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# Relationship building and minority business growth: Does participating in activities sponsored by institutional intermediaries help?

Mengyang Pan<sup>a,\*</sup>, James Hill<sup>b</sup>, Ian Blount<sup>c</sup>, Manus Rungtusanatham<sup>d</sup>

<sup>a</sup> Research Institute of Economics and Management, Southwestern University of Finance and Economics, 55 Guanghua Cun St, Chengdu 610074, China

<sup>b</sup> Fisher College of Business, The Ohio State University, 600C Fisher Hall, 2100 Neil Ave, Columbus, OH 43210, USA

<sup>c</sup> George Washington Carver Food Research Institute, 935 Eagle Road, Waxhaw, NC 28173, USA

<sup>d</sup> Schulich School of Business, York University, 111 Ian Macdonald Boulevard, Toronto, ON M3J 1P3, Canada

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## ABSTRACT

Historically, minority businesses have faced barriers to growth in mainstream U. S. markets. Institutional intermediaries have emerged as a low-cost solution. They help minority businesses access large, established corporate members. They provide training designed to improve long-term viability by enhancing internal management skills and processes within minority businesses. Drawing on social capital theory and using an online survey, we examine 113 minority businesses affiliated with a regional council of the National Minority Supplier Development Council (NMSDC). We find that their selective participation in different types of intermediary-sponsored activities influences their relationships with corporate and other minority members, although to different degrees. Moreover, we find that government contracting experience strengthens how relationship building with corporate members affects their growth. Compared to Hispanic and Asian minority businesses, African American minority businesses experience higher growth from relationship building with other minority members.

## 1. Introduction

Minority businesses are defined as “[b]usinesses in which at least 51 percent of the ownership and the management of daily business are controlled by one or more of the following groups: Black Americans, Hispanic Americans, Native Americans, Subcontinent Asian Americans, and Asian-Pacific Americans” (Carter et al., 1999, p. 28). According to a 2019 survey, these businesses account for approximately 18.3% (1 million) of all businesses in the United States (Census Bureau, 2021), with about 99.9% of them classified as small businesses (Esposito, 2019). Moreover, minority business ownership is a critical driver of upward mobility, wealth, and job creation for minority communities (Jones et al., 2012). Despite their established presence and importance, these businesses also routinely encounter barriers to growth. A recent U. K. report, for example, suggests minority entrepreneurs generate lower profits than non-minority entrepreneurs, even if they have comparably more qualifications (Pratty, 2020). Academicians and practitioners have continued to struggle to identify ways minority businesses can overcome these challenges.

Research investigating why minority businesses have lower success

shows they face higher barriers to business growth than non-minority-owned businesses (Bates et al., 2018). These barriers include difficulty accessing skilled labor (Cunningham & McGuire, 2019; Lofstrom et al., 2014; Rahman et al., 2018), acquiring financing (Chatterji & Seamans, 2012; Mitchell & Pearce, 2011; Neville et al., 2018), and entering mainstream markets (Shelton & Minniti, 2018). *Ceteris paribus*, minority businesses are less likely to sell to mainstream markets than non-minority-owned small businesses because they are unable to build relationships with large purchasing organizations (Bates, 2001). To overcome limited access to mainstream markets, policymakers have established programs to increase government contracting with minority businesses (Chatterji et al., 2014). Institutional intermediaries have also been established to help minority businesses build relationships with and sell to corporations (Armanios et al., 2017). Adopting Dutt et al. (2016, p. 818), we define an “institutional intermediary” as an actor connecting two or more parties to bring about specific activities that otherwise could not happen, ultimately supporting the creation and development of institutions crucial for fostering business development activities.

For minority businesses, simply becoming a member of an

\* Corresponding author.

E-mail addresses: [panmy@swufe.edu.cn](mailto:panmy@swufe.edu.cn) (M. Pan), [hill.249@osu.edu](mailto:hill.249@osu.edu) (J. Hill), [ian@gwcfri.org](mailto:ian@gwcfri.org) (I. Blount), [rung001@schulich.yorku.ca](mailto:rung001@schulich.yorku.ca) (M. Rungtusanatham).

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institutional intermediary is insufficient for building relationships (Davis et al., 2006). We contend that it is critical for minority businesses to actively participate in intermediary-sponsored activities (Adobor & McMullen, 2014). Per social capital theory, relationships endowed with social capital are built through repeated interactions between two parties (Barney, 1991). Indeed, business relationships result from socialization that occurs through participation in intermediary-sponsored activities (Aaltonen & Turkulainen, 2018; Petersen et al., 2008). While previous research on institutional intermediaries has supported their facilitative role in relationship building (Mair et al., 2012), the role played by minority businesses themselves remains unclear. The prevailing perspective is that membership automatically increases social capital. What remains unclear is why and how specific actions minority businesses take after becoming members of an institutional intermediary increase the value they derive from this status. To fill this gap, this study seeks to answer the following research question: *Does active participation by minority businesses in an institutional intermediary influence relationship building and, ultimately, firm growth?*

To answer this question, we (a) conducted a focus group with representatives of ten minority businesses and (b) collected data from minority businesses affiliated with the Ohio Minority Supplier Development Council (OMSDC). OMSDC is a regional council of the National Minority Supplier Development Council (NMSDC), whose charter is to connect and develop minority businesses. Our sample consists of 113 minority businesses operating in various industries. We first examine whether participation in intermediary-sponsored activities leads to relationship building with two types of NMSDC stakeholders: corporate members and other minority members (Adobor & McMullen, 2014). NMSDC corporate members are large corporations that represent some of the largest publicly- and privately-owned global companies in the U.S. (NMSDC, 2021). Other minority members are minority-owned, NMSDC-member businesses. Second, we examine whether the types of activities that minority businesses participate in influence relationship building. This is a relevant issue, as minority businesses are often resource constrained and need to wisely select the activities they participate in. Third, we examine whether relationships built with corporate members and with other minority members improve firm growth.

Our study contributes to the institutional intermediary literature and research on minority businesses. Our findings highlight the importance of minority businesses taking proactive action (via participation) to reap the benefits of joining an institutional intermediary. Further, we show how relationship building depends on the type of activity a minority business participates in. We also contribute to social capital research, highlighting how the effects on firm growth from relationship building with different entities are contingent on different factors.

## 2. Institutional intermediaries

The first institutional intermediary to assist minority businesses in the U.S. was the Minority Business Development Agency (MBDA), launched under President Nixon in 1969. The MBDA's sole purpose is to promote growth of minority-owned businesses by mobilizing and advancing public- and private-sector programs, policy, and research (MBDA, 2019). The NMSDC, a more broadly focused intermediary, emerged in 1972. As a 501.6(c) nonprofit business membership organization, the mission of the NMSDC is to connect dues-paying corporate members with certified minority members (Internal Revenue Service, 2020). An NMSDC-certified minority business can participate in numerous intermediary-sponsored programs and events available through one of 23 affiliate regional councils nationwide.

The literature categorizes intermediary-sponsored activities differently depending on who is served and under what circumstances. For example, Dutt et al. (2016) categorize intermediaries into those providing services that support lobbying, finance, and facilities and those seeking to build business capabilities via training and education.

Membership in intermediaries such as trade associations or chambers of commerce help create space for social interactions, provide outreach to service providers for capacity building, and legitimize new actors (Mair et al., 2012). Armanios et al. (2017) categorize intermediary-sponsored activities into those providing certification and those providing capability development.

