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Geographic Locations and Entrepreneurship: Evidence from Randomized Housing

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Abstract

Research on entrepreneurship emphasizes the importance of geographic locations. However, much of this literature focuses on regions and cities, overlooking the potentially important impact of neighborhood configurations. We refer to these configurations as micro-geographies and theorize that proximity to local markets can affect the rate of entrepreneurship. To test this notion, we use data from a public housing complex in Colombia where residents are randomly assigned to housing. We consider whether residents who live on the ground floor of a multi-story apartment building are more likely to become entrepreneurs than those assigned to upper floors. We also test the effect of residents' proximity to the local market on entrepreneurial earnings. For the entrepreneurs in this context, operating a small business on the ground floor versus an upper floor means the difference between living above or below the poverty line. Overall, this study extends the literature on entrepreneurial location choice to highlight the important effect of neighborhood configurations.

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(Anonymized)

ABSTRACT

Research on entrepreneurship emphasizes the importance of geographic locations. However, much of this literature focuses on regions and cities, overlooking the potentially important impact of neighborhood configurations. We refer to these configurations as micro-geographies and theorize that proximity to local markets can affect the rate of entrepreneurship. To test this notion, we use data from a public housing complex in Colombia where residents are randomly assigned to housing. We consider whether residents who live on the ground floor of a multi-story apartment building are more likely to become entrepreneurs than those assigned to upper floors. We also test the effect of residents' proximity to the local market on entrepreneurial earnings. For the entrepreneurs in this context, operating a small business on the ground floor versus an upper floor means the difference between living above or below the poverty line. Overall, this study extends the literature on entrepreneurial location choice to highlight the important effect of neighborhood configurations.

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Introduction.

For an entrepreneur, location matters. An entrepreneur's geographic location enables access to human capital (Zucker, Darby, and Brewer, 1998; Saxenian, 1996), beneficial policy environments (Marx, Strumsky, Fleming, 2009), access to ideas (Feldman, 2003; Armanios et al., 2016) and financial capital (Sorenson and Stuart, 2001), to name a few examples among many. As a consequence, the geographic location an entrepreneur chooses to start his or her business has long-term consequences on the new venture's performance (Dahl and Sorenson, 2012).

Yet, while there is little doubt that an entrepreneur's regional location is consequential, we still know little about how micro-geographic configurations (e.g., proximity to a train station) might affect an individual's likelihood of entrepreneurial activity. In a broad literature dating from the spatial ecologies of residential housing (Festinger, Schachter, and Back, 1950; Marmaros and Sacerdote, 2006) through seating locations in innovative environments (Allen, 1977) the trading floor (Baker 1984) or the Senate Chamber (Chown and Liu, 2015), there is strong evidence that geographic differences of even several meters can have quite profound effects on the patterns of human interaction. As social interactions are critical for the entrepreneur's accrual of opportunity recognition feedback, as well as access to the marketplaces of both suppliers and customers, there is strong reason to suspect that micro-geographies may be linked to entrepreneurial outcomes. However, the link between these micro-geographic configurations and entrepreneurship has not yet been drawn.

In this paper, we do two things. First, we extend the literature on geography and entrepreneurship to suggest that a macrostructural focus on cities and regions is incomplete. Rather, we complement this literature to suggest that even micro-geographic distances, on the

order of meters, is sufficient to dramatically affect an individual's rate of self-employment and entrepreneurship. Second, this paper inverts the traditional linkage between geography and entrepreneurship: rather than entrepreneurs choosing advantageous locations, we suggest that an individual's location can drive entrepreneurial rates. Specifically, we suggest that individuals endowed with spatial proximity to the marketplace will have a greater likelihood of being an entrepreneur. In drawing attention to a more fine-grained, as well as bidirectional, relationship between geography and entrepreneurship we highlight both the need to take a more nuanced look at this complex topic, as well as the difficulties in establishing a causal link between the two intermingled factors.

