

STRATEGIC ARTIFICIAL INTELLIGENCE USE AND MICROBUSINESS
PERFORMANCE: EVIDENCE FROM U.S. MINORITY-OWNED BUSINESS

by

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This dissertation was prepared under the direction of the candidate's dissertation advisor, Dr. Mark Kohlbeck, School of Accounting, and has been approved by all members of the supervisory committee. It was submitted to the faculty of the College of Business and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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This work is deeply rooted in my commitment to advancing both practice and equity—examining how emerging technologies, particularly artificial intelligence, can shape outcomes for small and minority-owned businesses operating within structurally

constrained environments. It reflects not only an academic pursuit, but a broader intention to contribute to more inclusive and informed approaches to economic opportunity.

To my family, thank you for your patience, encouragement, and understanding. Your support created the stability that allowed me to remain focused and committed throughout this journey.

To my son, Bernard—you are my greatest motivation. This accomplishment is not only a reflection of personal discipline, but of the responsibility I carry as a woman, a mother, and a leader to build, to persevere, and to create pathways where none existed before. I hope this work stands as an example of what is possible through faith, consistency, and courage.

This achievement is part of a larger legacy—one rooted in purpose, stewardship, and impact. It would not have been possible without the collective support of those acknowledged above.

ABSTRACT

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Minority-owned microenterprises play a critical role in economic development in underserved communities in the United States, yet persistent disparities in business performance remain. Prior research suggests that Black- and Hispanic-owned microenterprises face lower profitability and revenue relative to their White-owned counterparts, reflecting structural constraints such as limited access to capital, professional networks, and digital resources. As artificial intelligence (AI) becomes increasingly embedded in entrepreneurial decision-making, an important question is whether strategic AI use mitigates or reinforces these disparities. Drawing on the resource-based view (RBV) and critical race theory (CRT), this study examines whether strategic AI use moderates the relationship between minority ownership and microenterprise performance.

Using data from the 2024 Entrepreneurship in the Population (EPOP) survey, ordered logistic regression models are employed to analyze profitability and revenue

outcomes across Black-, Hispanic-, and White-owned firms. The results provide partial support for Hypothesis 1: minority ownership is only weakly associated with lower profitability (marginally significant, one-tailed) and shows no consistent differences in revenue once controls are included. In contrast, strong support is found for the moderating role of strategic AI use in profitability outcomes. Strategic AI use significantly attenuates, and in some cases reverses, the negative association between minority ownership and profitability. However, no moderating effect is observed for revenue outcomes.

These findings suggest that while baseline performance disparities are modest and context-dependent, strategic AI use functions as a conditional resource that can reduce profitability gaps among minority-owned firms. The results contribute to the literature on racialized entrepreneurship and AI use by demonstrating that the performance effects of AI use may vary across organizational contexts and outcomes. Policy implications highlight the importance of targeted AI access, digital capability development, and equitable technology diffusion to ensure that emerging technologies contribute to inclusive economic growth.

DEDICATION

This dissertation is dedicated to my parents, Clement Konwufine Ayafor and Lucia Momek Mbapeh. You taught me that education is more than the pursuit of knowledge—it is a pathway to opportunity, service, and transformation. Your sacrifices, resilience, and unwavering belief in me, planted seeds that will continue to bear fruit across generations. I stand today on a foundation built by your faith, hard work, courage and wisdom.

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To the women rebuilding while raising children—this is for you. Your strength is sacred, your sacrifices matter, and your dreams are still worthy. May you find the courage to pursue what God placed in your heart. I also dedicate this work to every entrepreneur building against unseen barriers. May this research contribute to a future where innovation expands opportunity, and success is not limited by circumstance.

Above all, I dedicate this achievement to God. Every step of this journey has been sustained by His grace. When the road was uncertain, He provided direction. When the burden felt heavy, He provided strength. What began as a goal became a testimony of His faithfulness. To Him be all the glory!

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PERFORMANCE: EVIDENCE FROM U.S MINORITY-OWNED BUSINESS

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CHAPTER 1: INTRODUCTION

Minority-owned micro-enterprises play an important role in the United States (U.S.) economy, especially in underserved communities and neighborhoods. These enterprises promote entrepreneurship, innovation, economic diversification, resilience, job creation, and equitable economic growth (Deller & McConnon, 2009). Despite their economic importance, persistent disparities in business performance outcomes of minority- and majority-owned microenterprises remain a defining feature of the U.S. entrepreneurial landscape. The disparities are more evident among Black and Hispanic micro-enterprises, which are characterized by lower profitability and revenue, slower growth rates, and a higher likelihood of closure.

Prior research consistently documents that minority microenterprise owners—including Black, Hispanic, Other/Multiracial groups—face structural barriers related to capital access, professional networks, managerial resources, and digital readiness. These constraints limit their ability to scale operations, enhance profitability, and sustain long-term competitiveness relative to majority-owned firms (Bates & Robb, 2016; Carpenter & Loveridge, 2018). Within the contemporary digital economy, artificial intelligence (AI) emerges as an enabling technology that can enhance microenterprises' decision-making, automate operations, and expand market reach. The central premise of this dissertation is to examine whether the strategic use of AI serves as a moderator for business performance disparities between minority- and majority-owned microenterprises in the United States.

