that deeply rooted exclusionary practices create information redundancies, decrease innovation and diminish efficiencies. Müller-Heidelberg (2003) proposed that these issues could be mitigated through inclusionary practices; but most procurement personnel are slow to change, especially without any measurable consequences for not moving beyond their traditional procurement networks to purchase goods and services from MBEs. In the case of state agencies, those created before major social changes of the civil rights movement are more likely to have exclusionary practices embedded in their organizational cultures than younger agencies (Better, 2008; Taylor, 2010; McCrudden, 2007). This leads to the final hypothesis.

H6. More recently founded state agencies are more likely to spend a higher percentage of their procurement expenditures through contracts with MBEs than older state agencies.

3. Research design, data and methods

To assess the relative impact of the factors that potentially impact MBE set-aside program success, this paper examines the percentage of procurement expenditures spent through contracts with MBEs across public agencies in the state of Ohio from 2008 to 2015. The focus on Ohio allows for a comparison between two gubernatorial administrations with the same set-aside goals for MBEs – 15 per cent for each state agency – each pursuing the same basic policy to achieve those goals – a gubernatorial directive to achieve the goal accompanied by support and technical assistance to MBEs. As noted earlier, the Taft administration tackled the initial fixed costs of setting up the basic policy framework for Ohio's set-aside program for MBEs. The Strickland and Kasich administrations continued to operate using the basic policy approach established by the Taft administration. The primary difference across the Strickland and Kasich administrations is the program strategy each pursued in implementing the policy. In comparison to the Strickland administration, the Kasich administration took aggressive steps to make it easier for minority-owned firms to register with the state as MBEs and post bids for contracts[1].

The research design is a panel data analysis of procurement expenditures with MBEs by 70 state agencies over eight years. Data were gathered from 2008 to 2015 because they capture the four years of the Strickland administration and all available years of the Kasich administration. Because the degree of regulatory control and systematic bureaucracy cannot be directly measured, the assessment of program strategy is based on the comparisons between the two periods while controlling for the impact of other potential program success factors.

The data come from state level administrative sources provided by the State of Ohio. To draw the sample of state agencies, we started with the entire population of agencies and dropped agencies that were disbanded during the analysis time frame, as well as those with incomplete data. This resulted in a total 70 agencies for the analysis[2]. Data were collected on MBE procurement expenditures from agency report cards posted by Ohio's DAS for each year of the analysis. These report cards also provide additional agency-specific data (e.g. full-time employment equivalents). Additional data on each agency, such as leadership diversity and agency age, were gathered through online resources, primarily agency websites. This section describes the specific dependent and independent variables used to measure key constructs.

3.1 Dependent variable

This research paper operationalizes two dependent variables to measure the degree to which each agency complies with MBE set-aside directives. First, the variable *MBE Procurement*

Expenditure per cent measures the percentage of each agency's procurement expenditures spent through contracts with MBEs. This gives a straightforward picture of which agencies meet the 15 per cent target in any given year. Second, the variable *MBE Procurement Expenditure* per cent *Change* measures the change in the percentage of each agency's procurement expenditures spent through contracts with MBEs from one year to the prior year. For example, if an agency spent 10 per cent of its procurement budget through contracts with MBEs in 2011 and 5 per cent in 2010, the variable *MBE Procurement Expenditure* per cent *Change* for that agency equals 5 per cent. This variable provides a picture of the rate of change in meeting the target by agency across the two administrations. Analyses are performed for both dependent variables.

3.2 Independent variables

To account for program strategy, the period during which the Strickland administration governed the program and the period during which the Kasich administration governed the program are measured. The variable *Kasich Administration* is coded 1 for observations during the Kasich administration, else 0. The expectation is that during the Kasich administration, agencies are more likely to spend a larger percentage of their procurement budget through contracts with MBEs and have higher rates of MBE procurement expenditure change.