The NMSDC encourages minority businesses to participate in their annual activities. These activities generally fall into two categories. One category of NMSDC activities focus on enhancing minority businesses' abilities to meet the needs of NMSDC corporate members (i.e., *development-oriented activities*). Minority businesses choose to attend seminars on topics of interest or training programs/workshops hosted by local universities/colleges or other educational institutions. Seminar speakers come from NMSDC corporate members or other minority members, who often serve as role models and share success stories and best practices. A second category of NMSDC activities promote socialization between certified minority businesses and corporate members (i.e., *connect-oriented activities*). These activities include large group gatherings (e.g., annual meetings, awards galas) and smaller social events (e.g., breakfasts, golf trips). Online Appendix A provides example descriptions of activities in each category.

Research on institutional intermediaries has also explored the motivations for businesses to become members. Corporate members join the NMSDC to explore ways to transact with minority businesses through supplier diversity programs as part of corporate social responsibility initiatives to enhance their corporate reputation (Blount, 2021). Minority businesses join institutional intermediaries for such reasons as reputation enhancement, information and knowledge acquisition, and relationship building (Mair et al., 2012). Adobor and McMullen (2014) note, however, that it is critical for minority businesses to participate and work to initiate relationship building. Increased physical distance from the network center (suggesting difficulty participating), however, reduces the positive effects of membership on firm performance (Boehe, 2013). Mere membership in an intermediary, therefore, does not automatically lead to realized benefits. Instead, minority businesses must act to reap such benefits. Our study investigates how and why relationship building through proactive participation by minority business yields increased growth.

## 3. Hypotheses development

Our conceptual model is illustrated in Fig. 1.

### 3.1. Relationship building from participation

Social capital is goodwill available to individuals or groups sourced from the actor's social relationships (Adler & Kwon, 2002). This goodwill is "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998, p. 243). Social capital is thus developed from a history of interactions among parties (Barney, 1991). Research suggests that the socialization process among interacting parties precedes cultivation of business relationships (Aaltonen & Turkulainen, 2018; Hughes & Perrons, 2011).

For minority businesses, participating in intermediary-sponsored activities provides socialization opportunities for relationship building (Oh et al., 2004). These socialization opportunities allow minority businesses to demonstrate their values, norms, and goals towards achievement of mutual engagement (Lawson et al., 2009). Minority businesses are, moreover, particularly dependent on socialization opportunities for relationship building as they have historically encountered social exclusion and discrimination in networking events (Liu et al., 2020). Participating in intermediary-sponsored activities allows them to establish social bonds with parties to which they otherwise would not have access (Paulraj et al., 2008). Repeated encounters from participating in intermediary-sponsored activities helps minority

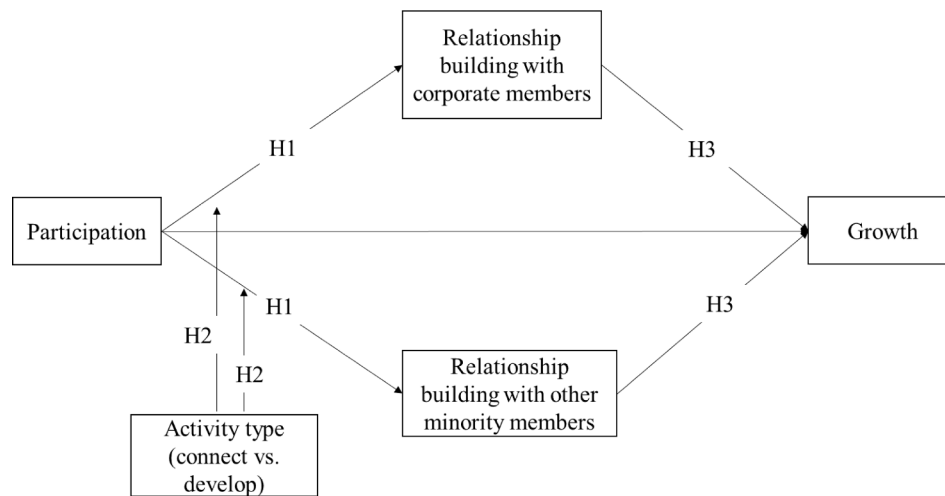


Fig. 1. Conceptual model. Note:  $H4 = H1 + H3$ , which hypothesizes the indirect effects of participation on growth via relationship building (a) with corporate members and (b) other minority members.

businesses develop collaborative bonds of mutual norms with their interacting parties (Xu et al., 2017), creating a virtuous cycle that allows trust to develop as a cumulative product of repeated past social interactions (Bernardes, 2010). Trust, in turn, develops a common understanding of mutual commitment and cooperation as a basis for strong relationships (Connelly et al., 2018). Serving as relationship facilitators, third-party intermediaries substantially contribute to developing trust in this virtuous cycle (Cannatelli & Antoldi, 2012).

Minority businesses are generally able to build two types of business relationships through an intermediary: relationships with either corporate members and/or with other minority members. Building relationships with corporate members is the mission of minority-supporting institutional intermediaries; improving minority businesses' access to large purchasing organizations helps them overcome a major barrier (Ram et al., 2012). As members of the same institutional intermediary, minority businesses are also able to build relationships with each other at sponsored activities; connecting within their communities is vital to their survival and growth (Blount et al., 2013). Thus, we propose:

*Hypothesis 1 (H1): For minority businesses, participating in intermediary-sponsored activities has a positive effect on relationship building with (a) corporate members and (b) other minority members.*

Participating in intermediary-sponsored activities has different effects on relationship building for minority businesses depending on the activity type. Armanios et al. (2017) show the relative benefits of different intermediary-sponsored activities depending on the minority business's internal characteristics. Businesses with fewer adequate skills tend to leverage more from capability-building activities than certification services. Evidence shows that, due to the different sets of activities sponsored, access to potential business partners improves more for members of sector-specific associations than for members of trade organizations (Battisti & Perry, 2015).

We posit that connect-oriented activities are less advantageous than develop-oriented activities for building relationships with corporate members. The higher social barriers between minority businesses and corporate members (Shelton & Minniti, 2018) mean more effort and more quality time is required to develop personal familiarity into trustworthy relationships (Adobor & McMullen, 2007). Programs associated with develop-oriented activities offer participants more opportunities to engage with corporate members in intense in-training discussions and team project collaborations, providing longer and higher-quality interactions with corporate members. The scale and duration of connect-oriented activities, in contrast, may be insufficient

for minority businesses to have meaningful interactions with corporate members. Participating in connect-oriented activities is, therefore, less efficient for building relationships with corporate members than participating in develop-oriented activities.

Building relationships with other minority members is distinctly different. Research finds that relationship building with homophilous contacts (i.e., those with the same minority status) is relatively easy and spontaneous (McPherson et al., 2001). Co-ethnic relationships often feature smoother communications and a higher sense of loyalty and friendship because of shared cultural backgrounds and common languages (Haq et al., 2021). Mollica et al. (2003) find minorities are more likely than non-minorities to seek homophilic relationships. Even for minority businesses that do not share the same ethnicity, being a minority in a host country increases the sense of trust in relationship building (Altinay et al., 2014). As connect-oriented activities are often designed for socialization via large-group gatherings, they expose minority businesses to a larger pool of other minority members than develop-oriented activities. Thus, we posit that participating in connect-oriented activities is more efficient for building relationships with other minority members than participating in develop-oriented activities. Based on these arguments, we propose:

*Hypothesis 2 (H2): For minority businesses, compared with participating in develop-oriented activities, participating in intermediary-sponsored connect-oriented activities is (a) less efficient for building relationships with corporate members but (b) more efficient for building relationships with other minority members.*

### 3.2. Firm growth from relationship building

Relationship building helps minority businesses build social capital, a valuable resource (Lin, 1999). Nahapiet and Ghoshal (1998) conceptualize social capital as composed of structural, cognitive, and relational dimensions, each uniquely facilitating resource exchanges. The structural dimension refers to relationships (social ties) between firms and the overall patterns of these relationships, while the cognitive dimension describes the expectations, interpretations, and systems of meaning shared between firms. The relational dimension captures the level of trust and relational dependence between firms (Nahapiet & Ghoshal, 1998). Social capital is instrumental to firm growth, as it fosters information flow and knowledge sharing (Casanueva et al., 2013; Pérez-Luño et al., 2011), engenders trust and legitimacy (García-Villaverde et al., 2018; Jeong et al., 2021; Li et al., 2013; Madhavaram & Hunt, 2017), reinforces identity and shared values (Meek et al., 2019; Stam et al.,

2014), and leads to positive outcomes (Carey et al., 2011; Gerke et al., 2021). Therefore, as minority businesses build more relationships with corporate members and with other minority members, we expect them to experience greater growth.

