Racial and ethnic differences in entrepreneurship

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Abstract Using data from the Entrepreneurship in the Population survey, we examine racial and ethnic differences in entrepreneurship, with a focus on Black and Hispanic entrepreneurs. Contrary to prevailing public perceptions and much of the extant literature, we find that Black and Hispanic individuals are more likely than White individuals to engage in entrepreneurial activity across a range of measures. This includes business ownership, nascent entrepreneurship, gig and freelance work, and withdrawn entrepreneurship. Our analysis also indicates these findings are not merely capturing informal entrepreneurship or low growth aspirations and that two potential mechanisms, financial and social capital, might serve as mechanisms explaining the relationship with entrepreneurial entry. We conclude that the relationship between race, ethnicity, and entrepreneurship is likely more complex than previous studies have realized.

Keywords: Black; Entrepreneurship; Ethnic; Freelance; Gig; Hispanic; Nascent; Racial

JEL Classifications: J15, L26, M13

1. Introduction

Entrepreneurship among Black and Hispanic members has been rising in the United States. According to the U.S. Census Bureau, the number of Black-owned and Hispanic-owned businesses increased by 34% and 33% between 2012 and 2017 compared to an increase of 12% for all businesses during the same period (U.S. Census, 2019). Despite this impressive growth, only 20% or about 1.2 million of employer businesses are owned by minorities (U.S. Census, 2023).

The lower minority entrepreneurship rate of Black and Hispanic individuals has been well-documented in the literature (Bruton et al., 2023; Fairlie, 1999; Fairlie and Meyer, 2000; Myrdal, 1944; Parker, 2018, 2009). Studies have estimated the rate of Black-owned businesses to be two to three times lower than White-owned (Clark and Drinkwater, 1998; Fairlie, 1999; Fairlie and

Robb, 2007; Parker, 2018). This differential has persisted since at least 1910, suggesting that little has changed since Myrdal (1944) first lamented the absence of black-owned businesses in America (Fairlie and Meyer, 2000). Several explanations exist for this lower entrepreneurship rate. First, discrimination in capital, labor, and product markets influence entrepreneurial entry (Blanchflower et al., 2003; Cavalluzzo and Cavalluzzo, 1998; Riach and Rich, 2002). Discrimination in capital and product markets discourage entrepreneurial entry whereas discrimination in labor markets encourage entrepreneurial entry (Parker, 2018). Second, mounting evidence suggests Black and Hispanic entrepreneurs often are discouraged borrowers (Atkins et al., 2022; Casey et al., 2022). That is, Black and Hispanic entrepreneurs apply for loans less often than Whites not because they are unqualified, but because they expect to be denied credit, even when they have good credit (Fairlie et al., 2022). Lastly, demotivation is a key factor as social networks, role models, and mentoring tend to be weaker among Black and Hispanic entrepreneurs. Studies have found strong intergenerational links in self-employment for every American ethnic group *except* for African Americans (Hout and Rosen, 2000), and Black entrepreneurs are less likely than white entrepreneurs to have had a self-employed family member and less likely to have worked in that family member's business (Fairlie and Robb, 2007).

Despite the importance of these findings, we contend that prior work on the racial and ethnic differences in entrepreneurship has viewed entrepreneurship too broadly using measures like self-employment and business ownership. While these measures allow researchers to examine racial and ethnic differences in entrepreneurship, these broad measures overlook the importance of the heterogeneity in entrepreneurship. This is important. Although studies have found racial and ethnic differences in entrepreneurship, they tend to focus on capital intensive industries where discrimination or discouragement in financing is present (Fairlie et al., 2022). However,

entrepreneurs often use little external finance in many other settings such as when engaging in gig work, freelancing, and nascent entrepreneurship. As such, discrimination and discouragement in capital markets is not present. Moreover, the literature on the racial and ethnic differences in entrepreneurship has overlooked the gig economy, defined broadly as "divide work into small pieces and then offer those pieces of work to independent workers in real-time, allowing for easy substitution of work across workers" (Cook et al., 2021, p. 2211). Thus, we know little about Black- Hispanic- and White-individuals' participation in these entrepreneurship activities. As a result, we believe the findings from some studies that focus on external finance have been extrapolated to others with less external finance without external validity. By examining a broader array of measures of entrepreneurship, this study offers a more complete picture of racial and ethnic differences in entrepreneurship.

The purpose of our paper is to examine racial and ethnic differences in entrepreneurship using a variety of entrepreneurship measures that have been unexplored by the literature. By doing so, our approach provides a more complete, and updated, picture of these differences in entrepreneurship. Using data from the Entrepreneurship in the Population (EPOP) survey, we find many racial and ethnic differences in entrepreneurship. Our descriptive analysis indicates that, compared to White individuals, Black and Hispanic individuals are more likely to be gig workers, freelance entrepreneurs, nascent and withdrawn entrepreneurs, and to own a business. In our logistic regression analysis that adjusts for regional differences and other observable individual traits, we find that Black and Hispanic individuals have higher rates of entrepreneurship for all measures. Although we uncover similar findings in our multinomial logistic regression, the results in this model suggest that Black and Hispanic individuals are less likely to be freelancers and Hispanic individuals are less likely to be business owners, compared to White individuals.

Our study makes several contributions to this literature. First, we find that racial and ethnic differences depend critically on the measure of entrepreneurship. Our regression analysis indicates higher—not lower—rates of entrepreneurship among Black and Hispanic individuals as compared to Whites. One explanation for this finding is that we examine measures of entrepreneurship like gig workers and freelance entrepreneurship (Burke et al., 2020; Burke and Cowling, 2020a) that represent "everyday entrepreneurs" (Audretsch et al., 2015; Welter et al., 2017). In contrast, studies identifying racial and ethnic differences in entrepreneurship tend to examine capital intensive measures (Bates and Robb, 2014; Fairlie et al., 2022). Yet, this is not the entire story because we also find higher rates of entrepreneurship among Black and Hispanic individuals for more established measures of entrepreneurship like business ownership. Our study thus increases our knowledge of racial and ethnic differences in entrepreneurship by examining other relevant indicators of entrepreneurship that have grown in importance such as the gig economy and freelance entrepreneurship.

Second, we extend this literature by examining a novel measure of entrepreneurship that has been previously unexplored—withdrawn entrepreneurs. Withdrawn entrepreneurs are those individuals who were involved in starting a business but quit and did not become entrepreneurs. If rates of nascent entrepreneurship are higher for Black and Hispanic entrepreneurs and rates of business ownership are lower as we might expect from studies in the literature (Bates et al., 2018; Parker, 2018; Reynolds et al., 2004), then we should observe the proportion of withdrawn entrepreneurs to also be higher for Black and Hispanic entrepreneurs. This measure, although implied, has yet to be explored by the literature. Our examination of withdrawn entrepreneurs provides a more complete picture of racial and ethnic differences in entrepreneurship throughout the entrepreneurship process.

Lastly, our study has important policy implications. A common proposal is that policy should encourage entrepreneurship activity among Blacks and Hispanics to combat the discrimination, discouragement, and other structural barriers that impede entrepreneurship (Atkins et al., 2022; Bates et al., 2018). Although these factors might inhibit entrepreneurial entry for capital intensive measures of entrepreneurship, our findings indicate that Black and Hispanic individuals are not less likely to be entrepreneurs for measures of business ownership, nascent entrepreneurship, and gig work. This suggests policy makers should not apply a general policy of encouraging entrepreneurship activity among Black and Hispanic individuals. Rather, policymakers should focus on more capital-intensive activities such as venture capital, and high-growth entrepreneurship. Our findings are also important because they suggest that minority individuals should not be discouraged from entrepreneurship.

2. Theoretical and conceptual background

2.1. Definitions

Before we proceed with the theoretical arguments, it is important to provide some definitions. According to the American Psychological Association (APA)[1], ethnicity is defined as, "A characterization of people based on having a shared culture (e.g., language, food, music, dress, values, and beliefs) related to common ancestry and shared history." The APA also distinguishes this from race defined as, "the social construction and categorization of people based on perceived shared physical traits that result in the maintenance of a sociopolitical hierarchy. The term is also loosely applied to geographic, cultural, religious, or national groups. Self-reported race frequently varies owing to changing social contexts and an individual's possible identification with more than

[1] https://www.apa.org/topics/race-ethnicity

one race." In this study, we follow the US Census Bureau's and refer to Black as a race and Hispanic as an ethnicity: "Hispanic origin can be viewed as the heritage, nationality, lineage, or country of birth of the person or the person's parents or ancestors before arriving in the United States. People who identify as Hispanic, Latino, or Spanish may be any race.[2]"

The literature on racial/ethnic differences in entrepreneurship is vast (Bates and Robb, 2014; Fairlie, 1999; Fairlie et al., 2022; Fairlie and Robb, 2007). It is widely believed that entrepreneurship offers disadvantaged groups a route to escape poverty and open doors for economic advancement (Bates, 1997; Light and Bonacich, 1988; Parker, 2018; Waldinger et al., 1990). However, disadvantaged groups often face socio-economic and cultural barriers that inhibit entrepreneurial entry or performance. This "liability of poorness" (Morris et al., 2022) lowers entrepreneurial entry for disadvantaged groups and results in a racial/ethnic difference in entrepreneurial entry.

Our central thesis is that Black and Hispanic individuals will be more likely to enter some forms of entrepreneurship and less likely to enter others, compared to Whites. These differences in entrepreneurship by race and ethnicity will depend on entry costs and capital requirements. Moreover, a history of inequality for Black and Hispanic groups through broader social, economic, and institutional forces can generate perceptions of built-in disadvantages and greater psychological disengagement (Neville et al., 2018; Schmader et al., 2001; Sellers and Shelton, 2003).

2.2. Theoretical mechanisms

In this study, we use several theoretical mechanisms to explain how the social relations and structures of racial and ethnic minority groups influence Black and Hispanic entrepreneurship

[2] https://www.census.gov/topics/population/hispanic-origin.html

(Aldrich and Waldinger, 1990; Granovetter, 1985; Portes and Sensenbrenner, 1993; Waldinger et al., 1990). The key insight is that entrepreneurs, and particularly Black and Hispanic entrepreneurs, are socially embedded in their community and constrained by regulation and market dynamics (Freeland and Keister, 2016; Kloosterman et al., 1999; Wilson, 1987). This insight allows us to adopt a racialized lens to our theorizing. By doing so, we begin by exploring the underpinnings of racial disadvantage for minority entrepreneurs (Bruton et al., 2023).

The reason we group Black and Hispanic entrepreneurs together in this study of minority entrepreneurship is that they are the most similar groups compared to White entrepreneurs. For example, Parker (2018) notes that Asian-Americans often have higher rates of entrepreneurship than White Americans, despite being a minority in the United States and Freeland and Keister (2016) find that while Black individuals rely on less supplier capital than White individuals, whereas Hispanic individuals did not differ from Whites. Moreover, quasi-experimental evidence has used Black and Hispanic individuals as relevant control groups (Gourley, 2018).

Minority entrepreneurship is determined by both social and cultural aspects on the one hand and economic and market aspects on the other (Freeland and Keister, 2016; Kloosterman et al., 1999; Wilson, 1987). Market conditions determine which opportunity structures become available and how capital is allocated. Thus, if institutions such as the welfare system, housing policies, higher education, and financial institutions determine the structure of capital and educational opportunities, then this will also affect minority individuals' opportunities to become entrepreneurs. Based on these insights, Parker (2018) identified three explanations for racial and ethnic differences in entrepreneurship: (1) discrimination, (2) discouragement, and (3) demotivation. We use this theoretical framing to explore the potential explanations for racial and ethnic differences in entrepreneurship.

2.2.1. Discrimination

According to the American Psychological Association, Discrimination is the "unjust or prejudicial treatment of different categories of people."[3] Depending on the situation, discrimination can either encourage or discourage entrepreneurial entry. Discrimination in the labor market, for example, will likely *encourage* entrepreneurial entry, especially for high-skilled individuals. In contrast, discrimination in the capital market and product market are likely to *discourage* entrepreneurial entry.

Labor Market Discrimination. Labor market discrimination occurs when employers either (i) prevent minorities from obtaining jobs in paid employment or (ii) restrict them to relatively low paid jobs (Parker, 2018). Both of these effects act to "push" minority individuals into entrepreneurship " (Amit and Muller, 1995; Bates and Robb, 2014). When minority entrepreneurs face discrimination in the workplace, they find better income and status rewards in entrepreneurship (Light, 1972). According to this view, we should observe higher rates of minority entrepreneurial entry to counteract the discrimination that minorities face in the labor market.

Capital Market Discrimination. Like labor market discrimination, capital market discrimination occurs when lenders (i) prevent minorities from obtaining external sources of finance or (ii) restrict them to less attractive and higher interest rate loans compared to non-minority individuals. Evidence suggests both effects occur. Blanchflower et al. (2003) found Black applicants faced a 25% higher loan denial rate when compared to Whites even after including extensive controls such as credit history. Conditional on receiving loans, Black and Hispanic individuals are frequently charged higher interest rates than similar White borrowers (Bates and Robb, 2013; Blanchflower, 2009). These financing barriers are likely to impede entrepreneurial

[3] https://www.apa.org/topics/racism-bias-discrimination/types-stress

entry because capital is important for start-up success (Cassar, 2014; Cole and Sokolyk, 2018; Robb and Robinson, 2014), and minority entrepreneurs face more difficulty in raising external capital, especially external debt (Fairlie et al., 2022), and Black individuals lack access to supplier credit (Freeland and Keister, 2016). Black individuals on average have about $1/11^{th}$ of personal wealth as Whites (Robb and Fairlie, 2007), and the lack of personal wealth influences how much collateral can be offered. Thus, even if lenders do not discriminate based on race/ethnicity, they often create rules that reward high-collateral and safe-sector start-ups with larger loans. Consistent with theories of statistical discrimination (Guzman and Kacperczyk, 2019), Black individuals will be observed to have fewer loans and smaller loans on average (Parker, 2018). The lack of personal wealth combined with difficulties in acquiring external capital discourage entrepreneurial entry among Black and Hispanic entrepreneurs (Blanchflower et al., 2003; Cavalluzzo and Cavalluzzo, 1998). Capital market discrimination is one component of the market conditions that determine the opportunity structure, and this disproportionately affects minority entrepreneurs.

