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Guest editorial

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Introduction

This Special Issue sought to develop new theories or expand on existing paradigms and perspectives on how social networks, entrepreneurial environments/ecosystems and support systems of minority, women and immigrant entrepreneurs’ (MWI) impact new venture creation and entrepreneurial processes, such as opportunity recognition, resource acquisition, venture success and survival. An expansive examination of the entrepreneurship literature elucidated the need for studies on support systems, entrepreneurial ecosystems as attributing factors to MWI venture creation, survival and success.

Consequently, the editors devised a call for papers requesting that authors explore new perspectives and paradigms incorporating environmental conditions that impact MWIs, and the role of social networks in venture creation, survival and success. Questions posed by the Special Issue include: first, what environmental factors, support systems or types of entrepreneurial ecosystems provide coping mechanisms for challenges faced by these entrepreneurs; and help facilitate success? second, how do MWIs network with others, develop their social networks and build social capital both before founding and after founding their ventures? third, what barriers to startup/success limit the potential of these entrepreneurs? fourth, what theories best explain venture creation, survival or failure among MWIs? fifth, are there important differences between these entrepreneurial groups and the general population, and sixth, how might these differences and/or generational status positively/negatively impact creation, survival or success?

Three manuscripts were accepted spanning topics on network diversity, immigrant entrepreneurial intentions with environmental stressors, emotional carrying capacity (ECC) and entrepreneurial self-efficacy (ESE). The following paragraphs highlight the importance of MWIs to the US economy, with demonstrative evidence of the critical role that support systems and entrepreneurial ecosystems play in manifesting positive outcomes for MWI ventures. An abbreviated review and discussion of the contributions made by the accepted manuscripts in this Special Issue is then followed by advice for future research directions.

Literature

Entrepreneurship and new venture creation help shape economies and advance societies (Hafer, 2013; Schumpeter, 1934; Wennekers and Thurik, 1999). However, research and government statistics show that new venture creation and entrepreneurship have been on the decline in the USA for the last several decades (Hathaway and Litan, 2014; Lockhart, 2013; Ozimek, 2013; Pethokoukis, 2014; Singh and Ogbolu, 2015). In 1978, startup ventures made up almost 15 percent of all firms but had fallen to just over 8 percent by 2011.
In a March 2016, US Bureau of Labor Statistics (BLS) study, it was reported that 10.1 percent of the US workforce was self-employed in the US in 2015; down from 16.5 percent in 1994 (Hipple and Hammond, 2016). This figure continues to trend downward. It had dropped to 10 percent in June 2017 and fallen further to 9.7 percent by July 2018 (BLS, 2018). As the demographics of the country change and the population becomes more diverse, understanding minority and immigrant entrepreneurs, as well as the rapidly growing number of women entrepreneurs becomes more important.

Of the 27.9m small businesses in the USA, 8m are minority-owned (US Department of Commerce, 2012). These firms add $1 trillion in economic output to the economy, lead the nation in exporting, and enhance the global competitive advantage of the USA (Minority Business Development Agency, 2012). A recent report on the state of women-owned businesses indicated that women-owned firms in the USA totaled 11.3m (6.3m firms were owned by non-minority women), and generated $1.6 trillion in sales (Womenable, 2016). According to the report, women-owned firms increased by 45 percent compared to a 9 percent increase for all businesses. Similarly, immigrant-owned businesses contribute $775bn to US gross domestic product, and employ one out of every ten American workers (New American Economy, 2012). The importance of immigrants to new venture creation in the USA cannot be overstated as immigrants are twice as likely to start a business as native-born Americans (Stangler and Wiens, 2015). These statistics point to the importance of MWIs to entrepreneurship in the USA.

Scholars agree that entrepreneurs need nurturing entrepreneurial environments, appropriate support systems (Isenberg, 2011), and meaningful social networks for the provision of information and resources to create and grow viable new enterprises (Levenstein, 1995; Singh, 2000; Chrisman et al., 1998). Isenberg (2010) describes ideal entrepreneurial ecosystems that include leadership, culture, capital markets and customers which can be adapted based upon regional variations, geographic conditions and the concentration of relevant industrial clusters in a location. He claims this is achievable even in the most isolated environments, if regions focus on their natural strengths (and resources), maintain the right combination of public–private–university partnerships, and recruit seasoned entrepreneurs willing to serve as mentors and advisors. The challenges within the ecosystems of MWIs are explored within this Special Issue, including the benefits of networks and support systems which are often different from traditional entrepreneurs (Fairlie, 1999; Hughes et al., 2012; Singh et al., 2009; Singh et al., 2008). Researchers intimate that the composition of minority social networks – often based on family, kinship, racial, ethnic or religious identifications – may account for differences in the patterns of entrepreneurship (Butler, 1991; Levenstein, 1995; Light, 1972). Hence, desirable outcomes from the Special Issue are contributions that demonstrate how MWIs might fully leverage social networks, or frameworks that enable policymakers and practitioners to develop proper support systems and entrepreneurial environments for MWIs to survive and thrive.

Ecosystem benefits may be fleeting for MWIs whose support systems and social networks may be poorly developed or insular. Thus, we must acknowledge and take stock of the unique challenges and obstacles often encountered by MWIs. While entrepreneurial activity among minority entrepreneurs is high, failure rates consistently exceed that of other groups (Dadzie and Cho, 1989; Sullivan, 2007). Minority-owned firms tend to be smaller and less profitable than their white counterparts (Edelman et al., 2010). Entrepreneurship scholars attribute low survival rates to factors such as education, access to capital, lack of financial resources, work experience, credit market discrimination, lack of role models and uncontrollable external constraints, to name a few (see Dadzie and Cho, 1989; Sullivan, 2007; Kollinger and Minniti, 2006). Statistics also show that women entrepreneurs have smaller firms, lower survival and profitability rates than their male counterparts (Fairlie and Robb, 2009). Persistent gender gaps that exist are attributed to access to resources, human capital, prior work experience,
startup capital, the masculine culture of entrepreneurship and type of industry (Greene et al., 2003; Fairlie and Robb, 2009). Women entrepreneurs are often erroneously characterized as not pursuing venture capital, lacking suitable networks and avoiding ownership of high growth ventures (Menzies, Diochon, and Gasse, 2004; Brush et al., 2008). Consequently, many have called for initiatives and policies to overcome gender gaps in entrepreneurship (Greene et al., 2003; Gibbs 2014; Sequeira et al., 2016). Exploring women’s social networks and the entrepreneurial support systems in which they operate may serve to dispel myths, and level the playing field for women-owned businesses.

In addition, the politically charged immigration debate does not change the fact that immigrants’ energy and intellectual capital are needed in the US labor market, especially given the low unemployment rate. As stated above, immigrants are more likely to found new ventures than the indigenous population in the US Research has found important differences between immigrant and non-immigrant entrepreneurs. In 2010, over 40 percent of Fortune 500 companies were founded by immigrants, or their children (Stangler and Wiens, 2015). Given their impact on the US economy, immigrants continue to be an important group to study.

The study of MWIs and how they differ from traditional entrepreneurs will continue to grow in importance as the demographics of the USA change and women continue to found firms at a faster pace than their male counterparts. In this issue, we sought to expand the base of knowledge on MWIs and to open up new directions for future research. In the next few paragraphs, we summarize the key findings and some of the implications of the papers included in this Special Issue.

Papers in this special issue
The first article by Mayank explores the performance gap between black- and white-owned ventures. Black-owned ventures have consistently been found to underperform those owned by white entrepreneurs (Fairlie and Robb, 2007; Sullivan, 2007). How and why the gap persists beyond the race of the owner can help us understand how to address the issue. Mayank proposed and tested for three mediators between the race-performance relationship: first, the demographic characteristics of venture’s location, second, the financial size of the venture and third, the venture’s credit riskiness. Thus, the research examined the external environment and the internal venture characteristics in a search for differences between ventures founded and owned by black and white entrepreneurs.

The demography of location was not found to play a part in the performance gap which suggests that both types of entrepreneurs are able to locate their firms in equally opportune locations. However, both of the other mediators were supported. It would seem that the internal characteristics of the venture differ between black and white entrepreneurs with black entrepreneurs founding financially smaller ventures that are also deemed to suffer from more credit risk. The research provides further evidence of the financial challenges facing black entrepreneurs and suggests that solutions aimed at developing subsidies to increase the asset base and reducing the credit risk would help to close the subsequent performance gap.

In the second article of the Special Issue, Awotoye and Singh present a conceptual paper focusing on immigrant entrepreneurs. More specifically, the authors examine how the elevated stress immigrants must deal with factor into immigrants’ intentions to start, grow and abandon a venture using Azjen’s (1985) theory of planned behavior. The authors focus primarily on one tenet of the theory – perceived behavioral control – to develop five propositions, one of which uses entrepreneurial resilience as a moderator between the demands of immigration and venture abandonment, such that those immigrant entrepreneurs who demonstrate higher levels of resilience are less likely to abandon their ventures.
While research has consistently shown that immigrants are more likely to found ventures than native-born citizens, this paper recognizes the challenges immigrants must deal with as they adapt to their new environments and explores new factors and behaviors of immigrants. Awotoye and Singh proposed that immigrant entrepreneurs are more likely to have intentions to found new ventures, have lower intentions to grow their businesses, and have higher intentions to abandon their businesses. As they point out, pursuing new venture creation — which is challenging in and of itself — would seem less likely for immigrants than non-immigrants, yet this is not the case. The authors argue that the knowledge of their own ethnic culture and population, combined with the challenges of integrating into a new society, often pushes immigrants into ethnic entrepreneurship. This type of entrepreneurship, which focuses on niche markets may be easier to start, but results in smaller ventures with limited growth potential that can be abandoned relatively easily if necessary.

Immigrant entrepreneurship is of central policy interest and deserves more critical examination. The paper adds important context and provides a more refined framework for understanding the challenges, behaviors and intentions of immigrant entrepreneurs. This may help researchers better consider how and why immigrants pursue their entrepreneurial ventures.

Finally, Javadian, Opie and Parise study the role of context by examining how entrepreneurs' social networks influence ESE. Typically, ESE is used as an independent variable that impacts survival and success of new ventures. However, this paper examines ESE as a dependent variable. In their study, they compare white and black entrepreneurs and find that the ECC and the network ethnicity of a white entrepreneur's social network relationships are both positively related to his or her ESE. For black entrepreneurs only ECC – not network ethnic diversity – was found to influence ESE. The authors pointed out that black entrepreneurs' networks were more ethnically diverse than white entrepreneurs. This finding possibly explains why black entrepreneurs may not specifically benefit from network ethnic diversity. That is, because black entrepreneurs' networks, as compared to white entrepreneurs' networks, are already characterized by higher ethnic diversity, black entrepreneurs may not reap the additional benefits that white entrepreneurs do when they increase the ethnic diversity of their networks.

Overall, the results indicate the relative significance of contextual variables beyond company and entrepreneur demographics with respect to ESE. When all of the network variables were entered into the model, owner and business demographic variables were no longer significant. The inclusion of ECC is novel and unique and the results suggest that entrepreneurs should work to diversify their networks in hopes of improving their ESE and ultimately success in their entrepreneurial endeavors.

**Conclusion and future research**

We believe that much more work is needed in coming years to better understand the unique challenges faced by MWIs and the significant potential benefits of further spurring entrepreneurship among this group of individuals. The US population is changing and the population of entrepreneurs is also changing. Immigrants have always been an important source of new venture creation, but the growth in women-owned and minority-owned businesses require re-evaluation of entrepreneurship theories and processes which have emerged in the entrepreneurship literature primarily based on research conducted on mostly white male entrepreneurs. In the Special Issue, contextual and environmental factors, economic and emotional challenges and social network analyses helped to advance the literature base and knowledge about MWIs. We hope that the articles assist with introducing readers to MWIs and leads to increased emphasis on the issues raised in this Special Issue which may spur new lines of research and knowledge that lead to better entrepreneurial outcomes.
We want to conclude with our thanks to those who submitted manuscripts, the authors of the papers that were selected for inclusion, and the reviewers who gave generously of their time and expertise. Without all of you, this Special Issue would not have been possible. Finally, we want to give a special note of thanks to Editor-in-Chief Grace Guo, who helped shepherd this project to a successful completion.

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Black vs white owned new venture performance: a study of mediating effects

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Abstract
Purpose – The purpose of this paper is to move beyond individual level characteristics of founders to explain the performance gap between white and black majority owned new ventures. It specifically investigates three potential mediators: demographic characteristics of venture’s location, financial size of the venture and its credit riskiness.

Design/methodology/approach – The Kauffman Firm Survey, a longitudinal data set of 4,928 new ventures started in the USA in 2004, has been utilized in this paper. Pooled OLS and Logit regression models were employed for direct effects. Mediation effects were tested using two different approaches: the Baron and Kenny approach and decomposition analysis.

Findings – The paper finds that the financial size and credit riskiness mediate the relationship between majority race ownership and the performance of a venture.

Research limitations/implications – The data were collected for a single cohort (2004) of nascent firms; furthermore, the sample draws from firms based in the USA. Future studies could replicate this research utilizing samples of different cohorts and from other parts of the world.

Practical implications – The paper provides important guidance to policy makers. In general, to reduce the performance gap between black and white owned ventures, providing access to subsidized assets, capital and credit could be very helpful.

Originality/value – Past research suggests that the majority race ownership of a new venture impacts its performance and attributes these differences to heterogeneous endowments, usually of the primary owner. In this paper, analyses are conducted at multiple levels and new mechanisms through which the internal resources and capabilities of a new venture mediate the relation are discovered.

Keywords Diversity, Entrepreneurship, New ventures

Introduction
New ventures have been touted as engines of growth for the economy. It is argued that new ventures contribute significantly to job growth. Decker et al. (2014) report that startups account for 20 percent of gross US jobs created annually. Research on new venture performance has spanned a few decades, one avenue of research in the “performance analysis” literature has been the study of outcomes such as survival, revenues and profits of minority-owned businesses and minority self-employment activities. Edelman et al. (2010) and Sullivan (2007) report that blacks have a higher propensity to start a new venture compared to whites and that black-owned ventures have a higher probability of failure or perform worse compared to white-owned ventures. Lately, the availability of census and other comprehensive data sets – such as the characteristics of business owners (CBO), the survey of minority and women owned businesses, the panel study of income dynamics has led to a number of studies analyzing the reasons for differences in outcomes between...
white- and black-owned ventures (Fairlie and Robb, 2007; Robb, 2002). These studies are necessary since entrepreneurship is a crucial alternative to wage based employment for making a living and alleviating the socio-economic conditions of the black community (Fairlie and Robb, 2007). Studies have shown that one of the reasons for upward economic mobility of immigrant minorities has been through their ownership of small businesses (Bonacich and Modell, 1980; Light, 1972). Recent studies find that entrepreneurship aids in reducing the wealth disparity between black and white households (Bradford, 2014) and black entrepreneurs suffer lesser downward wealth mobility compared to black workers (Bradford, 2003). Business creation is being used as a tool by many state and federal governments to bridge the socio-economic gap between different races and also to get families out of welfare and unemployment insurance rolls (Fairlie and Robb, 2007). Hence, it is important to understand what mechanisms are inducing the performance gap between black- and white-owned ventures.

In this study, I focus on ventures started in 2004 – a new venture is an independent business – started or purchased or a franchisee, by a team or individual. However, any new ventures which paid state unemployment insurance, or Federal Social Security Tax or had an EIN or had schedule C income prior to or after 2004 were excluded. Thus, I study nascent ventures from their inception. I expand the scope of previous studies by exploring mechanisms at multiple levels. First, I focus on the mediating role of external factors such as the demographics of the location of the venture. Although external variables are relatively difficult to alter, entrepreneurs possess the ability to “choose” locations, which are endowed with certain characteristics. Next, I analyze factors at the venture level. Resources at the disposal of a new venture play a pivotal role in its performance. I focus on two variables – assets of a venture and the credit riskiness.

Understanding the role played by the location of a venture in the differential success of black and white ventures may have profound policy implications. The prior literature focuses on the social networks of founders, abundance of resources and consumers, and agglomeration economies at the location, and ties it to performance (Dahl and Sorenson, 2012; Figueiredo et al., 2002; Florida, 1994; Marshall, 1920). Bates and Robb (2014b) report that small businesses serving minority clients face higher rates of closure and low profitability. If location is indeed a driver of success for a new venture, then it should be no surprise that more venture owners (both white and black) want to set up shop in zip codes that are more favorable to new venture performance – the white majority areas, since whites are known to possess better socio-economic status than blacks on average (Morgan, 2005; Western and Pettit, 2005[1]).

The second mechanism I investigate is the financial size of a venture and its mediating effects. The size of established firms has been linked to survival and performance (Dunne et al., 1989; Evans, 1987). Although most of the studies focus on the number of employees as an indicator of size, I propose instead to analyze the impact of financial size. Financial size could be considered more fundamental than the human resource size, since the former can be utilized to attract the latter. Performance of a venture is tied to internal attributes such as its resources and capabilities (Wernerfelt, 1984). Financial size is a proxy for the resources a venture has at its disposal, it also acts as a buffer while the new venture is struggling with the liability of newness. Consumers may also prefer to deal with a business that is strong and vibrant and might be in operation down the road if the product they bought needs repair, maintenance or add-ons. Finally, a bigger resource base could lead to more service and product offerings leading to better revenues and hence performance. Thus, I explore the impact of financial size as a mediator.

The third mediator – a venture’s credit riskiness – is crucial for attracting resources. It is an indicator of the ability of the venture to acquire resources in the future. The performance of a venture is dependent on access to resources (Mahoney and Pandian, 1992; Penrose,
1959; Peteraf, 1993; Wernerfelt, 1984). Suppliers, service providers and other members of the value chain might implicitly evaluate the prospects or riskiness of the venture before providing access to their resources or services to it (Stuart et al., 1999). Thus, I study the mediating role of a venture’s credit riskiness.

