

CENTRE FOR  
SOCIAL SCIENCE RESEARCH

Aids and Society Research Unit

**Perceived Barriers to Entry into Self-employment in Khayelitsha, South Africa: Crime, Risk, and Start-up Capital Dominate Profit Concerns**

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CSSR Working Paper No. 300

December 2011

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Funding for this work was provided by USAID via SAGA's Competitive Research Grant Program, administered by Cornell and Clark Atlanta Universities. The authors would like to especially thank Nicoli Nattrass for allowing this module to be part of the Khayelitsha Wave III survey. We would also like to thank Brendan Maughan-Brown, Celeste Coetzee, Monique Glass, and Nondumiso Hlwele for their vital roles in the survey design, survey collection, and/or data entry phases of this project. We also appreciate valuable comments from Laura Poswell, Caroline Skinner, Francie Lund, Imraan Valodia, Fred Derrick, David Newhouse, Chad Meyerhoefer, Kathleen Beegle, Michael Cichello, Gareth Newman, Julie Berg and seminar participants at the University of Natal-Durban, the University of Cape Town, and the Northeast University Development Consortium Conference.

# Perceived barriers to entry into self-employment in Khayelitsha, South Africa: Crime, risk, and start-up capital dominate profit concerns

## Abstract

*In South Africa, the broad unemployment rate for Africans has remained near or above forty percent for most of the last ten years. One critical reason is the relatively low level of employment in small-scale entrepreneurial work. This paper explores the factors that constrain individuals from engaging in self-employment activities in a large township in Cape Town. Crime is perceived to be the dominant hindrance to entering the micro-enterprise sector. A number of other hindrances, including capital constraints, transportation costs, and community jealousy, are on par or surpass concerns over profitability or government regulation. These findings are robust to a series of alternative ranking schemes.*

# 1. Introduction

The relatively low level of employment in small-scale entrepreneurial work is one of the many features that combine to produce enormous levels of unemployment in South Africa. Using a broad measure, national unemployment rates for Africans are estimated to have been near or above forty percent for most of the last ten years (Statistics South Africa (2009); Statistics South Africa (2011)).<sup>1</sup> The persistence of these extremely high levels of unemployment is dire, not just due to the immediate loss in welfare for the many individuals and their dependents, but also potentially for long-term social cohesion within South Africa. Understanding the factors that inhibit the unemployed (or underemployed) from engaging in micro-enterprise activities is important, as growth in wage/salary employment sector is unlikely to be sufficient to absorb the unemployed. Gainful work opportunities are important not only for reducing poverty and raising living standards, but also for their direct effect on happiness (Winkelman and Winkelman (1998)).

Drawing on a broad set of ideas from the existing literature, this study focuses on factors which inhibit people in one South African township from starting small-scale enterprises. As discussed in the next section, empirical work outlines a range of issues associated with the stunted expansion of self-employment in South Africa. The risk of business failure, a lack of access to start-up capital, transport costs, and the uncertainty over profits before one starts a business are fairly traditional concerns. Yet, additional concerns that are typically neglected by economists are also highlighted in this study. These include crime and jealousy faced in the community if an individual is successful.

Using data from the Khayelitsha township in Cape Town, we find that concern over the expected profitability of self-employment, while important, is not the dominant factor preventing entry into self-employment. Rather, concern over crime is the single most dominant perceived hindrance. Other severe hindrances include the continual risk of business failure (explained in more detail below), a lack of access to start-up capital, transport costs, and uncertainty over profits before one starts the business. We also find that jealousy faced in the community if an individual is successful plays a strong role. We conduct a number of robustness checks. While we start with a cardinality assumption in comparing hindrance scores, we also provide evidence to support these results using only

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<sup>1</sup> From 2002 to 2011, the broad unemployment rates for Africans are: 41, 44, 42, 39, 38, 38, 33, 36, 39, and 40 percent, respectively. The 2002 to 2007 values are constructed using data from Statistics South Africa (2009). The 2008 through 2011 values use a simple average of the quarterly rates estimated using data from the Quarterly Labour Force Survey (QLFS). The 2011 estimate uses data from the first two quarters of 2011.

ordinal comparisons. First, we assume individuals share a common understanding of the scale, and then we assume that only within-person ordinal comparisons can be made. We also include a discussion on the use of perceptions as a starting point for more de facto evidence of hindrances and other methodological concerns.