First, relationship building with corporate members is positively associated with firm growth as it increases the chances of minority businesses to be considered as suppliers (Blount & Li, 2021). Often, the qualifications of minority businesses are scrutinized when they compete with non-minority businesses (Peñaloza, 2018). Minority certification alone is insufficient for a purchasing manager to determine a minority business's competency (Shelton, 2010). Relationships with corporate members can help alleviate capability concerns. These relationships are social ties (social capital's structural dimension), giving minority businesses direct business opportunities and referrals to others. Relationships built with the help of an institutional intermediary are often characterized by shared narratives (social capital's cognitive dimension). These shared narratives set clearly defined norms and shared expectations that help develop trust between minority businesses and corporate members (social capital's relational dimension) (Smith & Lohrke, 2008). Repeated interactions during intermediary-sponsored activities help reduce information asymmetry and enhance credentials, easing the process corporate members use to make supplier selections (Batjargal & Liu, 2004). Minority businesses obtain in-person opportunities to demonstrate their ability to meet corporate buyers' sourcing requirements and, ultimately, convince potential buyers of their value (Fang et al., 2011). An information channel emerges for purchasing managers from corporate members to assess minority members' potential supply capability, which helps establish legitimacy (Murphy et al., 2007).

Second, relationship building with other minority members is positively associated with firm growth. Specifically, it allows minority businesses to learn industry-related information from other minority members (Bengtsson & Johansson, 2014), fosters information exchange with and mutual learning from other minority members (Lawson et al., 2009), and eases the transfer of best practices from other minority members (Cousins et al., 2008). Minority businesses relate more readily to the challenges of doing business with corporate members and gain peer assistance by sharing implicit knowledge about dealing with such challenges (Kuhn & Galloway, 2013). Shared minority status creates a sense of identification among minority members, bolstering the relational dimension of social capital (Blount et al., 2013). Ethnic relationships embedded in minority communities, moreover, fosters altruism toward improving connected parties' overall performance (Karra et al., 2006). Further, the shared language and codes among parties with similar ethnic backgrounds strengthens the cognitive dimension of social capital, improving access to resources (McDonald, 2011; Phillips et al., 2013). In a focus group interview, Jim Roberts, CEO of a minority financial services firm and director of the NMSDC's Michigan bureau, noted, "[W]e need minority business owners to reach out to other minority business owners. ... Connections lend new eyes for minority businesses and make a difference." Minority businesses leverage such relationships to learn together and improve their capacity to exploit business opportunities (Bergh et al., 2011). Access to co-ethnic businesses provides products, facilities, and utilities, all of which significantly drive firm growth (Wang & Altinay, 2012). Thus, we propose:

*Hypothesis 3(H3): For minority businesses, an increase in relationship building (a) with corporate members and (b) other minority members has a positive effect on firm growth.*

Considering Hypotheses 1 and 3 together suggests that participation in intermediary-sponsored activities indirectly affects firm growth through relationship building (a) with corporate members and (b) other minority members. As such, we propose:

*Hypothesis 4(H4): For minority businesses, participating in intermediary-sponsored activities has an indirect positive effect on firm growth via relationship building (a) with corporate members and (b) other minority members.*

## 4. Research design

### 4.1. Sample and data

We first used a focus group to provide contextual insights that informed development of our online survey questions. Our focus group consisted of ten active minority businesses that attended most OMSDC activities. Online Appendix B describes the focus group in greater detail. Analyses of focus group insights uncovered two recurring themes. First, minority businesses desire more opportunities to socialize with corporate members and with other minority members. Second, they struggle to participate in more activities due to time constraints, suggesting a need to guide them in wisely selecting intermediary-sponsored activities.

Second, we conducted an online survey. We contacted the OMSDC president to review our research objectives and request contact information for key informants from 500 OMSDC minority members. We then contacted them by email, notifying them of our upcoming effort to gather insights into their interactions with the OMSDC. To improve response accuracy and consistency with our archival data, we asked key informants to base their responses on the last three years of their OMSDC membership. Three days later, we emailed invitations to complete the online survey to two key informants for each minority business: one executive (CEO or president) and one functional manager (sales, procurement, or operations). We obtained firm-level information such as firm demographics from the executive and operation-level information, including details on relationship-building efforts, from the functional managers. This dual-source survey design helps increase objectivity and reduce common method bias (Podsakoff et al., 2003). Two weeks later, we sent follow-up emails to those who had not responded to the initial invitation, a tactic that helps improve response rates (Dillman, 2009). The executive and functional managers of 113 minority businesses completed the online survey, a response rate of 22.6%. We evaluated non-response bias by comparing employment size between minority business that responded to the online survey and those that had not (Rogelberg & Stanton, 2007) and found no statistical difference. We also conducted a wave analysis (Armstrong & Overton, 1977), comparing 41 minority businesses that responded early (i.e., within 10 days of the initial invitation) to the 29 that responded late (i.e., within 10 days of the follow-up invitation). Multivariate tests between these two groups with respect to employment size, age, and membership length found no statistical differences (Roberson & Sundstrom, 1990), further reducing concerns with non-response bias.

Third, we supplemented the online survey data with OMSDC archival records data regarding minority businesses' participation history. The archival records tracked participation in eight different OMSDC-sponsored activities, summarized in Online Appendix A.

### 4.2. Variables

Table 1 provides definitions and data sources for all variables. Table 2 presents their descriptive statistics and bi-variate correlations.

*Growth*, the dependent variable, is measured with three items from the online survey, asking minority businesses in our sample to indicate the extent to which they experienced increases in (i) sales, (ii) employment, and (iii) market share from their OMSDC affiliation. Previous research has measured firm growth in a similar manner (Walter et al., 2006). We chose a perceptual measure because any increase in sales, employment, or market share calculated from objective data is not readily attributed to whether or how a minority business is affiliated with the OMSDC. Perceptual measures have moreover been shown to

**Table 1**  
Variable definition and data source.

Variables	Definition	Data source
<i>Growth</i>	A 3-item factor measured by five-point Likert-type scales: 1) extent to which sales increased for the minority business through affiliation with the OMSDC; 2) extent to which employment increased for the minority business through affiliation with the OMSDC; 3) extent to which market share increased for the minority business through affiliation with the OMSDC.	Online survey
<i>Relationship building with corporate members (relptocorp)</i>	Extent to which relationships of the focal minority business with corporate members expanded through affiliation with the OMSDC measured by a five-point Likert-type scale.	Online survey
<i>Relationship building with other minority members (relptminority)</i>	Extent to which relationships of the focal minority business with other minority members expanded through affiliation with the OMSDC measured by a five-point Likert-type scale.	Online survey
<i>Participation</i>	Average number of OMSDC-sponsored activities the minority business participated in during the last three years.	Archival data
<i>Proportion of connect-oriented activities participated (connect%)</i>	Ratio of number of connect-oriented activities participated in by the minority business over total number of OMSDC-sponsored activities it participated in.	Archival data
<i>City</i>	Minority business headquarters location is in Cincinnati, Columbus, Dayton, or Other.	Online survey
<i>Goalalign</i>	Extent to which the minority business's goals and values are shared by the OMSDC.	Online survey
<i>Age</i>	Length of time the minority business has been in business.	Online survey
<i>Gender</i>	Gender of the owner of the minority business is male or female.	Online survey
<i>Ethnicity</i>	Ethnicity type of the minority business owner is African American, Hispanic, Asian, or Native American & other.	Online survey
<i>Employment</i>	Number of employees working for the minority business.	Online survey
<i>Sales</i>	Current sales volume of the minority business: 1 represents less than \$100,000, 2 ranges between \$100,000 and \$250,000, 3 between \$250,000 and \$500,000, 4 between \$500,000 and \$1 million, 5 between \$1 million and \$2.5 million, 6 between \$2.5 million and \$5 million, and 7 more than \$5 million.	Online survey
<i>Government</i>	Whether the minority business conducted business with governmental agencies.	Online survey
<i>Memberlength</i>	Length of time the minority business has been an OMSDC member.	Online survey
<i>Industry</i>	The minority business's industry: professional services, construction, manufacturing, or retail & wholesale industry.	Online survey