This study is based on the Kauffman Firm Survey (KFS), a confidential eight-year panel data set of new ventures representative of the new venture landscape of the US economy. Most past studies, using Census or survey data are able to observe ventures when they reach a certain size or age; however, KFS captures venture data for firms started in 2004, from the inception stage onwards. Hence, I am able to conduct analyses on ventures from the nascent stage onwards. The data set contains geo-coded data, which makes the analyses of location feasible. The abundance of variables in the data set allows me to control for potential endogeneity issues. Since the data are exclusively based on new ventures (and do not utilize self-employment data as a proxy for entrepreneurship) and the variables capture data on the entire owner team, analysis using these fine-grained data can be conducted at the venture team level rather than restricting it to sole or primary owner.

The key findings of this study are that I do not find support for the mediating role of local demography in new venture performance. However, the financial size and credit riskiness of a venture mediate the relationship between race and performance. The structure of the paper is as follows — in the next section, I discuss the theoretical underpinnings of the various relationships described above. I follow up with a description of the data, variables used and research methods. Results are presented in the section after and I close with a discussion of the results.

**Theory and literature review**

New venture performance has been a topic of study both theoretically and empirically over the past few decades. Availability of longitudinal data was a major constraint in studying outcomes but new panel data sets have alleviated the issue to a certain extent. Sexton and Robinson (1989) were one of the first to study demographic variables such as age, education, race of owners and their correlation with survival and performance. Cooper et al. (1994) utilized a panel data set which also represented a broader set of industries and, thus, was more representative of an economy, to analyze the impact of race on performance. They found that the minority-owned businesses perform worse than non-minority-owned ventures. Most previous studies account for race effects through two approaches. The older approach was to introduce a dummy variable for the race of the primary owner of the venture and interpret its coefficient. Newer studies (Fairlie, 2005a; Fairlie and Robb, 2007) conduct decomposition analyses wherein they calculate the contribution of endowments, such as education, work experience, etc., which explain the gap in performance metrics such as survival between white- vs black-owned ventures.

Multiple mechanisms were conjectured by studies for the poor performance of blacks, which included them possessing poor business contacts, poor location, more difficulty in obtaining insurance and credit, and access to “desirable” customers. In the following paragraphs, I explore the rationale of a few mechanisms that are the focus of this paper.

**Race of majority owners of a venture and its performance**

Using the CBO, 1992 data set, Fairlie and Robb (2007) find that black firms underperform their white counterparts in survival, employment size, sales and profits. Similar estimates are obtained by studies (Robb, 2002; Boden and Headd, 2002) using other data sources. A paper based on the Panel Study of Income Dynamics (Fairlie, 1999) also finds that black men exit self-employment at twice the rate of white men.

Most past studies focus on the primary owner of the venture even if the venture was run by a team of owners (for example, the CBO (Fairlie and Robb, 2007), 1992 had 20 percent ventures run by teams). Various criteria such as number of hours worked, which owner
founded the venture, or random assignments were used to assign primary ownership. I posit that performance outcomes of primary owners and a team of owners should be similar. For example, if a venture has a majority of black owner operators, the venture could be viewed as “embodying” black characteristics. Past research shows that individuals form “same race” friendships and ties (Mollica et al., 2003), even task groups are composed of individuals with similar ascriptive characteristics (Ruef et al., 2003). Thus, it could be inferred that say a venture with black majority owner operators has outcomes similar to ventures which have a black individual as the primary owner. The majority of black owners and their characteristics will impart to the venture black characteristics on “average.” A similar logic will also hold for new ventures which have majority white owner operators.

Therefore, the following hypothesis is proposed:

**H1.** Black majority owned new ventures will be associated with lower levels of performance compared to white majority owned new ventures.

**External characteristics – mediating role of demographics of new venture location**

The decision about where to set up a business is crucial and difficult to change. It can have significant consequences for new venture survival and performance. The phenomenon that location of a business in an area which has other similar businesses has the possibility of enhancing the focal venture’s performance has been studied as far back as 1920 by Marshall (agglomeration economies). Gilbert et al. (2008) show that technology-based firms located in geographic clusters experience higher growth rates and levels of innovation. Similar results for survival and higher tax payments by Swedish firms located in clusters were observed by Wennberg and Lindqvist (2010). Other studies investigate the impact of output market characteristics in the decision to locate a venture. Woodward and Glickman (1991), Coughlin et al. (1991) and Florida (1994) show that foreign direct investment in manufacturing plants is attracted by states that have higher per capita incomes, higher density of manufacturing activity or higher concentration of upstream and downstream firms of the value chain. Park and Leigh (2017) show that location endowments of a market such as pool of educated workers, highly developed transportation systems and links to domestic and international markets attract manufacturing FDI to a region.

Studies also show that entrepreneurs prefer a location since they are socially embedded in the location and, hence, can benefit from the resources and infrastructure of the area (Dahl and Sorenson, 2012). They further posit that a pivotal question is not whether a location is “good” or “bad” for a business but rather – “given my resources, do I have the greatest odds of success.” Thus, studies focus on both the resource endowments of a location and which entrepreneur is able to capitalize on those endowments.

Black dominated areas are known to possess fewer resources compared to white majority areas. Scarce availability of resources and infrastructure will adversely affect a new venture either by increasing the cost or decreasing the quality of services and products. Similarly, a shallow or lower quality talent pool will also weigh down the performance of the venture. The income levels of the consumers are also lower in black neighborhoods, further exacerbating the situation for a new venture in such areas. Given the above conditions, fewer owners would decide to locate their ventures in such areas than the ideal case. This should also lead to less opportunity for the remaining new ventures to “swap” services and fewer mentorship opportunities for the new ventures in the area, depressing performance further.

Owners may locate businesses in “hospitable” environments unless the benefits due to the synergy of endowments of “inhospitable” areas and owner characteristics to utilize those endowments outweigh the costs to locate in “inhospitable” locales. Bates and Robb (2014b) find that small businesses (mainly services and retail) located in urban minority areas
serving minority clientele have worse performance outcomes. Situating new ventures in areas which have demographics similar to the majority owners of the venture should aid in its performance. The venture will benefit from the social networks of the owners which will help in accessing resources, credit, land and infrastructure and consumers (Zaheer et al., 2009; Zhou, 1996). In fact, resources available through social ties may be difficult to imitate and lead to a sustainable competitive advantage (Zaheer et al., 2009). Extending the “liability of foreignness” (Hymer, 1976) to the local level, owners who set up new ventures in locales not familiar to them, may face challenges at cultural, political and economic levels. White areas are generally better than black areas on measures such as infrastructure and other economic factors, such as average house value or household income. The white business owners located in white majority areas would, thus, benefit from better resources, infrastructure as well as better networks. However, for the black business owners this should lead to an inherent tension, they may value social ties which may be in black neighborhoods but the economic pull may drive them to situate in white areas.

In light of the above arguments, I posit that the relationship between race of the majority owners of the venture and survival could be mediated through the characteristics of the location. Therefore, I posit the following hypothesis:

H2. The demographics of the area the new venture is situated in partially mediate the relationship between majority race of owner operators and new venture performance.

Internal characteristics as mediators

Financial size of the venture. Strategy scholars have long posited that internal capabilities and characteristics of a venture are a source of competitive advantage and, hence, better performance (Penrose, 1959; Wernerfelt, 1984). One important internal characteristic studied at length is firm size. Gibrat’s law was proposed in 1931, which stated that firm growth and size are not related. However, contrary to Gibrat’s Law, Dunne et al. (1989), Evans (1987) and other studies found that survival increases and growth decreases with business age and (employment) size. Size has been operationalized using different variables in the literature. Some common implementations include use of net worth, home ownership, and inheritance levels of the entrepreneur which measure static levels prior to venture starting and find that incorporating these variables does lead to an attenuation in the coefficient of race. Thornhill and Amit (2003) use assets of the firm as a proxy for size. Similar results are also obtained with decomposition analysis (Fairlie and Robb, 2007) – startup capital explains 30 percent to 40 percent of the explained gap in performance between black- and white-owned ventures. I propose to analyze the mediating role using a dynamic measure of financial size. This is especially pertinent in the context of a startup since the financial size of a venture changes over time and utilizing the initial conditions may not present a full picture of the impact of a time-varying variable such as financial size on new venture performance. I propose to explore the mediating role of financial size on the race ownership and performance relationship, while controlling for employee size.

In many prior studies, it has been shown that the race of the majority of owner-operators impacts performance. However, I theorize that the above relationship is partially mediated by the financial size of the firm. The assets of a firm are one dynamic indicator of the size of a venture (Thornhill and Amit, 2003) and they can be thought of as a proxy for the resources that are accessible to the venture. New ventures suffer from the liability of newness, size provides a buffer for entrepreneurs to learn and navigate problems (Cooper et al., 1994). Firms with bigger size will have resources to attract experts to provide advice on issues (Cooper et al., 1989). The size of a new venture may also represent more options to the consumer leading to more revenues and profits hence better performance. Finally, a small
size may inhibit product development, product launch and access to markets which will all hamper performance and survival of a firm. Previous studies incorporate size by either using a financial measure or a human resource measure, I study the impact of financial size while controlling for employee size. Furthermore, for external resource providers financial size may be a clearer signal of vitality of a new venture compared to the number of employees. The various assets of a venture could be used as collateral and also provide relatively more confidence to the suppliers, vendors and other stakeholders, that in the event of a venture going out of business, they could hopefully recoup their investments partially through the sale of the financial assets. On the other hand, given the mobility potential of the employees, the human resource base of a new venture may not inspire similar confidence amongst the resource providers.

Black-owned ventures usually are smaller in size compared to white-owned ventures (Edelman et al., 2010; Fairlie and Robb, 2007; Robb, 2002). This may be due to multiple factors as shown in previous literature – blacks may not be able to get similar amounts of loans as the whites, due to discrimination, thus leading to undercapitalization, resulting in smaller asset bases (Bates and Robb, 2014a, 2016). Furthermore, blacks on average have lower net worth than whites. Thus, they would have fewer possessions to serve as collateral for loans which would again lead to a smaller asset base (Fairlie and Robb, 2007). This smaller size of the black ventures compared to the white ventures should lead to bleaker prospects for the black-owned ventures vis-a-vis the white-owned ventures.

Given the above arguments, I propose the following hypothesis is proposed:

\[ H3. \] The financial size of a venture partially mediates the relationship between race ownership and performance for black-owned ventures with respect to white-owned ventures.

Credit riskiness of a venture. Young and small ventures face a liability of newness (Stinchcombe and March, 1965). New ventures usually have short track records and are fraught with risk, hence it is difficult for resource providers to assess their quality and provide resources to them (Stuart et al., 1999). Resource providers implicitly apply a “credit riskiness” score (what is the probability of venture failure, what is the probability that the resource provided will not deliver the anticipated rent since the new venture may go out of business) to such new ventures. If certain sub populations get discriminated against on the assessment and others get favorable treatment in credit ratings, the net impact will be a systematic heterogeneous gap in the availability of financial and other resources based on the majority race ownership of the venture. The importance of credit scores in attaining resources is apparent, but the mechanism by which the scores are assessed is nebulous (Henderson et al., 2015; Spader, 2010). Discrimination in credit scores based on race, gender and other such “immutable” characteristics has been outlawed. The Federal Reserve Board did find that the credit scores are different for different races but are not biased against any race (Braunstein, 2010). Blanchflower et al. (2003) show that discrimination against black-owned ventures exists in the small business credit market. Henderson et al. (2015) find that black-owned ventures receive more adverse ratings compared to what they deserve whereas white-owned ventures receive a more favorable rating. Finally, Bates and Robb (2016) find subtle unfavorable “nudges and shoves” for minority loan seekers.

Fraser (2009) finds that even though there is no discrimination in small business credit markets in the UK along ethnic lines, the black businesses have adverse credit outcomes compared to whites and Indians. These adverse outcomes are a result of less than sterling financial practices such as missed loan repayments and overdraft excesses associated with black-owned businesses. Bates (1973) also found erratic repayments and higher delinquency rates amongst black business owners in the New York, Boston and Chicago areas.
Accumulation of resources is a pivotal activity for a new venture. Resources play an important role in enabling the entire value chain of the product in a firm. This point becomes especially salient in the context of new ventures which are generally “resource sparse.” Resources can be of multiple kinds, for example, credit lines, supplier credit, provision of service by employees, credit by consumers, provision of valued or critical equipment, etc. The provision of these resources to a new venture by the resource providers is a business decision. Resource providers need to evaluate the “riskiness” and opportunity costs before deciding which ventures will receive the use of their assets. It is logical to infer that ceteris paribus resource providers will invest time, resources and effort in new ventures from which they expect to recoup their investment and a profit. Thus, they will invest in less risky ventures all else being equal.

Barter or “quid pro quo” type arrangements are also common in general business situations (Winborg and Landström, 2001) and more so in new ventures. I argue that even in such arrangements amongst other aspects a key analysis partners are conducting is whether a particular counterparty (venture) will be a “going concern” and actually exist when the time comes to collect on the favors it is owed.

Thus, I study the mediating role of credit riskiness of a venture on the majority race ownership and venture performance relationship. I predict that credit riskiness, which is a proxy for the ability of a venture to access resources in future, is most likely mediating the relationship between majority race ownership of the venture and performance.

I proposed the following hypothesis:

\[ H4. \] The credit riskiness of a venture partially mediates the relationship between race ownership and differential performance between black- and white-owned ventures.

**Data, measures and methods**

**Data source and sample**

The KFS is a confidential data set that has been used in prior studies, such as Robb and Robinson (2012). It is a longitudinal data set of approximately 5,000 new ventures started in 2004. The KFS started with an initial sample of 250,000 firms, provided by D&B. A business was defined as started in 2004, if it was a new independent business created by an individual or team, or purchase of an existing business or the purchase of a franchise. Businesses that paid state unemployment insurance, or Federal Social Security tax or had an EIN or had schedule C income prior to or after 2004 were excluded. Out of this sample, 4,928 firms were admitted into the survey with an oversampling of high-tech firms; weights have been provided by KFS in order to make the sample representative of all new ventures in the economy. These firms were surveyed annually in detail from 2004 to 2011, creating an eight-year panel. The KFS has a balanced panel of 3,140 firms, but since the focus of the current study was on majority ownership, hence I restricted the study to ventures which had 50 percent or more of the owner team belonging to one race. I focused on ventures owned by whites, blacks and Asians since venture ownership by other races represented no more than 1 percent of ventures. This led to a sample size of 2,918 ventures. Furthermore, various variables such as profits or credit classification scores were not available for some ventures in some years. Hence, the number of observations in regressions may vary across models of survival, revenues and profits. The sample has information on up to 10 owners, initially and later 15 owners, including age, gender, race, ethnicity, education and previous work experience. Detailed financial information about the ventures, location, revenues, expenses, number of employees and profit/loss, among many other firm-level variables are also available in the data set. The KFS data set was merged with data at the zip code level from the Census, to develop measures of demographics.
Measures

Dependent variables. Survival – a venture was recorded as surviving each year it was in business as an independent entity. If the venture survived till the end of the survey period (year 2011) it was censored. In the data, failure is coded as 1 (to signify an event) and survival (status quo as 0).

Log total revenues are the logarithm of leading total revenues of a venture. For computational purposes $1 was added to the raw revenue numbers and then a log taken.

Log net profits are the logarithm of leading net profits of a venture. $1 is added to the absolute value of net profits (as net profits can be zero), and then logarithms were taken. Finally, if the profits were negative, the log values were multiplied by –1.

Independent variables. Majority race owners of firm: similar to Bitler et al. (2001), a venture was deemed as belonging to a particular race if the number of active owner operators of a particular race in the venture were greater than or equal to 50 percent and all other races individually had representation that was less than 50 percent. Ventures which were owned equally by two or more races were dropped from analyses.

Demographics of a location: in order to capture the characteristics of a zip code, I use dummy variables indicating whether a zip code is white, black or other race majority. A location is deemed as white majority if the population of whites in the zip code is greater than 50 percent, similarly for black and other races.

Financial size of the firm: I operationalize financial size as the log of assets of a venture. This is a time varying measure as KFS collected various components of the assets of a venture annually. These mainly comprised: cash, accounts receivables, equipment, inventory, land and buildings, vehicles, etc., which were added up to arrive at the total tangible assets of a venture. Logs of assets were used to control for skewness and high standard deviation.

Credit risk classification score of a venture: the credit riskiness of a venture is captured by the credit score classification of the venture. This is a categorical variable with a score of 1 indicating minimal risk and 5 representing high risk. Data were imputed for some missing values for which logical imputation was possible[2]. Similar scores have been used by the Federal Reserve and in past studies (Henderson et al., 2015).

Control variables. I controlled for a number of factors that might impact survival and performance.

Education: previous research shows education impacts survival (Cooper et al., 1994) and performance, thus variables indicating the proportions of various levels of education in the owner operator team were introduced. However, education had minimal explanatory power in explaining the gap in performance between black and white ventures (Fairlie and Robb, 2007).

Work experience in the same industry: prior work experience in an industry provides networks and knowledge about customers and suppliers (Cooper et al., 1994; Delmar and Shane, 2004). I measure work experience in the same industry as the average number of years of such experience of the venture founding team. Similar to education, this variable too has been found to have minimal explanatory power for the gap in performance (Fairlie and Robb, 2007).

Age: the average age of owner operators was used in models since it will be correlated with higher levels of industry experience.

Number of active owner operators: the active owner operators of a new venture are human capital that could be crucial for the survival and performance of the venture. More owner operators will bring in more resources, human, social and financial capital and improve performance. Thus, I controlled for number of active owner operators.