To test the effects of microgeographic locations, we turn to a strategic setting in a public housing development in Columbia. Within this new complex, which was purpose built exclusively for displaced individuals, residents were randomly assigned to identical apartment lots. We exploit residents' random assignment to the ground floor, and the proximity to potential customers that that location affords, versus upper floors to causally examine the effects of spatial location on entrepreneurship. We find that random endowments of marketplace proximity induce a significantly greater odds of starting small business than those who live on the upper floors. Moreover, self-employment on the ground floor provides a substantive boost to income: these individuals earn 66% more income than their entrepreneurial peers in upper floors. This income difference is enough to segregate individuals into those above (or below) the poverty line, illustrating the importance of micro-geographic locations on objective entrepreneurial outcomes.

Theory.

Some regions and cities have a much higher rate of self-employment and entrepreneurship than others (cf. Chatterji, Glaeser, Kerr, 2013). Most explanations for this variation stem from the differential distributions of the resources needed to start an entrepreneurial venture. Regions that foster entrepreneurship are thought to provide an abundance of the varied resources necessary to start a new venture.

For example, consider the idea that often nucleates an entrepreneurial venture. Oftentimes, would-be entrepreneurs strive to recognize an unmet need, ranging from the recognition that a given neighborhood lacks adequate laundry services to changing belief structures that iteratively match available technological artifacts to market demands (e.g., Garud and Rappa, 1994). This complex process of opportunity recognition often require prior experience (Ingram and Baum, 1997), new knowledge combinations (Hargadon and Sutton, 1997; Fleming, 2001) or, for high-tech companies, contact with scientists at the technological frontier (e.g., Zucker, Darby, Brewer, 1998, Feldman, 2003, Powell et al., 1996). New ventures also must accrue social capital and status through prestigious affiliations (Stuart, Hoang, Hybels, 1999). In short, multiple inputs are necessary not only for the generation of the idea that sparks a new business, but also for the accrual of resources that allow that idea to result in a new venture.

Although entrepreneurs almost always must mobilize an array of resources, many of these necessary inputs are not controlled by the would-be startup. As a consequence, entrepreneurs must search externally for complementary expertise, financial capital, new team members, as well as timely feedback on the plausibility of their new venture. Moreover, the search for these resources is often an ongoing endeavor. For example, consumer trends in the fashion industry are rapidly updated, requiring constant feedback from salient taste-makers. To

summarize, entrepreneurs who have ready access to a myriad of necessary resources are likely to be more successful in their entrepreneurial ventures.

The quest for entrepreneurial resources is contoured by the uneven distribution of these inputs across the geographic landscape. A large body of work on economic geography and agglomeration focuses on the differences in industries across metropolitan areas. Within North America, the concentration of fashion in NYC, automobiles in Detroit, and high-technology in Silicon Valley is striking, and it is widely assumed that firms working in those industries are disadvantaged if they locate elsewhere. Moreover, universities (Furman and MacGarvie, 2007) as well industrial parks (Hounshell and Smith Jr, 1988) and large anchoring firms (Agrawal and Cockburn, 2003) serve to spill knowledge and resources over into the local economy.

As a consequence, locating within the “right” region provides a would-be entrepreneur with a competitive advantage in that industry as collocation allows privileged access to the resources within that region. As many of the most strategic resources are not easily diffusible across geographic space, a burgeoning body of literature focuses on location as a source of competitive advantage (Alcacer and Chung, 2014). For example, the flow of capital out of venture capital firms is geographically circumscribed, as venture capitalists often want intimate oversight over their funded ventures (Sorenson and Stuart, 2001). Lastly, talented or specialized individuals are often unwilling or unable to relocate far, limiting an entrepreneurial firm’s source of labor to the local population (Sorenson and Audia, 2000).

It is widely assumed that collocation is a necessary factor that enables contact, and the relationships that stem from that contact. For the budding entrepreneur, developing a web of relationships will channel the flow of entrepreneurial resources, enhancing the success of the entrepreneurial venture. As a consequence, an entrepreneur’s success within a marketplace for

relationships is concomitant to success within the marketplace for entrepreneurial resources, and strategic location choice is often viewed as a critical component of the entrepreneur's strategic plan.