To account for agency leadership diversity, the race of the agency director is measured. The variable *Diverse Leadership* is coded 1 if the agency director is a racial minority, else 0. The expectation is that agencies with diverse leaders are more likely to spend a larger percentage of their procurement budget through contracts with MBEs and have higher rates of MBE procurement expenditure change.

To account for agency size, the amount the agency spends per full-time employee equivalent (FTE) is measured. The variable *Expenditures per FTE* measures the total agency budget in a given year divided by the total number of FTEs in that agency in the same year. Not surprisingly, total expenditures and total FTEs are correlated variables so using this operationalization serves the dual purpose of avoiding multicollinearity and capturing the specific impact of agency size. The expectation is that smaller agencies are more likely to spend a larger percentage of their procurement budget through contracts with MBEs and have higher rates of MBE procurement expenditure change.

To account for variations in the supply of MBEs across product categories, an assessment of the percentage of agency procurement expenditures spent on products where MBEs are prevalent is examined. The State of Ohio codes procured products into four different categories (Ohio Department of Administrative Services, 2014):

(1) Category 51 – Purchases and/or contracted services (e.g. consultants);

(2) Category 52 – Expendable goods and supplies (e.g. construction, utilities, gasoline, postage, paper, pens, repairs and travel);

(3) Category 53 – Durable goods (e.g. computers, furniture and vehicles); and

(4) Category 57 – Capital items (e.g. land or buildings).

Past research finds MBEs to be more plentiful in service-based industries and commodity businesses in comparison to industries that produce durable goods and capital items (Bates, 2001; Swearingen and Plank, 1997). The variable *Durable/Capital* per cent measures the percentage of an agency's procurement expenditures spent in categories 53 and 57 of the Ohio categorization. The expectation is that agencies that purchase a high percentage of durable and capital goods are less likely to spend a larger percentage of their procurement budget through contracts with MBEs and have lower rates of MBE procurement expenditure change.

To account for the proximity of the agency to the Governor's central administration, a measure of whether the agency is a governor-appointed cabinet agency or a publicly elected non-cabinet state agency was included. The variable *Non-Cabinet Agency* is coded 1 if the agency is not a cabinet agency, else 0[3]. The expectation is that cabinet agencies are more likely to spend a larger percentage of their procurement budget through contracts with MBEs and have higher rates of MBE procurement expenditure change.

To account for agency culture and history, age of the agency is measured. The variable *Agency Age* counts the number of years since the agency was founded. The expectation is that older agencies are less likely to spend a larger percentage of their procurement budget through contracts with MBEs, based on the resilience of their organizational culture, and have higher rates of MBE procurement expenditure change.

Table I provides the descriptive statistics for all the independent and dependent variables.

3.3 Methods

The analysis uses a mixed-effects linear regression model to assess the impact of the independent variables on the two dependent variables. The mixed-effects model accounts for the covariance associated with the two "groups" in the analysis – namely, the 70 agencies under the Strickland administration and then under the Kasich administration. In this way, the agencies are "nested" within the administration, like classrooms in a school (Snijders, 2011). A linear estimation is used because both of the dependent variables are continuous.

For the empirical analysis, three models are estimated. The first model compiles the data for all 70 agencies over the eight-year period and examines the impact of the independent variables on the dependent variable, *MBE Procurement Expenditure* per cent. This provides a basic assessment of the impact of the independent variables across the full period for both administrations. In the second model, individual years are isolated over the eight-year period to make direct comparisons between the Strickland and Kasich administrations. The year 2011 is selected for the Strickland administration, as it represents the last year of his leadership as governor. This is three years after the implementation of his 2008 executive order establishing his MBE set-aside program. Agencies had the highest MBE expenditure percentages of the Strickland administration during this year, likely reflecting the increased adoption of his policy over time. For the Kasich administration, the most recent year of 2015