Number of employees: I use a time varying measure to account for the employee-based size of a venture. Previous research has shown that survival increases with number of employees since more employees implies more resources and scale (Brudere and Schussler, 1990; Carroll and Hannan, 2000). I corrected for skewness by taking the log transformation.
Legal form: Bruderl and Schussler (1990) show that the hazard of failure of German new ventures when the ventures were incorporated is lower. Thus, I control for the legal form of a venture with a dummy variable equal to 1 if the venture is a sole proprietorship rather than a limited liability company.

Other controls: the “average” gender of the venture was controlled for, since female led ventures may have a difference in performance compared to male led ventures. The technology type of a venture – whether it was high, medium or low – may lead to different rates of survival and performance, and hence was controlled for. Controls for provision of service and product by the venture were also included. Average hours worked by the owner operators were also controlled for since this represents the effort put in by the founders in making the venture a viable enterprise. Proportion of US citizens – Oyelere and Belton (2013) found that intragroup heterogeneity based on country of citizenship of the entrepreneur or of her parents could impact survival of the venture. Hence, I control for citizenship by including a variable of the proportion of US citizens amongst the owner operators.

Model choice
The three key indicators of performance I study are survival, total revenues and net profits. Pooled models with clustered standard errors and time dummies, and accounting for the survey nature of the data were used for revenue and net profits. The pooled OLS model was employed for total revenues and net profits since panel data models with fixed effects would drop out the time invariant variable coefficients such as majority race ownership, which is of primary interest in the current study. Survival models were assessed using pooled Logit models (with time dummies). Alternatively, Cox Proportional Hazard models could also have been used but Logit was preferred since most of the mediation analyses such as Fairlie, and Baron and Kenny use pooled Logit in the analyses. Hence, a comparison of coefficients across models is feasible with Logit models for survival. However, survival and Probit models were utilized for the base regression for robustness checks.

Mediation effects were tested with two broad class of models: the decomposition approach (Blinder, 1973; Oaxaca, 1973) and its nonlinear extension (Fairlie, 1999, 2005b), and the Baron and Kenny (1986) mediation analysis approach. Oaxaca decomposition with time dummies was utilized for decomposition analyses of total revenues and net profits, in addition to the Baron and Kenny approach. I applied the Fairlie approach for survival decomposition. In order to test for mediation effects using the Baron and Kenny (1986) approach, I followed the standard four step process.

Results
I begin the analyses with simple cross tabulations and t-tests, which are aimed at an intuitive understanding of the differences in performance between white- and black-owned ventures.

Summary statistics of the variables in the data set are provided in Table 1 (due to disclosure constraints maxima, minima and correlation values have been omitted). Ventures were started by an individual or a team with average work experience in the same industry of 11.5 and 45 years of age. This points to the fact that businesses are usually started by mature and experienced individuals. Only 2 percent of the ventures are categorized as high technology, whereas 85 percent are low technology, that is, most of the business ventures are non-innovative businesses. In total, 86 percent of the ventures provide services, which seem reasonable given that USA is a service economy. A super majority (89 percent) of the new ventures were started by whites, followed by blacks (9 percent), which approximately reflects the demography of the USA. Finally, the new ventures are small with 1.4 active owner operators.
Table II shows endowment and other differences between white-owned and black-owned new ventures for the year 2004 (note revenues and profits are leading hence are from 2005). I observe significant differences between the two groups, with whites performing better on all measures and possessing more endowments. White-owned businesses have average revenues of $5,200 whereas black-owned ventures $100. Furthermore, variables such as assets, credit risk classification score, age and work experience show differences between the two groups and hence as discussed earlier are worth investigating. Table III explains that businesses have a higher proclivity of situating in white majority zip codes (97.5 percent of white-owned and 61.3 percent of the black-owned ventures are situated in white majority zip codes). Table IV confirms my assertion that ventures in white majority zip code areas perform better than ventures in black majority zip codes (the significance in \( t \)-tests for net profits and survival is at 10.7 percent and 10.8 percent, respectively). Finally, Table IV illustrates that for the areas in which KFS ventures are located, there are significant differences in the average household income and average house values in the white vs black majority zip codes, with black majority zip codes being less affluent.
Table V tabulates the differences in some key variables between white- and black-owned ventures in white and black majority zip codes. In most cases, the white-owned ventures in white areas possess the most favorable attributes, and black ventures in black majority zip codes are the worst off. A similar pattern is observed in the outcome variables such as revenues and profits. However, survival seems to be comparable across race and location, except for black-owned businesses in black majority zipcodes.

Table VI shows the results of decomposition analyses. I find support for $H_1$ since on all three outcomes: survival, revenues and net profits, there is a difference between the white majority and black majority owned ventures. Assets and credit riskiness are consistently significant and their coefficients indicate that these variables are sizeable contributors.
to the gap, across all three models: survival, revenues and net profits. Contributions of the location variable is ambivalent, either coefficients are small or not statistically significant. Thus, H3 and H4 are supported but H2 is not supported. Finally, individual level characteristics such as industry work experience, education and age are relatively small contributors or insignificant, echoing results similar to Fairlie and Robb (2007). It is worth
noting that the Fairlie decomposition over explains the gap between black- and white-owned ventures, which may indicate that if the endowments of white ventures were to be allocated to the black-owned ventures they would be more successful than the white ventures.

Partial mediation by assets and credit riskiness was also supported by the Baron and Kenny approach. Table VII shows that white majority owned ventures outperform black majority owned ventures (black being the omitted category). Table AIV also utilizes the Probit and Cox models to validate the results of survival of ventures in the logit models. I do find, broad support for the results. Tables VIII and IX analyze the crucial steps for supporting Baron and Kenny’s (1986) mediation approach by showing that majority race ownership effects are partially mediated by assets or credit riskiness. When assets or credit riskiness are included in the same model as majority race ownership, the coefficient of the majority race ownership for all three regressions: survival, total revenues and net profits decreases, thus supporting $H_3$ and $H_4$. A negative coefficient in survival regressions implies a reduction in the hazard of death (since failure is coded as 1 and survival as 0 in the data). The interpretation for revenue and net profit regressions are obvious. The other steps of the Baron, Kenny mediation analysis are covered in Tables AI–AIII.

**Discussion and conclusion**

Past research suggests that performance of new ventures is related to the race of the primary owner(s). It is important to understand how these differences in performance occur above and beyond the characteristics of a primary owner and at the level of a venture, so that policy intervention can be addressed correctly. Given that the black community faces numerous obstacles to social and economic mobility, starting and successfully running one’s own venture could be a ticket out of low socio-economic status for many a black household. White-owned ventures have been shown to possess better performance prospects than black-owned ventures (Edelman et al., 2010; Robb, 2002; Sullivan, 2007). Decomposition analyses use individual characteristic endowments of primary owners to explain the performance gap between the white and black ventures. However, more venture level studies are required which focus on the mechanisms of how the survival gap between black and white ventures is induced due to the external environment and internal venture level characteristics. In this research, I investigated mediators at multiple levels to understand their role on majority race ownership and performance relationship. I assessed how the demographics of the area where a venture is located, how the financial size of a new venture and the credit riskiness mediate the above relationship.

I did not find support for the mediation by demography of the location of a venture. It seems entrepreneurs are savvy enough to understand and either tailor or open ventures which are demanded by an area. This points to the fact that the policy should be focused on the internal characteristics of the venture which is a more micro-level approach rather than following a more macro approach of ameliorating an area. The aforementioned implication is in the context of reducing the performance gap between white- and black-owned ventures. There could be many other policy reasons for which underdeveloped areas need to be developed, which the author does not preclude. Black-owned ventures are financially smaller than the white-owned ventures and this difference is path dependent, it does not decrease over time. The difference in financial size has a profound impact on the outcomes of white vs black ventures, thus developing innovative and subsidized approaches so that black ventures get access to a similar level of asset base as the white-owned ventures should be helpful in reducing the performance gap.

Finally, I found that credit riskiness of a new venture is an important mechanism in determining the difference between performances of black and white ventures. Black-owned ventures will have a lower probability of obtaining resources at a level similar to white-owned ventures, due to the difference in credit ratings. I also find that these lower credit ratings in turn negatively impact the performance of black-owned ventures compared to
| White owned | 0.333* (0.14) | 2.728*** (0.30) | 3.527*** (0.52) |
| Asian owned | 1.049** (0.34) | 2.993*** (0.49) | 4.248*** (1.05) |
| Avg same Ind work ex | 0.014** (0.00) | 0.017* (0.01) | 0.063*** (0.02) |
| Edu., technical | 0.014* (0.00) | 0.017* (0.01) | 0.063*** (0.02) |
| Edu., some Clg | 0.304 (0.20) | 0.690 (0.41) | 1.746* (0.73) |
| Edu., associate | 0.304 (0.20) | 0.690 (0.41) | 1.746* (0.73) |
| Edu., bachelors | 0.383* (0.18) | -0.528 (0.37) | -2.147** (0.74) |
| Edu., some grad | 0.383* (0.18) | -0.528 (0.37) | -2.147** (0.74) |
| Edu., masters | 0.383* (0.18) | -0.528 (0.37) | -2.147** (0.74) |
| Edu., PhDs/Prof. | 0.506*** (0.13) | 0.581* (0.29) | 1.818* (0.80) |
| Avg age | 0.005 (0.00) | -0.010 (0.01) | -0.058*** (0.02) |
| Provides product | 0.116 (0.09) | 0.580*** (0.15) | -1.331*** (0.31) |
| Provides service | -0.281* (0.11) | 0.240 (0.23) | 0.916 (0.47) |
| Sole proprietor | -0.281* (0.11) | 0.240 (0.23) | 0.916 (0.47) |
| Avg Hrs wrkd owner/s | -0.009*** (0.00) | 0.044*** (0.00) | 0.035*** (0.01) |
| Hi tech | -0.231 (0.12) | 0.712*** (0.20) | 0.104 (0.50) |
| Med. tech | -0.231 (0.12) | 0.712*** (0.20) | 0.104 (0.50) |
| Prop. US Cit. | -0.700*** (0.18) | 0.876 (0.65) | 0.520 (1.22) |
| Prop. Male | -0.134 (0.10) | 0.125 (0.21) | 0.503 (0.39) |
| Tot. Active Fndrs | -0.182* (0.08) | 0.141 (0.11) | -0.022 (0.23) |
| Log total employees | -0.073 (0.06) | 1.078*** (0.09) | 0.111 (0.23) |
| Time dummies? | Yes | Yes | Yes |
| Intercept | 4.588*** (0.84) | 1.106 (1.57) | 2.062* (0.88) |
| Number of observations | 16,284 | 13,117 | 12,799 | 16,284 | 13,117 | 12,799 |
| R² or X² | 5358.73 | 13117 | 12799 | 5416.43 | 13117 | 12799 |

Notes: Black owned is the omitted category. *p < 0.05; **p < 0.01; ***p < 0.001
Thus, policies which bolster the credit scores of black ventures either through provision of training to better manage their business or temporary boost to their credit scores to make them equivalent to white ventures’ scores should alleviate some of the performance differences.

**Limitations**

The study has a few limitations. The analysis has been conducted on new ventures started in 2004. To the author’s knowledge no major economic, political or other shocks occurred in that year, yet if cohorts of ventures from various vintage years could be analyzed it would further bolster the robustness of the results. Second, the study is based on new ventures started in the USA, a broader study which incorporates ventures from other regions of the world may further bolster the external validity of the results.

**Future research**

In this study, one of the mediators I explored was financial size. Future studies could explore what types of assets, for example, tangible vs intangible are more relevant to reducing the performance gap. Studies and analyses on whether financial size could lead to the acquisition of human resource size in a short span of time and how that impacts performance could further our knowledge on “time compression diseconomies” (Dierickx and Cool, 1989) as well.

With the study, I draw attention to the need of understanding the mechanisms involved in the differential performance of black- vs white-owned ventures. More studies are required to

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### Table VIII.
**Assets mediation pooled regressions**

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<tbody>
<tr>
<td>White owned</td>
<td>−0.333* (0.14)</td>
<td>−0.131 (0.14)</td>
<td>2.728*** (0.30)</td>
<td>2.143*** (0.28)</td>
<td>3.527*** (0.52)</td>
<td>2.987*** (0.52)</td>
</tr>
<tr>
<td>Asian owned</td>
<td>−1.049** (0.34)</td>
<td>−0.825* (0.35)</td>
<td>2.993*** (0.49)</td>
<td>2.351*** (0.44)</td>
<td>4.248*** (1.05)</td>
<td>3.653*** (1.03)</td>
</tr>
<tr>
<td>Log firm assets</td>
<td>−0.086*** (0.01)</td>
<td>0.357*** (0.03)</td>
<td></td>
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<tr>
<td>Controls included?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>observations</td>
<td>16,284</td>
<td>16,284</td>
<td>13,117</td>
<td>13,117</td>
<td>12,799</td>
<td>12,799</td>
</tr>
<tr>
<td>R² or X²</td>
<td>5416.43</td>
<td>5404.62</td>
<td>0.2118</td>
<td>0.2866</td>
<td>0.0530</td>
<td>0.0641</td>
</tr>
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| Notes: *p < 0.05; **p < 0.01; ***p < 0.001

### Table IX.
**Credit risk mediation pooled regressions**

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<tbody>
<tr>
<td>White owned</td>
<td>−0.333* (0.14)</td>
<td>−0.167 (0.14)</td>
<td>2.728*** (0.30)</td>
<td>2.588*** (0.30)</td>
<td>3.527*** (0.52)</td>
<td>3.215*** (0.52)</td>
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<tr>
<td>Asian owned</td>
<td>−1.049** (0.34)</td>
<td>−0.859* (0.35)</td>
<td>2.993*** (0.49)</td>
<td>2.922*** (0.48)</td>
<td>4.248*** (1.05)</td>
<td>4.052*** (1.04)</td>
</tr>
<tr>
<td>Credit risk = 1</td>
<td>−1.579*** (0.36)</td>
<td>−1.023*** (0.16)</td>
<td>1.460*** (0.34)</td>
<td>0.697*** (0.13)</td>
<td>0.220 (0.25)</td>
<td>1.314* (0.55)</td>
</tr>
<tr>
<td>Credit risk = 2</td>
<td>−1.023*** (0.16)</td>
<td>0.766*** (0.26)</td>
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<tr>
<td>Credit risk = 3</td>
<td>−0.697*** (0.13)</td>
<td>0.220 (0.25)</td>
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<tr>
<td>Credit risk = 4</td>
<td>−0.514*** (0.14)</td>
<td>−0.319 (0.29)</td>
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<td>Controls included?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>observations</td>
<td>16,284</td>
<td>16,284</td>
<td>13,117</td>
<td>13,117</td>
<td>12,799</td>
<td>12,799</td>
</tr>
<tr>
<td>R² or X²</td>
<td>5416.43</td>
<td>5402.83</td>
<td>0.2118</td>
<td>0.2866</td>
<td>0.0530</td>
<td>0.0641</td>
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</tbody>
</table>
| Notes: Credit risk = 5 is the omitted category. *p < 0.05; **p < 0.01; ***p < 0.001

white-owned ventures. Thus, policies which bolster the credit scores of black ventures either through provision of training to better manage their business or temporary boost to their credit scores to make them equivalent to white ventures’ scores should alleviate some of the performance differences.
to understand what other social or economic constructs may be at play. Another fruitful avenue of research could be related to exploring under what conditions the performance differences between the two groups exacerbate or reduce for example in high technology ventures or ventures in certain industries.

Notes
1. There are exceptions to this approach, for example, some small businesses “choose” to locate in high crime areas since surviving in such areas is one of their core capabilities (Bates and Robb, 2008).
2. Credit risk classification scores were back or forward filled using the scores available for the nearest year. For example, if credit classification score data were not available for a new venture for the year 2006, but was available for 2005 or 2007, then the 2006 score was imputed using the 2005 and/or 2007 scores.