Although we have learned much about the importance of geographic locations and proximity to the marketplace, this literature has largely bifurcated into two separate streams. On the one hand, a macrostructural approach emphasizes the importance of cities and regions (Glaeser, 2008; Fujita, Krugman, and Venables, 1999; Saxenian 1996). These scholars emphasize the importance of a greater metropolitan area, such as Silicon Valley or Route 128, and the variations across these different regions. The focus in this body of literature is on regions and cities, and is centered on deriving public policy prescriptions.

On the other hand, a microstructural literature, while still rooted in the geography of interactions, emphasizes that collocation in cities (i.e., distance in kilometers) is likely to be insufficient for social networks with the requisite resource partners to form. Instead, competition for resources often manifests at a much more local level, such as discrete neighborhood blocks (Baum and Mezias, 1992). In recent work by economic geographers, Kerr and Kominers (2015) examine the geographic shapes of neighborhood communities while Arzaghi and Henderson (2008) show that network effects for Manhattan advertising agencies drop off after 250 meters.

This recent appreciation of neighborhood effects complements a long-standing body of work emphasizing that the likelihood of contact-mediated relationships drops off incredibly rapidly, even over the distance of several meters (Festinger, Schachter, Back, 1950; Jacobs, 1961; Allen, 1977, Baker, 1984; Marmaros and Sacerdote, 2006; Chown and Liu, 2015). Within buildings, once two individuals are located on separate floors, they might as well be in separate buildings (Allen, 1977; Liu, 2014). In short, this second strand of literature suggests that regional

collocation is necessary, but often insufficient. Rather, as social relationships are most often driven by direct contact, it is necessary to enter the everyday orbit of resource holders and this often manifests through collocation in the same office building, voluntary organizations (McPherson, 1983), or social clubs (Feld and Grofman, 2009) to cite a few examples among many.

Although a direct link between micro-geographies and entrepreneurship has (to our knowledge) yet to be drawn, there are some burgeoning empirical clues that hint at the importance of local configurations. For example, Lerner and Malmendier (2013) illustrate that a focal individual's classroom peers at the Harvard Business School MBA program affect the rate and average quality of subsequent entrepreneurial ventures, highlighting the sharp, local limits of knowledge spillovers. Recently, Liu, Rosenthal, and Strange (2015) have documented a 50% dropoff in rental prices between the ground- and second-floor of commercial real-estate buildings, illustrating the salience of direct contact to street traffic. Building on this paper, we propose that *individuals in locations proximate to marketplace interactions will have a greater rate of entrepreneurship*. We also propose that *entrepreneurs in locations proximate to marketplace interactions will generate more income*.

The importance of geographic location emphasized by this wide-ranging body of literature comes as no surprise to entrepreneurs. Indeed, entrepreneurs are often advised to relocate to entrepreneurial hotbeds in order to gain access to these resources. Due to these problems of endogeneity, establishing the *causal* effect of local environments on entrepreneurship has been exceedingly difficult. In fact, almost all causal estimates have taken place within the confines of educational settings, including dormitories (Festinger, Schachter,

Back, 1950; Marmaros and Sacerdote 2006), classrooms (Lerner and Malmendier, 2013) and mentorship training (Azoulay, Liu, Stuart, 2016). A notable exception includes Hasan and Bagde (2015).

Research Design

Research Setting. We use data from a public housing complex in Colombia in which residents are randomly assigned to apartments to test the causal effect of location on entrepreneurship. The complex houses 3,034 individuals and sits approximately five miles outside a mid-sized Colombian city. These residents live in apartments that are identical in size and layout, with an average of five individuals living in each two-bedroom apartment. Each apartment building is four stories high, and we exploit residents' random assignment to apartments on the ground floor—with close proximity to the marketplace of consumers and information—versus upper floors to examine the effects of spatial location on entrepreneurship.