Variables	Mean	SD	Minimum	Maximum	*N*
Dependent variables					
MBE procurement expenditure (%)	0.166	0.008	0	0.959	560
MBE procurement expenditure % change	0.040	0.007	−0.699	0.706	560
Independent variables					
Kasich administration	0.500	0.021	0	1	560
Diverse leadership	0.371	0.020	0	1	560
Expenditures per FTE	16328	1990	65	814945	560
Durable/Capital (%)	0.0643	0.005	0	0.925	560
Non-cabinet agency	0.686	0.020	0	1	560
Agency age	57.20	1.975	0	199	560

Table I.
Descriptive statistics

is selected. This is two years after the implementation of his 2013 change in program strategy for the MBE set-aside program and three years after he took office. Like 2011, for the Strickland administration, in 2015 agencies had the highest MBE expenditure percentages for the Kasich administration. By selecting these two years, we compare the best years of each administration. In the third model, the rate of change in agency procurement expenditures through MBE contracts is examined. Here, the variable *MBE Procurement Expenditure* per cent *Change* measures the change in procurement expenditures with MBEs from 2010 to 2011 for the Strickland administration and from 2014 to 2015 for the Kasich administration.

The two-period panel analysis allows for a determination of whether the time period change – which serves as a proxy for the change in program strategy between the two administrations – accounts for differences in MBE expenditure percentages while accounting for other potential explanatory factors. The downside of this approach is that it raises the possibility of serial correlation of errors for the different time periods. A Woolridge test (coefficient of −0.309) indicated the presence of serial correlation in the error terms (Drukker, 2003). To address this serial correlation, the standard errors in our mixed effects models were clustered by the two groups – Strickland administration years and Kasich administration years.

All empirical analyses were conducted with the statistical program Stata.

4. Results

This section reports the results of the mixed-effects linear regression analyses of the impact of the independent variables on the two dependent variables. The results provide evidence that the Kasich administration's streamlined strategy positively contributed to an increase in agency procurement expenditures through contracts with MBEs. Table II reports the results for the impact of the independent variables on *MBE Procurement Expenditures* per cent across all eight years of the sample. Table III reports the results for *MBE Procurement Expenditures* per cent for the years 2011 (the last year of the Strickland administration) and 2015 (the most recent year of the Kasich administration). Table IV reports the results for *MBE Procurement Expenditures* per cent *Change* for the years 2011 and 2015.

The coefficient for *Kasich Administration* is positive (0.101) and statistically significant at the 0.001 level in Table II. Holding all other variables at their mean, the Kasich administration's program strategy changes are associated with an increase of 10 percentage points in the average percentage of procurement expenditures spent through MBE contracts across the eight years of the sample. The coefficient is also positive (0.177) and statistically significant at the

Table II. Mixed effects regression results of impact of independent variables on MBE procurement expenditure % (2008-2015), robust standard errors

Variables	B	S.E
Kasich administration	0.101***	0.001
Diverse leadership	0.002	0.009
Expenditures per FTE	−5.26e−07	3.09e−07
Durable/Capital (%)	−0.087***	0.011
Non-cabinet agency	−0.017	0.014
Agency age	6.33e−05	1.82e−04
Constant	0.138***	0.023
Log likelihood	193.22	
N	560	

Note: $^{***}p<0.001$

0.001 level in Table III. Holding all other variables at their mean, the Kasich administration's program strategy changes are associated with an increase of just under 18 percentage points in the average percentage of procurement expenditures between 2015 and 2011. Finally, the coefficient is positive (0.074) and statistically significant at the 0.001 level in Table IV. Holding all other variables at their mean, this amounts to an increase of over seven percentage points in the average change from 2014 to 2015 in procurement expenditures spent through MBE contracts in comparison to the change from 2010 to 2011[4].

Three other independent variables – *Expenditures per FTE*, *Durable/Capital* per cent, and *Diverse Leadership* – are statistically significant in the three analysis, although they are not each significant in all three analyses. In Table III, the variable *Expenditures per FTE* is negative ($-1.24e^{-06}$) and statistically significant at the 0.001 level. Holding all other variables at their mean, an increase of $100,000 in expenditures per FTE is associated with a decrease of one percentage point in the average change from 2014 to 2015 in procurement expenditures spent through MBE contracts in comparison to the change from 2010 to 2011. This provides evidence that agencies with larger budgets relative to the size of their labor force are less likely to meet the MBE set-aside target than those with smaller budgets.