Product Market Discrimination. Access to product markets is a key barrier faced by minority entrepreneurs (Shelton and Minniti, 2018). In addition to labor market and capital market discrimination, minority members might also face discrimination by consumers. Discrimination *against* minority members, would reduce the returns to entrepreneurship and the number of entrepreneurs in equilibrium (Parker, 2018). Product market discrimination might explain the proliferation of black personal service companies which catered specifically to black Americans in the first half of the 20th century (Myrdal, 1944). However, there is evidence this has shifted since the 1980s in a trend away from niches such as barbershops and mom and pop food stores toward finance, business services, and professional services (Bates, 2003).

2.2.2. Discouragement

In addition to discrimination, minority entrepreneurs might also be *discouraged* from entrepreneurial entry (Atkins et al., 2022; Casey et al., 2022; Neville et al., 2018). Discouraged entrepreneurship describes the phenomenon where individuals become discouraged from entrepreneurship, despite possessing similar criteria to other entrepreneurs. For example, Black entrepreneurs apply for loans less often than White entrepreneurs because they expect to be denied credit, even when they have a good credit history and in settings where strong local banks favor new business development (Fairlie et al., 2022). On the surface, discouragement resembles discrimination—researchers might observe minorities to be less likely to apply for a loan or to start a business. If the lender is less likely to approve a minority's loan application, this might indicate discrimination assuming all other explanations for loan approval are considered (Parker, 2018). However, if the applicant is less likely to apply for a loan, this might instead indicate discouragement. One way to frame them then is that discouragement is a demand side effect and discrimination is a supply side effect. Lenders might discriminate against borrowers based on race or ethnicity (supply side) but borrowers who, fearing discrimination, will not seek loans in the first place (demand side). In this study, we do not disentangle discouragement and discrimination. Rather, we note that both effects might be present and use them to form hypotheses about entrepreneurial entry among minority individuals.

Although it is possible that discouragement might arise due to expected product or labor market discrimination, these effects are likely smaller than the discouragement from capital market discrimination. The reason is because with labor market or product market discouragement, minority individuals can choose different employers or customers, assuming they have substitutes and those substitutes will not discriminate against them. Yet, the discouragement in capital markets

are more difficult for minority entrepreneurs to overcome. The belief, even if unfounded, is that there is systemic discrimination in capital markets against minority individuals. Therefore, going to a different lender will not solve the problem.

2.2.3. Demotivation

In addition to discrimination and discouragement, studies have also found that minority individuals often lack the same opportunities and positive role models that influence entrepreneurial entry. For example, studies have documented strong positive intergenerational links for all ethnic groups except African Americans (Hout and Rosen, 2000). Fewer favorable role models could translate into weaker pro-entrepreneurial attitudes among young blacks (Parker, 2018). A Gallup survey of more than 1,000 young Americans detected greater ignorance of how markets work among Blacks than Whites, and fewer Black youths personally knew small business owners (Walstad and Kourilsky, 1998a). This tendency of Black youths to not personally know small business owners is important. Studies have found Black business owners often lack prior work experience in a family business, and this adversely affects the performance of Black business owners. (Fairlie and Robb, 2007). In addition, although Black self-employed income is similar to Whites at the bottom three quartiles of the income distribution, it is significantly lower at the upper quartile (Hamilton, 2000). This implies a lack of strong positive entrepreneurial role models, and the lack of positive role models is likely to impede entrepreneurial entry.

2.3. Hypotheses development

In this section, we discuss the logic predicting minority entrepreneurial entry with a special emphasis on Black and Hispanic entrepreneurs relative to Whites. We begin with the premise that rates of nascent entrepreneurship and entrepreneurial intention are higher among Black and Hispanic individuals compared to Whites. This is well documented. For example, a survey by

Walstad and Kourilsky (1998a) found that black youth had a stronger desire to start businesses, wanted more entrepreneurship taught in schools, and believed successful entrepreneurs have a responsibility to give back to their community as compared to white youth. Another reason is that fear of failure is low and entrepreneurial self-efficacy and opportunity recognition are high for Black and Hispanic Individuals when compared to Whites (Bates et al., 2018; Parker, 2018; Reynolds et al., 2004). However, we do not only examine nascent entrepreneurship. We also examine business ownership and the gig economy. Here, entrepreneurship outcomes will depend on the net effects of discrimination, discouragement, and demotivation. These factors will exert heterogenous effects, depending on the timing and measure of entrepreneurship. We discuss the logic explaining these racial and ethnic differences in entrepreneurship in the following sections.

2.3.1. Gig work and freelance entrepreneurship.

Gig work is defined as "earning money through short, paid tasks or jobs online or in-person that are conducted through companies that coordinate payment for the service." Examples of gig work include driving for rideshare companies (e.g., Uber or Lyft), selling goods through Etsy, completing online tasks on Mechanical Turk, and providing art or design services through Fiverr or Upwork. *Freelance work* is defined as work done as an independent contractor, i.e., someone who is not hired as an employee but instead works on projects as an outsider to the organization. In the United States, these individuals are sometimes referred to as 1099 employees because they report their income using IRS Form 1099 rather than the W2 form.

Discrimination. Gig workers and freelance entrepreneurs have high flexibility but little job security (Burke et al., 2020; Burke and Cowling, 2020a). How does discrimination influence entrepreneurial entry into gig work and freelance entrepreneurship? We begin by examining capital market, product market, and labor market discrimination among Black and Hispanic

individuals compared to Whites. Capital market discrimination is unlikely to deter entry into gig work and freelance entrepreneurship—capital requirements are low in these activities. Gig work and freelance entrepreneurship thus have low entry costs. It is possible for product market discrimination to discourage gig work and freelance entrepreneurship. For gig work, customers might not want to interact with a gig worker who is of a different race/ethnicity. While this could apply to White individuals, we expect this to apply more to Black and Hispanic individuals who have faced more historical discrimination. Black and/ or Hispanic gig workers might be discriminated against, and this could affect entry into gig work. However, in many platforms, the race/ethnicity is unknown to the customer or revealed after a transaction. Also, customers might know the race/ethnicity of a freelancer who coordinates relationships with clients or who works as a 1099 employee for a company. However, we expect that discrimination is more likely to occur in an interaction between an employer and freelance entrepreneur rather than in an interaction between a customer and freelance entrepreneur. This brings us to labor market discrimination. Of the three types of discrimination, labor market discrimination is likely to exert the biggest effect on Black and Hispanic entrepreneurship as compared to Whites. Labor market discrimination is likely to encourage entrepreneurial entry as gig workers or freelance entrepreneurs. If Black and Hispanic entrepreneurs are discriminated against in the labor market as employees, they can instead work in the gig economy and as freelance entrepreneurs as an escape route from discrimination (Parker, 2018). On the other hand, racial discrimination against Whites by employers is less common. Thus, we expect the effect of labor market discrimination to outweigh the effects of capital market and product market discrimination. Because labor market discrimination pushes Black and Hispanic individuals towards entrepreneurship compared to

Whites, we expect the net effect of discrimination to *encourage* entry into gig work and freelance entrepreneurship among Black and Hispanic individuals.

Discouragement. We expect discouragement to have little effect on deterring entrepreneurial entry into gig work and freelance entrepreneurship among Black and Hispanic individuals. Gig work and freelance entrepreneurship have low entry costs and do not require large capital outlays. Because entrepreneurial intention is highest among Black and Hispanic individuals (Walstad and Kourilsky, 1998b), and gig work and freelance have little capital outlays, we do not expect discouragement to exert a large effect on gig work and freelance entrepreneurship among Black and Hispanic entrepreneurs.

Demotivation. Like discouragement, we also expect demotivation to have a negligible effect on entry into gig work and freelance entrepreneurship among Black and Hispanic individuals. Not personally knowing business owners or having a family member who owns a business is likely to deter some entrepreneurial entry (Fairlie and Robb, 2007). Moreover, interest in starting a business is high among Black and Hispanic individuals (Köllinger and Minniti, 2006). Thus, demotivation might deter some entry into gig work and freelance entrepreneurship, but it is more likely to deter entry into business ownership. As a result, we expect demotivation to have a negligible effect on deterring entry into gig work and freelance entrepreneurship among Black and Hispanic individuals.

In summary, our theoretical arguments suggest that labor market discrimination pushes Black and Hispanic individuals into gig work and freelance entrepreneurship at a greater rate than White individuals. This effect exceeds the capital and product market discrimination effects that deter entry into gig work and freelance entrepreneurship. The net effect of discrimination, therefore, is to encourage entry among Black and Hispanic entrepreneurs into gig work and

freelance entrepreneurship. Further, discouragement and demotivation have little effect on entry into gig work and freelance entrepreneurship. Therefore, we expect Black and Hispanic individuals to be more likely to become gig workers or freelance entrepreneurs when compared to White individuals. Formally:

Hypothesis 1: (a) Black entrepreneurs and (b) Hispanic entrepreneurs have higher rates of gig work compared to White entrepreneurs.

Hypothesis 2: (a) Black entrepreneurs and (b) Hispanic entrepreneurs have higher rates of freelance entrepreneurship compared to White entrepreneurs.

2.3.2. Nascent and withdrawn entrepreneurship

Nascent entrepreneurs are those who are currently in the process of starting a business but have not actually started it yet. Withdrawn entrepreneurs are those who were at some point nascent entrepreneurs but they never started the business. They "withdrew" from the entrepreneurial process of starting a business.

Discrimination. How does discrimination influence the decision to become a nascent entrepreneur or to withdraw from the entrepreneurship process? Like gig work and freelance entrepreneurship, capital market and product market discrimination are unlikely to deter nascent entrepreneurship. These factors might discourage entrepreneurial entry, but they are more likely to do so later in the entrepreneurial process, due to a greater reliance on capital once the business is founded (Cole and Sokolyk, 2018; Robb and Robinson, 2014). This also helps explain why Black and Hispanic entrepreneurs often have higher rates of withdrawal from the entrepreneurship process (Köllinger and Minniti, 2006). In contrast, labor market discrimination is likely to have a stronger relationship with nascent entrepreneurship. That is, we expect discrimination by employers to push Black and Hispanic individuals into nascent entrepreneurship. As before, we

expect the positive effects of labor market discrimination on entrepreneurial entry to exceed the negative effects of capital and product market discrimination on nascent and withdrawn entrepreneurship.

Discouragement. Like gig work and freelance entrepreneurship, we expect discouragement to have little effect on deterring entry into nascent or withdrawn entrepreneurship among Black and Hispanic individuals. The reason is because nascent entrepreneurship has low entry costs and does not require large capital outlays. All that is required is for an individual to be in the process of starting a business. Therefore, there is little discouragement at this stage of the entrepreneurial process. Although potential Black entrepreneurs might be discouraged from applying for loans (Fairlie et al., 2022), this mechanism has little effect on nascent entrepreneurship because these individuals are not yet at that stage. However, the discouragement effect is more prominent for withdrawn entrepreneurship among Black and Hispanic entrepreneurs. That is, if these individuals withdraw from entrepreneurship, one potential reason might be because they became discouraged.

Demotivation. Although we expect demotivation to have a negligible effect on entry into nascent entrepreneurship among Black and Hispanic individuals, this is not the case for withdrawn entrepreneurship. Not knowing a business owner or not having a family member who owns a business is unlikely to deter nascent entrepreneurship because this type of entrepreneurship is early in the entrepreneurship process and only requires individuals to be in the process of starting a business. However, the start-up process can be difficult to navigate. Having a mentor to help them navigate this process is likely to be beneficial. Thus, demotivation is more likely to affect withdrawn entrepreneurship, not nascent entrepreneurship. As a result, we expect demotivation to have a negligible effect on deterring entry into nascent entrepreneurship, but we do expect it to worsen withdrawn entrepreneurship among Black and Hispanic individuals.

In summary, because labor market discrimination encourages entrepreneurial entry and capital and product market discrimination have little effect on discouraging entrepreneurial entry, we expect Black and Hispanic entrepreneurs to be more likely to become nascent entrepreneurs compared to White entrepreneurs. Moreover, discouragement and demotivation are unlikely to influence nascent entrepreneurship. However, we do expect these factors to make withdrawal more likely among Black and Hispanic entrepreneurs. Formally:

Hypothesis 3: (a) Black entrepreneurs and (b) Hispanic entrepreneurs have higher rates of nascent entrepreneurship compared to White entrepreneurs.

Hypothesis 4: (a) Black entrepreneurs and (b) Hispanic entrepreneurs have higher rates withdrawn entrepreneurship compared to White entrepreneurs.

2.3.3. Business ownership

Discrimination. In contrast to the other measures of entrepreneurship, we expect capital market and product market discrimination to deter business ownership among Black and Hispanic entrepreneurs. Compared to gig work and freelance entrepreneurship, business ownership requires greater capital outlays (Cole and Sokolyk, 2018; Robb and Robinson, 2014), and there is a greater disparity of capital use by race and ethnicity. For instance, White entrepreneurs receive lending from commercial institutions at twice the rate of black entrepreneurs (Fairlie and Robb, 2008). Due to the greater reliance on capital, capital market discrimination has more potential to constrain entry into business ownership, especially for Black and Hispanic individuals. Similarly, we expect product market discrimination to deter more business ownership among Black and Hispanic individuals. In contrast to the other measures of entrepreneurship, business ownership entails greater business-to-customer (B2C) interactions. This suggests there is more opportunity for product market discrimination to deter the entry of Black and Hispanic entrepreneurs. If severe

enough, these effects of capital market and product market discrimination might lead Black and Hispanic entrepreneurs to exit (Ahn, 2011). Whereas capital market and product market discrimination discourage business ownership, labor market discrimination exerts the opposite effect. That is, discrimination by employers 'pushes' Black and Hispanic individuals into business ownership (Parker, 2018). However, relative to gig work and freelance entrepreneurship, business ownership entails higher entry costs. We thus expect the negative effects of capital and product market discrimination to exceed the positive effects of labor market discrimination on business ownership. The net effect of discrimination is to discourage business ownership among Black and Hispanic individuals.