In the fall and winter of 2014, a private data collection firm conducted a census of individuals living in the complex. At that point, residents had been living in the complex for approximately one year. Given our interest in entrepreneurial outcomes, we focus on the 1,786 working-age adults (16 or older) who live in the housing complex.¹

Residents are selected to live in the housing complex through a two-stage process. First, they must meet certain criteria for social vulnerability—such as poverty or lack of stable housing—and must apply for government housing. The government housing ministry then selects residents from the applicant pool. The first stage of the selection process is non-random. Individuals do not experience social vulnerability purely by chance and the housing ministry may select residents on non-random characteristics, such as party affiliation.

¹ We exclude 10 working-age adults from the analysis because they have incomplete demographic information.

However, the second stage of the process occurs through random assignment. In this stage, those selected to receive government housing are assigned to apartments by lottery. Apartment lotteries take place in full public view with officials drawing apartment numbers from lottery machines and residents awaiting their assignments in the audience.

Our balance checks provide support for the notion of random assignment. Our primary theoretical interest lies in examining how spatial configurations causally affect entrepreneurial outcomes. Thus, we examine how those assigned to the ground floor may differ from those assigned to upper floors on key characteristics that might affect entrepreneurship. Table 1 presents the results of these balance checks, which reveal that residents assigned to different floors are statistically similar on a variety of important characteristics: non-entrepreneurial income, gender, education, marital status, and family size. The balanced assignment on these characteristics also suggests that residents are evenly distributed on unobservable characteristics, as well.

[Insert Table 1 about here.]

However, the balance checks also reveal that individuals on the ground floor have different levels of mobility. Since the apartments do not have elevators, elderly individuals and those with disabilities are given priority for ground floor apartments. As such, the balance checks reveal that those who live on the ground floor are significantly older and more likely to be disabled. We control for these and other factors in our analyses, and find that our results are robust.

Dependent Variables: Business Ownership and Income. We employ two main independent variables to measure the effect of location on entrepreneurship. Our first dependent variable measures whether an individual is an entrepreneur and “owned an active business in their home”.

Of the 1,786 adults in the sample, 103 report active businesses. Examining businesses located at home allows us to ascertain whether proximity to the marketplace of consumers and information affects the tendency to start a small business. Our second dependent variable measures individual income. As discussed below, we include an interaction term for ground floor location and entrepreneurship to measure the differential effects of location on entrepreneurial and non-entrepreneurial income. We log the individual income variable to correct for right skew.

Control Variables. Randomization is a key feature of our setting and empirical strategy, but we also present the results controlling for factors that may affect entrepreneurial outcomes. First, we control for *non-entrepreneurial household income*. We calculate this value by aggregating the incomes of all individuals in the household who are not entrepreneurs and thus earn income through other sources. Next, we control for *gender*, since gender may affect one's perception of entrepreneurship as a realistic or appropriate employment option (Thébaud, 2010). We also control for whether or not the individual is the *household head*, as this person is primarily responsible for the household income and should be more likely to be employed (as an entrepreneur or otherwise) than non-household heads. We account for different levels of employment across the lifecycle by controlling for *age* and *age squared*. Including age and its squared term allows us to control for the fact that individuals in middle age may be more likely to be employed (as entrepreneurs or otherwise) than young adults or seniors (Cowling, 2000). Additionally, since age is non-randomly distributed across ground and upper floors, it is important to control for this characteristic in the models. We account for the effect of human capital on entrepreneurship (Kim, Aldrich, and Keister, 2006) by controlling for whether one has *secondary education* or greater. We also control for *marital status*, which has been shown to

influence entrepreneurial activity. Finally, we control for whether an individual is *disabled*.

Disabled individuals may be more likely to start small businesses since mobility challenges make it difficult to enter the wage labor market. Additionally, this variable is non-randomly distributed across ground and upper floors, so it is important to control for disability in the models.

Results

Does location have a causal effect on entrepreneurship and earnings? We begin by presenting the summary statistics and correlations for with the 1,786 adults in Tables 2 and 3.

[Insert Tables 2 and 3 about here.]