correspond closely to objective performance data (Venkatraman & Ramanujam, 1986). As a robustness check, we asked an OMSDC administrator to verify responses provided by minority businesses regarding sales, employment, and market share against their archival tax files and employment records.<sup>1</sup> Factor analysis revealed that the three items significantly loaded on a single factor with factor loadings greater than 0.91, above the 0.7 rule of thumb (Hu & Bentler, 1999). The eigenvalue of the single factor is 2.571, explaining 85.7% of the total-item variation (Fornell & Larcker, 1981). Its Cronbach's alpha is 0.915, greater than the recommended 0.7 threshold (Cronbach, 1951). Together, these metrics support good measurement quality. Note that for estimation, we used factor scores for *growth*.

*Relptocorp* denotes relationship building with corporate members. *Relptminority* denotes relationship building with other minority members. Each is measured with a single perception item. A single item is appropriate because relationship building is a unidimensional, concrete construct—that is, it refers to homogenous objects and their characteristics, which all raters perceive similarly (Fuchs & Diamantopoulos, 2009). When a construct is judged as concrete, using single-item measures is considered reasonable (Wanous & Hudy, 2001). This simple, easy-to-use operationalization also allows a global measurement (Kwon & Trail, 2005). Recent work has also suggested that an appropriately used single-item measure can have reliability comparable to a multi-item counterpart (Joshi & Knight, 2015).

*Participation* measures the amount of participation using the average number of OMSDC-sponsored activities a minority business participated in per year over the last three years. For example, the average value of a minority business that participated in five activities over the three-year period is 1.67 (=5/3). We used a three-year average to absorb variations in the number of activities available each year. We compared archival participation data to survey responses and found no statistical difference, strengthening the validity of the *participation* measure.

*Connect%* denotes the relative mix of intermediary-sponsored activities a minority business participates in. Its numerical value is the proportion of connect-oriented, OMSDC-sponsored activities during a three-year span out of the total number of activities during the same time period that a minority business participated in. For example, if a minority business participated in three training seminars and two annual meetings over three years, then *participation* equals 1.67 and *connect%* equals 0.4 (=2/5) because 40% of the activities this minority business participated in were connect-oriented.

Following Li (2021), we included several control variables to account for base level of firm growth (*employment* and *sales*), firm age (*age*), firm owner demographics (*ethnicity* and *gender*), government contracting experience (*government*), membership characteristic (*memberlength*), and industry fixed effects.

## 5. Method

### 5.1. Accounting for endogeneity

The decision to participate in OMSDC-sponsored activities is a strategic behavior for minority businesses due to time and energy constraints (Stuart & Sorenson, 2007). It is thus likely endogenous because unobserved firm-level attributes may influence both participation and firm growth. A financially strong minority business, for instance, has sufficient resources to support both greater participation and firm growth. Thus, a positive correlation between participation and firm growth does not necessarily imply a causal relationship. Consequently, fitting a conventional regression model to the data is problematic because the error term is likely to be contemporaneously correlated with

<sup>1</sup> To respect the wishes of privately-held minority businesses that did not want their tax returns shared with non-OMSDC parties, actual sales, employment, and market share figures were not shared with the authors.

**Table 2**  
Descriptive statistics and correlation matrix.

No	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
1	growth	1																										
2	relptocorp	0.71	1																									
3	relptminority	0.60	0.68	1																								
4	participation	0.39	0.37	0.38	1																							
5	connect%	0.06	0.13	0.14	0.19	1																						
6	city: Cincinnati	0.01	0.07	0.07	0.09	0.10	1																					
7	city: Columbus	-0.03	0.03	-0.10	0.23	-0.12	-0.50	1																				
8	city: Dayton	-0.04	-0.09	-0.07	-0.21	-0.09	-0.34	-0.19	1																			
9	city: Other	0.05	-0.05	0.07	-0.19	0.07	-0.46	-0.26	-0.18	1																		
10	goalalign	0.48	0.34	0.45	0.28	0.04	0.14	-0.15	-0.11	0.07	1																	
11	age	-0.01	-0.08	-0.03	0.01	-0.15	-0.15	0.06	0.07	0.07	-0.06	1																
12	gender: female	-0.22	-0.18	-0.24	-0.12	0.16	-0.06	0.08	-0.11	0.08	-0.15	-0.13	1															
13	gender: male	0.22	0.18	0.24	0.12	-0.16	0.06	-0.08	0.11	-0.08	0.15	0.13	-1.00	1														
14	ethnicity: African American	0.14	0.17	0.23	0.33	0.11	0.19	0.12	-0.13	-0.26	0.17	-0.08	0.12	-0.12	1													
15	ethnicity: Hispanic	-0.11	-0.03	-0.08	-0.13	0.07	-0.05	-0.11	0.00	0.17	-0.12	-0.08	0.00	0.00	-0.64	1												
16	ethnicity: Asian	-0.06	-0.18	-0.23	-0.28	-0.14	-0.17	0.01	0.13	0.10	-0.08	0.12	-0.11	0.11	-0.55	-0.15	1											
17	ethnicity: Native American & other	-0.02	-0.06	-0.03	-0.07	-0.17	-0.08	-0.10	0.08	0.15	-0.05	0.14	-0.12	0.12	-0.29	-0.08	-0.07	1										
18	employment	0.11	0.03	0.19	0.01	0.00	0.02	-0.04	-0.12	0.11	0.02	0.30	-0.02	0.02	-0.03	0.06	-0.02	-0.01	1									
19	sales	0.22	0.05	0.02	0.08	-0.11	-0.10	0.06	-0.01	0.08	0.00	0.22	-0.16	0.16	-0.18	0.16	0.01	0.11	0.53	1								
20	government: yes	0.03	0.04	0.00	0.10	-0.06	-0.14	0.23	0.05	-0.10	-0.11	0.18	-0.14	0.14	0.15	-0.20	0.11	-0.18	-0.20	-0.05	1							
21	government: no	-0.03	-0.04	0.00	-0.10	0.06	0.14	-0.23	-0.05	0.10	0.11	-0.18	0.14	-0.14	-0.15	0.20	-0.11	0.18	0.20	0.05	-1.00	1						
22	memberlength	0.07	0.00	0.00	0.25	-0.12	0.03	0.11	0.01	-0.16	0.09	0.47	-0.17	0.17	0.08	-0.21	0.00	0.20	0.19	0.20	0.11	-0.11	1					
23	industry: professional service	-0.23	-0.04	-0.14	0.04	-0.06	-0.09	0.21	0.07	-0.16	-0.21	0.14	-0.01	0.01	-0.05	0.01	0.12	-0.10	-0.03	-0.09	0.19	-0.19	0.09	1				
24	industry: construction	0.10	0.04	0.12	0.11	0.16	0.19	-0.18	-0.09	0.02	0.10	-0.04	-0.18	0.18	0.04	0.01	-0.09	0.04	-0.05	-0.11	0.00	0.00	-0.17	-0.47	1			
25	industry: manufacturing	0.09	0.01	0.02	-0.20	-0.10	-0.14	-0.07	0.13	0.14	0.10	-0.06	0.13	-0.13	-0.12	0.01	0.06	0.17	0.10	0.15	-0.23	0.23	-0.10	-0.47	-0.20	1		
26	industry: retail & wholesale	0.14	0.01	0.05	0.04	0.02	0.08	-0.03	-0.15	0.06	0.10	-0.10	0.07	-0.07	0.16	-0.03	-0.15	-0.08	-0.02	0.09	-0.03	0.03	0.14	-0.42	-0.18	-0.18	1	
	Mean	3.09	3.55	3.65	3.44	0.50	0.47	0.22	0.12	0.19	3.94	5.30	0.29	0.71	0.70	0.15	0.12	0.04	25.27	4.42	0.47	0.53	6.62	0.52	0.17	0.17	0.14	
	Std.	0.98	0.96	0.92	1.85	0.28	0.50	0.42	0.32	0.40	0.79	2.33	0.46	0.46	0.46	0.36	0.32	0.19	36.04	2.03	0.50	0.50	6.01	0.50	0.38	0.38	0.35	