Discouragement. Like discrimination, we expect discouragement to deter entry into business ownership among Black and Hispanic individuals. Compared to gig work and freelance entrepreneurship, business ownership entails higher entry costs and requires larger capital outlays (Cole and Sokolyk, 2018; Robb and Robinson, 2014). Even if Black and Hispanic entrepreneurs do not face discrimination, they face societal pressures that discourage them from applying for external finance in the first place (Freeland and Keister, 2016). Black and Hispanic entrepreneurs will be less likely to apply for credit out of fear lenders will deny them credit (Fairlie et al., 2022). Whereas we anticipated discouragement would have little effect on entry into gig work and freelance entrepreneurship, we expect discouragement will deter business ownership, due to the larger reliance on external forms of capital.

Demotivation. We also expect demotivation to deter business ownership among Black and Hispanic individuals. While the absence of entrepreneurial role models might not discourage nascent entrepreneurship, gig work, or freelance entrepreneurship, it is more likely to inhibit business ownership (Fairlie and Robb, 2007). This is because role models help entrepreneurs to

navigate the entrepreneurship process by setting an example for prospective entrepreneurs (Bosma et al., 2012). We contend the influence of role models is more important later in the entrepreneurial process like business ownership.

In summary, we expect capital and product market discrimination to discourage business ownership among Black and Hispanic individuals. This effect exceeds the push effect of labor market discrimination that encourages entry into business ownership. The net effect of discrimination, therefore, is to discourage business ownership among Black and Hispanic entrepreneurs. In contrast to gig work, freelance, and nascent entrepreneurship, we expect discouragement and demotivation to deter entry into business ownership among Black and Hispanic entrepreneurs. Thus, we expect Black and Hispanic individuals to be less likely to become business owners compared to White individuals. Formally:

Hypothesis 5: (a) Black entrepreneurs and (b) Hispanic entrepreneurs have lower rates of business ownership compared to White entrepreneurs.

3. Data and Methods

3.1. Sample and data description.

To test our hypotheses, we use data from the recent Entrepreneurship in the Population Survey (EPOP). The goal of the EPOP is to "better understand experiences with entrepreneurial activity in the U.S population through survey data collection" (EPOP, 2022). The EPOP survey includes several measures of entrepreneurship at the local level and provides policymakers and researchers with new information on the experiences and perceptions of entrepreneurs in their local community (EPOP, 2022). The EPOP Survey uses a nationally representative sample to measure current and former business ownership, the extent to which individuals have taken or are currently taking steps toward business formation, the engagement in freelance work, and engagement with

the gig economy. The EPOP survey uses a stratified sampling design: States without a top 50 MSA constitute a primary sampling stratum. For states with one or more of the top 50 MSAs, each MSA and the rest of the state outside MSAs comprise a primary sampling stratum. MSAs comprised of counties from multiple states are divided into multiple primary sampling strata, one for each state. For more details on the sampling design, see the EPOP user guide (EPOP, 2022). The EPOP sample comprises a maximum of 95,046 observations over the years 2022, 2023, and 2024, though the sample size differs depending on the measure. The main reason being there are logical skips (i.e., questions were not asked if they did not meet certain criteria). EPOP plans to introduce more data over the next several years.

3.2. Variables

3.2.1. Dependent variables

We acknowledge that entrepreneurship is an "essentially contested concept" (Gallie, 1955). To avoid the debate of what is considered entrepreneurship, we examine a variety of different potential measures of entrepreneurship in three categories: (1) Gig work, (2) freelance entrepreneurship, (3) business ownership. Business ownership is the least controversial proxy for entrepreneurship. However, we believe that gig work and freelance work contain some aspects of entrepreneurship (e.g., self-employment) and that all are suitable for examination in this study. All measures are binary coded (1=yes; 0=no). In the category gig work, there are three potential choices to examine: *Main Job Gig Work, Second Job Gig Work,* and *Outside Gig Work,* where outside gig work refers to gig work outside of the forms of employment the respondent already mentioned. We use the first measure, *Main Job Gig Work,* as our measure of gig work. Although we could also use the other two measures, we believe gig work as the main job matches our theory the best. Similarly, in the category freelance entrepreneurship, there are also three potential choices

to examine: *Ever Freelancer, Still Freelancer,* and *Ever Owned a Business Excluding Freelance.* We use the second measure, *Still Freelancer,* to capture freelance entrepreneurship. Although having ever been a freelance entrepreneur is useful to examine, our interest lies in those who are *currently* freelancers. The last measure makes a distinction between business ownership and ownership that is not freelance to account for some overlap. We do not focus on this measure in the study. In the category business ownership, there are four potential measures: *Ever Owned a Business, Still Own a Business, Nascent Entrepreneur,* and *Withdrawn Entrepreneur.* To examine business ownership, we use the measure of *Still Own a Business* because we wish to capture current business owners. Ever owning a business is useful but does not necessarily capture current entrepreneurs. We also examine *Nascent Entrepreneurship* and *Withdrawn Entrepreneurship.*

3.2.2. Independent variables

Because we focus on racial and ethnic differences in entrepreneurship, our focal explanatory variables are the respondent's race/ethnicity. This includes four measures: *Black, Hispanic, White,* and *Other/Mixed.* Each variable is binary (1=yes; 0=no) and mutually exclusive. That is, *Black* and *White* are coded in the EPOP survey as Black/Non-Hispanic and White/Non-Hispanic. EPOP codes individuals Mixed if belonging to multiple races. *Other* also includes Native-American and Asian. We do not recode any of these variables and rely on EPOP's definitions of race/ethnicity. Approximately 19% of the sample are Black, 14% are Hispanic, 8% are Other/Mixed, and 60% are White.

3.2.3. Control variables.

We include several control variables in our regression models. Because race, ethnicity, and entrepreneurship rates might vary by Metro area (Glaeser et al., 2010), we include *Urban* (1=yes; 0=no). We also include the *Age* of the respondent. Studies have found that entrepreneurship entry

increases with age often at a diminishing marginal rate (Azoulay et al., 2020; Boudreaux and Nikolaev, 2019; Lévesque and Minniti, 2011, 2006; Zhang and Acs, 2018) The EPOP survey provides the ages of the respondent in five bins: 18-29, 30-39, 40-49, 50-64, and 65+. Next, we include the respondent's gender. Studies often find a gender gap in entrepreneurship where women are less likely to become entrepreneurs than men (Coleman and Robb, 2009; Fairlie and Robb, 2009; Guzman and Kacperczyk, 2019). *Female* is binary coded (1=yes; 0=no) with male being the reference category. The EPOP survey does allow respondents to identify as non-binary. However, this comprises only a small portion of survey responses (< 0.005%). Consequently, this variable is missing in most regression models. As a result, we exclude this category from the analysis to ensure an equal comparison of gender in all models. Next, we include an individual's education. Studies have found education is related to entrepreneurial entry (Elert et al., 2015; Oosterbeek et al., 2010; Van Der Sluis et al., 2008). The EPOP survey includes four categories for education: *Less than College, Associate's Degree or Some College, Bachelor's Degree*, and *Graduate Degree*. Next, we include the respondent's marital status. Surprisingly, there are few studies on the role of marital status and entrepreneurship. The closest literature is that of family composition and entrepreneurship (Aldrich and Cliff, 2003). However, studies have documented that married men are more likely to be entrepreneurs (Parker, 2018; Shane, 2008). The EPOP survey includes five categories for marital status: *Single, Married, Widowed, Divorced,* and *Live with Partner.* Next, we include a respondent's military status. Little work has been done on this topic, but Heinz et al. (2017) found that veterans were twice as likely to be self-employed compared with non-veterans. This includes *Non-military, Active Duty,* and *Veteran.* Several studies have found that immigrants are more likely to be entrepreneurs (Dabić et al., 2020; Kerr and Kerr, 2020; Levie, 2007; Lofstrom and Bean, 2002; Malki et al., 2022). We thus include citizenship. *US Citizen* is

binary coded (1=yes; 0=no). We also include the respondent's number of children as a measure of family size. This speaks to the literature on family composition (Aldrich and Cliff, 2003). The EPOP survey includes four categories: *No Children, One Child, Two Children,* and *Three or More Children.* We also include a measure of household debt, given the importance of access to capital. *Household Debt* is coded based on the variable DEM_DEBT, which has four categories: 1: Have a manageable amount of debt; 2: Have a bit more debt than is manageable; 3: Have far more debt than is manageable; and 4: Do not have any debt. We coded *Household Debt* 1 if DEM_DEBT is 2 or 3 and coded it 0 otherwise. We include industry fixed effects to account for differences between business types. Lastly, we also include four indicators for the region of the country: *Northeast, Midwest, South,* and *West.* We include these regional fixed effects to account for geographical differences in entrepreneurship in the US.

3.3. Methods

We use several methods to test our hypotheses. First, we test for statistically significant differences in group means between entrepreneurs in the following race/ethnicity categories: Black, Hispanic, White, and Other/Mixed. Consistent with earlier studies (Hechavarria et al., 2009; Reynolds et al., 2016), we also illustrate these differences to ease interpretation. Second, we estimate logistic regression models for all measures of entrepreneurship except *Interest in Starting a Business.* We use logistic regression because these measures of entrepreneurship are binary response variables. We include the full set of control variables in all models and use robust standard errors.

3.3.1. Descriptive analysis

Table 1 reports the descriptive statistics for the EPOP sample. In Panel A of Table 1, 23% of individuals were involved in gig work as the main job. On average, 39% of individuals were

involved in freelance entrepreneurship. Similarly, 37% of individuals were business owners. For early-stage entrepreneurship activity, 20% of individuals were nascent business owners and 20% were withdrawn entrepreneurs.

[Insert Table 1 Here]

Although informative, these descriptions report sample averages that mask heterogeneity by race/ethnicity. To better capture this heterogeneity, we report the descriptive statistics by race/ethnicity for Black (Panel B), Hispanic (Panel C), Other/Mixed (Panel D), and White (Panel E). Table 1 also reports a t-test comparing each race/ethnicity against the baseline category, White. For example, although 23% of individuals do gig work as their main job on average, it ranges from 33% for Hispanic to 18% for White. For freelance work, 39% of individuals are freelancers, on average, but this ranges from 50% for Black to 33% for White.

There are larger differences between business owners, nascent entrepreneurs, and withdrawn entrepreneurs. On average, 37% are business owners, but it ranges from 52% for Black to 29% for White. Strikingly, the nascent entrepreneurship rate is more than double for Black (30%) and Hispanic (31%) individuals as it is for White individuals (14%). Lastly, the withdrawn entrepreneurship rate is 39% for Black, 41% for Hispanic, and 26% for White.

[Insert Figure 1 Here]

To better ease comparisons, we illustrate the differences in the rates of entrepreneurship by race/ethnicity in Figure 1. Black and Hispanic individuals have higher rates of entrepreneurship compared to Whites for all measures of entrepreneurship. This includes gig work, freelance work, business ownership, nascent entrepreneurship, and withdrawn entrepreneurship.

3.3.2. Logistic regression

Our descriptive analysis reports sizable differences between Black and Hispanic entrepreneurs and White entrepreneurs in terms of gig work, freelance entrepreneurship, nascent and withdrawn entrepreneurship, and business ownership. This section analyzes whether these differences persist once we adjust for regional differences and other observable individual traits. To test our hypotheses about the differences in entrepreneurship between race/ethnicity, we estimate logistic regression models. Consider the following latent variable model:

$$E_i^* = \alpha + \beta R_i + X'\delta + \varepsilon_i \quad (1)$$

where *i* indexes individual observations. *R* and *X* are the vectors of race/ethnicity and controls, respectively. E_i^* is the latent propensity of the decision to become an entrepreneur or not, but E_i^* is unobserved. Rather, we observe E_i , which is a binary indicator of whether an individual is an entrepreneur or not. It equals one if $E_i^* > 0$ and zero if $E_i^* \leq 0$. Assuming ε has the standard logistic distribution, the logit model is given by:

$$Prob(E_i = 1) = ln\left(\frac{p}{1-p}\right) = \Lambda(\alpha + \beta R_i + X'\delta + \varepsilon_i) \quad (2)$$

where $\Lambda = e^z/(1 + e^z)$.

3.3.3. Multinomial logistic regression

As an alternative to logistic regression, we test our hypotheses using multinomial logistic regression. This approach is suitable with categorical data for the dependent variable that can fall into one of several mutually exclusive categories (Cameron and Trivedi, 2022). In this study, we have data on several different measures of entrepreneurship that could be modeled as categorical data for the dependent variable. In general, these categories are not mutually exclusive (e.g., business owners could also work as freelance or gig workers). However, we can satisfy the

requirement that each category be mutually exclusive by restricting our sample to only those individuals who participate in one category of entrepreneurship. This is the approach we take for the multinomial logistic regression. When examining gig work, for example, the analysis is only for individuals who have never freelanced or owned a business and are not currently taking steps to own a business.

Multinomial logistic regression coefficients can be interpreted similarly as binary logit model parameters, with comparison to the base category. This is because the multinomial logit model is equivalent to a series of pairwise logit models (Cameron and Trivedi, 2022). The multinomial logistic regression specifies that

$$p_{ij} = \frac{exp(x_i'\beta_j)}{\sum_{l=1}^{m} exp(x_i'\beta_l)}, \qquad j = 1, \ldots, m \tag{3}$$

where $x_i'\beta_j$ is the same set of variables in the logistic regression above. The multinomial logistic regression ensures that $0 < p_{ij} < 1$ and $\sum_{j=1}^{m} p_{ij} = 1$. Finally, to ensure identification, β_j is set to zero for one category, and we interpret coefficients relative to that category, known as the base category. In our study, the base category is non-entrepreneurs.

4. Results

4.1. Logistic regression analysis

Table 2 reports our logistic regression estimates. We use logistic regression because our dependent variables are binary, and we report coefficient estimates as odds ratios (e^{β})[4]. Except for withdrawn entrepreneurship for Hispanic individuals, Black and Hispanic individuals are more likely to become entrepreneurs compared to White individuals. Compared to Whites, Black

[4] Odds ratio (OR) are interpreted by differencing from 1. OR > 1 indicate a higher likelihood and OR < 1 indicate a lower likelihood.

individuals are 84.9% ($p = 0.000$) more likely to be gig workers, 64.8% ($p = 0.000$) more likely to be freelancers, 150.8% ($p = 0.000$) more likely to be nascent entrepreneurs, 38.7% ($p = 0.000$) more likely to withdraw from entrepreneurship, and 90.8% ($p = 0.000$) more likely to be a business owner. We observe a similar trend among Hispanic individuals. Compared to Whites, Hispanic individuals are 84.5% ($p = 0.000$) more likely to be gig workers, 48% ($p = 0.000$) more likely to be freelancers, 76.9% ($p = 0.000$) more likely to be nascent entrepreneurs, and 41.3% ($p = 0.008$) more likely to be a business owner. There is no statistically significant relationship for withdrawn entrepreneurship.