As an initial estimate of the effect of location on entrepreneurship, we present T-Tests examining the average proportion of entrepreneurial activity and monthly entrepreneurial income (among entrepreneurs) on the ground floor and upper floors. The results shown in Table 4 suggest that assignment to the ground floor has a strong, positive effect on the likelihood of starting a business and of earning more income from that business.

[Insert Table 4 about here]

Next, we examine the effect of location on entrepreneurship by regressing ground floor location on business activity and business earnings. In this analysis, we control for personal and household characteristics to obtain a more accurate estimate of spatial effects, as well as to account for the non-random distribution of certain variables (age and disability) (Glennerster and Takavarasha, 2013). We use logistic regression² to predict business ownership, a binary variable, and ordinary least squares regression to predict logged individual earnings, a continuous variable. Table 5 presents the results.

² The results are robust to predicting business ownership using Ordinary Least Squares.

[Insert Table 5 about here]

Model 1 of Table 5 shows a strong, positive effect of ground floor location on the likelihood of entrepreneurship. Controlling for a variety of factors, individuals randomly assigned to live on the ground floor have 3.44 times greater odds of starting a small business than those who live on upper floors. To better understand the impact of location, we generated the predicted probabilities associated with starting a small business, holding all controls constant at their means. We find that individuals on the ground floor have a 2.4% probability of starting a small business, while individuals on upper floors have a 0.7% probability of the same.

Model 2 of Table 5 reports a strong, positive effect of ground floor location on entrepreneurial income. The interaction *Ground Floor * Entrepreneurship* captures the significant, positive relationship between living on the ground floor and the amount of entrepreneurial income earned. This effect is perhaps most easily understood using predicted values. Holding all variables constant at their means, individuals who own a business and live on the ground floor are predicted to earn \$393,782.60 Colombian pesos (COP) per month, or approximately \$118 US dollars. Entrepreneurs who live on upper floors are predicted to earn \$238,879.30 COP, or approximately \$71 US dollars per month. Importantly, the difference between these values means that entrepreneurs on the ground floor are predicted to earn *above* the poverty line, whereas those who live on upper floors are predicted to earn *below* the poverty line.

Together, these results offer strong evidence for the important, causal effect of location on entrepreneurial outcomes. The analyses reveal that random assignment to a location with close proximity to the marketplace makes individuals more likely to start a small business and also causes them to earn more money from that business.

Robustness Checks. Although a full set of robustness tests are not available at this date, we affirm that when we restrict our sample to the a) non-disabled, pre-retirement population or b) income-earning adults alone, our results do not change.

Conclusion and Discussion

In this paper, we have illustrated the important role of micro-geographic locations on an individual's rate of entrepreneurship, as well as the income derived from those entrepreneurial ventures. Using fine-grained data collected at a strategic research site in Columbia, we illustrate that individuals randomly assigned to ground-floor residences have a significantly higher rate of entrepreneurship than their upper-floor peers. Moreover, residential location assignments shifted the income of entrepreneurs in a substantive manner, boosting many ground-floor entrepreneurs above the poverty line.

This paper contributes to the literature on entrepreneurship. In overlooking the effect of micro-geographies on entrepreneurial outcomes, we are potentially ignoring a major factor driving entrepreneurial activity, particularly among smaller businesses. While previous work has demonstrated how macro-level geographic distributions of resources affect entrepreneurial outcomes, this study contributes to that literature by suggesting that micro-geography have an important, causal effect on entrepreneurial outcomes. In doing so, this paper contributes to the structuralist perspective on entrepreneurial outcomes, demonstrating that features of individuals' environments that are entirely exogenous to their personal characteristics, preferences, or capabilities can influence whether or not they become entrepreneurs.