In Table II, the variable *Durable/Capital* per cent is negative (−0.087) and statistically significant at the 0.001 level. Holding all other variables at their mean, an increase of one per cent in the percentage of an agency's procurement expenditures spent on durable and capital goods leads to a decrease of nine percentage points in the procurement expenditures spent

Variables	B	S.E
Kasich administration	0.177***	0.003
Diverse leadership	−0.027*	0.012
Expenditures per FTE	−1.24e−06***	7.47e−08
Durable/Capital %	−0.187***	0.035
Non-cabinet agency	−0.0359	0.038
Agency age	8.22e−05	6.11e−04
Constant	0.206***	0.010
Log likelihood	52.92	
N	140	

Notes: $^{*}p < 0.05$; $^{***}p < 0.001$

Table III. Mixed effects regression results of impact of independent variables on MBE procurement expenditure % (2011 vs 2015), robust standard errors

Variables	B	S.E
Kasich administration	0.074***	0.003
Diverse leadership	−0.029	0.026
Expenditures per FTE	−2.14e−8	3.02e−08
Durable/Capital %	−0.030	0.198
Non-cabinet agency	−0.008	0.061
Agency age	2.39e−04	6.08e−04
Constant	0.004	0.004
Log likelihood	47.06	
N	140	

Note: $^{***}p < 0.001$

Table IV. Mixed effects regression results of impact of independent variables on MBE procurement expenditure % change (2011 vs 2015), robust standard errors through MBE contracts across the eight years of the sample. This provides evidence that agencies which purchase a higher percentage of durable and capital goods are less likely to meet the MBE set-aside target than agencies which purchase a higher percentage of services and commodities.

In Table III, the variable *Diverse Leadership* is negative (−0.027) and statistically significant at the 0.05 level. Holding all other variables at their mean, an agency that transitioned from a leader not from an underrepresented population to a leader from an underrepresented population leads to a decrease of three percentage points in the average change from 2014 to 2015 in procurement expenditures spent through MBE contracts in comparison to the change from 2010 to 2011. This provides evidence that agencies with leadership from an underrepresented population are less likely to meet the MBE set-aside target than agencies without leadership from an underrepresented population.

In summation, *H1* (Kasich Administration) was fully supported; *H3* (Organizational Size) and *H4* (MBE Supply) were partially supported; and *H2* (Leadership Diversity), *H5* (Organizational Design) and *H6* (Organizational Culture and History) were not supported.

5. Discussion

Taken together, the results provide evidence that the deepening of program implementation strategy from the Strickland administration to the Kasich administration contributed positively to an increase in the percentage of procurement expenditures spent through contracts with MBEs. Figure 1 displays the aggregate annual MBE set-aside expenditure percentage for each of the 70 state agencies within the sample.

This simple descriptive presentation shows that set-aside rates are higher on average for the Kasich administration relative to the Strickland administration. The empirical analysis in the previous section suggests that this pattern is the result of differences in program implementation strategy across the two administrations rather than the multiplicity of other factors identified by extant research. The empirical approach utilized in the paper considers the most salient and compelling alternative arguments for what drives agency purchasing through contracts with MBEs. None of the other variables that were operationalized to