Overall, this evidence supports our hypotheses that Black and Hispanic individuals would have higher rates of gig work (H1a and H1b), freelance entrepreneurship (H2a and H2b), and nascent entrepreneurship (H3a and H3b). This evidence supports the hypothesis that Black individuals would have higher rates of withdrawn entrepreneurship (H4a) but we did not find similar evidence for withdrawn entrepreneurship among Hispanic individuals (H4b). Lastly, we do not find evidence to support the hypothesis that Black and Hispanic individuals would have lower rates of business ownership (H5a and H5b). The reason is because we hypothesized that Black (H5a) and Hispanic (H5b) individuals would have lower rates of business ownership compared to White individuals, but we found the opposite result.

[Insert Table 2 here]

Although logistic regression reports coefficient estimates β (or odds ratios, e^{β}), we cannot interpret these effects as marginal effects with logistic regression. To facilitate a more meaningful interpretation of the magnitude of our effects, we report the predictive margins for each entrepreneurship measure by race/ethnicity using robust standard errors and 95% confidence

intervals. We use the average marginal effects to plot the predicted margins that ease the interpretation.

Figure 2 reports the predictive margins. The results indicate that Black and Hispanic individuals are more likely than White individuals to become gig workers, freelancers, business owners, or nascent entrepreneurs. Specifically, the predicted probability of gig work for Black and Hispanic individuals is 29% and 28%, respectively. These predictions are statistically and significantly different (henceforth significantly different) from White (19%) and Other/Mixed (20%). This amounts to a 9-10 percentage point difference relative to Whites. Black and Hispanic individuals have a 47% and 45% predicted probability of being a freelance entrepreneur. This is significantly different from the predicted probabilities for White (34%) and Other/Mixed (35%). This is a 13 and 11 percentage point difference compared to Whites for Black and Hispanic individuals, respectively. Black and Hispanic individuals have a 46% and 40% predicted probability of being a business owner. This is significantly different from White individuals (33%) and represents a 13 and seven percentage point difference for Black and Hispanic individuals. Lastly, Black and Hispanic individuals have a 27% and 22% predicted probability of being a nascent entrepreneur—significantly different from White (15%) and Other/Mixed (20%). This is a 12 and 7 percentage point difference relative to Whites for Black and Hispanic individuals.

[Insert Figure 2 here]

4.2. Multinomial logistic regression analysis

Table 3 reports the results from a multinomial logistic regression analysis where the dependent variable can take on three values: (1) withdrawn entrepreneur, (2) business owner, and (3) nascent entrepreneur (reference category). Controlling for other variables in the model, Black individuals are 8.3% less likely than White individuals to be withdrawn entrepreneurs rather than

nascent entrepreneurs. Similarly, Black individuals are 13% less likely than White individuals to be business owners rather than nascent entrepreneurs. We also find that Hispanic individuals are 28% less likely than White individuals to be business owners rather than nascent entrepreneurs.

These findings are consistent with the results from Table 2. The logistic regression results from Table 2 indicate that Black and Hispanic individuals are more likely to be nascent entrepreneurs, and the multinomial model says that Black individuals and Hispanic individuals are less likely to be business owners than nascent entrepreneurs. It also says that Black individuals, but not Hispanic individuals are less likely to be withdrawn entrepreneurs than nascent entrepreneurs. Both models point to a higher likelihood of nascent entrepreneurship among Black individuals.

[Insert Table 3 here]

4.3. Robustness checks

Because EPOP is a survey-based measure that asks respondents if they own a business, it captures less formal forms of business ownership than other data sources (Johnson and Newsom, 2023). In this section, therefore, we provide several robustness checks to ensure a better comparison between our study and others.

4.3.1. Restricting businesses to those that have a tax ID.

One potential explanation for the higher rate of minority entrepreneurship is that EPOP's survey was designed to be more inclusive of informal forms of business ownership (Brummet and Johnson, 2022). As a result, EPOP uses a broader definition of business ownership that includes business owners who may not have tax records or documented business income (Johnson and Newsom, 2023). To adjust for this, our first robustness check is to restrict the sample to only those businesses that have tax IDs. We therefore ran the robustness check for the tax id variable

(PE_STEPS_5_4). Column 1 of Table 4 reports these results. We found that, compared to White individuals, Black individuals were more likely to be a business owner. This is consistent with our main results, where we found that Black individuals had higher rates of business ownership when compared to White individuals. However, since we hypothesized a *lower* rate of business ownership, we conclude that, once again, the evidence does not support H5a. We also found no statistically significant difference between Hispanic and White individuals for this robustness check, so we also do not find evidence to support H5b, which is consistent with our main results.

4.3.2. Restricting business ownership to the primary job in the past week.

Another potential explanation for the higher rates of minority entrepreneurship found in this study is that the entrepreneurship activity might not be the individual's primary job. To ensure a better comparison, we restricted our sample to only those businesses that worked for Profit (S_JOB_1==3) or Not for Profit (S_JOB_1==4) as their main job/work arrangement in the last week. Column 2 of Table 4 reports these results and finds that Black and Hispanic individuals are more likely to be business owners when the business type is restricted to their main job/work arrangement. Once again, this is consistent with our main findings yet opposite of what we hypothesized. We therefore conclude that the evidence fails to support H5a and H5b.

4.3.3. Restricting gig work to those with a confirmed gig platform.

Because the definition of gig work in EPOP is broad, an additional robustness check is to restrict the sample to gig work that has been confirmed to be a gig platform (S_GIGPLATFORM_DRV=1,2, or 3). Column 3 of Table 4 reports these results, which are very similar in magnitude, though they are not statistically significant. As a result, this robustness check does not support H1a and H1b.

4.3.4. Restricting nascent entrepreneurs to be those who have taken staffing steps.

The definition of nascent entrepreneurship in EPOP is very broad and designed to be inclusive in that it only captures whether a respondent is currently trying to start a business. As a final robustness check, we restrict the sample to only those nascent entrepreneurs who had taken a particular set of steps towards starting a business. Thus, to restrict our sample in this way, we used the variable, Staffing and Growth Steps (PE_STEPS_6_1-PE_STEPS_6_4). These steps include: first customer, made sale, hired employee, and quit job. Any of these steps represents a milestone for the business and restricts the definition of nascent entrepreneurship into those that are more promising for entrepreneurial entry. Column 4 of Table 4 reports these results and finds that Black and Hispanic individuals are more likely than White individuals to be nascent entrepreneurs who have taken staffing steps. This is consistent with our main results and supports H3a and H3b.

[Insert Table 4 here]

4.4. Post-analytic extension

In addition to the robustness checks, we investigated whether some of the mechanisms we have discussed might explain the differential rates of entrepreneurship by race and ethnicity. Specifically, we examine the role of two potential moderators: finance and networking.

First, is the role of finance. For finance, we examined the role of personal finance as a financial challenge (BO_CHALLENGE_1_3), "Which of the following financial or economic security challenges are you currently facing (1=personal/family finances; 0=else)." We used this variable because we argued that Black and Hispanic individuals might be less likely to become entrepreneurs, especially business owners, due to the reliance on external capital. If personal finance is a challenge, then this variable should help to capture this mechanism. Therefore, our

moderator examines whether personal financial challenges have differential effects on entrepreneurial entry by race and ethnicity. The results in Table 5 indicate that personal financial challenges are associated with a higher likelihood of gig work and nascent entrepreneurship in general, and it predicts a higher likelihood of gig work in particular for Black individuals compared to White individuals. More importantly, we find a negative moderating effect of personal financial challenges, suggesting that although personal financial challenges predict a higher likelihood of gig work, this is weaker for Black individuals compared to White individuals. Stated differently, personal financial challenges are less of a reason to enter gig work for Black individuals compared to White individuals. We find no other statistically significant relationship for the other entrepreneurship measures or for Hispanic individuals.

[Insert Table 5 here]

Second, is the role of networking. For networking, we examined the role of networking steps (PE_STEPS_1_5). EPOP asked individuals "which of the following networking steps did you take to pursue [INSERT DOV_ACTIVITY]: Friend, family member, mentor, experts, or none of the above. The last variable, PE_STEPS_1_5, captures whether they did not take any networking steps. This variable is coded 1 if they took zero networking steps and 0 otherwise. We used this variable because we argued that mentoring plays a role in entrepreneurial entry. In our discussion of demotivation, we explained how Black individuals often have less experience working in family businesses and personally know fewer business owners compared to White individuals. Although one of the questions asked specifically about mentoring, another one asked about experts. Because it is difficult to disentangle these two, we decided it was best to examine whether they had not taken any networking steps. The results in Table 5 indicate that not taking any networking steps is associated with a lower likelihood of gig work and a higher likelihood of

freelance work for Black individuals compared to White individuals. We also find that not taking any networking steps is associated with a lower likelihood of nascent entrepreneurship in general (0.419; p =.000), and an even lower likelihood for Hispanic individuals compared to White individuals (0.548; p = .045). We do not find any association for business ownership.

4.5. Summary of results

In sum, our findings indicated that Black and Hispanic individuals were more likely than White individuals to become gig workers, freelancers, business owners, nascent entrepreneurs, and withdrawn entrepreneurs. When examining effect sizes, we found that the differences were greatest for freelance workers and nascent entrepreneurs. We found that Black individuals were 12 percentage points more likely to be a nascent entrepreneur than Whites. This is a little less than double the rate of nascent entrepreneurship for Whites (27% vs. 15%). This is similar to the descriptive statistics of the raw data and suggests a higher rate of nascent entrepreneurship for Black and Hispanic individuals even after controlling for observable traits and regional differences. Hispanic individuals are also more likely than White individuals to become gig workers, freelancers, nascent entrepreneurs, and business owners, but the differences are typically smaller.

Our post-hoc analysis of the channels of financial and social capital also revealed some important differences. Although we found that Black and Hispanic individuals were more likely to become gig workers compared to White individuals, personal financial challenges proved to be less of a driver of gig work among Black individuals. Also, failure to take any networking steps lowered the likelihood that Black individuals would become gig workers. On the other hand, not taking any networking steps increased the likelihood that black individuals would become freelance workers compared to white individuals. In some ways, these seem like conflicting

results, since gig work and freelance work can be similar. However, we know there are important differences between the two, and our findings provide evidence that social capital can play unique roles here. For Hispanic individuals, we found that not taking any networking steps lowered the likelihood that Hispanic individuals would become nascent entrepreneurs as compared to White individuals. This is consistent with our expectation that social capital would facilitate entrepreneurship (Boudreaux et al., 2022).

5. Discussion

Our study's objective was to examine racial and ethnic differences in entrepreneurship by focusing on the differences among Black, Hispanic, and White entrepreneurs. Our analysis of the Entrepreneurship in the Population Survey (EPOP) revealed several substantial differences. To summarize our findings: Black and Hispanic entrepreneurs are more likely to become gig workers and freelance entrepreneurs compared to White entrepreneurs; Black and Hispanic entrepreneurs are also more likely to be business owners, be nascent entrepreneurs or withdrawn entrepreneurs. In the multinomial logistic regression model, however, we found that Black and Hispanic individuals were less likely to be freelancers and that Hispanic individuals were less likely to be business owners, compared to White individuals. These findings suggest racial and ethnic differences in entrepreneurship is more nuanced than previously believed.

5.1. Contributions to and implications for the entrepreneurship literature

Our findings extend the entrepreneurship literature in several ways. First, building on a number of studies exploring how race and ethnicity influence entrepreneurship (Boudreaux, 2020; Cordero and Lewis, 2024; Fairlie et al., 2022; Fairlie and Robb, 2007; Parker, 2018), our findings provide support for the finding that nascent entrepreneurship and entrepreneurial intentions are

highest among Black and Hispanic entrepreneurs (Bates et al., 2018; Parker, 2018; Reynolds et al., 2004).

Yet, our results also shed new light on previously unexplored relationships. Specifically, gig work and freelance entrepreneurship are highest among Black and Hispanic entrepreneurs. Taken together, these findings suggest the type of entrepreneurship matters when discussing racial and ethnic differences in entrepreneurship. When entry costs are low—such as with gig work, freelance entrepreneurship, and nascent entrepreneurship—the rates of entrepreneurship are highest among Black and Hispanic entrepreneurs. In contrast, business ownership entails greater entry costs and greater use of personal and social networks. In the descriptive analysis, we find the rates of business ownership are highest among Black and Hispanic entrepreneurs. However, in our regression analysis, we find the rates of entrepreneurship among Black and Hispanic individuals are highest for all measures. Our findings, thus, provide a more nuanced picture of racial and ethnic differences in entrepreneurship than previously believed.

Second, our findings also contribute to the burgeoning literature on diversity and entrepreneurship (Bakker and McMullen, 2023; Tonoyan and Boudreaux, 2023; van den Groenendaal et al., 2023). Contrary to earlier findings, our study finds the rates of entrepreneurship are highest among Black and Hispanic individuals. These results support recent findings that Black entrepreneurs are equally credit worthy and ought not to be discouraged from applying for loans (Fairlie et al., 2022). Our findings suggest Black and Hispanic individuals should not be discouraged from entrepreneurship. This is reminiscent of Robb and Watson (2012) who found that, after adjusting for differences in risk attitudes, there was little performance differences between female and male entrepreneurs. They made an excellent conclusion (p. 556): “These results should dispel the myth that female-owned firms underperform male-owned firms simply

because they are smaller, or because females prefer to take fewer risks." Similarly, our findings should not discourage minority individuals from entrepreneurship. That said, future research might consider exploring the margins under which racial and ethnic differences in entrepreneurship are largest. We hypothesized that racial and ethnic differences in entrepreneurship would be largest when entry costs are low and external capital requirements are high. Based on this logic, future research might consider examining racial and ethnic differences in incorporated entrepreneurship like C-corporations, S-corporations, and to a lesser extent, LLCs (Levine and Rubinstein, 2017). Similarly, although we speculated about the role that access to capital and interest rates plays in explaining racial and ethnic differences in entrepreneurship, we did not specifically explore these mechanisms. Future work might consider exploring these mechanisms in more detail.