Over the years, policy interventions have been implemented in the United States to support minority-owned microenterprises, however, performance gaps still exist between minority- and majority-owned microenterprises. Black- and Hispanic-owned microenterprises, especially, still record lower profitability levels, lower revenues, and lower business survival rates compared to their White counterparts (Fairlie et al., 2022). Given the systemic nature of capital, credit access barriers, and other challenges, existing disparities are likely to persist. Most existing research focuses on access to capital, managerial experience, market position, and the perception that technology usage is race neutral.

While AI emerges as a transformative tool capable of enhancing efficiency and decision-making, a significant empirical gap exists regarding whether AI benefits all businesses equally. Much of the existing research on AI use implicitly assumes firm homogeneity, overlooking how racialized barriers—including access to capital, digital readiness, and structural discrimination—shape AI use and effective implementation (Mohib et al., 2025). The limited body of work that examines minority-owned microenterprises and technology use has rarely explored AI's differential effects across racial groups. Nor has prior research rigorously assessed whether AI tools are accessible, effective, or strategically advantageous for minority-owned firms, particularly those operating under financial constraints, limited managerial capacity, and longstanding systemic inequities.

Minority entrepreneurs, most of them Black microenterprise owners, as indicated by Bates et al. (2018) and Poole et al. (2021), have endured decades of discriminatory lending, inability to access financial markets, and systemic prejudices in business

networks. The proper implementation of AI technologies can enhance operational efficiency, marketing strategies, and data-driven decision-making (Al-Surmi et al., 2022). However, the implementation is dependent on already established capabilities - financial, digital, and cognitive ones, which are not equally accessible to all entrepreneurs. The research question then becomes, does strategic AI use enhance business performance outcomes equitably between minority- and majority-owned microenterprises, or does it risk reinforcing existing disparities?

I consider two theories to answer this research question. First, critical race theory (CRT) emphasizes that racial inequalities are deeply embedded within social, economic, and institutional systems (Delgado & Stefancic, 2017). These structural and institutional barriers generate systematic differences in profitability and revenue that cannot be adequately explained by managerial ability, entrepreneurial effort, or market conditions alone. In my first hypothesis, I expect that Black- and Hispanic-owned microenterprises generate lower profits and revenue compared to their White-owned counterparts.

Second, the resource-based view (RBV) of the firm suggests that strategic AI use provides an important firm resource and improves firm performance (Barney, 1991). However, Black- and Hispanic-owned microenterprises frequently operate from lower baseline levels of operational capacity and performance because of the structural and institutional constraints emphasized by CRT. Accordingly, strategic AI use may disproportionately benefit Black- and Hispanic-owned microenterprises, thereby reducing observed racial disparities in performance outcomes (Abe, 2023). As a result, I expect that strategic AI use moderates racial disparities in microenterprise performance outcomes.

Using the Entrepreneurship in the Population (EPOP) survey data, I develop two empirical specifications to test my hypotheses. First, profitability and revenue measures on an indicator variable for minority status and control variables to determine if Black- and Hispanic-owned microenterprises generate lower profits and revenue as expected. Second, a strategic AI use variable is added and then interacted with minority variables to provide evidence of the moderating effect of strategic AI use.

The findings reveal that minority-owned microenterprises are weakly associated with lower profitability but not lower revenue once entrepreneur and firm-level characteristics are accounted for. The main effects of strategic AI use on business performance outcomes are not uniformly positive; however, the interaction between minority ownership and strategic AI use is significant and positive for profitability. Minority entrepreneurs who use AI strategically exhibit substantially higher odds of profitability than would be expected from either minority status or AI use alone. This moderating effect is not observed for revenue. These findings suggest that strategic AI use may help narrow racial disparities in entrepreneurial profitability, though the cross-sectional design precludes causal claims.

The findings of this study hold significant implications for policymakers, entrepreneurship support organizations, particularly those advancing digitally assisted decision making as solutions for challenges faced by minority-owned microenterprises. In the absence of empirical evidence demonstrating whether such initiatives reduce or inadvertently exacerbate racial performance disparities, well-intentioned programs risk allocating resources in ways that reinforce, rather than alleviate, existing inequities (Addo, 2017). Prior research by Bates et al. (2018) and Poole et al. (2021) documents

persistent barriers encountered by minority-owned microenterprises, including discriminatory lending practices, restricted access to formal financial markets, and systemic exclusion within business networks (Al-Surmi et al., 2022). Yet, when effectively implemented, AI technologies have the potential to enhance operational efficiency, strengthen marketing capabilities, and support more informed decision-making.