Note: Upper part of the table denotes the correlation matrix; for the significance of correlation, if  $|rho| \geq 0.19$ , then  $p\text{-value} \leq 0.05$ .

the participation level. To account for endogeneity arising from unobserved factors, we employed a 2SLS estimation approach (Bun & Harrison, 2019). This approach requires a valid instrumental variable, which satisfies two conditions: relevance, meaning it is associated with the endogenous variable, and exogeneity, meaning it does not directly influence the dependent variable (Semadeni et al., 2014).

We identified two instrumental variables: *city* and *goalalign*. *City* indicates the location of a minority business. Because most OMSDC-sponsored activities are hosted at its Columbus headquarters, minority businesses based in other cities may be less able to participate due to greater travel burdens (Boehe, 2013). Therefore, a minority business's geographic location influences its participation in intermediary-sponsored activities, which is endogenous in our model, satisfying relevance. Meanwhile, location cannot directly influence a minority business's relationship building or firm growth through OMSDC affiliation without the mediation of participation efforts, thus satisfying exogeneity. *Goalalign* measures the extent to which a minority business's overall goals and values are shared by the OMSDC. Minority businesses with closer alignment are likely to participate in more OMSDC-sponsored activities, satisfying relevance. This alignment does not directly influence relationship building or a minority business's opportunities to grow through OMSDC affiliation. If alignment were to influence firm growth, it could only do so indirectly through a minority business' participation efforts, satisfying exogeneity.

**Table 3**  
Participation and relationship building.

VARIABLES	H1		H2	
	DV: Relationship building with corporate members (1)	DV: Relationship building with other minority members (2)	DV: Relationship building with corporate members (3)	DV: Relationship building with other minority members (4)
<i>participation</i>	<b>0.393**</b> (0.144)	<b>0.331**</b> (0.124)	-0.110 (0.412)	-0.565 (0.424)
<i>proportion of connect-oriented activities (connect%)</i>	0.033 (0.370)	0.049 (0.318)	-1.549 (1.672)	-3.207 (1.721)
<i>participation X connect%</i>			<b>0.836</b> (0.799)	<b>1.656*</b> (0.822)
<i>age</i>	-0.003 (0.048)	0.006 (0.041)	0.006 (0.051)	0.032 (0.052)
<i>gender: Male</i>	0.364 (0.218)	0.526** (0.187)	0.305 (0.240)	0.365 (0.247)
<i>ethnicity: Hispanic</i>	0.080 (0.291)	-0.061 (0.250)	0.039 (0.297)	-0.056 (0.306)
<i>ethnicity: Asian</i>	0.048 (0.381)	-0.145 (0.327)	-0.067 (0.395)	-0.199 (0.407)
<i>ethnicity: Native American &amp; other</i>	0.091 (0.561)	0.241 (0.482)	-0.069 (0.565)	0.064 (0.582)
<i>employment</i>	0.002 (0.003)	0.009** (0.003)	0.002 (0.003)	0.010** (0.003)
<i>sales</i>	-0.033 (0.059)	-0.110* (0.050)	-0.029 (0.060)	-0.118 (0.062)
<i>government: No</i>	-0.042 (0.200)	-0.063 (0.172)	0.034 (0.215)	0.095 (0.221)
<i>memberlength</i>	-0.036 (0.022)	-0.039* (0.019)	-0.027 (0.023)	-0.031 (0.023)
<i>industry: construction</i>	-0.197 (0.261)	0.011 (0.224)	-0.323 (0.300)	-0.267 (0.309)
<i>industry: manufacturing</i>	0.412 (0.274)	0.468* (0.235)	0.374 (0.276)	0.452 (0.284)
<i>industry: retail &amp; wholesale</i>	0.129 (0.282)	0.356 (0.242)	0.118 (0.285)	0.384 (0.293)
Constant	2.212*** (0.530)	2.522*** (0.455)	3.148*** (0.857)	4.139*** (0.882)
Observations	113	113	113	113
Model fit statistics	Chi2 = 22.53†	Chi2 = 42.29***	Chi2 = 19.83	Chi2 = 30.72**
Root MSE	0.920	0.790	0.919	0.945

Note: (1) \*p ≤ 0.05, \*\*p ≤ 0.01, \*\*\*p ≤ 0.001; (2) standard errors in parentheses; (3) base level for the categorical variable industry is the professional service industry; base level for the categorical variable ethnicity is African American; (4) predicted values from the first-stage regressions are used for the corresponding endogenous variables in the analyses. For brevity, first-stage regression results are reported in Online Appendix E; (5) sales is treated as a continuous rather than categorical variable for simplicity; this does not change the main results; (6) Durbin-Wu-Hausman test statistics: regarding relptocorp (Dubinχ<sup>2</sup>(1) = 3.079, p ≤ 0.1; Wu-Hausman F(1,97) = 2.717, p ≤ 0.1) and relptminority (Dubinχ<sup>2</sup>(1) = 3.931, p ≤ 0.05); Wu-Hausman F(1,99) = 3.532, p ≤ 0.1).

First-stage regression summary statistics (partial F-statistics = 4.09, p ≤ 0.01) suggested the two instrumental variables are appropriately correlated with the endogenous variable, satisfying relevance. We also failed to reject the null hypotheses that the instrumental variables are uncorrelated with the structural error term (Sarganχ<sup>2</sup>(3) = 3.081, p > 0.05; Basmanχ<sup>2</sup>(3) = 2.663, p > 0.05), satisfying exogeneity.