We would be grossly remiss if we failed to touch upon this study's implications for public policy and urban planning. Every urban planner is aware that regulations on the vertical height of buildings are a key lever for policy. However, while some such as Jane Jacobs (1961) have argued for limitations on vertical height to promote more mixed usage, others such as Ed Glaeser (2008) have called for less regulation on housing development. This study contributes to this debate on verticality by highlighting the role of ground-floor commercial footage as a limited entrepreneurial resource. We doubt that anyone would disagree with the notion that this scarce resource is essential for a proliferation of restaurants, stores, and other urban amenities that require contact with passersby. As vertical limits, relative to the physical footprint of the building, are increased, the ratio of housing (for apartment buildings) to storefront footage would shift, and in the advent of modern skyscrapers, shift rather dramatically. While the benefits and costs of this ratio lie beyond even the speculative scope of this paper, we intimate at a new outcome measure worthy of the urban planner's attention.

One question that comes to mind in our settings, is whether these effects are long-lasting? We chose to situate our study in this specific housing complex because of the random assignment policy. Moreover, many of the residents are victims of turmoil and displacement, and we presume that their local ties were limited when they moved into the complex (i.e., they didn't know their neighbors). However, a literature suggests that an entrepreneur's localized social capital may be critical, as regional prior experience may assist in entrepreneurial success of both the lodging (Ingram and Baum, 1997) and fast food industry (Kalnins and Mayer, 2004). Lastly, it is widely assumed that family and friends are a key fount of entrepreneurial resources (Greenberg 2016; Ruef, Aldrich, Carter, 2003). Thus, it remains to be seen whether the ground-floor (vs. upper-floor) effects we have found are lasting, as this community continues to evolve.

As individuals become more embedded in the housing project, it is possible that information flows will thicken over time, and the marketplace advantage afforded by adjacency to the streetmarket for supplier-customer interactions will diminish.

For empirical studies that claim random assignment, there is always the question of “is this truly random”? In a series of balance tests, we did not find any evidence of non-randomness, which is supported by the very public nature of the housing lottery. While we believe that we have checked for the most obvious potential differences among ground-floor vs. upper-floor residents, including household income, gender, education and marital status, as well as family size, it is plausible that there were other variables (e.g., social or familial ties to the housing administrator) that would skew our results. Nonetheless, we are reassured by the non-random elements that we do observe, notably a greater number of disabled and elderly individuals on the first floor, and our results were robust to their exclusion. Lastly, we were reassured by a number of administrators at the setting that they firmly believed that housing assignments were randomly assigned, while readily acknowledging that other resource allocations (but not housing) were notoriously open to bribery.

While this setting has served as a strategic location, primarily due to the random assignment of dwellings to residences, examining a public housing complex in Latin American may impose severe boundary and scope conditions to this study. There is little we can do but to acknowledge this limitation, while noting that the advantages of single-setting studies almost always come with caveats. Consider Festinger, Schachter, Back’s (1950) classic study of spatial ecological patterns of communication, which predates the “identification revolution” in econometrics by nearly 50 years, while foreshadowing the use of random assignment as well as field experiments. Essentially, Leon Festinger was studying gossip circles among housewives in

a post WWII dormitory complex. And yet, this study has inspired a rich line of empirical research in settings far more aligned with the modern organization. Similarly, our hope with this paper is to spur the examination of micro-geographic locations and entrepreneurship in a broader array of settings. Whether or not our results would hold across multiple settings, spurring the empirical comparisons between those at the poverty line and individuals in million-dollar residences; Latinos and Canadians; and displaced vs. long-standing members of a community would make us very happy.

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Table 1. Balance Checks

| Variable | Ground Floor | Upper Floors | Difference |
|------------------------|---------------------|---------------------|--------------------|
| Household Income (COP) | 725,112 (13,182) | 738,092 (9,634) | 12,980 (18,432) |
| Female | 0.52 (0.02) | 0.53 (0.01) | 0.01 (0.02) |
| Secondary Education | 0.36 (0.02) | 0.35 (0.01) | -0.01 (.02) |
| Married | 0.35 (0.02) | 0.37 (0.01) | 0.02 (0.02) |
| Family Size | 5.13 (0.07) | 5.03 (0.04) | -0.10 (0.08) |
| Age | 26.83 (0.74) | 22.97 (0.35) | -3.86 (0.74)*** |
| Disabled | 0.04 (0.01) | 0.01 (0.00) | -0.03 (0.01)*** |

Note: Statistics are for 1,786 adults in our sample. Income is presented in Columbia Pesos (COP).