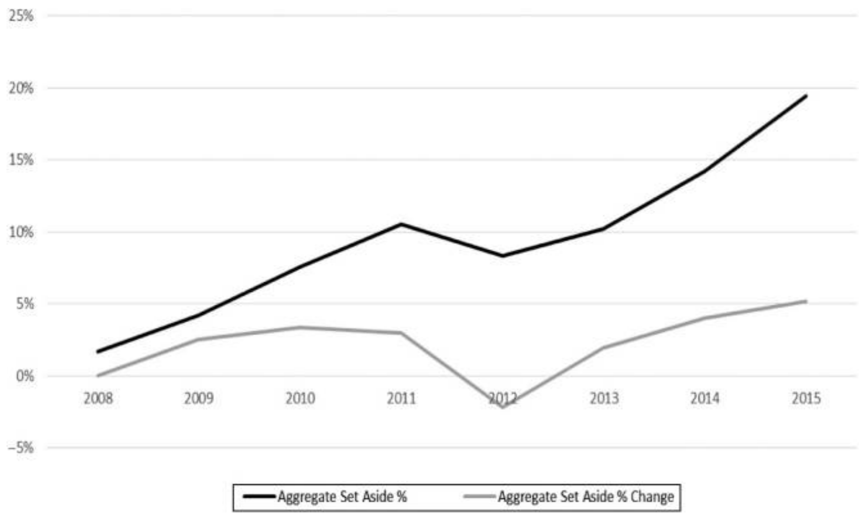

Figure 1.
Aggregate MBE procurement expenditure percentage, 2008-2015

measure these arguments were consistently statistically significant across the three models. To that end, the analysis provides evidence that program implementation strategy choices can positively impact the success of MBE set-aside programs.

The Kasich administration drew on lean six sigma and total quality management techniques (e.g. George and George, 2003) to reform the implementation of the MBE set-aside process (Ohio DAS, 2015). Kasich staff targeted two components of the process to increase the percentage of procurement expenditures spent through contracts with MBEs: the registration of minority-owned firms as MBEs and the process for MBEs to offer proposals on agency bids. The assessment of Kasich staff and outside consultants was that both processes were overly cumbersome and a barrier to entry for MBEs into the public procurement market. Descriptive data suggest that the greatest impact came from improvements to the bidding process rather than the registration process. In 2011, the final year of the Strickland administration, there were 1,365 firms designated as MBEs by the Ohio DAS. At the beginning of 2016 – the most recent year for which data is available – there were 1341 certified MBE firms. We cannot draw definite conclusions from these figures due to a lack of data on those MBEs that either graduated from the program or chose not to reapply. While the Kasich administration may have made it easier for MBEs to register with the State of Ohio, there does not seem to be a demonstrable impact on the supply of eligible firms.

This is not to say that MBE supply is not important. On the contrary, the results suggest that MBE supply matters. Agencies that purchase goods and services where there is a generally a higher prevalence of MBEs – notably commodities and services – had higher set-aside rates. For example, the Department of Public Safety's portfolio of purchases was 100 per cent of commodities and services in 2015; of these purchases, 75 per cent were contracts with MBEs. In comparison, the Racing Commission's portfolio of purchases was 59 per cent of commodities and services in 2015; of these purchases just under 1 per cent were contracts with MBEs. The results suggest that MBE supply matters, but it did not vary across administrations. Instead, efforts to make it easier for MBEs to bid on contracts appear to be the driver behind the increase in the set-aside rate in the Kasich administration.

The statistical results also indicate that expenditures per FTE influence the set-aside rate. However, the effect of size is diminutive. As noted in the results section, an increase of \$100,000 in expenditures per FTE is associated with a decrease of one percentage point in the average change in procurement expenditures spent through MBE contracts between the two periods. While a one percentage point change is meaningful, very few agencies spend \$100,000 or more per FTE. The mean of this variable is \$16,228 and the standard deviation only \$1,992.63. Agencies with large expenditures per employee have a harder time accelerating their set-aside purchases to meet the goal, but there are few agencies with notably large expenditures per FTE.