References


Further reading

Appendix

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<tr>
<td>White owned</td>
<td>0.059 (0.17)</td>
<td>1.966*** (0.29)</td>
<td>2.543*** (0.57)</td>
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</tr>
<tr>
<td>Asian owned</td>
<td>-0.545 (0.36)</td>
<td>2.152*** (0.44)</td>
<td>3.368*** (1.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log firm assets</td>
<td>-0.077*** (0.01)</td>
<td>0.364*** (0.02)</td>
<td>0.339*** (0.04)</td>
<td>-0.078*** (0.01)</td>
<td>0.345*** (0.03)</td>
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<td>Credit risk = 1</td>
<td>-1.425*** (0.36)</td>
<td>1.169*** (0.33)</td>
<td>3.242*** (0.86)</td>
<td>-1.436*** (0.36)</td>
<td>0.991*** (0.32)</td>
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<td>Credit risk = 2</td>
<td>-0.930*** (0.16)</td>
<td>0.639*** (0.24)</td>
<td>2.356*** (0.59)</td>
<td>-0.931*** (0.17)</td>
<td>0.471 (0.24)</td>
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<td>-0.650*** (0.13)</td>
<td>0.165 (0.24)</td>
<td>1.287* (0.54)</td>
<td>-0.642*** (0.13)</td>
<td>0.059 (0.24)</td>
</tr>
<tr>
<td>Credit risk = 4</td>
<td>-0.485*** (0.15)</td>
<td>0.271 (0.27)</td>
<td>0.826 (0.58)</td>
<td>-0.478** (0.15)</td>
<td>-0.346 (0.26)</td>
</tr>
<tr>
<td>White maj. zip code</td>
<td>-0.237 (0.17)</td>
<td>1.415*** (0.41)</td>
<td>1.975* (0.80)</td>
<td>-0.234 (0.19)</td>
<td>0.561 (0.42)</td>
</tr>
<tr>
<td>Othr race maj. zip code</td>
<td>-0.500 (0.26)</td>
<td>1.475*** (0.48)</td>
<td>1.777 (1.02)</td>
<td>-0.445 (0.27)</td>
<td>0.948 (0.47)</td>
</tr>
<tr>
<td>Controls included?</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time dummies?</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of observations</td>
<td>16,284 13,117 12,799 16,284 13,117 12,799</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² or X²</td>
<td>5361.75 0.2515 0.0646 5390.53 0.2609 0.0693</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: When all proposed mediators – assets, credit riskiness and location of the venture are put in one regression model. We repeatedly observe that assets and credit riskiness are statistically significant but location not so. *p < 0.05; **p < 0.01; ***p < 0.001

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Log firm assets</td>
<td>-0.089*** (0.01)</td>
<td>0.385*** (0.03)</td>
<td>0.376*** (0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit risk = 1</td>
<td>-1.607*** (0.36)</td>
<td>1.814*** (0.35)</td>
<td>3.878*** (0.87)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit risk = 2</td>
<td>-0.504*** (0.16)</td>
<td>1.089*** (0.27)</td>
<td>2.813*** (0.60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit risk = 3</td>
<td>-0.740*** (0.12)</td>
<td>0.441 (0.26)</td>
<td>1.585*** (0.56)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit risk = 4</td>
<td>-0.552*** (0.14)</td>
<td>-0.160 (0.30)</td>
<td>0.967 (0.60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controls included?</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Time dummies?</td>
<td>Yes Yes Yes Yes Yes Yes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Number of observations</td>
<td>16,284 13,117 12,799 16,284 13,117 12,799</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² or X²</td>
<td>5364.05 0.2436 0.0567 5358.89 0.2609 0.0506</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: These regressions establish the correlation between the dependent variables (survival, revenues and profits) and the mediators – assets and credit risk. This is one of the four steps for Baron and Kenny mediation. *p < 0.05; **p < 0.01; ***p < 0.001

Table A.1 Assets, credit risk and race location based pooled regressions

Table A.2 Assets and credit risk based pooled regressions
Mayank Jaiswal is Assistant Professor in the College of Business Administration, Rider University. He received the PhD Degree in Strategic Management (with emphasis in Entrepreneurship) from Georgia Institute of Technology. His professional experience includes working in the energy, agri-business and social VC space. Mayank Jaiswal can be contacted at: mjaiswal@rider.edu

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Table AIII.
Assets and credit risk mediation pooled regressions

<table>
<thead>
<tr>
<th>Model 1: assets (coef/SE)</th>
<th>Model 2: assets with controls (coef/SE)</th>
<th>Model 3: credit risk (coef/SE)</th>
<th>Model 4: credit risk with controls (coef/SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White owned</td>
<td>2.098*** (0.26)</td>
<td>1.678*** (0.21)</td>
<td>−0.463*** (0.06)</td>
</tr>
<tr>
<td>Asian owned</td>
<td>2.609*** (0.43)</td>
<td>1.731*** (0.38)</td>
<td>−0.475*** (0.10)</td>
</tr>
<tr>
<td>Controls included?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Time dummies?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Number of observations</td>
<td>16,581</td>
<td>16,284</td>
<td>16,581</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.0273</td>
<td>0.2351</td>
<td>0.0180</td>
</tr>
</tbody>
</table>

Notes: Another step in the Baron and Kenny mediation analysis. These regressions establish a correlation between the independent variables and the mediators. *\( p < 0.05 \); **\( p < 0.01 \); ***\( p < 0.001 \)

Table AIV.
Alternative models for new venture survival

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White owned</td>
<td>−0.333* (0.14)</td>
<td>−0.187** (0.07)</td>
</tr>
<tr>
<td>Asian owned</td>
<td>−1.049** (0.34)</td>
<td>−0.554** (0.16)</td>
</tr>
<tr>
<td>Controls included?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Time dummies?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Number of observations</td>
<td>16,284</td>
<td>16,284</td>
</tr>
</tbody>
</table>

Notes: *\( p < 0.10 \); **\( p < 0.05 \); ***\( p < 0.01 \)
The influence of emotional carrying capacity and network ethnic diversity on entrepreneurial self-efficacy

The case of black and white entrepreneurs

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Tina R. Opie
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Salvatore Parise
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Abstract

Purpose – One key determinant of entrepreneurial success is entrepreneurial self-efficacy (ESE), defined as an individual's confidence in his or her ability to perform entrepreneurial tasks. Whereas previous research has examined how individual and business factors influence ESE, the purpose of this paper is to analyze the influence of entrepreneurs' social networks upon ESE. The paper examines such relationships for black and white entrepreneurs.

Design/methodology/approach – In total, 110 black and white entrepreneurs responded to a survey measuring ESE and critical constructs representing elements of the quality of entrepreneurs' networks: emotional carrying capacity (ECC) and network ethnic diversity.

Findings – The authors found significant, positive relationships between both ECC and network ethnic diversity on ESE for white entrepreneurs but only found a significant positive relationship between ECC and ESE for black entrepreneurs.

Originality/value – While research is clear about the role that ESE plays in entrepreneurial activities, few studies have focused on the factors that improve ESE. In the present work, the authors study the role of context by examining how entrepreneurs' social networks influence ESE. The authors examine such influences for both white and black entrepreneurs to better understand the implications of ethnicity.

Keywords Entrepreneurial self-efficacy, Emotional carrying capacity, High-quality connections, Network ethnic diversity

Paper type Research paper

Introduction

Entrepreneurship, known as the creation of new ventures (Bruyat and Julien, 2000), is a popular and important pursuit, but it is not without challenges. According to a US Small Business Administration (2012) report, about two-thirds of businesses survive at least two years and about...
half of businesses survive at least five years. Relatedly, Brownlee (2014) reports that roughly 80 percent of startups fail for a variety of reasons, with incompetence (e.g. no knowledge of industry pricing conventions, no experience in record-keeping) and lack of managerial experience (e.g. poor credit-granting decisions) accounting for 76 percent of small business failures.

In general, business failure rates are higher for minority-owned businesses (Bates et al., 2007), with businesses owned by black and Hispanic entrepreneurs failing at greater rates than those owned by white entrepreneurs (Koellinger and Minniti, 2006; Meyer, 1990; Robb, 2002). Similarly, businesses owned by women have higher failure rates than those owned by men (Robb, 2002). This backdrop suggests that during the start of a new venture, entrepreneurs, and especially minority entrepreneurs, may benefit from considering how they might increase their likelihood of entrepreneurial success. An important part of this consideration is individuals’ entrepreneurial self-efficacy (ESE). ESE, defined as an individual’s confidence in his or her ability to perform entrepreneurial tasks and roles successfully (Chen et al., 1998), is a key determinant of entrepreneurial success (Baum and Locke, 2004; Boyd and Vozikis, 1994; Zhao et al., 2005). The specificity of the ESE concept is helpful because efficacy beliefs are not global in nature but a varying belief system connected to specific domains (Bandura, 2006).

ESE is known to have important implications for entrepreneurial activities. Individuals with higher ESE are more likely to form entrepreneurial intentions (Boyd and Vozikis, 1994; Krueger, 1993), start a business (Markman et al., 2002; Zhao et al., 2005), and successfully grow their business (Baum et al., 2001; Baum and Locke, 2004; Forbes, 2005; Hmieleski and Baron, 2008). ESE is also important because it mediates the effects of individual-level factors such as perceived learning (i.e. from entrepreneurship-related courses), previous entrepreneurial experience, and risk propensity on entrepreneurial intentions (Zhao et al., 2005). Additionally, for entrepreneurs who have high levels of self-efficacy, improvisational behavior has a positive impact upon new venture performance (Hmieleski and Corbett, 2008). Additionally, higher levels of self-efficacy lead to a higher engagement in high-growth ventures among women entrepreneurs (Muntean and Ozkazanc-Pan, 2015; Sweida and Reichard, 2013). Overall, ESE is positively associated with a host of positive entrepreneurial outcomes for entrepreneurs.

While research is clear about the role that ESE plays in entrepreneurial activities, few studies have focused on factors that improve ESE. Among these few studies, Cox et al. (2002) found that entrepreneurship education positively influenced ESE. Additionally, Forbes (2005) found that strategic decision-making processes within a venture influence the entrepreneur’s ESE. For minority entrepreneurs such as women entrepreneurs, educational programs and governmental policies improve ESE (Muntean and Ozkazanc-Pan, 2015). While this research illuminates the influence of individual-level factors upon ESE, we argue that context also matters.

In the present work, we study the role of context by examining how entrepreneurs’ social networks influence ESE. We examine such influences for both white and black entrepreneurs to better understand the implications of ethnicity. Among all ethnic categories, we decided to compare black and white entrepreneurs given the history of racial discrimination against black entrepreneurs. Comparing black and white entrepreneurs in terms of the influence of their networks upon ESE enables us to better understand how these two groups may similarly or differently use their entrepreneurial networks to navigate the entrepreneurial landscape.

Entrepreneurs’ social networks, which include family, organizational, and community-based ties, are known to supplement the effects of the entrepreneurs’ experience, education, and financial resources (Coleman, 1990). Social networks influence outcomes based on the pattern of direct and indirect ties between network actors (Burt, 1995; Hoang and Antoncic, 2003). Additionally, network composition is of importance for employee and business performance (Ibarra, 1995; Klyver and Terjesen, 2007; Renzulli et al., 2000; Thomas, 1990, 1993). While a traditional view of the benefit of one’s social network focuses upon access to resources such as financial, physical, intellectual, and social capital, this perspective portrays the owner or entrepreneur narrowly as a manager of resources. However, effective entrepreneurs also take a relational view and think of...
their personal network as providing critical connections to opportunities (Aldrich et al., 1986). With this view in mind, herein we examine how ESE is influenced by two contextual factors that relate to critical connections, namely the quality of connections and the ethnic diversity of entrepreneurs’ social networks. These two factors are indicators of social network composition and governance mechanisms. High quality of connections between network actors has been associated with higher quality of resource flows, and one element of connection quality is the emotional carrying capacity (ECC). ECC is defined as relationship partners’ mutual abilities to express more of their positive and negative emotions in a constructive way (Stephens et al., 2013). The ethnic diversity of an entrepreneur’s social network refers to the coexistence of diverse ethnicities in that network. We expect these two factors to influence ESE.

High-quality connections are formed based on relationship quality, which is an individual-level factor, and relationship context, which is an environmental-level factor (Settoon and Mossholder, 2002). The ethnic diversity of entrepreneurs’ social networks is also influenced by individual characteristics and the environmental context. For example, entrepreneurs’ demographics (e.g. ethnicity), personal characteristics (e.g. friendliness and non-discrimination), and environment (e.g. living in an ethnic minority enclave) influence the ethnic diversity of their social networks (Singh, 2000). Moreover, research (e.g. Singh, 2000) has shown that both individual and environmental aspects of social networks are crucial to entrepreneurial activities such as opportunity recognition. However, such influence has not been examined for ESE. In other words, we do not know the extent to which these two specific features of social networks may influence the ESE of black and white entrepreneurs.

High-quality connections offer psychological safety to individuals (Kahn, 1990). Moreover, knowledge is transferred more effectively through high-quality connections (Dutton and Heaphy, 2003; Wenger, 2000). Accordingly, it can be argued that high-quality connections between the entrepreneur and their network actors can improve ESE as a result of enhanced psychological safety and improved knowledge. Also, as Dutton and Heaphy (2003) argue, high-quality connections, and specifically high-ECC connections, help individuals value their identity and grow. Similarly, it can be argued that entrepreneurs who have high-quality connections with people in their network will value their entrepreneurial identity more, and as a result, their ESE will improve. We also argue that both black and white entrepreneurs can benefit from ethnically diverse networks. We believe that such networks allow entrepreneurs to access novel and non-redundant information, information that can improve ESE. Figure 1 illustrates the conceptual model of our study.

The rest of this paper is organized as follows. We first discuss social network theory and its implications for entrepreneurial activities. Then, using this theory, we argue how ECC

Figure 1.
Hypothesized impacts of emotional carrying capacity and network ethnic diversity upon ESE of black and white entrepreneurs
and network ethnic diversity likely impact the ESE of both black and white entrepreneurs. Specifically, we assert that ECC improves the ESE of black and white entrepreneurs by creating secure relationships for entrepreneurs. Also, we assert that high-ECC helps entrepreneurs better attend to their social environment and represents networks characterized by positive emotion. Further, we posit that network ethnic diversity is positively related to the ESE of both black and white entrepreneurs because as network ethnic diversity increases, entrepreneurs have access to more novel information and more accurate opportunity assessment.

Theory and hypothesis development

Social network theory

According to social network theory (Burt, 2004), belonging to a social network offers individuals the advantage of social capital. Entrepreneurs are embedded in social networks and networks play a critical role in entrepreneurial success (Aldrich et al., 1986). They increase entrepreneurs’ access to information and knowledge by expanding their bounded rationality (Singh, 2000). In other words, social networks help entrepreneurs overcome their limited ability to access and process information by providing them with knowledge they could have not obtained on their own. Social networks work as media through which entrepreneurs gain access to a variety of resources (Hoang and Antoncic, 2003; Zimmer and Aldrich, 1987), identify business ideas and opportunities (Singh, 2000), and start and run successful ventures (Honig and Davidsson, 2000; Renzulli and Aldrich, 2005; Robinson and Stubberud, 2010). Specifically, social networks help entrepreneurs gain access to capital, including financial capital (Granovetter, 1985; Greve and Salaff, 2003; Zimmer and Aldrich, 1987). Also, social networks influence the entrepreneurs themselves by providing them with the emotional support they need for entrepreneurial risk-taking (Brüderl and Preisendörfer, 1998; Renzulli and Aldrich, 2005).

Social networks have been researched from different perspectives including the perspective of network governance mechanisms and network composition. The term governance mechanism refers to a mechanism that coordinate network exchange (Hoang and Antoncic, 2003). Within the governance perspective, the quality of the relationship between entrepreneurs and their social networks has received little attention, and research in this area has been limited mostly to trust between network actors. Trust has been shown to enhance the quality of resource flows (Larson, 1992), enrich the quality of information exchanged (Lorenzoni and Lipparini, 1999), and reduce transaction costs (Jones and Seguin, 1997). ECC is another important aspect of high-quality relationships (Dutton and Heaphy, 2003) that has not been examined in entrepreneurial social network research.

Social networks have also been examined from the viewpoint of network composition (Klyver and Terjesen, 2007; Renzulli et al., 2000). Research found that gender heterogeneity in networks represents a critical advantage for entrepreneurs (Renzulli et al., 2000). Forming network ties with dissimilar others is argued to benefit entrepreneurs by expanding their knowledge through indirect ties to others beyond their immediate circle and by compensating for their biased perceptions about venture start-up (Renzulli et al., 2000). Given the benefits of network heterogeneity, it is surprising that the aspect of ethnic diversity remains unexplored within study on network composition.

Black vs white entrepreneurship

Several differences have been found in the ventures created by black and white entrepreneurs. Compared to white entrepreneurs, black entrepreneurs open smaller ventures that generate little or no economic gain (Fairlie and Robb, 2008), have lower employment rates (Fairlie and Robb, 2007), and experience higher rates of venture failure (Fairlie and Robb, 2008;
Such differences have been attributed to differences in access to resources, and research has found that racial discrimination at least partially explains why black entrepreneurs have less access to resources (Blanchflower et al., 1998; Fairlie and Robb, 2007). For example, compared to their white counterparts, black entrepreneurs receive less frequent approval for credit and when they are approved are charged higher interest rates (Blanchflower et al., 1998); have fewer opportunities than white entrepreneurs to acquire valuable work experience before starting a business (Fairlie and Robb, 2008); receive less venture capital funding (Fairlie and Robb, 2007); and have less access to formal and informal network contacts to provide them with information and resources (Singh et al., 2008).

Yet, despite racial discrimination, black entrepreneurs are making significant entrepreneurial strides. Based on a 2012 survey of business owners, the number of black-owned firms has increased 34 percent since 2007. Interestingly, black women-owned businesses grew 66.9 percent during this period, making black women the fastest growing group of entrepreneurs in the USA. Overall, black entrepreneurs are creating ventures at a higher rate than their white or other-minority counterparts (Kelley et al., 2015). Thus, black entrepreneurs as a whole are overcoming racial barriers and flourishing despite racial discrimination. It is possible that marginalized members of society, such as black entrepreneurs, may develop assets or resources because of their collective’s unique experience with oppression (DuBois, 1903). While this assertion may be new to entrepreneurship research, literature in fields as diverse as history, philosophy, and positive organizational psychology provide theoretical support for this assertion (Fulbright, 1985; Merolla, 2013). Because of the collective experience of racial oppression, black entrepreneurs may be likely to develop higher levels of ESE than their white counterparts through the resilience they have developed in response to their disadvantaged position. While this is perhaps a surprising argument, ethnicity has already been found to be an important factor shaping self-efficacy. For example, research has shown that ethnic variables (e.g. ethnic identity, other-group orientation) are important predictors of career decision-making self-efficacy for racial and ethnic minorities (Gloria and Hird, 1999). Thus, it is important to examine black entrepreneurs’ ESE with comparison to white entrepreneurs to see if similar contextual factors influence their ESE. Below we examine the impact of ECC and network ethnic diversity upon black and white entrepreneurs’ ESE. We believe that our approach is helpful not only because it includes an examination of social networks based on previously unexplored features, but also because it highlights the impact of social networks upon ESE for both groups.