Table 2. Summary Statistics for Adult Population

| Variable | Mean | SD | Min | Max |
|-------------------------------------|-------------|-----------|------------|------------|
| Entrepreneur | 0.06 | 0.23 | 0 | 1 |
| Ground Floor | 0.26 | 0.44 | 0 | 1 |
| Non-Entrepreneurial HH Income (COP) | 724,795 | 478,847 | 0 | 3,100,000 |
| Female | 0.54 | 0.50 | 0 | 1 |
| Household head | 0.35 | 0.48 | 0 | 1 |
| Age | 35.15 | 14.20 | 16 | 84 |
| Secondary Education | 0.46 | 0.50 | 0 | 1 |
| Married | 0.61 | 0.49 | 0 | 1 |
| Disabled | 0.02 | 0.13 | 0 | 1 |

Note: Statistics are for 1,786 adults in our sample. Income is presented in Columbia Pesos (COP).

Table 3. Correlation Matrix for Adult Population

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 Entrepreneur | 1.00 | | | | | | | | |
| 2 Ground Floor | 0.05 | 1.00 | | | | | | | |
| 3 Non-Entrepreneurial HH Income (COP) | -0.17 | -0.10 | 1.00 | | | | | | |
| 4 Female | 0.07 | 0.01 | -0.07 | 1.00 | | | | | |
| 5 Household head | 0.26 | -0.04 | -0.11 | 0.14 | 1.00 | | | | |
| 6 Age | 0.12 | 0.12 | -0.01 | -0.02 | 0.36 | 1.00 | | | |
| 7 Secondary Education | -0.05 | -0.01 | 0.08 | 0.04 | -0.19 | -0.44 | 1.00 | | |
| 8 Married | 0.06 | -0.07 | 0.04 | -0.07 | 0.09 | 0.19 | -0.13 | 1.00 | |
| 9 Disabled | 0.04 | 0.13 | -0.01 | -0.06 | -0.01 | 0.02 | -0.05 | -0.10 | 1.00 |

Table 4. T-Tests of Relationship Between Location and Entrepreneurial Outcomes

| Variable | Ground Floor | Upper Floors | Difference |
|------------------------------|---------------------|---------------------|------------------------|
| Entrepreneurship | 0.08 (0.01) | 0.05 (0.01) | -0.03 (0.01)* |
| Entrepreneurial Income (COP) | 407,567 (49207) | 234,681 (29591) | (172,885) (53997)** |

Note: ** p <.01, * p<.05

Table 5. Logistic Regression and OLS Predicting Entrepreneurship and Income

| Model | (1) | (2) |
|-------------------------------------|-------------------------|-------------------------------|
| Variables | Logistic | OLS |
| | Entrepreneurship | Individual Income (ln) |
| Ground Floor | 3.44*** (1.05) | -0.11 (0.32) |
| Entrepreneurship | | 0.79 (1.07) |
| Non-Entrepreneurial HH Income (COP) | 0.85*** (0.02) | |
| Female | 2.92** (1.03) | -5.56*** (0.27) |
| Household head | 5.71*** (2.14) | 1.18*** (0.32) |
| Age | 1.20* (0.10) | 0.37*** (0.05) |
| Age ² | 1.00* (0.00) | -0.00*** (0.00) |
| Secondary Education | 0.79 (0.26) | 0.39 (0.30) |
| Married | 2.86** (1.08) | -0.90** (0.31) |
| Disabled | 2.05 (1.77) | -3.00** (1.04) |
| Ground Floor * Entrepreneurship | | 3.91* (1.56) |
| N | 1,786 | 1,786 |

Note: Coefficients are exponentiated in Model 1. Standard errors are in parentheses.

*** p<.001, ** p <.01, * p<.05