### 5.2. Econometric models for hypotheses testing

H1 examines how participation affects relationship building. Using 2SLS estimation, we first regressed *participation* on the instrumental variables (Eq. (1)), then used the predicted value in Eqs. (2) and (3). To test H2, which proposes different efficiency in relationship building between connect- and develop-oriented activities, we checked whether the proportion of connect-oriented activity participation (*connect%*) moderates the effect of *participation*. If participation effects become more positive as the proportion of connect-oriented activities increases, connect-oriented activities are likely more efficient than develop-oriented activities for relationship building, and vice-versa. We added an interaction term between *participation* and *connect%* in Eqs. (2) and (3). Because the interaction term is potentially endogenous, following Hoisl and Mariani (2016), we used the predicted value for the interaction term from the first-stage estimation, where it was instrumented by the product of *goalalign* and *connect%*. To test H3, we regressed *growth* on

*relptocorp* and *relptminority* in Eq. (4). For observation  $i$ ,  $z_i$  is the vector of control variables. The corresponding error terms are  $v_i$ ,  $\hat{1}/4_i$ ,  $\hat{1}/4_i$ , and  $\epsilon_i$ .

$$participation_i = \alpha_0 + \alpha_1 city_i + \alpha_2 goalalign_i + z_i \alpha' + v_i \quad (1)$$

$$relptocorp_i = \beta_0 + \beta_1 participation_i + z_i \beta + \mu_i \quad (2)$$

$$relptminority_i = \gamma_0 + \gamma_1 participation_i + z_i \gamma + \epsilon_i \quad (3)$$

$$growth_i = \eta_0 + \eta_1 participation_i + \eta_2 relptocorp_i + \eta_3 relptminority_i + z_i \eta + \epsilon_i \quad (4)$$

## 6. Results

Table 3 summarizes the model results for hypotheses testing. First, we conducted Durbin-Wu-Hausman tests and rejected the null hypothesis that minority businesses' participation in OMSDC-sponsored activities is exogenous to relationship building with corporate members and with other minority members. This supports using 2SLS estimation in our analyses.

H1 is supported, as minority businesses' participation in more OMSDC-sponsored activities increases relationship building with corporate members (Model 1). This participation also increases relationship building with other minority members (Model 2).

Our results partially support H2. We find no support for H2(a) regarding relationship building with corporate members because the interaction term between *participation* and *connect%* is not significant (Model 3). As minority businesses participate in a greater proportion of connect-oriented activities relative to total activities, the effect of *participation* on relationship building with corporate members does not lessen significantly. Likewise, as minority businesses decrease (increase) the proportion of connect- (develop-) oriented activities relative to total activities, the effect of *participation* on relationship building with corporate members does not increase significantly. This could be because connect-oriented activities, though lacking needed quality interaction, expose minority businesses to a much larger pool of corporate members than develop-oriented activities. Develop-oriented activities offer opportunities for quality interaction but are designed for training minority members; thus, corporate members often do not attend. Therefore, we find no empirical support for the moderation argument regarding relationship building with corporate members.

For relationship building with other minority members, we find support for H2(b) (Model 4). This result shows that a minority business's relationship building with other minority members increases when it participates more (less) in connect- (develop-) oriented activities. The interaction plot in Fig. 2 illustrates this result. We set the high and low levels as one standard deviation above and below the mean proportion of connect-oriented activities, respectively. The figure reveals the slope of the solid line (denoting a higher proportion of participation in connect-oriented activities) is more positive than that of the dashed line. Thus, our results encourage minority businesses to use connect-oriented activities as their primary venue for relationship building with other minority members. Together, the results testing H2 suggest the type of activities (connect vs. develop) a minority business participates in has a different influence on relationship building with corporate members compared to relationship building with other minority members.

H3 is partially supported. The results, presented in Table 4, suggest a significantly positive relationship between relationship building with other minority members and growth (Model 5). No significant relationship, however, exists between relationship building with corporate members and growth (Model 5), suggesting this form of relationship building may not always be effective for enhancing minority businesses' firm growth.

Finally, H4 is partially supported. Following Imai et al. (2010), the indirect effect of participation on growth via relationship building with corporate members is estimated at  $-0.113$  with the 95% confidence

interval containing zero. The indirect effect via relationship building with other minority members is estimated at 2.262, with the 95% confidence interval larger than zero. Thus, minority members can increase growth by relationship building with other minority members but not with corporate members.<sup>2</sup>

## 7. Post-hoc analyses

Our results show relationship building with corporate members has no significant effects on firm growth. However, given the institutional intermediary's mission is to connect minority businesses with corporate members, we conducted post-hoc analyses to explore whether firm growth may occur under certain contingencies. We checked whether a nonlinear relationship exists such that the effects of relationship building with corporate members diminish beyond a certain threshold. We added the squared term of *relptocorp* to the regression, but the result was insignificant. We also checked whether the effects of relationship building with corporate members diminish as relationship building with other minority members increases. We added an interaction term between *relptocorp* and *relptminority* but found no significant interaction. These results are available in Online Appendix C.

We then checked whether the effect of relationship building with corporate members is contingent on government contracting experience. Such experience can be instrumental in minority business development as it lends legitimacy and demonstrates how competent a minority business is (Bates, 2009). Government agency contacts can enhance a minority business's reputation and credibility in the eyes of corporate members (Shelton & Minniti, 2018). Our focus group interviews further support this, as several interviewees said they would like the institutional intermediary to help them find government contracting opportunities to improve their competency. Many minority businesses develop their initial protocols, procedures, and relationships by participating in government procurement programs, thus showing their readiness to supply to mainstream markets (Blount & Hill, 2015). Government-sponsored research agreements and special contracting opportunities from federal agencies are important resources that link minority businesses to external relationships (Li et al., 2015). Thus, we argue that the effects of relationship building with corporate members on firm growth become more positive for minority businesses with government contracting experience compared to those with no such experience. To test this, we added an interaction term between *relptocorp* and *government* in Eq. (4). As shown in Table 4, we found a significantly negative moderation when minority businesses had no government contracting experience (Model 6). Fig. 3 illustrates this: compared to those with no such experience, minority businesses with government contracting experience report larger increases in firm growth from increasing relationship building with corporate members (the solid line is more positive than the dashed line). Government contracting experience is one contingency for minority businesses seeking to translate their relationships with corporate members into firm growth.

In addition, we explored whether the effects of relationship building with other minority members differ by ethnic group. Previous research has long suggested minority communities are valuable resources for developing minority businesses (Fairlie & Robb, 2010). Such effects, however, vary across ethnic minorities. Daniel et al. (2019) found Asian entrepreneurs in the U.K. are less likely than Caribbean and African entrepreneurs to operate in high-growth industries, due to factors related to cultural social norms, beliefs, and family ties. For instance, cultural distance can vary between a minority's country of origin and the host country, influencing sociocultural fit and, consequently, entrepreneurship activities (Contín-Pilart & Larraza-Kintana, 2015). Clark et al. (2017) also find significant variation among ethnic groups in

<sup>2</sup> We also investigated moderated mediation by activity type. The results are consistent with our test of H2.



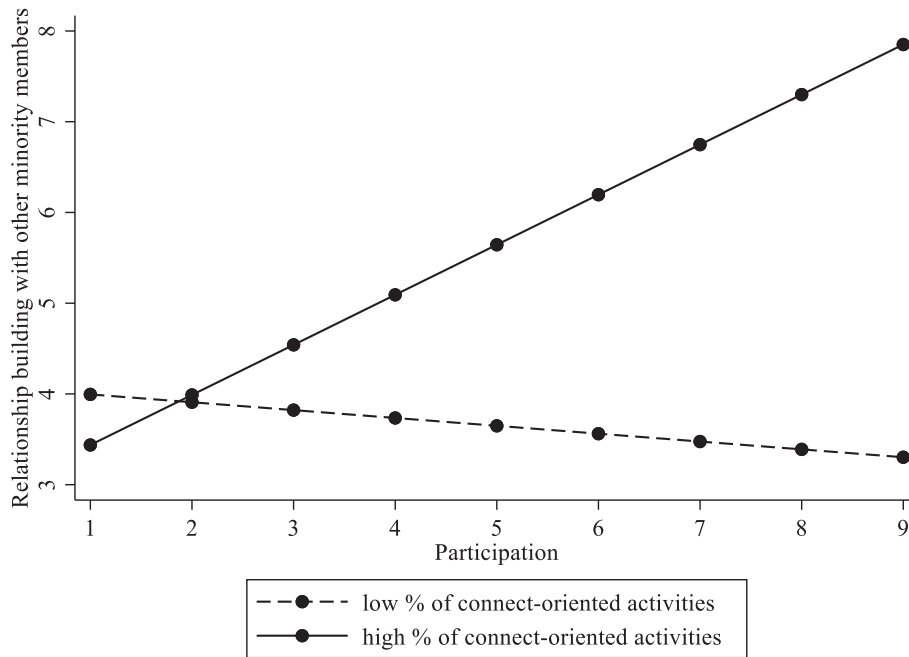


Fig. 2. Moderating effect by activity type on relationship building with other minority members.