Quality of network connections: the role of emotional carrying capacity
The quality of the connection between network actors has been found to enhance the quality of resource flows (Dutton and Heaphy, 2003; Larson, 1992; Lawler and Yoon, 1998), enrich the quality of information exchanged (Hite, 2005; Lorenzoni and Lipparini, 1999), and reduce transaction costs (Jones et al., 1997). In this section, we examine how one element of connection quality, the ECC of entrepreneurs’ social networks, relates to ESE. ECC is defined as relationship partners’ mutual abilities to express more of their positive and negative emotions in a constructive way (Stephens et al., 2013). ECC has been studied in the organizational context and has been found to be a source of individual and team resilience (Stephens et al., 2013). In the workplace, ECC is related to psychological safety and improved learning (Carmeli et al., 2009). We posit that ECC provides similar benefits in the entrepreneurial context. Emotional connections with network ties can improve entrepreneurs’ abilities to face difficulties and enhance entrepreneurs’ learning. In addition, ECC may improve the flow of resource exchange and also contribute to the creation of new and valued resources (Dutton and Heaphy, 2003).

ECC can be especially important for black entrepreneurs in improving their ESE. Research has found that black entrepreneurs have less self-confidence and more fear of
failure compared to white entrepreneurs (Preisendorfer et al., 2012). Research has previously shown that black entrepreneurs specifically are motivated by their role models and their emotional connections with them (Edelman et al., 2010). Accordingly, the ECC between black entrepreneurs and their role models or other social network actors may be an important contributor to improving ESE. Despite the potential importance of ECC as an important contextual factor for entrepreneurs and especially for black entrepreneurs, ECC has been largely ignored in the entrepreneurship literature.

In the following section we argue that the ECC of an entrepreneur’s social network connections will be positively related to his or her ESE. Our argument is based upon three premises: ECC influences ESE by creating secure relationships that provide entrepreneurs the space to receive encouragement and constructive criticism and to engage in self-reflection; entrepreneurs with high-ECC connections will better attend to their social environment because of helpful cues and benchmarking provided by their network partners; and high-ECC connections are characterized by positive emotion. We contend that secure connections that facilitate self-reflection, attention to the social environment, and positive emotions provide entrepreneurs safe space to soberly reflect on themselves and their social environment, thereby enhancing ESE. ESE improves with positive encouragement and feedback from others (Wilson et al., 2007). As a contextual factor, ECC contributes to ESE by providing both black and white entrepreneurs a relationship through which the entrepreneur learns but also receives emotional support. Below is a detailed discussion of these notions.

High-ECC connections, relational security, and self-reflection. ECC creates secure, safe relational spaces (Dutton and Heaphy, 2003; Stephens et al., 2013) that provide relationship partners with greater freedom of expression, more learning, greater risk taking, and greater ability to share ideas (Edmondson, 1999; Stephens et al., 2013). We posit that the security provided by high-ECC connections provides entrepreneurs the opportunity to receive and learn from others via encouragement as well as constructive criticism about their entrepreneurial ideas. Learning from encouragement and constructive criticism is indicative of verbal persuasion (e.g. feedback that you or your idea is good; Bandura, 1977; Chen et al., 1998). Verbal persuasion is a key source of self-efficacy, along with enactive mastery (i.e. feedback on performance and personal experience), vicarious experience (e.g. learning through role models), and physiological/affective arousal (Bandura, 1997). Accordingly, we argue that ECC improves ESE through verbal persuasion.

Further, individuals in secure relationships are more likely to develop a learning and mastery orientation (Sutcliffe and Vogus, 2003) and to gain access to resources (Stephens et al., 2013). Finally, we argue that the security provided by high-ECC connections provides entrepreneurs a safe opportunity to self-reflect, whereby they can consider entrepreneurial tasks at hand, think about how their prior experiences may generalize in the current situation, and reframe negative feedback in an adaptive manner (Tams, 2007). Such self-reflection is indicative of enactive mastery, a key source of self-efficacy (Bandura, 1997). Self-reflection is particularly relevant for entrepreneurs because entrepreneurial activity may be isolating at times, requiring individuals to believe in their ability to accomplish their tasks and pursue their goals even if no one else believes in their ideas or intervenes on their behalf (Markman and Baron, 2003; Sarason et al., 2006).

Thus, the security provided by high-ECC connections should support entrepreneurs in adopting a learning and mastery orientation, and provide them with the opportunity for verbal persuasion and enactive mastery, all of which are key levers to increase self-efficacy (Bandura, 1977) and, we argue, to increase ESE. This assumption is true for both black and white entrepreneurs. Both groups benefit from the security provided by their high-ECC connections and their ESE is expected to improve as the result of the increased verbal persuasion and enactive mastery imparted by high-ECC connections.
High-ECC connections and the social environment. In addition to engaging in self-reflection, entrepreneurs must also attend to their social environment, taking cues to develop and refine their entrepreneurial pursuits (Meek et al., 2010; Tams, 2007). In high-ECC relationships, entrepreneurs can attend to their social environment by responding to friendly verbal and non-verbal cues from network partners that signal idea feasibility, social support, etc. (Tams, 2007). These cues, embedded in constructive interactions and linked to verbal persuasion, help to build self-efficacy.

In high-ECC relationships, entrepreneurs may be able to benchmark by using their network partners’ experiences as helpful models for future plans (Tams, 2007). For example, consider the case of an entrepreneur considering the timing of a new market entry, and receiving constructive criticism from a network partner for whom slowing market entry led to a better outcome. If the relationship between these two people is of high ECC, the entrepreneur may be more likely to benefit from this interaction, and may decide to refine how quickly they enter the new market. We posit that if the entrepreneur received the same criticism from a network partner with whom they did not share a high-ECC relationship, the input might be dismissed or discounted. We hold this assumption regarding both black and white entrepreneurs. Thus, we assert that both black and white entrepreneurs in high-ECC relationships will have higher ESE because they will better attend to their social environment via cues and benchmarking from their network partners.

High-ECC connections and positive emotions. High-ECC connections also provide relationship partners with more positive emotions than individuals in low-ECC relationships (Dutton and Heaphy, 2003). Specifically, as compared to low-ECC connections, high-ECC connections are characterized by more vitality, personal regard (i.e. the sense that one is known and understood), and mutual understanding (i.e. feeling an active connection) between relationship partners (Dutton and Heaphy, 2003). Given the positive relationships between positive emotions and self-efficacy (Kirschenbaum et al., 1985) and positive emotions and improved cognition and motivation in task performance (Tams, 2007), we argue that the positive emotions characteristic of high-ECC connections will contribute to higher ESE.

Overall, we assert that entrepreneurs having social network connections characterized by high ECC will have higher relational security, be more self-reflective, be more attentive to their social environment, and experience more positive emotions. These factors should enhance the ESE of any entrepreneur, including white and black entrepreneurs. As previously noted, research suggests that black entrepreneurs have less access to resources. ECC can, to some extent, make up for such lack of resources. ECC helps black entrepreneurs to be more attentive to their social environment, which may help them identify resources not otherwise visible to them. The relational security and self-reflection afforded by high-ECC relationships can also help black entrepreneurs search for resources more actively. The resulting increased access to resources combined with positive emotions can indeed improve the ESE of black entrepreneurs. Therefore, we make the following two hypotheses:

\( H1a. \) The ECC of a white entrepreneur’s social network connections is positively related to his or her ESE.

\( H1b. \) The ECC of a black entrepreneur’s social network connections is positively related to his or her ESE.

Entrepreneurs’ network ethnic diversity: benefit of heterogeneous networks
We argue that, like the ECC of entrepreneurs’ network connections, the ethnic diversity of entrepreneurs’ networks is an understudied contextual factor that influences ESE. We assert that network ethnic diversity benefits both black and white entrepreneurs by countering the effects of racially segregated networks and providing access to more novel information and
more accurate opportunity assessment. Our argument is based upon three premises: heterogeneous networks yield more novel information and more accurate opportunity assessment; social networks are often highly racially segregated, but network ethnic diversity benefits both underrepresented and white entrepreneurs; and network ethnic diversity is related to access to novel information and more accurate opportunity assessment. Below is a detailed discussion of these three premises.

**Heterogeneous networks and novel information.** Social networks are an important source of information for entrepreneurs (Baron *et al.*, 2005), and novel information received from social networks contributes to entrepreneurial activities (Davidsson and Honig, 2003). Research has found that heterogeneity, one of the most direct indicators of social network diversity, is a critical advantage for entrepreneurs (Renzulli *et al.*, 2000). Higher network diversity provides individuals entrée to different societal spheres, enabling them to access novel information (Blau, 1977; Blau and Alba, 1982; Brass, 1984; Ibarra, 1995). Forming network ties with dissimilar others has been found to benefit entrepreneurs by expanding their knowledge through indirect ties to others beyond their immediate circle and by compensating for their biased perceptions about venture start-up (Renzulli *et al.*, 2000).

Reagans and Zuckerman (2001) found that network heterogeneity was significantly predictive of team productivity. Specifically, connections with diverse others provided access to different, information, perspectives, and sets of experiences, which enhanced learning and productivity. That is, heterogeneous networks helped to span structural holes that reflected divisions in the larger social system (Reagans and Zuckerman, 2001). Those with networks that span boundaries between groups tend to have greater access to non-redundant information (Burt, 1982, 1995). In contrast, more homogenous networks fail to span structural holes and tend to have more redundant information (Burt, 1995) because these networks rely on information contained within the homogenous group. Overall, as compared to homogeneous networks, heterogeneous networks provide network members with more novel information, and this is relevant for both black and white entrepreneurs. Additionally, those in heterogeneous networks may make better decisions, as they process information more deeply and make more accurate decisions when assessing opportunities (Apfelbaum *et al.*, 2014).

**Highly racially segregated networks vs ethnically diverse networks.** In the USA, social networks are highly segregated by race; in fact, race and ethnicity are considered to be the biggest divide in US social networks (McPherson *et al.*, 2001). These highly racially segregated networks occur for two main reasons: in the USA, homophily within opportunity structures (US population, workplace interactions, etc.) means that white Americans have more racially homogenous networks than other ethnic groups; and individuals may choose to identify with racially similar others (McPherson *et al.*, 2001). Given the benefits of heterogeneous networks, we argue that racially segregated networks deprive entrepreneurs of novel information contained in the networks of ethnically dissimilar entrepreneurs.

Social network research posits that underrepresented minorities such as black entrepreneurs benefit from network relationships with white individuals because whites have greater social capital and access to experts (Cummings, 1999; Falemo, 1989). However, we argue that white entrepreneurs may also benefit from access to underrepresented ethnic minorities for two key reasons. First, although minorities may have less network access to experts (Cornwell and Cornwell, 2008), ethnic minorities may be just as or more creative than their white network members (Duguid and Goncalo, 2015). Creativity is positively associated with entrepreneurship (Lee *et al.*, 2004; Shalley and Perry-Smith, 2008), and individual creativity is positively related to entrepreneurial opportunity recognition (Ardichvili *et al.*, 2003; Dimov, 2007; Kirzner, 2009), business idea development (Puhakka, 2007), and entrepreneurial intentions (Yar Hamidi *et al.*, 2008). Thus, we argue that access to ethnic minorities may enhance creativity and positively influence entrepreneurial outcomes.
Second, racial discrimination and social exclusion may prevent ethnic minorities from fully engaging in the mainstream economy; thus, these individuals may create ventures that meet needs previously unaddressed by the mainstream (Valdez, 2011). Access to such ventures may provide novel information and business opportunities that have not yet reached the largely white mainstream economy. Hence, white entrepreneurs whose networks include ethnic minorities may be able to tap into opportunities that are less perceptible to White entrepreneurs whose networks are more homogeneous.

**Network ethnic diversity and accurate opportunity assessment.** Given that network heterogeneity is associated with novel information, we argue that network ethnic diversity, a type of network heterogeneity, is also positively associated with novel information and its associated benefits. We contend that both black and white entrepreneurs whose networks are ethnically diverse will benefit from the novel information held by members of previously undertapped communities and that the non-redundant information will likely boost an individual’s ESE (Ozgen and Baron, 2007). These arguments rest on social network theory, which finds that network heterogeneity positively influences access to non-redundant information. Similarly, as network ethnic diversity increases, entrepreneurs will have greater access to non-redundant information and deeper cognition, leading to more accurate opportunity assessment (Apfelbaum et al., 2014). We argue that as entrepreneurs obtain more non-redundant information and engage in more accurate opportunity assessment, they will become more confident in their ability to perform entrepreneurial tasks and roles successfully, and that this holds true for both black and white entrepreneurs. Therefore, we make the following two hypotheses:

**H2a.** The network ethnic diversity of a white entrepreneur’s social network relationships is positively related to his or her ESE.

**H2b.** The network ethnic diversity of a black entrepreneur’s social network relationships is positively related to his or her ESE.

**Method**

In our study, we pursued initial evidence that ESE would be positively related to participation in social networks of higher network ethnic diversity and higher ECC. We anticipated that these ESE relationships would apply for both white and black entrepreneurs regardless of the entrepreneurs’ other demographics and business characteristics (e.g. gender, age, education level, company sales, and company size).

**Research setting and data collection**

A web-based, cross-sectional, anonymous survey was developed and distributed to a random sample of US entrepreneurs. We collected data from the panel provider Qualtrics, who sent an online survey link to individuals each of whom had started and run their own business in the USA. Since we were interested in understanding the proposed relationships for black and white entrepreneurs, we collected survey responses for each of these two dimensions. Our goal was to obtain a minimum of 50 responses for each of the two categories based on our power and sample size calculations (Lenth, 2006).

The questionnaire was sent via Qualtrics to a Qualtrics panel of 2,802 qualified individuals. We instructed Qualtrics to collect 20–25 participants in each of four conditions: black male entrepreneurs, black female entrepreneurs, white male entrepreneurs, and white female entrepreneurs. We provided these specific instructions because of the cost-prohibitive nature of collecting data from panel providers. Further, given our continuing interest in collecting entrepreneurial data, we did not want to contaminate the data source by exposing all panel participants to the current study. Importantly, we used
Qualtrics because the firm vets panel participants to ensure that they are actual entrepreneurs. This increases the likelihood that our results are generalizable to other entrepreneurs. We received a total of 112 completed surveys from business owners. We excluded two responses from our sample because they were outliers in terms of company sales and size, thus leaving sample size of 110. Two test questions were placed in the middle of the survey to ensure respondents were attentive when answering questions (“To make sure the respondents are paying attention to the content of this survey, we ask you to pick the opposite of the word ‘Good’. ” and “To make sure the respondents are paying attention to the content of this survey, we ask you to pick a synonym for the word ‘Beautiful’.”); all 110 respondents selected the correct answers to these questions (“Bad” and “Pretty”, respectively). We used the GPower program to test for the minimum required sample for a hierarchical regression/R² change test to achieve adequate power, based on the number of tested predictors (i.e. our network variables) and total predictor variables. Our sample size of 110 was determined to exceed the minimum requirement.

Tables I–III summarize respondents’ profile information in the categories of demographics, industry, and state location.

**Variable measures**

We studied entrepreneurs’ networks using the name generator methodology (Wasserman and Faust, 1994). The name generator approach has been a standard method for analyzing personal networks (i.e. ego networks; Burt, 1995, 1998), including entrepreneurs’ networks (Aldrich, 1989; Greve and Salaff, 2003; Singh, 2000). Typically, each research participant is presented with one or more questions that elicit a list of names (i.e. alters) of people in the participant’s network. The size of the name list requested varies depending on the nature of the study but is usually five at a minimum (see, e.g. Renzulli et al., 2000; Diaz Garcia and Carter, 2009). The researcher can then analyze the network based on its structure.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Number of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>54</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>White</td>
<td>56</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>54</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Female</td>
<td>56</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>110</td>
<td>49.03</td>
<td>13.18</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td>110</td>
<td>4.25</td>
<td>1.47</td>
</tr>
</tbody>
</table>

**Table I. Respondent demographics**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional, scientific, or technical services</td>
<td>19</td>
</tr>
<tr>
<td>Retail trade</td>
<td>17</td>
</tr>
<tr>
<td>Other services (except public administration)</td>
<td>8</td>
</tr>
<tr>
<td>Construction</td>
<td>7</td>
</tr>
<tr>
<td>Arts, entertainment, or recreation</td>
<td>5</td>
</tr>
<tr>
<td>Finance or insurance</td>
<td>5</td>
</tr>
<tr>
<td>Real estate or rental and leasing</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table II. Respondents’ industries**

*Note: Only industries with more than three responses are listed*
We used the following name generator question to record a five-person network for each entrepreneur: “Please list the names of five (5) people with whom you most regularly discuss business matters and respond to the following questions about each contact.” Each respondent provided five names. We then asked the participants to identify the ethnicity of the contact and to respond to questions related to ECC between the entrepreneur and the contact person.

**Emotional carrying capacity.** The ECC of the entrepreneurs’ network was calculated using three items related to ECC for each contact in their network (Stephens et al., 2013). A five-point Likert scale was used for each item (ranging from 1 for “strongly disagree” to 5 for “strongly agree”). Sample items included “I can fully express my emotions to this person” and “When we interact with each other, we express both positive and negative feelings to each other.” The average (across the five-person network) Cronbach’s α score for ECC was 0.89. Factor analysis yielded one component consisting of all three items explaining, on average, 83 percent of the variance. The lowest component loading for any item was 0.80. The mean score for ECC across each entrepreneur’s five-person network was 4.07.

**Network ethnic diversity.** Entrepreneur respondents identified the ethnicity of each contact in their network by selecting one of the following responses: “White/Caucasian”, “African American”, “Hispanic”, “Asian”, “Native American”, “Pacific Islander”, and “Other.” Roughly 90 percent of the network across the entire sample was of either white/Caucasian or African American, with the remaining 10 percent distributed across the other ethnic groups.