In the private and public sectors, the question of which "kind" of minority matriculates the corporate or governmental ladder has not been traditionally studied. According to Carbado and Gulati (2004) and Carli and Eagly (2001), most minorities and women have to assimilate to matriculate. They found that the assimilation process minorities and woman go through to reach senior management levels alienates them from other lower- or mid-level minority and female employees. These researchers further posit that this chasm reduces the likelihood of the assimilated minority or woman ascending the corporate ladder to open doors of opportunity for other minorities and women to walk through. Specifically, Carbado and Gulati (2004) illustrated that minorities who matriculate to senior levels at corporations do not hire any more minorities than did their white male executive counterparts. Furthermore, they also do not provide any additional mentoring to junior minority staff as compared to white males in the same organization. Extrapolating this logic to our research agenda in procurement, this might explain why there is an inverse relationship between agencies with diverse leadership and the amount of procurement their respective agencies made with MBEs.

The results have implications for both research and practice on public procurement. For research, the results provide support for the impact of streamlining the regulations governing state procurement. In particular, this study corroborates research on the positive impact of efforts to streamline overly bureaucratic and regulated processes (Bannock and Peacock, 1989; Loader, 2007, 2013). In the public sector, regulations are typically instituted for good reasons (i.e. quality assurance and security), but over time, the accumulation of many regulations can undermine the original intent of any process. In the context of public procurement, making it easier for MBEs to do business with a purchasing agency increases the likelihood that agencies will meet set-aside goals. Furthermore, market conditions also impact success for public procurement programs. The more viable MBEs in a particular product category, the easier it is for an agency to purchase a needed product to pursue its core mission and activities, while also meeting the state-level goal of increasing the number of MBEs doing business with the government (Bangs *et al.*, 2007).

The advantage of the approach of focusing on one state over two administrations pursuing the same basic policy is that it controls for state-level and policy-level differences (Blount and Hill, 2015). The limitation is that the results are not generalizable beyond a single state at two points in time. In addition, the assertions about the impact of specific program implementation strategies (e.g. creating a more efficient proposal process) are based on descriptive analyses rather than a systematic inquiry. Still, the findings point to the general importance of program implementation strategy.

As discussed in the introductory portion of this paper, the set-aside program was meant to be a stepping stone for MBEs in the contracting market to compete with firms having an incumbent advantage. By evaluating implementation strategy, this research paper opens up the opportunity for further investigation into the impacts of program success itself on the market competitiveness of graduated MBE firms. At this point, more progressive economic policy geared towards marginalized business interests can be made using up to date analyses. Furthermore, while unavailable for this analysis, the addition of contract size among state agencies as a variable could perhaps shine more light on where MBEs are most likely to win contracts and where they are not. Future research can also seek to apply similar methods to other contexts and geographies to see if the same results hold. For example, this research could inform policymakers in European governments now struggling with a significant influx of immigrants from various parts of the Middle East and Africa. Using governmental policy to provide an inclusive and efficient procurement environment may encourage immigrant entrepreneurship, deter extremism and facilitate a smoother path for immigrants to integrate into European society (Preuss, 2009; Ram *et al.*, 2006).

6. Conclusion

The analysis of two state administrations pursuing the same policy to promote contracts with MBEs provides evidence that alternative program implementation strategies impact program outcomes. The findings should give confidence to reformers focused on improving program performance through strategies designed to simplify procurement processes. Clear performance goals and leadership commitment provide the foundation for program success, but real traction comes from removing barriers to entry for MBEs into the public procurement market.

Notes

1. A difference of means t-test was run on set asides for 2010 and 2011 resulting in a failure to reject the null hypothesis that the two means are statistically different across the two administrations
2. Five agencies were dropped in total: Lake Erie Commission, Medical Transportation Board and the School Facilities Commission were dropped because of missing data. The Legal Rights Service was also dropped because it changed into a non-profit organization during the time frame. Finally, the Ohio Department of Mental Health and the Ohio Department of Alcohol and Drug Addiction Services were merged to create the Ohio Department of Mental Health and Addiction Services. The observations were consolidated into one single observation across the time period using pre-merger data from the larger and older Department of Mental Health and post-merger data from the merged agency.
3. Universities were dropped from the analysis because of a lack of consistent data over the period.
4. A difference of means t-test was run on set asides for 2010 and 2011 resulting in a failure to reject the null hypothesis that the two means are statistically different across the two administrations.

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