Lastly, our findings also contribute to the budding literature on gig work and freelance entrepreneurship (Burke et al., 2020; Burke and Cowling, 2020a, 2020b; van den Groenendaal et al., 2023). Although scholars have traditionally viewed freelance and gig work as a substitute for employment, there is a growing recognition that freelance and gig work is now a direct provider of entrepreneurship (Burke, 2012; Burke et al., 2020; Burke and Cowling, 2015). Despite this recognition, scholars have overlooked the role that race/ethnicity plays in gig work and freelance entrepreneurship. This is due to data limitations that, until recently, have been difficult to overcome. However, the recent EPOP survey provides an excellent avenue to explore these questions as it asks many questions related to gig work and freelance entrepreneurship. Our findings that Black and Hispanic individuals have the highest rates of gig work and freelance entrepreneurship answers the call for scholars to refrain from focusing solely on restrictive definitions of entrepreneurship (e.g., gazelles, unicorns, high-growth oriented) and instead focus

on a broader more inclusive definition of entrepreneurship (Aldrich and Ruef, 2018; Audretsch et al., 2015; Welter et al., 2017).

5.2. Limitations and suggested directions

Like any study, our results are subject to a few limitations that future research could address. One limitation is that our study does not examine the causal impact of race/ethnicity on entrepreneurship activity (King et al., 2021). For example, if *x* increased by one unit, how much would we expect *y* to change? Applying this to our study means if race/ethnicity changed, how much would we expect the entrepreneurship rate to change? Fortunately, race/ethnicity are more likely to be random than other measures, which limits this criticism. Nonetheless, there are some possibilities for future research to consider.

One possibility is in the realm of laboratory or field experiments that could randomize race/ethnicity among several treatments. For example, Bertrand and Mullainathan (2004) randomly assigned African-American- and White-sounding names for interviews and found callbacks for interviews were more responsive for White-sounding names than for African-American ones. Using a similar approach, Carpusor and Loges (2006) randomly assigned Arab, African American, and White names and found African American names fared the worst in callbacks for housing vacancies. Future studies might consider a similar identification strategy to examine the causal impact of race/ethnicity on business applications. Although entrepreneurship like gig work, freelance entrepreneurship, and business ownership might not apply, due to individuals' self-selection and the lack of application screening, settings such as venture capital and business incorporation might prove to be a more fruitful avenue. Yet another possibility is to use more sophisticated identification strategies such as difference-in-differences, regression

discontinuity, instrumental variables, or matching algorithms to better address the forward causal questions (King et al., 2021).

It is also worth noting that the EPOP gathered data after Covid-19. Covid-19 changed the economic landscape for entrepreneurs, and this might partially explain why we find higher rates of minority entrepreneurship than some previous studies. Moreover, EPOP uses a broader definition of business ownership that includes business owners who may not have tax records or documented business income (Johnson and Newsom, 2023). The high rate of minority entrepreneurship is consistent with the survey's design to be more inclusive of informal forms of business ownership (Brummet and Johnson, 2022). Our findings are thus only a first step in addressing racial and ethnic differences in entrepreneurship. Future research should consider examining other data sources gathered after Covid-19 to assess whether these findings are unique to EPOP or are indicative of a general trend following Covid-19.

Another limitation is that the EPOP survey treats the races as mutually exclusive. That is, an individual can be Black or Hispanic but not both. If they do identify as both, then they might choose the other/mixed category, but this is a catch-all category that is not descriptive. Future research might examine the racial differences in entrepreneurship explored here using surveys that allow for individuals to choose multiple categories rather than one category or "other".

Lastly, although we hypothesized three theoretical mechanisms—discrimination, discouragement, and demotivation—we do not formally test them. Unfortunately, data availability limits our ability to test each of these mechanisms. However, these mechanisms are well grounded in theory and have acquired empirical support. On discrimination, Chatterji and Seamans (2012) found that the expansion of credit card availability encouraged entrepreneurial entry for Black entrepreneurs, and the results were strongest in areas with high rates of historical racial

discrimination. This discrimination leads to discouragement. Fairlie et al. (2022) found that minority individuals were less likely to seek loans, not because they were less qualified, but because they felt they would be denied. On demotivation, studies have found strong intergenerational links in self-employment for every American ethnic group *except* for African Americans (Hout and Rosen, 2000). Future research might consider exploring a complete model that accounts for each of these theoretical mechanisms as they pertain to the racial and ethnic differences in entrepreneurship.

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FIGURES AND TABLES

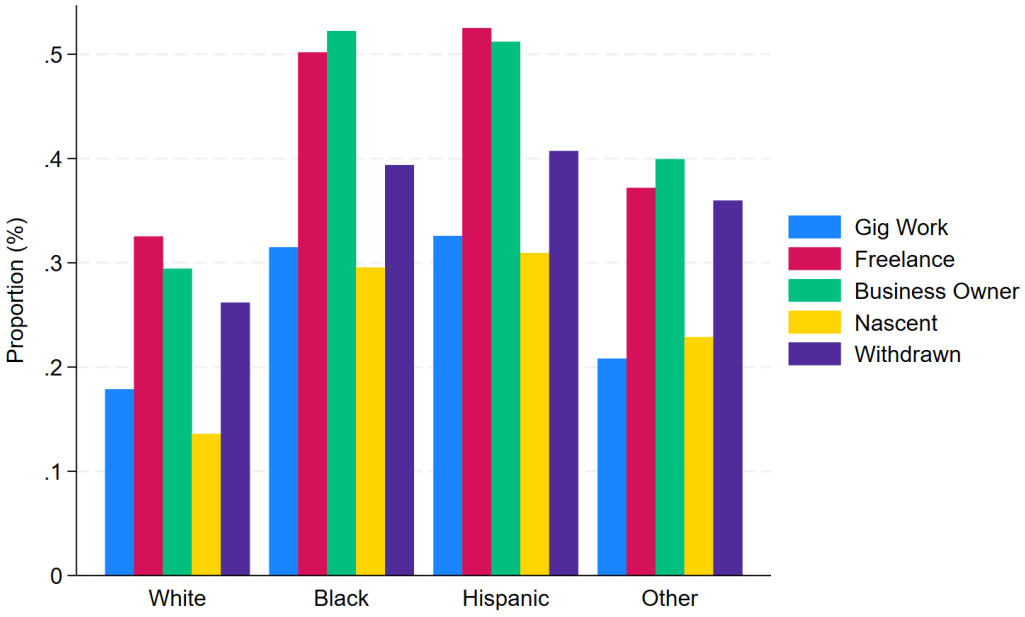

Figure 1. Entrepreneurship by Race/Ethnicity

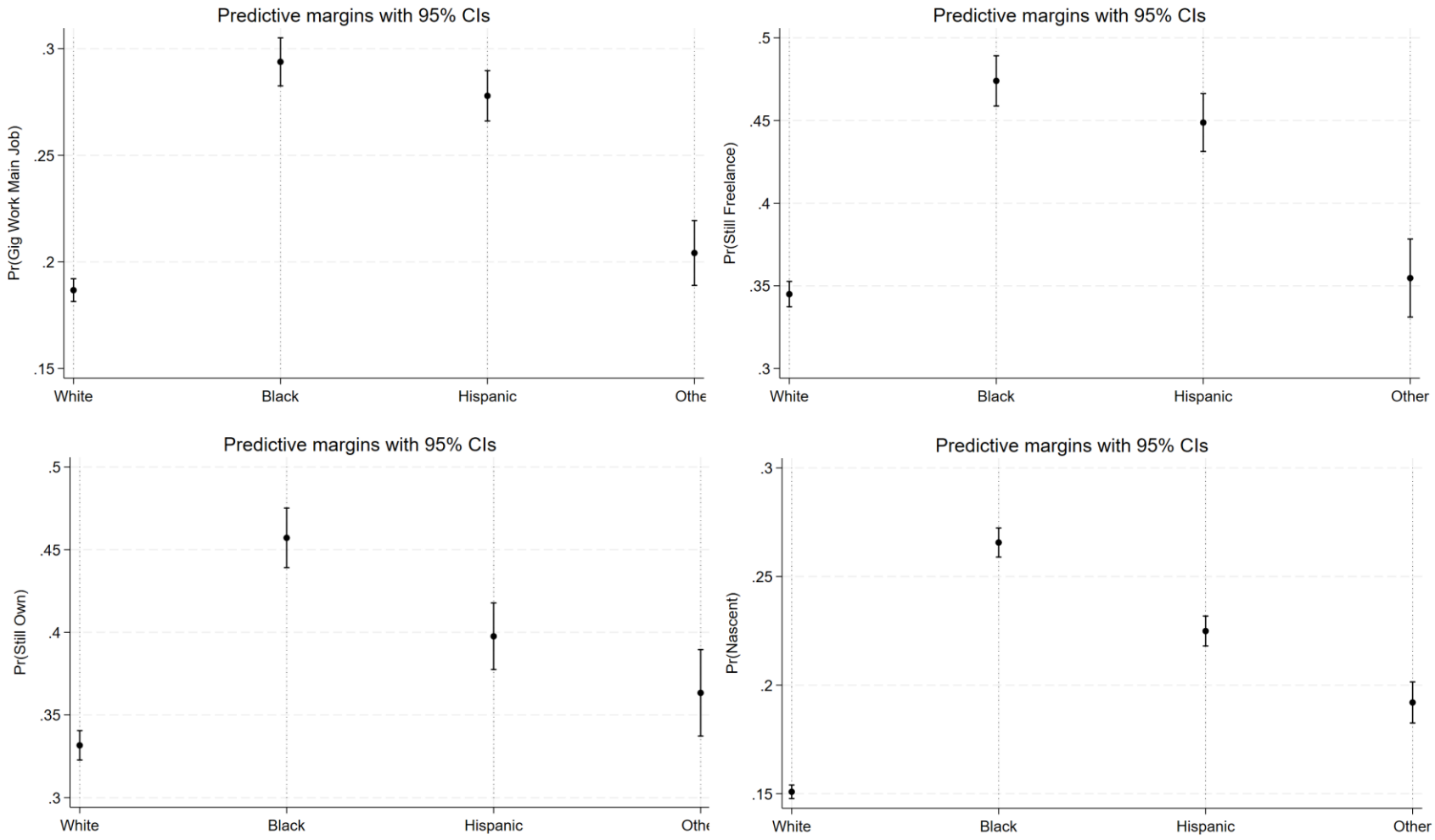

Figure 2. Predicted probabilities among race/ethnicity.
Notes. These figures report the predictive margins (with 95% confidence intervals) following the regression models reported in Table 2.

Table 1: Descriptive Statistics

	Panel A: Overall Sample			Panel B: Black				Panel C: Hispanic				Panel D: Other/Mixed				Panel E: White		
Variable	N	Mean	SD	N	Mean	SD	Diff t-stat	N	Mean	SD	Diff t-stat	N	Mean	SD	Diff t-stat	N	Mean	SD
Gig Work	39699	.229	.42	7306	.315	.465	*25.07****	6151	.326	.469	*25.43****	3392	.208	.406	*4.15****	22798	.179	.383
Freelancer	25936	.388	.487	4759	.502	.5	*22.40****	3532	.525	.499	*22.62****	1958	.372	.483	*22.62****	15653	.325	.469
Business owner	18423	.373	.484	3297	.522	.5	*24.68****	2463	.512	.5	*21.07****	1462	.399	.49	*8.22****	11175	.294	.456
Nascent entrepreneur	95046	.197	.398	17992	.295	.456	*49.98****	12996	.31	.462	*48.55****	7252	.229	.42	*21.15****	56669	.136	.343
Withdrawn entrepreneur	78233	.317	.465	15910	.394	.489	*31.59****	11260	.407	.491	*30.65****	5883	.36	.48	*15.89****	45085	.262	.44
Man	95561	.488	.5	18096	.564	.496	*26.31****	13088	.52	.5	*13.88****	7295	.52	.5	*10.84****	56942	.453	.498
White	95421	.597	.491	18096	--	--	--	13088	--	--	--	7295	--	--	--	56942	--	--
Black	95421	.19	.392	18096	--	--	--	13088	--	--	--	7295	--	--	--	56942	--	--
Hispanic	95421	.137	.344	18096	--	--	--	13088	--	--	--	7295	--	--	--	56942	--	--
Other/Mixed	95421	.076	.266	18096	--	--	--	13088	--	--	--	7295	--	--	--	56942	--	--
Urban	93789	.765	.424	17858	.841	.366	*31.87****	12858	.826	.379	*24.16****	7176	.792	.406	*12.40****	55759	.723	.447
18-29	95378	.154	.361	18049	.22	.414	*43.56****	13043	.282	.45	*57.66****	7220	.207	.405	*28.23****	56942	.097	.297
30-39	95378	.199	.399	18049	.205	.404	*8.23****	13043	.26	.439	*21.61****	7220	.243	.429	*13.48****	56942	.178	.382
40-49	95378	.172	.377	18049	.185	.389	*9.891****	13043	.216	.412	*17.17****	7220	.197	.398	*9.32****	56942	.154	.361
50-59	95378	.237	.425	18049	.239	.426	*5.23****	13043	.159	.365	*24.15****	7220	.213	.409	*8.38****	56942	.258	.438
Female	95561	.512	.5	18096	.436	.496	*26.31****	13088	.48	.5	*13.88****	7295	.48	.5	*10.84****	56942	.547	.498
AD or Some College	92306	.329	.47	17171	.364	.481	*10.85****	12299	.33	.47	*2.09***	6367	.316	.465	*0.70*	56330	.32	.466
Bachelor's Degree	92306	.255	.436	17171	.179	.383	*26.02****	12299	.24	.427	*8.38****	6367	.303	.459	*4.34****	56330	.277	.447
Graduate Degree	92306	.165	.372	17171	.106	.308	*26.05****	12299	.115	.319	*20.22****	6367	.19	.393	*0.21*	56330	.191	.393
Married	94308	.526	.499	17757	.339	.473	*59.09****	12759	.521	.5	*13.50****	6978	.51	.5	*12.28****	56679	.587	.492
Widowed	94308	.192	.394	17757	.188	.391	*6.96****	12759	.139	.346	*18.63****	6978	.138	.345	*14.57****	56679	.212	.409
Single	94308	.265	.441	17757	.445	.497	*68.86****	12759	.308	.462	*28.16****	6978	.302	.459	*20.89****	56679	.195	.396
US Citizen	94158	.897	.852	17733	.9	.847	*10.20****	12839	.781	1.207	*24.70****	7167	.623	1.586	*35.34****	56279	.957	.564
Active Duty	93037	.038	.192	17452	.048	.213	*14.72****	12509	.086	.28	*32.71****	6905	.031	.173	*2.53***	56033	.026	.158
Veteran	93037	.082	.274	17452	.086	.281	*1.16*	12509	.055	.229	*12.44****	6905	.059	.235	*8.58****	56033	.089	.285
One Child	92567	.11	.313	17244	.114	.318	*6.23****	12440	.148	.355	*16.55****	7050	.126	.332	*7.39****	55701	.098	.297
Two Children	92567	.095	.293	17244	.08	.271	*5.53****	12440	.12	.325	*8.90****	7050	.097	.295	*0.80*	55701	.094	.291
Three or More Children	92567	.057	.231	17244	.058	.234	*3.32****	12440	.078	.269	*11.64****	7050	.056	.229	*1.45*	55701	.052	.221
Northeast	95561	.18	.385	18096	.155	.361	*10.04****	13088	.198	.399	*2.90***	7295	.157	.363	*6.40****	56942	.187	.39
Midwest	95561	.224	.417	18096	.212	.409	*11.03****	13088	.149	.356	*25.48****	7295	.168	.374	*15.97****	56942	.253	.435
South	95561	.389	.487	18096	.549	.498	*46.47****	13088	.348	.476	*1.88**	7295	.311	.463	*7.73****	56942	.357	.479
West	95561	.207	.405	18096	.084	.278	*36.96****	13088	.305	.46	*25.36****	7295	.365	.481	*31.57****	56942	.203	.402
Household debt	94156	.315	.464	17719	.378	.485	*25.60****	12841	.384	.486	*23.83****	7191	.326	.469	*8.55****	56267	.277	.448