To measure the diversity of a group with regard to a nominal feature such as ethnicity or gender, researchers generally employ the Blau index of heterogeneity (Baum et al., 2000; Blau, 1977). The Blau index is calculated using the formula $1 - \sum p_i^2$, where $p$ is the proportion of group members in a given category and $i$ is the number of different categories of the feature across all groups. Higher Blau index scores indicate a greater diversity in the network. For example, an entrepreneur who has four white/Caucasian network contacts and one African American network contact has a Blau index score of $1 - ((0.8)^2 + (0.2)^2) = 0.32$.

Ethnic diversity network scores ranged from 0 to 0.80 across the sample of 110 respondents, with a mean of 0.24. Several of the respondents had a completely homogeneous ethnic network (i.e. all network members were of one ethnic group), corresponding to the minimum Blau index of 0, thus producing the low overall mean network ethnic diversity.

**Entrepreneurial self-efficacy.** ESE was measured using a six-item scale reflecting the entrepreneur’s general belief in his or her capabilities to grow his or her business (DeNoble et al., 1999). A five-point Likert scale was used for each item (ranging from 1 for “strongly disagree” to 5 for “strongly agree”). Sample items included “I can work

<table>
<thead>
<tr>
<th>State</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>14</td>
</tr>
<tr>
<td>Ohio</td>
<td>9</td>
</tr>
<tr>
<td>Georgia</td>
<td>7</td>
</tr>
<tr>
<td>Florida</td>
<td>6</td>
</tr>
<tr>
<td>Virginia</td>
<td>6</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>5</td>
</tr>
<tr>
<td>Michigan</td>
<td>5</td>
</tr>
<tr>
<td>New York</td>
<td>5</td>
</tr>
<tr>
<td>Colorado</td>
<td>4</td>
</tr>
<tr>
<td>Illinois</td>
<td>4</td>
</tr>
<tr>
<td>South Carolina</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: Only states with more than three responses are listed.

---

Case of black and white entrepreneurs

<table>
<thead>
<tr>
<th>Table III. Respondents across states</th>
</tr>
</thead>
</table>
| California 14
| Ohio 9
| Georgia 7
| Florida 6
| Virginia 6
| Massachusetts 5
| Michigan 5
| New York 5
| Colorado 4
| Illinois 4
| South Carolina 4

111
productively under continuous stress, pressure, and conflict” and “I can originate new ideas and products.” ESE has been assessed using a general self-efficacy measure (e.g. Markman et al., 2005), which assesses multiple specific dimensions of entrepreneurship (DeNoble et al., 1999), or more recently using a measure that assesses the general entrepreneurial task domain (Baum and Bird, 2010; Bullough et al., 2014; Cassar and Friedman, 2009; Dimov, 2010; Hopp and Stephan, 2012; Murnieks et al., 2014; Zhao et al., 2005). Given our theoretical interest in entrepreneurs’ overall ESE and considering time limitations on our study, we utilized a measure of self-efficacy for the general entrepreneurial task domain.

Reliability testing was carried out using Cronbach’s α measures, whereas factor analysis was conducted using principal components extraction (eigenvalues > 1). The Cronbach’s α score for ESE was 0.83. Factor analysis yielded one component consisting of all six items, explaining 54 percent of the variance. The lowest component loading for any item was 0.62. The mean score for ESE was 4.22.

Entrepreneur’s ethnicity. Our sample consisted of 56 white and 54 black entrepreneurs. White entrepreneurs were coded as 0, and black entrepreneurs were coded as 1.

Control variables
We included several control variables because previous research has shown that certain entrepreneurs’ demographics and the characteristics of their business and industry may have an impact upon their self-efficacy and the types of personal networks that they form.

Entrepreneur’s gender. Previous research indicates there are gender-specific barriers to entrepreneurial success and the general process of new business development (Murphy et al., 2007). Further, gender influences the types of ties in the entrepreneur’s network (Kwon and Arenius, 2010). For example, women entrepreneurs have been found to have a higher proportion of family members in their network (Greve and Salaff, 2003). There were 54 male and 56 female respondents in our sample. Male entrepreneurs were coded as 0, and female entrepreneurs were coded as 1.

Entrepreneur’s age. Older individuals tend to have larger social networks (Renzulli et al., 2000). They also tend to have accumulated more social capital and financial resources, thereby reducing the need for external support in starting and growing a business (Parker, 2004). The ages of entrepreneurs in our sample ranged from 22 to 75 years and averaged 49 years.

Entrepreneur’s education level. An owner’s education level may impact the amount of knowledge and network support they may need and their overall entrepreneurship success (Diochon et al., 2008; Samuelsson and Davidsson, 2009). Respondents were asked to select their highest level of education completed from the following list:

(1) Less than high school (< 1 percent of respondents).
(2) High school/GED (9 percent).
(3) Some college (29 percent).
(4) Two-year college (14 percent).
(5) Four-year college (28 percent).
(6) Master’s degree (15 percent).
(7) Doctoral degree (2 percent).
(8) Professional degree (JD, MD; 3 percent).

The mean response score was 4.3, with a range of 1 to 8 across the sample.

Company sales. Company sales and size can impact the types of relationships entrepreneurs form because smaller companies with few financial resources often deal with
more uncertainty regarding resource requirements and sources. This circumstance, in turn, may influence the owner’s personal contacts used to access these types of resources. We used a self-report measure of revenue for the most recent year; the mean revenue for our sample was $458,383. A log_{10} transformation was used in the analysis (e.g., revenue of $458,383 corresponds to a logarithmic measure of 5.66).

Company size. We measured company size by asking owners the number of full-time employees they employed in the most recent year. The mean company size in our sample was ten employees. Survey responses regarding company size were coded into one of the following three categories, which represented roughly equal-sized groups of responses:

1. one full-time employee (just the owner);
2. two to four full-time employees; and
3. more than four full-time employees.

Results
Table IV lists descriptive statistics and correlations for each variable in the model. Because there were no very high correlations (i.e. > 0.7) among the predictor variables, multicollinearity was not an issue.

Hierarchical multiple regression analysis was used to test the four hypotheses (see Tables V and VI). We used hierarchical regression because we wanted to test the differential impacts of the network variables between black and white entrepreneurs upon ESE, above and beyond control variables such as demographic variables regarding the entrepreneur and his or her business. A normal probability plot comparing the distribution of standardized residuals to a normal distribution was conducted to ensure the normal distribution of the data in our sample. The data were split based on the owner’s ethnicity to allow testing of the hypotheses for each group. Table V shows the results for white entrepreneurs and Table VI shows the results for black entrepreneurs.

Model 1 represented the relationships among the control variables and our dependent variable ESE, whereas Model 2 represented the addition of the network ethnic diversity and ECC variables to Model 1.

For white entrepreneurs, business size was positively correlated with ESE, perhaps indicating that as entrepreneurial businesses grow in size, and coordination among labor and other resources becomes necessary, ESE plays a larger role. However, it

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Entrepreneur gender</td>
<td>0.51</td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Entrepreneur age</td>
<td>49.03</td>
<td>13.18</td>
<td>−0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Entrepreneur education</td>
<td>4.25</td>
<td>1.47</td>
<td>−0.22**</td>
<td>0.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Entrepreneur ethnicity</td>
<td>0.49</td>
<td>0.50</td>
<td>0.02</td>
<td>−0.40****</td>
<td>−0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Company sales (\log_{10})</td>
<td>4.78</td>
<td>1.26</td>
<td>−0.33****</td>
<td>0.04</td>
<td>0.14</td>
<td>−0.20**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Company size</td>
<td>1.99</td>
<td>0.80</td>
<td>−0.24**</td>
<td>−0.18*</td>
<td>0.11</td>
<td>−0.15</td>
<td>0.43****</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) Emotional carrying capacity</td>
<td>4.07</td>
<td>0.58</td>
<td>0.24**</td>
<td>−0.07</td>
<td>−0.09</td>
<td>−0.01</td>
<td>0.00</td>
<td>0.17*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Network ethnic diversity</td>
<td>0.24</td>
<td>0.25</td>
<td>−0.09</td>
<td>−0.24**</td>
<td>0.02</td>
<td>0.43****</td>
<td>−0.07</td>
<td>0.18*</td>
<td>−0.20**</td>
<td></td>
</tr>
<tr>
<td>(9) Entrepreneur self-efficacy</td>
<td>4.22</td>
<td>0.57</td>
<td>0.03</td>
<td>−0.24**</td>
<td>0.00</td>
<td>0.19**</td>
<td>0.12</td>
<td>0.26***</td>
<td>0.45****</td>
<td>0.26***</td>
</tr>
</tbody>
</table>

Table IV. Descriptive statistics and correlations

Notes: \(n = 110\). \(*p < 0.1\); \(**p < 0.05\); \(***p < 0.01\); \(****p < 0.001\)
is important to note that after all the network variables were added to the model, business size was no longer statistically significant, revealing the relative importance of network (i.e. contextual) variables over company demographics with regards to ESE.

The results of Model 2 supported \( H1a \). There was a significant positive relationship between a white entrepreneur’s ECC and ESE. \( H2a \) was also supported. There was a strong, positive relationship between a white entrepreneur’s network ethnic diversity and ESE. The overall \( R^2 \) for Model 2 was 0.36, which was statistically significant at \( p < 0.01 \). The change in the \( F \)-statistic from Model 1 to Model 2 was also significant. Of the two network predictor variables, network ethnic diversity had the highest effect size with a standardized coefficient of 0.42, which was statistically significant at \( p < 0.01 \).

For black entrepreneurs, no control variables were statistically significant in Models 1 or 2. The results of Model 2 support \( H1b \). There was a strong, positive relationship between a black entrepreneur’s ECC and ESE. However, \( H2b \) was not supported. There was no significant relationship between a black entrepreneur’s network ethnic diversity and ESE. The overall \( R^2 \) for Model 2 was 0.45, which was statistically significant at \( p < 0.001 \). The change in the \( F \)-statistic from Model 1 to Model 2 was also significant.

### Table V.
Standardized results of regression analysis to predict entrepreneurial self-efficacy of white entrepreneurs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (y intercept)</td>
<td>4.12****</td>
<td>2.16**</td>
</tr>
<tr>
<td>Entrepreneur gender</td>
<td>0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Entrepreneur age</td>
<td>-0.16</td>
<td>-0.02</td>
</tr>
<tr>
<td>Entrepreneur education</td>
<td>-0.10</td>
<td>-0.05</td>
</tr>
<tr>
<td>Company sales (log10)</td>
<td>-0.03</td>
<td>0.13</td>
</tr>
<tr>
<td>Company size</td>
<td>0.36**</td>
<td>0.11</td>
</tr>
<tr>
<td>Emotional carrying capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network ethnic diversity</td>
<td>0.18</td>
<td>0.36</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.18</td>
<td>0.42****</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>0.09</td>
<td>0.27</td>
</tr>
<tr>
<td>SE</td>
<td>0.57</td>
<td>0.51</td>
</tr>
<tr>
<td>( F )</td>
<td>2.14*</td>
<td>3.89****</td>
</tr>
<tr>
<td>Significance of change in ( F ) vs prior model</td>
<td>( p &lt; 0.01 )</td>
<td></td>
</tr>
</tbody>
</table>

Notes: \( n = 110 \). Values represent standardized coefficients. *\( p < 0.1 \); **\( p < 0.05 \); ***\( p < 0.01 \); ****\( p < 0.001 \)

### Table VI.
Standardized results of regression analysis to predict entrepreneurial self-efficacy of Black entrepreneurs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (y intercept)</td>
<td>3.79****</td>
<td>1.74****</td>
</tr>
<tr>
<td>Entrepreneur gender</td>
<td>0.20</td>
<td>-0.13</td>
</tr>
<tr>
<td>Entrepreneur age</td>
<td>-0.14</td>
<td>-0.14</td>
</tr>
<tr>
<td>Entrepreneur education</td>
<td>0.11</td>
<td>0.18</td>
</tr>
<tr>
<td>Company sales (log10)</td>
<td>0.28</td>
<td>0.20</td>
</tr>
<tr>
<td>Company size</td>
<td>0.09</td>
<td>-0.06</td>
</tr>
<tr>
<td>Emotional carrying capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network ethnic diversity</td>
<td>0.13</td>
<td>0.45</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.13</td>
<td>0.70****</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>0.04</td>
<td>0.36</td>
</tr>
<tr>
<td>Standard error</td>
<td>0.51</td>
<td>0.41</td>
</tr>
<tr>
<td>( F )</td>
<td>1.48****</td>
<td>5.31****</td>
</tr>
<tr>
<td>Significance of change in ( F ) vs prior model</td>
<td>( p &lt; 0.001 )</td>
<td></td>
</tr>
</tbody>
</table>

Notes: \( n = 110 \). Values represent standardized coefficients. *\( p < 0.1 \); **\( p < 0.05 \); ***\( p < 0.01 \); ****\( p < 0.001 \)
In addition to the hypothesis testing results, we observed that black entrepreneurs had higher levels of ESE than white entrepreneurs ($M = 4.11$ for white entrepreneurs and $4.35$ for black entrepreneurs). This difference was significant ($F = 5.07, p < 0.05$). We also found that black entrepreneurs had more ethnically diverse networks than white entrepreneurs ($M = 0.14$ for white entrepreneurs and $0.34$ for black entrepreneurs). This difference was significant ($F = 23.45, p < 0.001$).

**Discussion**

Our study results provide evidence that the ECC and the network ethnicity of a white entrepreneur’s social network relationships are both positively related to his or her ESE. Importantly, when all of the network variables were entered into the model, owner and business demographic variables were no longer significant. We stress this result as it indicates the relative significance of contextual variables beyond company and entrepreneur demographics with regards to ESE. Further, both ECC and network ethnic diversity independently influence ESE for white entrepreneurs. Therefore, they are complementary, not substitutive, to the contribution of ESE.

For black entrepreneurs, we found evidence of ECC only—not network ethnic diversity—influencing ESE. As predicted, ECC was beneficial to the ESE of both white and black entrepreneurs but network ethnic diversity was only beneficial to the ESE of white entrepreneurs. At the same time, we found that black entrepreneurs’ networks are more ethnically diverse than White entrepreneurs and this may be why they may not specifically benefit from network ethnic diversity. That is, because black entrepreneurs’ networks, as compared to white entrepreneurs’ networks, are already characterized by higher ethnic diversity, black entrepreneurs may not reap the additional benefits that white entrepreneurs do when they increase the ethnic diversity of their networks.

Entrepreneurship is a popular and important pursuit, yet many entrepreneurs fail. Improving ESE is a promising path, as the construct has been linked to various positive entrepreneurial outcomes. Our research had two primary aims. First, we wanted to test whether the ECC of relationships in entrepreneurial networks was positively related to ESE. We posited the positive ECC–ESE relationship because ECC provides both black and white entrepreneurs the opportunity to receive and process constructive criticism, obtain encouragement, and reflect on themselves and the social environment (e.g. helpful cues, benchmarking) in a positive emotional context.

Second, we hope that our research will encourage scholars to acknowledge that white entrepreneurs do benefit from connecting with black network actors, which can provide them with unique and valuable resources. At the same time, it is important to highlight the fact that black entrepreneurs had higher levels of ESE compared to white entrepreneurs and this may be a contributing factor to their recent entrepreneurial advancements.

Our research findings have important implications to the entrepreneur practitioner. Entrepreneurs need access not only to physical and financial resources but also to social relationships that provide an environment for learning, experimentation, and support. Unfortunately, most entrepreneurs build their personal networks from convenient ties such as close family and friends, a practice that often produces biases and redundancies. Our findings strongly suggest that entrepreneurs should build their networks strategically, looking for partners who can provide high-quality relationships through emotional support and diversity of perspective. The diversity aspect is especially crucial for white entrepreneurs. Additionally, entrepreneurship education programs should discuss ECC and network ethnic diversity when educating potential entrepreneurs about avenues to increase entrepreneurial success.

We can offer some recommendations for both black and white entrepreneurs regarding how to build networks strategically. The entrepreneur needs to perform continuous
self-evaluation and reflection on their network portfolio to ensure as few gaps and biases as possible. Network assessments can be made to measure the quality of connections and ethnic diversity. Coaches or mentors can offer personalized help in these areas. White entrepreneurs specifically need to make sure that they connect with diverse individuals given that these individuals can provide them with novel information.

One limitation of our research is that the cross-sectional design of our study precludes the ability to make causal inferences. The relationships that we found between ECC and ESE and network ethnic diversity and ESE could be reciprocal, meaning that our theorized independent variables could be dependent variables. For example, an entrepreneur with higher ESE may be more likely to have a social network characterized by relationships with higher ECC or higher network ethnic diversity. A future course of study would be to conduct longitudinal research to elucidate such possible causality. In addition, the cross-sectional nature of the study prohibits us from understanding how ESE, ECC, and network ethnic diversity have emerged over time. Given that we do not know the age of the businesses in the sample, it is possible that increases in ESE result from entrepreneurs’ experience in the field rather than ECC or network ethnic diversity. Future research could use longitudinal approaches and consider business age to further examine the relationships discussed herein.

Future research could also expand on the conceptualization and operationalization of the entrepreneur’s network. Ties among the entrepreneur’s network contacts (i.e. alters) could be measured through survey questions answered by the entrepreneur. Such study would allow one to analyze the entrepreneur’s network by means of critical network metrics such as density, cohesion, and fragmentation, and to study the role that the entrepreneur plays in the network, such as the broker role. This research would yield interesting analysis on the relationships between different start-up network structures and indicators of entrepreneurial success such as ESE.

Finally, our network ethnic diversity variable only addressed ethnicity and did not take into account that the experience of ethnicity may shift when ethnicity intersects with other demographic variables (e.g. gender, sexual orientation, and/or social class; Crenshaw, 1989). Future research might employ an intersectional research methodology allowing for more granular investigation of the interactive relationships between various demographic variables and entrepreneurial outcomes.