Table 4  
Effects of relationship building on growth.

	H3 DV: Growth (5)	Post-hoc DV: Growth (6)
<i>relationship building with corporate members (relptocorp)</i>	-0.157 (1.381)	2.246*** (0.331)
<i>relationship building with other minority members (relptominority)</i>	1.643* (0.776)	0.521* (0.218)
<i>participation</i>	-0.042 (0.325)	-0.200 (0.161)
<i>proportion of connect-oriented activities (connect%)</i>	-0.256 (0.297)	-0.797* (0.337)
<i>government: No</i>	0.072 (0.161)	6.388*** (1.011)
<i>relptocorp X government: No</i>		-1.785*** (0.280)
<i>ethnicity: Hispanic</i>	0.032 (0.281)	2.622** (0.926)
<i>ethnicity: Asian</i>	0.762* (0.353)	2.177* (0.986)
<i>ethnicity: Native American &amp; other</i>	-0.225 (0.457)	-0.572 (1.296)
<i>relptominority X ethnicity: Hispanic</i>		-0.752** (0.249)
<i>relptominority X ethnicity: Asian</i>		-0.475† (0.278)
<i>relptominority X ethnicity: Native American &amp; other</i>		0.124 (0.341)
Observations	113	113
Chi2	105.85***	172.19***
Root MSE	1.044	1.204

Note: (1) †  $p \leq 0.1$ , \* $p \leq 0.05$ , \*\* $p \leq 0.01$ , \*\*\* $p \leq 0.001$ ; (2) standard errors in parentheses; (3) base level for the categorical variable *ethnicity* is African American; (4) for brevity, control variable results are omitted. Full results with control variables (including *age*, *gender*, *employment*, *sales*, membership length, and industry fixed effects) are provided in Online Appendix E.

terms of their tendency to become self-employed and hire co-ethnic employees. Thus, we propose that ethnicity moderates the effect on growth of relationship building with other minority members.

Specifically, we posit that African American minority businesses

benefit more from relationship building than Hispanic and Asian minority businesses in our context. First, African American minority businesses have higher sociocultural fit because of better language proficiency, longer residence in the U.S., a generally closer social life, and religious beliefs more closely aligned to ethnic majority communities (Contín-Pilart & Larraza-Kintana, 2015). Second, they have a larger presence and tend to occupy a more central position in the minority communities of U.S. institutional intermediaries. This increases legitimacy and enables them to better reap the benefits of relationship building with other minorities (Tan et al., 2013). Third, African American-owned businesses tend to rely more on an ethnic enclave strategy by selling to their ethnic community (Ndofor & Priem, 2011; Shinnar et al., 2011) in light of historically higher social barriers (Freeland & Keister, 2016). Thus, we argue that the effect of relationship building with other minority members on firm growth is more positive for African American businesses than for Hispanic and Asian businesses. To test this, we added an interaction term between *relptominority* and *ethnicity* in Eq. (4). We found support for our argument, as the coefficients of the interaction terms are significantly negative for Hispanic- and for Asian-owned businesses (Model 6) compared to African American businesses. Fig. 4 shows relationship building with other minority members increases firm growth for African American businesses (dashed line marked by circles), but less so for Hispanic and Asian businesses (solid lines marked by squares and diamonds, respectively).

### 8. Robustness checks

As robustness checks, we first checked the robustness of the activity type effects considering membership length. Because many important develop-oriented activities (e.g., the two-year Center of Excellence program) are only available to new members, we checked whether the activity type effects hold for new members. We found that the proportion of participation in connect-oriented activities does not highly correlate with membership length, indicating no systematic changes in types of activities participated in over time. Furthermore, we duplicated the analyses on a subsample with less than two years of membership (results reported in Online Appendix D). For relationship building with corporate members, the interaction between *participation* and *connect%* is insignificant. For relationship building with other minority members,

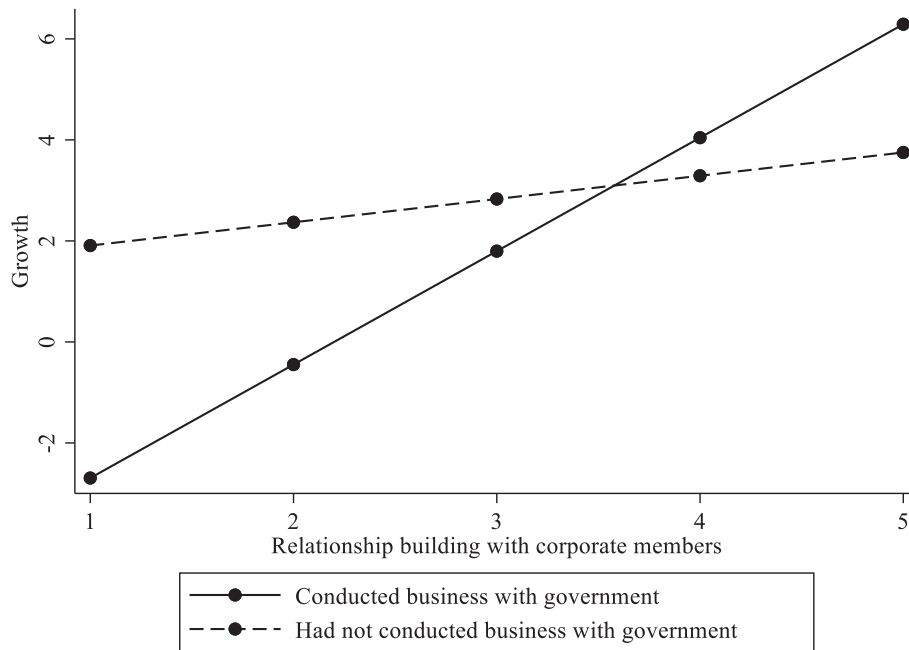


Fig. 3. Moderating effect by government contracting experience.

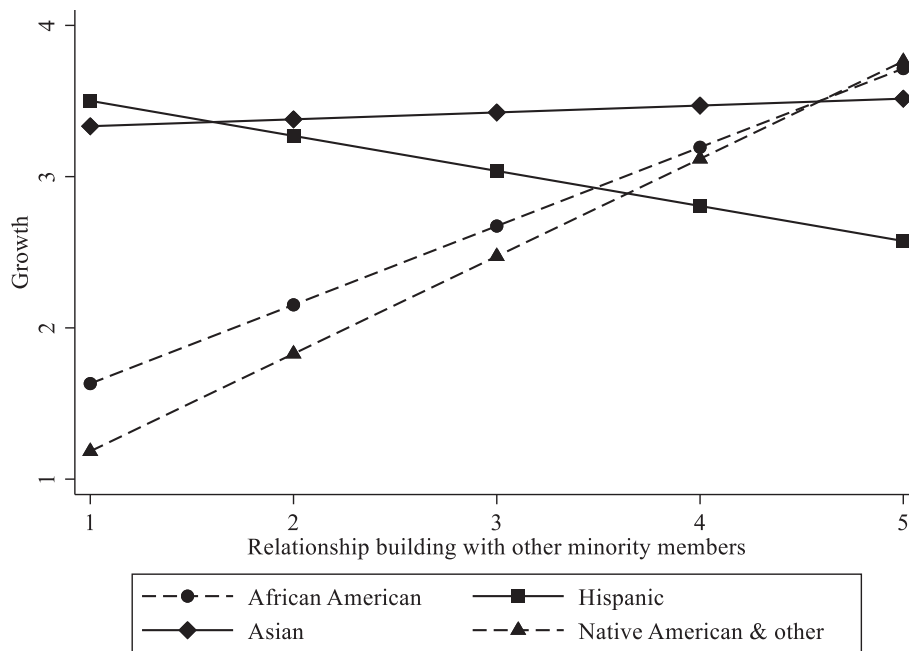


Fig. 4. Moderating effect by ethnic groups.

the interaction is positive and significant. These results are consistent with our main analyses.