This study offers both theoretical and practical contributions by examining AI use among minority-owned microenterprises as a collective group. It extends the racialized entrepreneurship literature by incorporating multiple minority subpopulations, situating AI use within the broader context of structural inequities and providing empirical evidence on whether strategic technology use meaningfully narrows performance gaps (Johnson, 2025). The results have direct relevance for government agencies, incubation programs, and entrepreneurship education initiatives. If AI demonstrates a beneficial moderating effect on performance disparities, the findings will support the development of targeted digital literacy programs, subsidized AI onboarding, and technical assistance tailored to minority entrepreneurs. Conversely, if disparities persist despite AI use, the evidence will underscore the need for deeper structural reforms—such as addressing algorithmic bias, expanding equitable access to capital, and confronting systemic barriers that restrict the ability of minority-owned firms to leverage emerging technologies.

The remainder of this dissertation is structured as follows: Chapter 2 conducts a literature review of minority micro-enterprise performance, AI use, and structural inequities. Chapter 3 develops the hypotheses using the CRT and the RBV framework. Chapter 4 describes the research methodology, including the data sources, variables, and

model specifications. In Chapter 5, the sample is discussed and the results are presented; a discussion of the results, implications to theory, policy, and practice are presented in Chapter 6. Finally, Chapter 7 draws conclusions, discusses limitations, and identifies directions for future research.

PREVIEW

CHAPTER 2: LITERATURE REVIEW

The integration of new technologies into business operations presents both significant opportunities and substantial challenges for micro-enterprises. While digital transformation and AI in particular offer considerable potential to enhance competitiveness, improve operational efficiency, and expand market reach, these benefits are not distributed equally across racial and ethnic groups (Korcsmáros et al., 2025). For minority-owned microenterprises, including those owned by Black, Hispanic, and multiracial entrepreneurs, long-standing structural and historical disadvantages continue to constrain firm survival, operational capacity, and performance outcomes.

This chapter reviews the existing body of literature to examine the roots and manifestations of racial disparities in entrepreneurial performance. The discussion synthesizes evidence on financial and demographic determinants of business outcomes and evaluates the role of AI as an emergent transformative force with the potential to reshape performance trajectories (Korcsmáros et al., 2025). Through this review, the chapter establishes the empirical and theoretical foundations necessary to understand how race, resources, and technology intersect in shaping microenterprise success in the contemporary economy.

2.1 Diverse Structural Challenges and Outcomes Among Minority Entrepreneurs

Black and Hispanic entrepreneurs are the predominant minority entrepreneurs across U.S. industries; however, research indicates that these groups encounter numerous structural barriers in their entrepreneurial journey. Existing literature

(Bates & Robb, 2016; Fairlie et al., 2022) highlights some of these challenges, noting that, while most challenges are similar across minority groups, others disproportionately affect specific minority groups.

2.1.1 Black Entrepreneurs

Black entrepreneurs in the United States face entrenched systemic barriers that limit access to financial resources necessary for business formation, growth, and long-term competitiveness. Evidence of econometric modeling using large-scale U.S. datasets on startup and administrative financing (Fairlie et al., 2022), found enduring racial differences in access to startup capital between Black- and White-owned startups. Black business owners experience disproportionately high loan denial rates, even after controlling for creditworthiness, business viability, and financial documentation. These disparities reflect anticipated discrimination within lending processes, manifested through both discouragement effects and more subtle institutionalized forms of prejudice (Fairlie et al., 2022). These capital issues are not merely regarding the discrimination of lenders but also concerning the behavior of the borrowers. Fairlie et al. (2022) discovered that Black entrepreneurs also do not apply loans as frequently as White entrepreneurs because they expect to be turned down, which is also a demand side effect since they are discouraged to apply loans when they are creditworthy but barriers to supply are also possible.

These trends are consistent with the discussion of ethnic entrepreneurship by Parker (2018), who points out capital market discrimination as the most empirically well-founded mechanism that explains the presence of persistent racial disparities in business formation and performance. Parker claims that unequal access to financial capital

generates a cycle in which minority entrepreneurs, especially African Americans, are denied loans more effectively and at an increased cost after adjusting for such visible signs of creditworthiness. He also highlights the impact of discouraged borrowers, who one would expect to be rejected, deters the rates of loan applications as applied by minority entrepreneurs and thus limits access to other faster-growing and more lucrative industries (Parker, 2018). Within its context, there are not only entrepreneurial endowments generating performance differentials, but the balance results of the supply-side constraints, as well as the demand-side reactions in the market environment, support structural inequality in entrepreneurial achievement.

Black entrepreneurs have limited representation in influential professional industry networks, which are critical channels for accessing mentorship, market information, and resource-sharing opportunities. Limited network embeddedness reduces visibility to potential investors, restricts participation in entrepreneurial ecosystems, and diminishes access to strategic partnerships (Wingfield & Taylor, 2018). As a result, Black entrepreneurs often rely heavily on personal savings, family resources, or informal lending channels, which are insufficient to support business expansion or cushion against operational risks.

The difference between the supply-side and the demand-side processes explains the origins of racial inequality in the performance of micro-enterprises. On the supply side, there are factors related to the differences in the human capital, financial resources, and abilities of the firm, and on the demand side, there are factors associated with how lenders and markets access minority-owned business. Fairlie et al. (2022) contribute to demand-side explanations of financing disparities by demonstrating that Black business