Conclusion

While ESE is not a panacea (Chen et al., 1998), we believe that our study provides encouraging news for entrepreneurs and entrepreneurship researchers. We hypothesized that ECC and network ethnic diversity improve the ESE of black and white entrepreneurs. Our findings suggest that black and white entrepreneurs may experience increased ESE if they proactively manage their networks to include relationships with high ECC. Further, white entrepreneurs’ ESE may also be increased by increasing network ethnic diversity. In comparison, we believe that black entrepreneurs’ ESE was not improved by network ethnic diversity given that their networks are already more ethnically diverse. The benefits of such ethnically diverse networks might have impacted other entrepreneurial outcomes such as their recent advancement in entrepreneurship.

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Immigrant entrepreneurs in the USA

A conceptual discussion of the demands of immigration and entrepreneurial intentions

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Abstract
Purpose – Given the growing number of immigrant entrepreneurs in the USA, the purpose of this paper is to better understand the behaviors of this subgroup of entrepreneurs. Specifically, the paper aims to understand the unique challenges faced by immigrant entrepreneurs and how environmental challenges affect decisions to grow or abandon their ventures.

Design/methodology/approach – To make the theoretical arguments in this conceptual paper, the authors draw on the theory of planned behavior developed by Ajzen (1985), which suggests that a person’s behavior is predicted by their intention, and intentions are predicted by one’s attitudes, subjective norm and perceived behavioral control.

Findings – The paper provides theoretical insights on the effect of demands of immigration on the intentions of immigrant entrepreneurs to engage in three specific entrepreneurial behaviors: new venture formation, growth and abandonment. The authors propose that immigrant entrepreneurs deal with increased stress yet continue to maintain higher intentions to found new ventures compared to non-immigrants. Contrastingly, the authors also propose that the stress and obstacles immigrant entrepreneurs face reduce their intentions to grow their firms and increase their intentions to abandon their firms. The authors also explore entrepreneurial resilience as a possible moderating factor between stress and entrepreneurial intentions of immigrant entrepreneurs.

Research limitations/implications – First, the authors do not distinguish between immigrants from different nations or parts of the world or having different backgrounds. Second, the authors do not fully develop or incorporate the element of coping. Also, our paper is limited to behaviors of immigrant entrepreneurs with micro- and small-businesses.

Practical implications – Venture capitalists could benefit from empirical results of these propositions as funding decisions may need to include consideration of the proposed effects of stress and demands of immigration.

Originality/value – This paper meets an identified need to examine the effects of immigrant-specific issues such as the demands of immigration on the behaviors of this growing group of entrepreneurs.

Keywords Stress, Resilience, Growth, Entrepreneurial intentions, Abandonment, Immigrant entrepreneur

Paper type Conceptual paper

Introduction
Regardless of one’s perspective on the value of immigrants to the USA, the number of immigrants in the USA continues to rise. According to the US Census Bureau, the population of all immigrants in the USA is now over 40 million, and is the highest it has been in close to a century (Camarota and Zeigler, 2016). Relative to the general population, immigrants are twice as likely to found new ventures than non-immigrants (Vandor and Franke, 2016). In 2015, the Kauffman Foundation reported that over a quarter of new business ventures in the USA were founded by immigrants, compared to 13.3 percent in 1997. Immigrants clearly represent a sizeable portion of the total population and studies on
immigrant entrepreneurship suggest that immigrant entrepreneurs have been fostering economic development both directly through new venture creation and indirectly through coordination of information flows between their home and host countries, thereby promoting international trade and investment (Das et al., 2017; Saxenian, 2000). Additionally, immigrants bring fresh perspectives, energy and an enterprising spirit to the economy (Savino, 2014).

Given immigrants' growing numbers and significance to the US economy, it is important to better understand the behaviors of this subgroup of entrepreneurs. More specifically, the actions and behaviors of entrepreneurs determine entrepreneurial outcomes (Sharma et al., 2003; Stevenson and Jarillo, 1990). Entrepreneurial behaviors are determined by a combination of the person and his/her environment (Muchinsky and Monahan, 1987). Venture creation and venture growth are two types of entrepreneurial behavior that have been studied in the existing literature (Javadian, 2014).

At the heart of entrepreneurship is venture creation (Shook et al., 2003), described as planning, organizing and establishing new organizations (Gartner, 1985). Venture creation generates value for both the entrepreneur and stakeholders of the venture they create (Williams and Shepherd, 2016). Following venture creation, venture growth has been identified as the next most important indicator of venture success (Baum et al., 2001; Low and MacMillan, 1988), and research has linked new venture growth to both job creation and regional development (Acs and Armington, 2006). Some have proposed that new ventures follow a "grow or exit" logic (Wennberg et al., 2016), by which new venture growth is considered appealing if the venture holds a promise of profitability.

In addition to the behaviors of venture creation and growth, many firms fail due to circumstances that may be within or beyond the control of the entrepreneur (Headd, 2003; Khelil and Helene, 2014) and, thus, venture abandonment is the third key behavior. Entrepreneurs may decide to abandon failing ventures when prospects of growth are low. While existing research on immigrant entrepreneurship clearly shows that immigrants' venture-founding behavior is more prevalent than that of non-immigrants, less is known about why they found ventures, their intention to grow their businesses, or how and when they decide to abandon their ventures. Given that intention has been found to be the best predictor of behavior (Ajzen, 1991; Fishbein and Ajzen, 1977), researchers can study entrepreneurs' intentions to better understand and predict their actual behaviors. Entrepreneurial intention signifies a person's commitment to creating a new venture and shapes entrepreneurs' decisions regarding venture creation, growth and closure by inspiring their goals and commitment (Bird, 1988; Zapkau et al., 2015).

As an analogy, a person who decides to build a house has a higher likelihood of actually building the house than someone who has no such intention. Similarly, in entrepreneurship, intentions have been found to predict entrepreneurial behavior (Bird, 1988).

According to the theory of planned behavior, these intentions are impacted by the attitude, subjective norm and perceived behavioral control (PBC) of an entrepreneur (Ajzen, 1991; Kautonen et al., 2015; Krueger et al., 2000). Attitude refers to a person's evaluation (favorable or unfavorable) of a proposed behavior, subjective norms encapsulates the views of some referent social groups (such as family and friends) concerning whether the person should engage in the behavior and PBC represents the person's perception of how easy or difficult it is to perform the behavior (Ajzen, 1991, 2011; Kautonen et al., 2015). Furthermore, intention fully mediates the effects of attitude and subjective norms upon behavior, whereas PBC plays a double role in the theory of planned behavior (Kautonen et al., 2015). Specifically, when an individual has a very high degree of control over a behavior, intention fully mediates the effect of PBC, but when there are difficulties with control, PBC is also expected to have a partial mediating effect by serving as a proxy for actual behavioral control (Ajzen, 1985, 1991; Kautonen et al., 2015).
Like other behaviors, entrepreneurial behavior is a function both of the person and the environment with which they interact (Bird, 1989; Lewin, 1936). Entrepreneurial behaviors, therefore, involve interactions of the entrepreneur and the situations and contexts that surround them. From an entrepreneurship perspective, immigrants face unique challenges that native citizens do not. Among other things, immigrants encounter immigration stress (Falconier et al., 2013; Sternberg et al., 2016), demands of immigration (Aroian et al., 1998) and liability of newness (Das et al., 2017) which impact their lives and decisions in various ways. Since stress has been found to significantly predict physical and mental health, job satisfaction and the intention to quit one’s job (Leong et al., 1996), it is possible that immigrant entrepreneurs’ experiences of stress may differ from those of non-immigrants, and further, it is likely that their decisions, intentions and behaviors may also be impacted by these experiences.

To deal with the stressful conditions they face, entrepreneurs need certain resources and competencies. Resilience has been defined as a form of psychological capital (Luthans et al., 2006; Luthar et al., 2000) and competency (Morris et al., 2013) necessary for successful adaptation to the challenges encountered in entrepreneurship. Entrepreneurial resilience (Awotoye and Singh, 2017; Bullough and Renko, 2013) is conceived as resilience in specific entrepreneurial settings which enables entrepreneurs to positively adapt and recover from high-impact challenges that could lead to firm failure. We define entrepreneurial resilience as the ability of an entrepreneur to positively adapt and recover from any high-impact challenge that has the ability to result in any form of failure such as liquidation, bankruptcy or closure of the business. These high-impact challenges include factors that have been shown to cause firm failure, such as problems with venture capitalist relationships, major product recalls, intense competition and intellectual property theft (Bruno and Leidecker, 1988; Lussier, 1996). Immigrant entrepreneurs may benefit more from entrepreneurial resilience given the additional demands of immigration they have to manage.

In this paper, we contribute to the literature on entrepreneurial intentions by examining the effects of the stressful conditions immigrants face upon their decisions regarding entrepreneurial activities. We explore immigrant entrepreneurs by focusing on their intentions with respect to three entrepreneurial behaviors: venture creation, growth and abandonment. In addition, we consider the unique demands and stress that immigrants deal with, as well as the potential benefits of entrepreneurial resilience. Following the literature review in the next section, we develop five theoretical propositions. In our discussion section, we expand on the theoretical/practical implications and the limitations of this work, and propose future research directions. Finally, we offer some concluding thoughts.

**Literature review**

**Immigrant entrepreneurship**

We begin by discussing what we know so far about immigrant entrepreneurs. According to Castles et al. (2013), the movement of immigrants into many developed countries has become prevalent in the last few decades. The economic implications of such movement represent a challenge that these countries have had to deal with. In particular, immigrants have limited access to necessary resources such as human, social and financial capital (Bird and Wennberg, 2016), resulting in reduced opportunities and consequently lower labor participation than natives (Bates, 2011). This has been identified as a major cause of the high participation rate of immigrants in entrepreneurship in developed countries (Bird and Wennberg, 2016; Chaganti et al., 2008), since entrepreneurship offers immigrants an avenue for economic integration in their host countries.

Immigrants play a significant role in the economy of the host country primarily because they have potential to alter the employment statistics of the nation (Carbonell et al., 2014). Specifically, immigrant entrepreneurs are key players in determining the level and type of
market competition in the host country market and significantly contribute to GDP (Carbonell et al., 2014). Hence, immigrant entrepreneurship remains a vital subject of study in the entrepreneurship literature.

Literature examining immigrant entrepreneurship has also attempted to provide some explanations for why and how individual immigrants undertake entrepreneurial activities (Vinogradov and Jørgensen, 2017). Theories and perspectives such as the middleman minority theory (Bonacich, 1973; Wingfield and Taylor, 2016); selective migration (Audretsch et al., 2017); ethnic enclave viewpoint (Achidi and Priem, 2011; Aldrich and Waldinger, 1990; Zhang et al., 2016); social capital and use of ethnic resources (Sanders and Nee, 1996; Vinogradov and Jørgensen, 2017); and mixed embeddedness perspective (Kloosterman, 2010; Kloosterman et al., 2016) have been employed to explain immigrant entrepreneurship. Despite the increasing amount of research associated with these theories, there remains a gap in the literature regarding the effects of the stress associated with immigration upon the entrepreneurial behaviors and intentions of immigrant entrepreneurs.

The entrepreneurial environment, demands of immigration, and stress

Immigrants are defined as people who have come to settle in a country that is not originally theirs (Wickramagamage, 1992), or those who are foreign born (Wang and Liu, 2015). While the reasons for relocating differ from immigrant to immigrant, they tend to relocate to places that offer them some form of economic, political, religious or security advantage (Hagen-Zanker, 2008). Upon relocating, they encounter stressful and demanding situations, which require them to successfully adapt to be able to succeed.

For all entrepreneurs, the environment and context within which they operate have been described as uncertain, volatile, stressful, ambiguous and even lonely (Best, 2014; Morris et al., 2012). Entrepreneurs may be exposed to high-impact challenges such as unpredictable and rapidly changing environments, work overload, personal responsibility for others (Baron et al., 2016), product design/timing problems, inappropriate distribution strategies, unclear business definition, initial undercapitalization, problems with venture capitalist relationships, team discord, major personal issues, major product recall, changes in economic climate (recession), changes in political climate, intellectual property theft, intense competition (Altman, 1983; Lussier, 1996), risk, income and outcome uncertainty, intense work effort and long working hours (Uy et al., 2013), and other challenges which they may not encounter outside of their entrepreneurial settings.

The effects of these challenges upon the entrepreneur manifest as stress (Best, 2014). According to Best (2014), sources of stress for entrepreneurs include occupational demands, responsibility for others and environmental factors. These stressful events negatively impact both their performance and their contemplations regarding whether to do certain things regarding the business. Hence, when entrepreneurs feel stressed, it is likely that both their behaviors and their intentions will be affected.

For immigrant entrepreneurs, stress levels are likely to be heightened because of the additional challenges they face in adapting to a new society. Toward this end, Aroian et al. (1998) identified six dimensions of the demands of immigration that immigrants to the US face: loss, novelty, occupational adjustment, language barrier, discrimination and not feeling at home. Loss is defined as an unresolved attachment to things or people left behind in one’s home country. A second dimension, novelty, relates to one’s newness or unfamiliarity with the host country. Novelty could lead to inability to access necessary information for success in the host country. Occupational adjustment refers to difficulty finding employment or having to take on a lower status. Language barrier is defined as an immigrant’s subjective opinion regarding their proficiency in English language as spoken in the USA. The fifth dimension is discrimination, which could be blatant or subtle. For example, in the USA, it relates to the notion that immigrants do not belong in the USA and should not be granted
Entrepreneurial intentions and the theory of planned behavior

Bird (1988) defines entrepreneurial intentions as the states of mind of entrepreneurs which guide their attention, experiences and action toward a business concept, and also sets the form and direction of the organization right from inception. Entrepreneurial intentions shape the decisions of entrepreneurs regarding venture creation, growth and closure by inspiring entrepreneurs’ goals and commitment (Bird, 1988). To better understand the antecedents of intention, we turn to the theory of planned behavior, an extension of the theory of reasoned action that includes PBC (Ajzen, 1985).

The theory of planned behavior is one of the major theories in psychology that attempts the difficult task of explaining human behavior in specific contexts (Ajzen, 1991). Based on the theory of reasoned action, the theory of planned behavior assumes that human social behavior follows along lines of well-formulated plans (Ajzen, 1985). A person’s intention is the indirect result of their beliefs, or the direct result of their attitude, subjective norm or PBC (Ajzen, 1991, 2001). In the words of Krueger et al. (2000), “intentions in general depend on perceptions of personal attractiveness, social norms, and feasibility” (p. 412).

Krueger et al.’s (2000) empirical evaluation of competing models of intention provided support for the theory of planned behavior by upholding the argument that intention is the single best predictor of behavior. However, they also found that the effects of personal and situational factors upon intention are mediated by a person’s attitude and motivation to act. Ajzen (2005) defines attitude as a disposition to react positively or negatively to an object, person, institution or event. One’s attitude toward entrepreneurship therefore determines one’s entrepreneurial intentions. Another predictor of intentions is related to PBC, which refers to people’s opinion of the ease or difficulty of performing a behavior of interest (Ajzen, 1991). Subjective norms, which stem from the opinions of some important or referent others, also determines people’s intentions. While all three of these predictors are relevant, herein we focus more specifically on PBC, as stress may impact the entrepreneur’s feeling of control. In the following section, we develop specific propositions related to immigrant entrepreneurs and their intentions regarding venture creation, growth and abandonment.

Theoretical propositions

Demands of immigration and stress

According to Yakhnich (2008), immigration is a potentially stressful event which is likely to increase a person’s risk of negative psychological symptoms such as anxiety, depression, and psychosomatic complaints. Aroian et al. (1998) found that many immigrants have to deal with substantial changes in lifestyle and therefore experience comparatively greater emotional distress than the non-immigrants in their host countries. Immigration demands relating to loss (unresolved attachment to people or things back in the home country), discrimination and not feeling at home in the new country (Aroian et al., 1998) are stressors which can negatively impact an immigrant entrepreneur’s attitudes and PBC regarding business continuity. Immigration demands imply additional psychological difficulties on top of usual work stressors (Pung et al., 2017). Entrepreneurs who are immigrants are not exempt from the usual high-impact challenges that characterize entrepreneurship. In fact, the presence of immigration demands may heighten the effect of these challenges. Consequently, we argue that the addition of immigration demands increases the amount of
stress that immigrants must deal with relative to non-immigrants in the USA. More formally, we propose the following:

\[ P1. \] Immigrant entrepreneurs will experience higher levels of stress than non-immigrant entrepreneurs.

**Venture creation intention**

Antecedents of venture creation intention are related to personal attractiveness, social desirability and perception of control over the process (Krueger et al., 2000). A person who views new venture creation favorably will be more likely to create a venture than a person whose attitude toward it is negative (Liñán et al., 2011) because attitude predicts intentions. Such attitudes are based on beliefs, which could be developed as a result of experiences (Myers et al., 2013). Similarly, those who feel that they have some measure of control over the entrepreneurial process, or some support and validation from some important other, will be more likely to indicate intentions to create a venture relative to those who feel otherwise or lack necessary support. Consequently, one’s attitude, social networks (Chen and He, 2011; Davidsson and Honig, 2003) and experiences (Zapkau et al., 2015) have the ability to influence one’s intention to create a venture.

Attempting to extend Bird’s (1988) model of entrepreneurial intention, Boyd and Vozikis (1994) posit that a person’s self-efficacy reflects their perception of control, and hence impacts their intention to create a new venture. PBC describes the perception of how easy or difficult it is to do something, indicating both the individual’s past experience and their anticipation of future challenges (Ajzen, 1987). This definition suggests that PBC may be impacted by factors such as stress and demands encountered in the past or present. Immigrants have been found to experience challenges resulting from immigration demands including loss, novelty, occupational adjustment, language accommodation, discrimination and not feeling at home (Aroian et al., 1998). Based on the theory of planned behavior, the resulting stress of immigration (Sternberg et al., 2016) would be expected to negatively impact immigrant entrepreneurs’ PBC and subsequently, their entrepreneurial intentions.