Second, we checked alternative empirical specifications for testing H2. Instead of using a proportion measure, we checked robustness by separately using the number or count of a minority business’s connect-oriented and develop-oriented activities (results reported in Online Appendix D). In predicting relationship building with corporate members, the effects of connect-oriented and develop-oriented activity counts are both insignificant. In predicting relationship building with other minority members, however, the effect of the connect-oriented activity count is positive and significant, while that of the develop-oriented activity count is insignificant. Chi-squared tests confirm the following. The effects of the connect-oriented activity count are not

more positive than those of the develop-oriented activity count on relationship building with corporate members. However, the effects of the connect-oriented activity count are significantly more positive than those of the develop-oriented activity count on relationship building with other minority members. These results are consistent with our main results.

## 9. Discussion

### 9.1. Theoretical contributions

We contribute to the institutional intermediary literature and research on minority businesses by showing the importance of minority

businesses' proactivity (via participation) for reaping the benefits of institutional intermediary membership. Previous research assumes such benefits are realized automatically (Adobor & McMullen, 2014). Our research instead shows minority businesses not only need to increase participation, but given their constrained resources, also need to wisely select the type of activities they participate in. While connect-oriented activities are more efficient than develop-oriented activities for facilitating relationship building with other minority members, there is no difference between these two activities for relationship building with corporate members. This is consistent with previous minority business research that predicts relationship building with homophilous contacts is easier and more spontaneous (McPherson et al., 2001). When building relationships with other minority members, connect-oriented activities give minority businesses more chances to socialize and develop relationships. In contrast, when building relationships with corporate members, these businesses face tradeoffs between greater exposure through connect-oriented activities compared to deeper interactions through develop-oriented activities, resulting in no difference between these two types of activities.

We also contribute to social capital research by highlighting that the effect of relationship building on firm growth has contingencies. For relationship building with corporate members, government contracting experience is a contingency; it provides additional legitimacy by demonstrating a minority firm's competency in the face of higher social barriers (Aldrich & Kim, 2007). For relationship building with other minority members, we echo Carter et al.'s (2015) call for customized policies supporting minority businesses given the significant variation in barriers individual ethnic groups face. Our finding that African American-owned minority businesses enjoy the highest growth from relationship building with other minority members provides empirical evidence that the benefits of ethnic relationship building vary across ethnic groups (Clark et al., 2017). We argue that such higher benefits are derived from higher sociocultural fit, a more central position in the minority community, and higher dependence on co-ethnic relationships (Contín-Pilart & Larraza-Kintana, 2015; Tan et al., 2013; Ndofof & Priem, 2011).

## 9.2. Practical contributions

Our findings also offer recommendations for institutional intermediary administrators and minority businesses. First, minority businesses should be aware that active involvement in intermediary activities is essential. Second, minority businesses benefit from relationship building with other minority members, a finding consistent with our focus group study. We also find that the benefits of relationship building with corporate members are often contingent on previous relationships with government entities. Providing extra qualifications to show a minority business's competency plays a vital role in their growth. Third, institutional intermediaries must pay close attention to activity design when attempting to connect minority businesses with corporate members; these activities might need to be different from those used to connect minority businesses with other minority members. Finally, we show heterogeneity across ethnic groups in realizing firm growth. Institutional intermediaries should be aware of such differences and develop customized activities.

## 10. Limitations and future research

Limitations in our study suggest potential avenues for future research. First, our sample is limited to members of a single branch of an NMSDC intermediary located in the midwestern U.S. Future research should test the generalizability of our findings by replicating our study with other NMSDC regional affiliates and beyond the U.S. Second, generalizing our findings to other types of intermediaries that promulgate their ability to connect their membership to valuable resources needs further investigation. Future research may investigate whether

minority businesses participate differently across various types of intermediaries. Third, using a survey design has its limitations. For instance, we have little information on the actual counts and dynamics of relationships formed through OMSDC. Conducting a thorough content analysis via a case study with intermediaries would provide more context regarding relationship dynamics (Eisenhardt & Graebner, 2007). Finally, we acknowledge potential sources of uncontrolled endogeneity in our empirical methods. While we used 2SLS estimation to account for endogeneity, we are aware that no econometric procedure is perfect. Nonetheless, we are confident our results are as accurate as possible given the nature of the empirical data collected.

## CRediT authorship contribution statement

**Mengyang Pan:** Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Formal analysis, Methodology. **James Hill:** Conceptualization, Data curation, Writing – review & editing, Formal analysis, Methodology. **Ian Blount:** Conceptualization, Data curation, Writing – review & editing, Methodology. **Manus Rungtusanatham:** Conceptualization, Writing – review & editing, Methodology.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jbusres.2022.01.030>.

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**Mengyang Pan** is Assistant Professor at Research Institute of Economics and Management, Southwestern University of Finance and Economics, China. She received her Ph.D. in management science from The Ohio State University, and MBA with specialization in supply chain management from Iowa State University. Her research interests include small/minority business management, innovation and project management, supply chain management, and operations management in healthcare settings. She has publication in *The International Journal of Logistics Management*. As a young scholar, she has participated in several international scientific conferences. She teaches undergraduate course in entrepreneurship, graduate course in operations management, and doctoral seminars.

**James A. Hill** is Chair of the Management Sciences Department and associate professor of operations management at The Ohio State University. Hill teaches elective courses in supply chain management in the undergraduate and graduate programs. He is the academic leader for Ascend Columbus, a partnership with JP Morgan Chase to develop minority businesses in the state of Ohio. He has twice received the outstanding professor for teaching excellence in the full time MBA program and was a recipient of the Production and Operations Management Society Wickham Skinner Excellence in Teaching Award. He is primarily interested in supply chain management with an emphasis on supply chain coordination. His research on coordination covers areas such as behavioral supply chain contracts as well as coordinating and managing supplier diversity programs.

**Ian Y. Blount** is a serial entrepreneur. He is also the Co-founder and Director of Research & Policy at the George Washington Carver Food Research Institute. His teaching and research interests include women/minority business enterprises, supplier diversity, corporate social responsibility, government set-aside contracting and business membership organizations. His articles have appeared in such journals as *Business & Society*, *Equality, Diversity and Inclusion: An International Journal*, *Journal of Developmental Entrepreneurship*, *Journal of Public Procurement*, *Journal of Purchasing and Supply Management* and the *Journal of Supply Chain Management*. He received his Ph.D. in Public Policy & Management from The Ohio State University.

**M. Rungtusanatham** is Canada Research Chair in Supply Chain Management at the Schulich School of Business, York University, a 2017 Fellow inductee of the Decision Sciences Institute, and awards-winning researcher and educator. He is considered one of the top-50 authors of supply chain management research and one of the top contributors to the field of Operations Management, according to published sources. His research is supported by grants totaling more than US\$295,000 and CAD\$1,400,000, with his 55+

publications related to quality management, mass customization, and supply chain disruptions and relationships having appeared in top academic and business journals. His current research focuses on attributes, triggering events, performance consequences, and mitigation of supply disruptions. Rungtusanatham has also co-authored two introductory operations management textbooks and five teaching cases.