Notes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test). Diff t-stat refers to difference between race/ethnicity and the baseline, white.

Table 2 - Logistic Regression Results

Variables	Gig work (1)	Freelance (2)	Nascent entrepreneur (3)	Withdrawn entrepreneur (4)	Business owner (6)
Black	1.849***	1.648***	2.508***	1.387***	1.908***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Hispanic	1.845***	1.480***	1.769***	1.043	1.413***
	(0.000)	(0.000)	(0.000)	(0.476)	(0.008)
Other/Mixed	1.434***	1.009	1.564***	1.198***	1.291*
	(0.001)	(0.940)	(0.000)	(0.004)	(0.052)
Urban	0.951	0.893*	0.996	0.957	1.013
	(0.484)	(0.087)	(0.940)	(0.241)	(0.866)
18-29	0.839	3.282***	4.677***	3.044***	5.939***
	(0.146)	(0.000)	(0.000)	(0.000)	(0.000)
30-39	0.797**	2.594***	4.373***	2.307***	5.041***
	(0.045)	(0.000)	(0.000)	(0.000)	(0.000)
40-49	0.630***	2.642***	3.637***	2.256***	3.780***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
50-59	0.509***	1.958***	2.579***	1.825***	2.014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female	0.991	1.000	0.924*	0.741***	1.192**
	(0.894)	(0.998)	(0.081)	(0.000)	(0.016)
AD or Some College	0.647***	0.727***	0.995	1.394***	1.001
	(0.000)	(0.001)	(0.933)	(0.000)	(0.989)
Bachelor's Degree	0.468***	0.847*	0.963	1.538***	1.198*
	(0.000)	(0.093)	(0.565)	(0.000)	(0.094)
Graduate Degree	0.460***	0.996	0.993	1.638***	1.642***
	(0.000)	(0.972)	(0.924)	(0.000)	(0.000)
Married	1.017	1.031	0.981	0.558***	0.970
	(0.953)	(0.937)	(0.953)	(0.006)	(0.946)
Widowed	1.251	1.045	1.290	0.581**	0.927
	(0.428)	(0.910)	(0.446)	(0.012)	(0.869)
Single	1.153	1.108	1.052	0.538***	1.116
	(0.608)	(0.790)	(0.879)	(0.004)	(0.812)
US Citizen	1.008	1.071*	0.982	0.971*	1.055
	(0.794)	(0.094)	(0.412)	(0.074)	(0.228)
Active Duty	2.840***	1.315**	2.387***	1.277***	1.792***
	(0.000)	(0.031)	(0.000)	(0.003)	(0.001)
Veteran	0.808*	0.997	1.110	0.921	0.923
	(0.082)	(0.977)	(0.169)	(0.164)	(0.504)
One Child	1.066	1.098	1.071	1.145**	0.965
	(0.533)	(0.287)	(0.331)	(0.023)	(0.756)
Two Children	1.035	0.862	1.129*	1.318***	0.867
	(0.703)	(0.124)	(0.087)	(0.000)	(0.254)
Three or More	0.978	1.155	1.298***	1.285***	0.906
	(0.845)	(0.193)	(0.001)	(0.000)	(0.526)
Household Debt	1.174**	0.914	1.213***	1.324***	0.751***
	(0.013)	(0.205)	(0.000)	(0.000)	(0.000)
Observations	23590	22438	49686	71392	15774
Degrees of freedom	41	41	41	25	41

Notes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test). Odds ratios reported with p-values in parentheses. All models estimated using logistic regression except model 5 which uses ordered logistic regression. Regional dummies and industry fixed effects included in all models. All models use robust standard errors.

Table 3 – Multinomial Logistic Regression Results

Variables	Withdrawn Entrepreneur (1)	Business Owner (2)
Black	0.9169**	0.8639*
	(0.0386)	(0.0682)
Hispanic	1.0173	0.7170***
	(0.0471)	(0.0723)
Other	1.0151	1.0124
	(0.0620)	(0.1141)
Urban	0.7000***	0.6891***
	(0.0275)	(0.0450)
18-29	0.2742***	0.1012***
	(0.0195)	(0.0123)
30-39	0.2807***	0.1518***
	(0.0190)	(0.0156)
40-49	0.3468***	0.2286***
	(0.0237)	(0.0228)
50-59	0.5577***	0.3366***
	(0.0362)	(0.0297)
Female	1.0354	1.1606**
	(0.0334)	(0.0679)
AD or Some College	1.1731***	1.0745
	(0.0493)	(0.0883)
Bachelor's Degree	1.4805***	1.3694***
	(0.0678)	(0.1183)
Graduate Degree	1.1969***	1.4441***
	(0.0612)	(0.1310)
Married	0.2294***	0.6797
	(0.0632)	(0.3627)
Widowed	0.2307***	0.5711
	(0.0640)	(0.3061)
Single	0.2900***	0.5320
	(0.0798)	(0.2856)
US Citizen	0.8965***	0.9519
	(0.0211)	(0.0408)
Active Duty	0.3346***	0.7841*
	(0.0255)	(0.1036)
Veteran	0.8419***	0.8318*
	(0.0556)	(0.0901)
One Child	0.9703	0.9912
	(0.0462)	(0.0889)
Two Children	0.9845	0.8435*
	(0.0502)	(0.0848)
Three or More Children	0.8598**	0.8315
	(0.0516)	(0.0979)
Household Debt	1.0510	0.8786
	(0.0532)	(0.0825)

Notes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test). N = 21,813. Relative risk ratios reported with standard errors in parentheses. Models estimated using Multinomial Logistic Regression with robust standard errors. Regional dummies included in all models. The baseline reference category is nascent entrepreneurs.

Table 4 – Robustness Checks

	Business with a Tax ID	Businesses with Main Job/Work Arrangement in the Last Week	Confirmed Gig Work Platform Only	Taken a Set of Staffing and Growth Steps
	Own a Business	Own a Business	Gig Work	Nascent Entrepreneurship
Variables	(2)	(4)	(5)	(6)
Black	1.467**	1.917***	1.418	1.940***
	(0.024)	(0.000)	(0.420)	(0.000)
Hispanic	0.827	1.390*	1.509	1.423***
	(0.401)	(0.094)	(0.359)	(0.000)
Other/Mixed	1.016	1.522**	0.715	1.351***
	(0.945)	(0.049)	(0.429)	(0.002)
Urban	1.154	0.812	0.684	1.017
	(0.388)	(0.146)	(0.294)	(0.783)
18-29	3.331***	3.324***	2.291	3.145***
	(0.000)	(0.000)	(0.148)	(0.000)
30-39	2.521***	3.306***	2.455	3.126***
	(0.000)	(0.000)	(0.116)	(0.000)
40-49	2.615***	2.410***	2.103	2.643***
	(0.000)	(0.000)	(0.201)	(0.000)
50-59	1.230	1.151	2.765*	1.772***
	(0.283)	(0.483)	(0.073)	(0.000)
Female	1.575***	1.128	1.211	0.832***
	(0.001)	(0.302)	(0.545)	(0.001)
AD or Some	1.340	0.906	0.898	1.032
	(0.183)	(0.575)	(0.781)	(0.676)
Bachelor's	1.509*	1.288	0.346***	0.966
	(0.064)	(0.158)	(0.006)	(0.645)
Graduate Degree	2.630***	1.820***	0.434**	0.935
	(0.000)	(0.001)	(0.046)	(0.406)
Married	1.341	1.520	1.062	1.599
	(0.741)	(0.486)	(0.851)	(0.337)
Widowed	1.241	1.271	0.904	2.126
	(0.809)	(0.697)	(0.833)	(0.127)
Single	1.156	1.719	--	1.702
	(0.871)	(0.372)		(0.281)
US Citizen	1.163**	1.096	0.539	0.974
	(0.017)	(0.120)	(0.593)	(0.334)
Active Duty	1.036	1.878**	1.291	1.983***
	(0.893)	(0.045)	(0.801)	(0.000)
Veteran	0.865	1.135	1.251	1.161
	(0.537)	(0.569)	(0.797)	(0.131)
One Child	0.668*	0.938	1.514	0.946
	(0.080)	(0.705)	(0.251)	(0.493)
Two Children	0.620*	0.905	1.190	1.060
	(0.056)	(0.553)	(0.710)	(0.541)
Three or More	0.666	0.977	0.946	1.186*
	(0.117)	(0.924)	(0.917)	(0.082)
Household debt	0.586***	0.716***	1.487	1.182***
	(0.000)	(0.008)	(0.158)	(0.003)
Observations	3795	5341	1088	23656
Degrees of	25	25	24	25

Notes. * p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed test). Odds ratios reported with p-values in parentheses. Models estimated using Logistic Regression with robust standard errors. Regional dummies included in all models. Columns 1 and 2 restrict the sample to include only those firms that have a Tax ID. Columns 3 and 4 restrict the sample to only those businesses that were the respondent's primary job in the past week for either profit or not-for-profit businesses.

Table 5 - Logistic Regression Results for Gig Work and Freelance Measures of Entrepreneurship

	(1) Gig Work	(2) Freelance	(3) Nascent entrepreneur	(4) Business Owner
Black	2.347***	1.032	2.148***	2.105***
	(0.000)	(0.874)	(0.000)	(0.000)
Hispanic	1.964***	1.201	1.632***	1.205
	(0.000)	(0.376)	(0.000)	(0.377)
Personal finance challenge	1.785***	1.063	1.807***	0.953
	(0.000)	(0.641)	(0.000)	(0.713)
Black x personal finance challenge	0.497***	1.028	1.092	1.029
	(0.000)	(0.924)	(0.550)	(0.922)
Hispanic x personal finance challenge	0.704	1.100	1.081	1.147
	(0.149)	(0.780)	(0.658)	(0.671)
Zero Networking Steps	1.069	1.056	0.419***	0.827
	(0.520)	(0.741)	(0.000)	(0.180)
Black x Zero Networking steps	0.492***	3.330***	0.884	0.909
	(0.005)	(0.004)	(0.552)	(0.812)
Hispanic x Zero Networking Steps	1.043	0.867	0.548**	0.901
	(0.902)	(0.796)	(0.045)	(0.829)
Controls	Yes	Yes	Yes	Yes
Observations	12913	10224	23728	7962
Degrees of freedom	47	47	47	47

Notes. * p < 0.10, ** p < 0.05, *** p < 0.01 (two-tailed test). Odds ratios reported with p-values in parentheses. Models estimated using Logistic Regression with robust standard errors. Regional dummies included in all models.

ONLINE APPENDIX

This online appendix is a supplement for the manuscript, "Racial and ethnic differences in entrepreneurship." In this appendix, we provide additional analysis that break down the entrepreneurship measures into finer categories that we did not explore in the manuscript. The results here demonstrate that the differences between Black and Hispanic individuals compared to White individuals do not depend on the measures chosen in the manuscript and exist for many additional measures of entrepreneurship. Table A1 in the online appendix provides the precise definitions.

Descriptive Statistics

Figure A1 breaks down gig work into three separate categories: if gig work is the main job, if gig work is the second job, and if gig work is "outside of any paid employment in the last 6 months." Figure A1 below illustrates that Black and Hispanic individuals are more likely than White individuals to use gig work for all three additional measures.

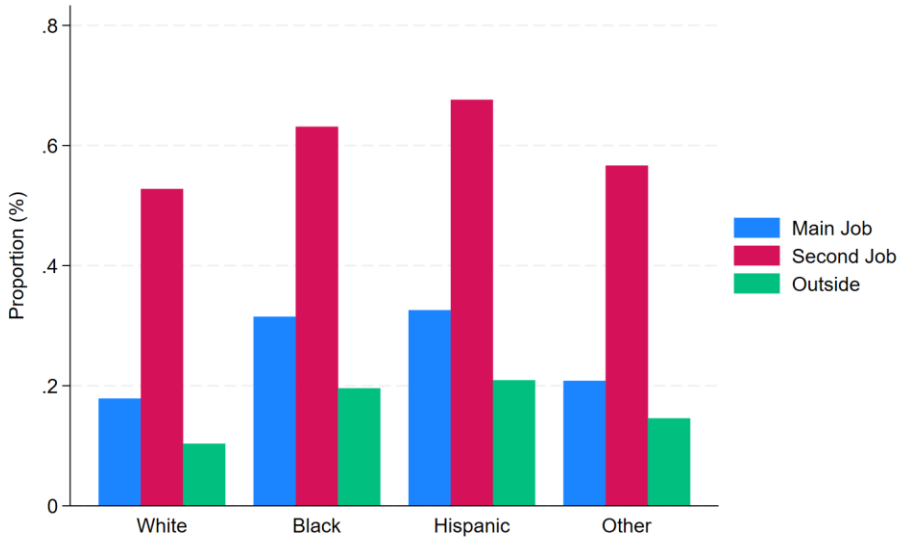

Figure A1. Gig work by race/ethnicity.