As noted by Welter (2011), entrepreneurship behavior (or intention) is best understood when put in its appropriate context. Relative to non-immigrants, immigrants operate in a context characterized by the demands of immigration (Aroian et al., 1998). Demands of immigration that manifest as unresolved attachment to people or things in one’s home country, difficulty finding a job, discrimination, language barriers, feelings of not being welcome and feelings of newness in a host country (Aroian et al., 1998) can impact an entrepreneur’s beliefs and consequent attitude and perceived ability to control a situation. Thus, while immigrants may face higher levels of stress and significant challenges when adapting to the customs of their new country, many choose to establish firms that serve their ethnic communities. They are pushed into entrepreneurship out of necessity and the desire to help their community, or pulled into it as a result of its potential benefits such as increased wages and independence (Shinnar and Young, 2008), which they might not have been able to access in their home countries. Inability to get into paid employment could also drive immigrants’ decisions to found ventures. They may feel they have more control of their financial situation through entrepreneurship. Applications of the theory of planned behavior in entrepreneurship have also shown that intentions adequately predict actual behavior (Kautonen et al., 2015). This is consistent with existing research that shows that the actual venture creation rates of immigrants are higher than those of non-immigrants (Vandor and Franke, 2016), suggesting that their intentions could also be higher. Consequently, we propose the following:

\[ P2. \] Immigrants have higher venture creation intentions than non-immigrants.
**Venture growth intention**

Based on the theory of planned behavior, a person’s intention can be predicted by their attitude toward the behavior of interest, their subjective norm and their perception that they are in control (Ajzen, 1991; Kautonen et al., 2015). Growth intentions can be predicted by a person’s perception of their ability to control events and activities relating to growth. When entrepreneurs feel that they are capable of accessing the necessary resources to actualize and manage growth, they are likely to indicate growth intentions.

Morrison et al. (2003) identify an opportunistic approach as a characteristic of business owners who wish to grow their businesses. Among the factors that enhance growth, they consider market conditions, access to finance and perceived or actual competence of the owner to be relevant. Consequently, one can argue that the intention to grow a business involves factors that are both within and beyond the control of the manager, but clearly, the owner’s decision is central. Morrison et al. (2003) concluded that the eventual growth decisions are based on the fit among the intention, ability and opportunity available to the business owner. Along similar lines, Wiklund and Shepherd (2003) empirically assessed the relationship between the aspirations of business owners/managers to grow their business and the eventual growth of the business, finding a positive relationship between growth aspirations and actual growth. Venture growth intentions are vital both to entrepreneurs and the economy since the ratio of entrepreneurs with growth intentions in the population predicts economic growth better than general start-up rates or self-employment rates (Levie and Autio, 2013).

Evidence of venture growth intentions includes involvement of a firm in collaborative relationships (Dobbs and Hamilton, 2007) and activities related to firm expansion (Javadian, 2014). Predictors of venture growth intention also include characteristics of the entrepreneur, their firm and environmental factors (Kolvereid and Bullvag, 1996), regardless of immigration status.

The demands of immigration represent additional sources of stress for immigrant entrepreneurs. Given findings that one’s sense of personal control is impacted by high demands and overload (Griffin et al., 2002; Rosenfield, 1989), it is possible that immigrant entrepreneurs may wish to retain control by limiting their ventures to manageable sizes. Along similar lines, Ross and Mirowsky (2013) reported that “perceived control vs powerlessness is the cognitive imprint of structured inequality, disadvantage, and objective powerlessness, including socioeconomic status and its elements (educational attainment, work, and income); gender, age, neighborhoods, and race/ethnicity,” suggesting a link between one’s feeling of personal control and ethnicity. Given the challenges immigrants face accessing capital/resources, and the possibility of demands of immigration negatively impacting one’s sense of control, we posit that immigrants’ exposure to the demands of immigration will negatively impact their intentions to grow their business:

*P3.* Demands of immigration are negatively related to venture growth intentions.

**Intention to abandon a venture**

Business survival has been extensively studied (Mas-Verdú et al., 2015), as survival is often used as a measure of venture performance (Josefj et al., 2017; Van Praag, 2003; Wilson et al., 2013). Given factors such as the liability of smallness (Djupdal and Westhead, 2015; Hunt and Ortiz-Hunt, 2017) and newness (Djupdal and Westhead, 2015; Freeman et al., 1983; Kale and Arditi, 1998), and the high-impact challenges (Awotoye and Singh, 2017) that characterize entrepreneurial settings and affect the entrepreneur, the possibility of failure in entrepreneurship should not be viewed as an unexpected event. As stated earlier, entrepreneurial environments and contexts have been described as uncertain, volatile, stressful, ambiguous and lonely (Best, 2014; Morris et al., 2012); hence, the conclusion that
entrepreneurship is stressful (Morris et al., 2013). Baron et al. (2016) put it this way: “the environments in which they (entrepreneurs) work are often unpredictable and subject to rapid change, they face high levels of risk, their work loads are intense, they are responsible for their company and its employees, and they frequently operate under severe financial constraints” (Baron et al., 2016, p. 743).

While different entrepreneurs respond differently to these stressful circumstances, research has shown that entrepreneurs may have to trade their health for the wealth that could result from entrepreneurial behaviors (Cardon and Patel, 2015). This suggests that stress could result in a decision to abandon a venture. Such a decision would be preceded by the intention of the owner to abandon the business.

An entrepreneur’s intention to abandon the venture they created does not necessarily imply that the firm itself will be dissolved (DeTienne and Cardon, 2012). However, it suggests that the entrepreneur will no longer put in the time and resources necessary for the venture to survive and thrive. In addition to the stress that marks the entrepreneurial environment (Baron et al., 2016; Morris et al., 2012), demands of immigration represent an additional category of stress for immigrant entrepreneurs. Different effects of stress upon intentions have been reported. For instance, stress has been found to predict turnover intentions (Jensen, 2012; Podsakoff et al., 2007). Through direct (Allisey et al., 2014; Klassen and Chiu, 2011) and indirect effects (Elangovan, 2001), stress has also been found to predict intention to quit one’s job. We therefore argue that immigrant entrepreneurs who encounter the additional stress that results from immigration demands will be more likely to indicate intentions to abandon their businesses. Formally stated:

\[ P4. \text{Demands of immigration are positively related to intention to abandon a venture.} \]

Entrepreneurial resilience and intention to abandon a venture

Given the demands of immigration and the heightened level of stress that immigrant entrepreneurs face, it is remarkable that immigrants are more likely to found new ventures (Vandor and Franke, 2016) and, conditional on location and industry, more able to remain in business relative to native entrepreneurs (Kerr and Kerr, 2016). We believe this may be related to an elevated level of resilience that immigrants may have when compared to their native citizen counterparts.

We defined entrepreneurial resilience earlier as the ability of an entrepreneur to positively adapt and recover from any high-impact challenge that has the ability to result in any form of failure such as liquidation, bankruptcy or closure of the business. This definition of entrepreneurial resilience captures the process of adapting to the high-impact challenges in entrepreneurship, which are analogous to the traumatic events that define the general construct of resilience. While general resilience is recovery from and adaptation to traumatic events that people face (Fletcher and Sarkar, 2013; Lee and Cranford, 2008; Luthar et al., 2000; Masten et al., 1990; Sinclair and Wallston, 2004), such as the death of a loved one, a major car accident, the occurrence of a natural disaster or other life-altering negative events, entrepreneurial resilience entails recovery and adaptation to the high-impact challenges that have the capacity to result in the failure of a firm in the form of liquidation, bankruptcy, or closure of the business.

The value of entrepreneurial resilience can be seen in a number of ways. First, while there are firms that do need to close down due to poorly recognized or exploited opportunities, there may be instances where pending failure of a firm centers on entrepreneurial resilience rather than opportunity recognition issues. In other words, a firm’s survival is largely dependent upon the willingness of the entrepreneur to take the steps necessary to recover and positively adapt to negative situations, given that the entrepreneur is the most important resource in entrepreneurship (Brush et al., 2001).
Another value of entrepreneurial resilience can be seen in the positive outcomes that result from it. Research has shown that resilience is positively related to continuous improvement in tough times (Chadwick and Raver, 2013); health of entrepreneurs and their firms (Virginie and Olivier, 2012); and firm success (Fisher et al., 2016). By acting as a form of psychological capital (Luthans et al., 2006), entrepreneurial resilience enables entrepreneurs to overcome hurdles that would otherwise have halted their entrepreneurial efforts (Bullough and Renko, 2013).

Entrepreneurial resilience thus influences the responses of entrepreneurs to unfavorable conditions faced in entrepreneurship, making a difference between keeping the doors open or quitting the venture. This seems to align with immigrant entrepreneurs, who may have to decide in the face of immigration demands whether to keep their businesses going. We therefore posit that entrepreneurial resilience will moderate the relationship between the demands of immigration and venture abandonment intentions:

\[ P5. \text{Entrepreneurial resilience moderates the positive relationship between demands of immigration and the intention to abandon a venture such that higher entrepreneurial resilience will result in lower intentions to abandon the business.} \]

**Discussion**

For decades, research has consistently found that immigrants are more likely to found new ventures than native-born individuals in the USA. They are an important source of economic growth and activity and will continue to be so in the near future. While government statistics bear this out, more study is needed regarding the unique challenges immigrants must overcome in order to found ventures and succeed in entrepreneurship. In this paper, we first argued that immigrants are more likely to feel pressure and stress as a result of their need to adapt to a new environment. Then, recognizing this inherent obstacle to entrepreneurship and the fact that immigrants still found ventures at a higher rate than non-immigrants, we focused our conceptual research on the intentions of immigrant entrepreneurs. More specifically, we concentrated on the intentions of entrepreneurs to engage in three types of entrepreneurial behavior: new venture creation, venture growth activities and abandonment. As we discussed, human behavior is predicted by intentions, and understanding the intentions of immigrant entrepreneurs may shed new light on this important subgroup of entrepreneurs.

Based on our review of the literature, we proposed that immigrant entrepreneurs are more likely to have intentions to found new ventures, have lower intentions to grow their businesses, and have higher intentions to abandon their businesses. Given the higher levels of stress they encounter resulting from the demands of immigration, the latter two propositions related to venture growth and abandonment are consistent with the effects of stress. However, pursuing new venture creation – which is challenging in and of itself – would seem less likely for immigrants than non-immigrants, yet we know that immigrants are more likely to found ventures than non-immigrants. We argue that the knowledge of their own ethnic culture and population, combined with the challenges of integrating into a new society, often pushes immigrants into ethnic entrepreneurship. This type of entrepreneurship, which focuses on niche markets, results in smaller ventures with limited growth potential that can be abandoned relatively easily if necessary.

Decision making involves having an intention to carry out a decision, based on available information, experience, beliefs, perception of control and the influence or opinion of some important others (Ajzen, 1991, 2005). The decision to grow one’s business is impacted by some or all of these factors. By arguing that the demands of immigration pose additional challenges and stress to immigrant entrepreneurs, we posit that their intention to grow their businesses will be lower than those of non-immigrant entrepreneurs as immigrants may not...
feel they have the capacity to manage and control such growth. They are more likely to have
difficulties accessing the necessary resources required to initiate and sustain such growth.

Furthermore, immigrant entrepreneurs may indicate higher intentions to abandon their
businesses as a result of the effects of the stress accompanying the demands of immigration.
While research suggests that a person’s evaluation of what constitutes a stressful encounter
is based on their cognitive appraisal of the encounter (Lazarus, 2000; Lazarus and Folkman,
1984), there is evidence in literature suggesting that stress predicts intentions to quit one’s
job (Firth et al., 2004).

Resilience in entrepreneurship has been identified as an important factor for survival
and success. It acts both as a psychological capital (Hmieleski and Carr, 2008) and a
competency (Morris et al., 2013) that aids the entrepreneur in coping with the stressful
conditions that accompany entrepreneurship. Given that the emotions of entrepreneurs
significantly impact their ability to develop and grow their ventures (Baron, 2008;
Cardon et al., 2012), research findings suggest that psychological capital may grant
entrepreneurs the psychological resources required to meet the emotional challenges
characteristic of the entrepreneurial process (Hmieleski and Carr, 2008). Entrepreneurial
resilience is therefore beneficial in coping with the additional demands and stresses that
immigrant entrepreneurs face on top of the other challenges that their native counterparts
deal with. As noted by Hmieleski and Carr (2008), entrepreneurs often have only
themselves to rely on at the moment to get their job done. Entrepreneurial resilience as a
competency therefore plays a vital role in ensuring their ventures’ survival and success.
Consequently, we argued that immigrant entrepreneurs who have greater entrepreneurial
resilience will be better equipped to manage the challenges they encounter in
entrepreneurship and indicate less intentions to abandon their ventures than those who
have poorer entrepreneurial resilience.

While our propositions remain to be tested, we expect that they will hold true for
most immigrant entrepreneurs. Entrepreneurship is a stressful endeavor because the
entrepreneurial environment is filled with uncertainty and volatility. Additionally, it is
impossible to know the outcomes of entrepreneurial endeavors a priori (Jenkins et al., 2014);
hence, entrepreneurs have to make a lot of decisions without knowing for certain the
outcomes of those decisions. However, by developing necessary capital and competencies,
entrepreneurs will be more likely to succeed against the odds.

Conclusion

Implications for practice and theory development

Although this paper is conceptual in nature, it contributes to the discussion on immigrant
entrepreneurs by highlighting the additional stressful conditions they have to face as a
result of the demands of immigration, and projecting how these may impact their
entrepreneurial intentions to act. This paper has implications for both research and practice.
Studies on immigrant entrepreneurs should not neglect the context of immigration stress
and the additional demands of immigration. Furthermore, policymakers need to factor in
this contextual aspect of immigrant entrepreneurship rather than assume that all
entrepreneurs face similar challenges. By doing so, they will be able to offer more tailor
made and effective assistance to immigrant entrepreneurs and derive the possible benefits
associated with their entrepreneurial activities.

Venture capitalists could also benefit from empirical results of these propositions as
funding decisions may need to include consideration of the proposed effects of stress and
demands of immigration. Based on our arguments that immigrant entrepreneurs may be
unwilling to grow their businesses beyond a defined threshold and more likely to abandon
their businesses, venture capitalists may choose to devise additional strategies to support
immigrant entrepreneurs to minimize the risk of losses due to abandonment.
Limitations and future research directions

This conceptual paper has a number of limitations that we want to acknowledge.

First, we do not distinguish between immigrants from different nations or parts of the world or having different backgrounds. Immigrants who come from English-speaking countries are likely to find the transition to American culture easier to achieve. Those who are educated and/or who come from families with greater financial resources may also find the transition easier. Thus, not all immigrants are the same, but in this paper, we have treated them as a monolithic group.

Second, we do not fully develop or incorporate the element of coping. Resilience is one factor which allows one to cope with high-impact challenges; however, cognitive appraisal theory suggests that people evaluate if and how a particular encounter with their environment is relevant to their well-being (Folkman et al., 1986) to determine their ability to cope with such encounters. People and groups differ in their sensitivity and vulnerability to certain types of events, as well as in their interpretations and reactions (Lazarus and Folkman, 1984, p. 22). Consequently, different outcomes can also be expected when people react differently to the same stressor given their individual evaluations of the situation. The mere presence of a stressful encounter does not automatically result in stress. Rather, what matters is the person’s evaluation of the impact the stressor will have on them and their own ability to deal with the situation.

Also, our paper is limited to behaviors of immigrant entrepreneurs with micro and small businesses. Consequently, bankers and entrepreneurial support organizations will be more likely to benefit from the findings of this paper than venture capitalists. Finally, we also do not incorporate the motivations for entrepreneurship among immigrant entrepreneurs. Immigrant entrepreneurs who found ventures out of necessity may be more unwilling to abandon their ventures than opportunity entrepreneurs; hence, the proposed relationships may differ based on differences in opportunity recognition processes. Future research will need to consider these differences.

We recommend testing the propositions through empirical study. The nature of the propositions clearly calls for longitudinal study. Entrepreneurial behavior is a function of both the person and their environment; hence, it is necessary to observe the effects of immigration demands on immigrant entrepreneurs over a period of time to determine the effects of personal and environmental changes. Future research could also examine the effects of entrepreneurial ecosystems available to immigrant entrepreneurs upon their intentions. For instance, the availability of support centers such as incubators, university programs, small business development centers and loan assistance programs may independently influence immigrants’ intentions to start, grow or abandon a venture.

Concluding thoughts

As noted by Kerr and Kerr (2016), immigrant entrepreneurship is of central policy interest and deserves more critical examination. We have argued that even with increased stress, immigrants continue to maintain high levels of intention to found new ventures and engage in entrepreneurship. However, the demands of immigration will be more likely to inhibit growth intentions among immigrant entrepreneurs, and promote intentions to abandon their businesses. This is because the demands of immigration pose additional stress and limit immigrants’ perceptions of control over their entrepreneurial behaviors. We also argued for the moderating role of entrepreneurial resilience on the positive relationship between demands of immigration and intentions to quit their business.

The limitations notwithstanding, we believe our paper contributes to the understanding of the contextual factors that differentiate immigrant entrepreneurs from non-immigrant entrepreneurs. Through our discussion and the development of our research propositions, we offer specific differences that are in need of further research. Finding empirical support
for these differences can help us to better understand the needs of immigrant entrepreneurs, which is important as they represent a significant and growing percentage of all entrepreneurs in the USA.

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