We can also separate freelance work into three different categories. Figure A2 breaks down

freelance work into: if ever freelancer, if still a freelancer, and if "ever owned a business excluding freelance work." Figure A2 below illustrates that Black and Hispanic individuals are more likely than White individuals to use freelance work. There is little difference between business ownership when excluding freelance work in the third category. Importantly, the difference is largest for the measure of still being a freelancer.

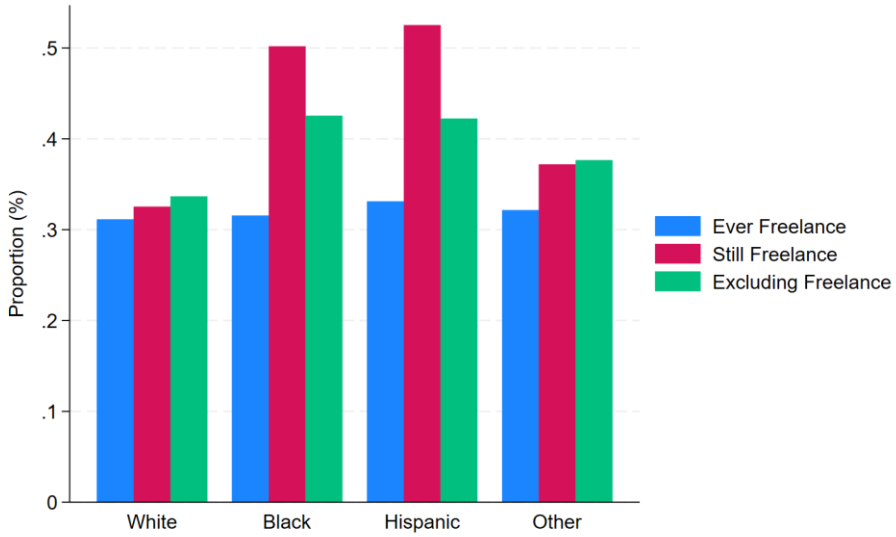

Figure A2. Freelance work by race/ethnicity

In the manuscript, we examine the measure of business ownership based on the question, "Do you still own a business?" Figure A3 breaks down business ownership into two categories: "Have you ever owned a business?" and "Do you still own a business?" Figure A3 below illustrates that, although Black and Hispanic individuals are more likely than White individuals to still own a business, they are slightly less likely to have ever owned a business. Therefore, this leads some credence to the argument that Black and Hispanic individuals are less likely to own a business, but the differences are much larger for still owning a business which refutes that argument.

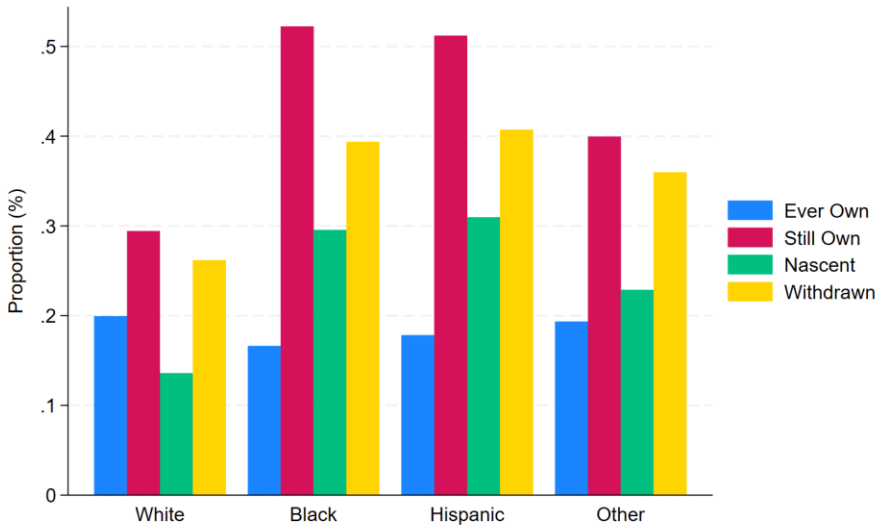

Figure A3. Business ownership by race/ethnicity

Regression Analysis – Predictive Margins

Although the descriptive statistics illustrate sizeable differences in entrepreneurship between Black, Hispanic, and White individuals, this analysis does not account for omitted variables or confoundedness. Therefore, like in the manuscript, this supplemental analysis reports the predictive margins following regression estimation for the various subcategories of gig work, freelance work, and business ownership presented here.

We present the results from the regression analysis in Figures A4 and A5 and Tables A2 and A3. These results suggest that Black individuals have higher rates of entrepreneurship when compared to White individuals for all additional measures except gig work as a second job. The results also suggest that Hispanic individuals have higher rates of entrepreneurship than White individuals for all measures except gig work as a second job, ever owned a business, ever owned a business excluding freelance, and withdrawn entrepreneurship.

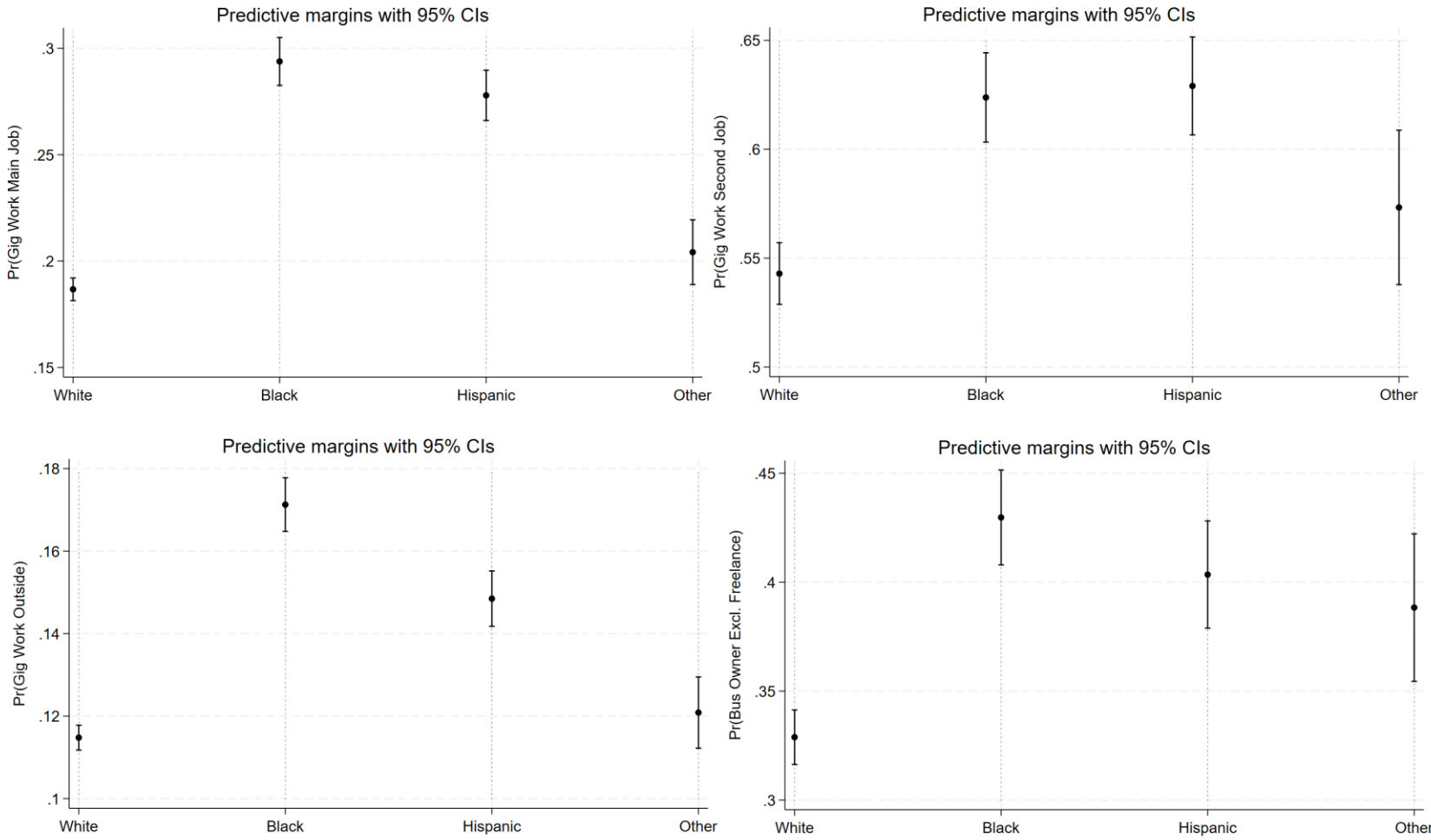

Figure A4. Predicted probabilities for gig work and business ownership among race/ethnicity.
Notes. These figures report the predictive margins (with 95% confidence intervals) following the regression models reported in Tables A2 and A3.

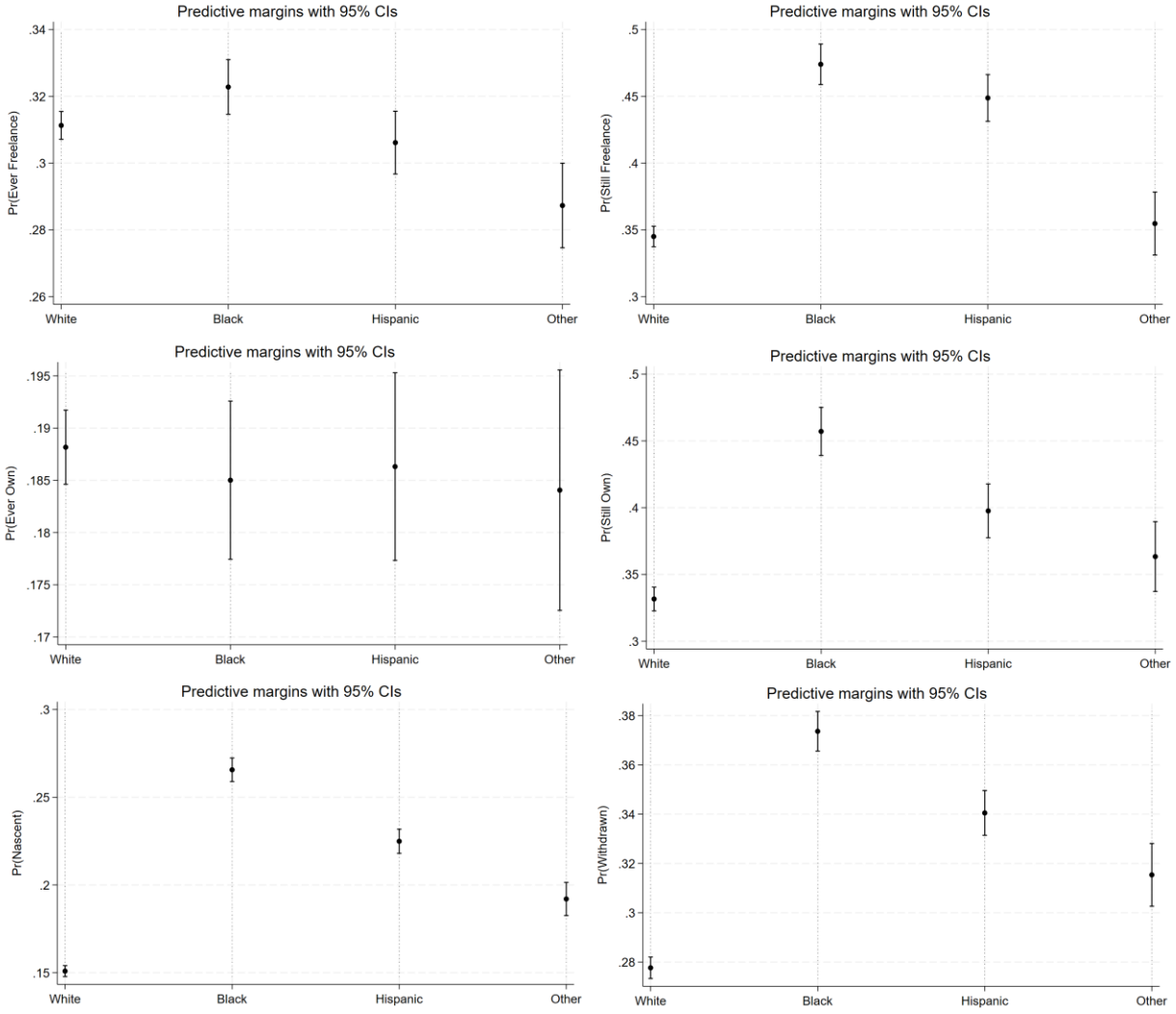

Figure A5. Predicted probabilities for freelance entrepreneurship and business ownership among race/ethnicity.

Notes. These figures report the predictive margins (with 95% confidence intervals) following the regression models reported in Tables A2 and A3.

Table A1. Variable descriptions from EPOP Survey.

Codebook	Variable	Description
S_GIGCHECK_1	Gig work main job	Some people earn money through short, paid tasks or jobs online or in-person that are conducted through companies that coordinate payment for the service. This is sometimes referred to as "gig work." Is your main job or work arrangement gig work? These tasks might include driving for Uber or Lyft, selling goods through Etsy, completing online tasks on Mechanical Turk, providing graphic design, music, or other services via Fiverr or Upwork, or other activities. (Yes/No).
S_GIGCHECK_2	Gig work second job	Some people earn money through short, paid tasks or jobs online or in-person that are conducted through companies that coordinate payment for the service. This is sometimes referred to as "gig work." Is your second job/work arrangement gig work? These tasks might include driving for Uber or Lyft, selling goods through Etsy, completing online tasks on Mechanical Turk, providing graphic design, music, or other services via Fiverr or Upwork, or other activities. (Yes/No).
S_GIGCHECK_3	Gig work outside employment	Some people earn money through short, paid tasks or jobs online or in-person that are conducted through companies that coordinate payment for the service. This is sometimes referred to as "gig work." Outside of the forms of employment you have already mentioned, in the last 6 months have you been paid for any gig work? These tasks might include driving for Uber or Lyft, selling goods through Etsy, completing online tasks on Mechanical Turk, providing graphic design, music, or other services via Fiverr or Upwork, or other activities. (Yes/No).
S_FORMFREE_1	Ever freelancer	Have you ever worked for yourself as a freelancer, consultant, or independent contractor either full-time or part-time? (Yes/No).
S_FORMFREE_STAT_1	Still freelancer	Are you still working for yourself as a freelancer, consultant, or independent contractor either full-time or part-time? 1. Yes, I am still working for myself as a freelancer, consultant, or independent contractor 2. No, I stopped working as a freelancer, consultant, or independent contractor within the last 5 years 3. No, I stopped working as a freelancer, consultant, or independent contractor more than 5 years ago. We recoded the variable (Yes/No).
S_FORMBIZ_2	Ever own a business excluding freelance work	You reported you are currently working as a self-employed consultant, freelancer, or independent contractor. Outside of this work activity, have you ever owned a business? (Yes/No).
S_FORMBIZ_1	Ever own a business	Have you ever owned a business? (Yes/No).
S_FORMBIZ_STAT_1	Still own a business	Do you still own a business? (Yes/No).
S_NASCENT_1	Nascent entrepreneur	Are you, alone or with others, currently trying to start a new business, including any form of self-employment, freelancing, consulting, or independent contracting, or selling any goods or services to others? (Yes/No).
S_WITHDRAW_1	Withdrawn entrepreneur	Have you, alone or with others, ever considered starting a new business, including any form of self-employment, freelancing, consulting, or independent contracting, or selling any goods or services to others but decided to wait or change your mind? (Yes/No).

Table A2 - Logistic Regression Results for Gig Work and Freelance Measures of Entrepreneurship

	Gig Work			Freelance		
	Main Job	Second Job	Outside	Ever	Still	Ever Owned a Business
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Black	1.863***	1.420***	1.650***	1.057**	1.803***	1.573***
	(0.000)	(0.000)	(0.000)	(0.016)	(0.000)	(0.000)
Hispanic	1.716***	1.454***	1.373***	0.975	1.612***	1.404***
	(0.000)	(0.000)	(0.000)	(0.336)	(0.000)	(0.000)
Other/Mixed	1.123**	1.138	1.064	0.887***	1.048	1.314***
	(0.030)	(0.122)	(0.188)	(0.001)	(0.443)	(0.001)
Urban	1.054	1.248***	1.142***	1.053***	0.956	0.956
	(0.116)	(0.000)	(0.000)	(0.009)	(0.202)	(0.399)
18-29	1.755***	2.535***	7.306***	1.317***	4.212***	0.583***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
30-39	1.374***	2.664***	5.317***	1.434***	3.753***	0.566***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
40-49	1.090	2.208***	3.706***	1.240***	3.090***	0.588***
	(0.143)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
50-59	0.756***	1.252**	2.118***	1.121***	1.856***	0.681***
	(0.000)	(0.044)	(0.000)	(0.000)	(0.000)	(0.000)
Female	0.775***	0.681***	0.774***	0.647***	0.796***	0.665***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AD or Some College	0.780***	0.976	1.038	1.535***	0.825***	1.141**
	(0.000)	(0.698)	(0.234)	(0.000)	(0.000)	(0.023)
Bachelor's Degree	0.567***	0.874**	1.049	1.887***	1.005	1.083
	(0.000)	(0.034)	(0.151)	(0.000)	(0.915)	(0.210)
Graduate Degree	0.783***	0.902	1.314***	2.768***	1.248***	1.271***
	(0.000)	(0.143)	(0.000)	(0.000)	(0.000)	(0.001)
Married	1.266	0.880	1.197	1.027	1.178	1.268
	(0.154)	(0.635)	(0.216)	(0.811)	(0.428)	(0.314)
Widowed	1.440**	0.880	1.296*	1.200	1.008	1.248
	(0.030)	(0.640)	(0.080)	(0.107)	(0.970)	(0.354)
Single	1.191	0.730	1.082	0.868	1.073	0.875
	(0.292)	(0.243)	(0.587)	(0.209)	(0.735)	(0.573)
US Citizen	1.025	1.007	1.026*	1.075***	1.064**	1.022
	(0.132)	(0.825)	(0.088)	(0.000)	(0.010)	(0.408)
Active Duty	3.348***	1.781***	3.013***	2.147***	1.932***	3.713***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Veteran	1.122*	1.143	1.245***	1.016	0.961	1.089
	(0.054)	(0.190)	(0.000)	(0.595)	(0.447)	(0.364)
One Child	1.099**	1.136**	1.184***	1.095***	1.206***	1.035
	(0.017)	(0.042)	(0.000)	(0.001)	(0.000)	(0.610)
Two Children	1.262***	1.299***	1.176***	1.213***	1.284***	1.118
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.135)
Three or More Children	1.114**	1.055	1.189***	1.224***	1.184***	1.135
	(0.044)	(0.516)	(0.000)	(0.000)	(0.005)	(0.157)
Household debt	1.149***	1.054	1.245***	1.066***	0.876***	1.027
	(0.000)	(0.242)	(0.000)	(0.000)	(0.000)	(0.561)
Observations	35867	9680	72324	75169	23274	9853
Log-likelihood	-17909.6	-6279.7	-25482.2	-44796.5	-	-6202.5
Degrees of freedom	25	25	25	25	25	25
Pseudo R^2	0.0581	0.0464	0.0915	0.0387	0.0862	0.0423

Notes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test). Odds ratios reported with p-values in parentheses. Models estimated using logistic regression with robust standard errors. Regional dummies included in all models.

Table A3 – Logistic Regression Results for Business Ownership Measures of Entrepreneurship

Variables	Ever owned a business (1)	Still own a business (2)	Nascent business (3)	Withdrawn business (4)
Black	0.978	1.864***	2.202***	1.601***
	(0.467)	(0.000)	(0.000)	(0.000)
Hispanic	0.987	1.398***	1.718***	1.371***
	(0.711)	(0.000)	(0.000)	(0.000)
Other/Mixed	0.972	1.178**	1.376***	1.213***
	(0.509)	(0.023)	(0.000)	(0.000)
Urban	0.856***	0.955	1.109***	0.928***
	(0.000)	(0.288)	(0.000)	(0.000)
18-29	0.569***	6.375***	8.622***	3.692***
	(0.000)	(0.000)	(0.000)	(0.000)
30-39	0.601***	6.162***	7.421***	3.099***
	(0.000)	(0.000)	(0.000)	(0.000)
40-49	0.628***	4.273***	5.398***	2.533***
	(0.000)	(0.000)	(0.000)	(0.000)
50-64	0.768***	2.001***	3.067***	2.062***
	(0.000)	(0.000)	(0.000)	(0.000)
Female	0.663***	0.972	0.676***	0.697***
	(0.000)	(0.454)	(0.000)	(0.000)
Associate degree or Some College	1.555***	0.956	1.220***	1.544***
	(0.000)	(0.392)	(0.000)	(0.000)
Bachelor's Degree	1.571***	1.299***	1.213***	1.749***
	(0.000)	(0.000)	(0.000)	(0.000)
Graduate Degree	1.951***	1.726***	1.606***	2.006***
	(0.000)	(0.000)	(0.000)	(0.000)
Married	1.038	1.109	1.033	0.640***
	(0.778)	(0.607)	(0.777)	(0.000)
Widowed	1.143	0.890	1.151	0.713***
	(0.317)	(0.564)	(0.224)	(0.000)
Single	0.651***	1.169	0.856	0.612***
	(0.001)	(0.441)	(0.174)	(0.000)
US Citizen	0.998	1.072***	1.013	0.983*
	(0.861)	(0.003)	(0.282)	(0.073)
Active Duty	2.438***	1.874***	3.187***	1.569***
	(0.000)	(0.000)	(0.000)	(0.000)
Veteran	1.046	0.947	1.169***	0.971
	(0.194)	(0.389)	(0.000)	(0.379)
One Child	1.147***	1.120*	1.225***	1.253***
	(0.000)	(0.051)	(0.000)	(0.000)
Two Children	1.244***	1.361***	1.415***	1.387***
	(0.000)	(0.000)	(0.000)	(0.000)
Three or More Children	1.245***	1.086	1.388***	1.416***
	(0.000)	(0.286)	(0.000)	(0.000)
Household debt	0.968	0.868***	1.190***	1.237***
	(0.159)	(0.001)	(0.000)	(0.000)
Observations	68842	16390	86055	71392
Log-likelihood	-31740.5	-9273.9	-36543.1	-41257.8
Degrees of Freedom	25	25	25	25
Pseudo R^2	0.0437	0.138	0.123	0.0657

Notes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test). Odds ratios reported with p-values in parentheses. Models estimated using logistic regression with robust standard errors in 1-4 and ordered logistic regression in 5. Regional dummies included in all models.

Table A4 - Logistic Regression Results with Strength of the Economy as a Control Variable

Variables	Gig work (1)	Freelance (2)	Nascent entrepreneur (3)	Withdrawn entrepreneur (4)	Business owner (6)
Black	1.393*	1.497**	2.315***	1.175	1.664***
	(0.082)	(0.014)	(0.000)	(0.322)	(0.010)
Hispanic	1.785***	1.617***	1.725***	0.833	1.840**
	(0.003)	(0.008)	(0.000)	(0.321)	(0.037)
Other/Mixed	0.948	0.676*	1.226	1.153	1.552*
	(0.799)	(0.060)	(0.138)	(0.464)	(0.081)
Urban	0.883	0.704**	0.850	1.008	0.795
	(0.456)	(0.015)	(0.132)	(0.953)	(0.183)
18-29	0.877	3.440***	6.370***	3.570***	5.068***
	(0.621)	(0.000)	(0.000)	(0.000)	(0.000)
30-39	0.737	3.146***	5.105***	2.818***	6.600***
	(0.205)	(0.000)	(0.000)	(0.000)	(0.000)
40-49	0.563**	3.182***	3.993***	2.972***	3.307***
	(0.022)	(0.000)	(0.000)	(0.000)	(0.000)
50-59	0.520***	2.189***	3.006***	1.692***	2.155***
	(0.006)	(0.000)	(0.000)	(0.001)	(0.000)
Female	1.094	1.092	1.049	0.827*	1.169
	(0.502)	(0.446)	(0.590)	(0.071)	(0.274)
AD or Some College	0.678**	0.757*	1.015	1.135	0.902
	(0.018)	(0.087)	(0.900)	(0.349)	(0.611)
Bachelor's Degree	0.445***	0.857	1.093	1.225	0.882
	(0.000)	(0.374)	(0.477)	(0.154)	(0.558)
Graduate Degree	0.452***	1.012	1.009	1.326*	1.253
	(0.000)	(0.946)	(0.949)	(0.088)	(0.318)
Married	1.031	0.775*	0.887	1.306**	0.713
	(0.842)	(0.094)	(0.278)	(0.047)	(0.104)
Widowed	1.058	1.053	1.205	1.249	0.876
	(0.791)	(0.789)	(0.193)	(0.209)	(0.581)
US Citizen	1.441	0.789	0.850	0.955	0.759
	(0.393)	(0.511)	(0.563)	(0.915)	(0.576)
Active Duty	2.527***	1.174	2.019***	0.980	1.700
	(0.002)	(0.480)	(0.000)	(0.945)	(0.129)
Veteran	0.602*	0.994	1.132	1.075	1.007
	(0.075)	(0.975)	(0.417)	(0.691)	(0.973)
One Child	1.479**	1.283	1.095	0.821	1.041
	(0.017)	(0.128)	(0.442)	(0.217)	(0.850)
Two Children	1.149	1.002	0.977	1.120	0.958
	(0.480)	(0.992)	(0.868)	(0.506)	(0.856)
Three or More	1.127	1.384	1.338**	0.790	0.837
	(0.596)	(0.107)	(0.042)	(0.289)	(0.532)
Household Debt	1.344**	0.813*	1.401***	1.208*	0.867
	(0.029)	(0.097)	(0.000)	(0.098)	(0.380)
Economy Strength	1.176**	1.130**	1.042	1.124**	1.012
	(0.023)	(0.040)	(0.374)	(0.044)	(0.882)
Observations	7294	7739	15504	12821	5191
Degrees of freedom	41	41	41	25	41

Notes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ (two-tailed test). Odds ratios reported with p-values in parentheses. All models estimated using logistic regression except model 5 which uses ordered logistic regression. Regional dummies and industry fixed effects included in all models. All models use robust standard errors.

Table A5 - Logistic Regression Results for Withdrawn Entrepreneurship, controlling for ever been a freelancer

	(1) Withdrawn entrepreneur
Black	1.442***
	(0.000)
Hispanic	1.072
	(0.264)
Other	1.160**
	(0.028)
Urban	0.938
	(0.117)
18-29	3.361***
	(0.000)
30-39	2.371***
	(0.000)
40-49	2.334***
	(0.000)
50-59	1.876***
	(0.000)
Female	0.788***
	(0.000)
AD or Some College	1.306***
	(0.000)
Bachelor's Degree	1.408***
	(0.000)
Graduate Degree	1.436***
	(0.000)
Married	0.718*
	(0.067)
Widowed	0.706*
	(0.059)
Single	0.673**
	(0.029)
US Citizen	0.974
	(0.131)
Active Duty	1.152
	(0.116)
Veteran	0.939
	(0.308)
One Child	1.212***
	(0.002)
Two Children	1.299***
	(0.000)
Three or More Children	1.253***
	(0.002)
Household debt	1.269***
	(0.000)
Ever Freelancer	2.366***
	(0.000)
Observations	63354

Notes. * p < 0.10, ** p < 0.05, *** p < 0.01 (two-tailed test). Odds ratios reported with p-values in parentheses. Models estimated using Logistic Regression with robust standard errors. Regional dummies included in all models.