The outline of the rest of the paper is as follows: Section 2 presents previous research on barriers to self-employment in South Africa. Section 3 describes the context, the data, and the novel survey instrument used in this study. Section 4 discusses the key methodological concerns, particularly of aggregating responses based on a Likert scale. Section 5 presents empirical results. Section 6 provides more details on the largest hindrances to self-employment. Section 7 concludes with a discussion of future work in this area.

## **2. Literature Review**

A number of studies of the labour market in South Africa and elsewhere explore why unemployment is persistent and address, to varying degrees, barriers to self-employment. Yet, discussion of these potential barriers is often not the focal point of the study and/or lacking appropriate data for a detailed empirical examination. For example, Kingdon and Knight (2004) speculate on a series of reasonable barriers that have hindered the unemployed from entering into employment both in the Apartheid and post-Apartheid eras but do not provide a direct examination of such barriers. Likewise, Cichello, Fields, and Leibbrandt (2005) note that the observed earnings outcomes in KwaZulu-Natal are consistent with barriers to entry into the informal sector. They call for more research to uncover these barriers, yet provide no direct evidence on specific barriers.

Much of the existing knowledge on these barriers comes from studies of informal work. Those engaged in informal enterprises are asked about barriers they currently face or faced when first opening the enterprise. Yet, many of these studies focus on one sector or activity among the many types of self-employment activities. Lund (1998) reviews the quantitative and qualitative survey work concerning street traders in Durban and other areas. Skinner (1999) looks at the specific problems faced by street traders as well as the administrative regulations and institutional structures that street traders face. Skinner and Valodia (2002) examine the role of informal workers in the clothing industry with particular interest in addressing how the formal and informal economies interact. Carr and Chen (2002) call for more such studies, but note

these studies are particularly useful when they include analysis of policies that may be applied by governments to address problems of the self-employed.

More recent work has begun to examine barriers by looking across all types of informal economy activity in South Africa. An important dimension to consider among existing studies is on whom the study focuses: those currently self-employed (what constrains the success of the micro-enterprise?), former self-employed persons (why does the person no longer have the business?), or those that were never self-employed (why hasn't the person ever started a micro-enterprise?).

Chandra, Nganou and Noel (2002) using a survey of 500 informal sector operators in Johannesburg found constraints in order of importance to be: "(1) lack of credit, (2) low demand and variability of income streams, (3) high cost of infrastructure (public transport) and services (water, electricity, and telephone) and poor access to business support centers, (4) poor access to training, (5) lack of storage spaces/permanent stalls, (6) lack of transport facilities, and (7) inadequate business space." Chandra et al. (2002) discount perceptions of crime as a deterrent, a point brought out later in the paper.

Skinner (2005) reviews constraints faced by over 500 informal firms in the Durban metropolitan areas. This study offers an extensive set of questions directly assessing and ranking limitations faced by these existing small firms and looks at the role the government may play to assist these firms as judged by those actually engaged in these activities.

Cichello (2005) draws on data that covered the currently self-employed, formerly self-employed, and never self-employed. The author identifies a lack of capital as the primary barrier to self-employment in the Khayelitsha/Mitchell's Plain (KMP) area of Cape Town. While concerns over expected profit are present, they are not the dominant hindrance. A lack of skills, concerns over future access to formal jobs and other "hidden" costs (such as crime) also play a role in limiting self-employment but these are much more minor compared to the lack of access to capital. This study is limited by the fact that respondents were only asked to identify the most dominant reason for them not to enter self-employment and that one exceptionally common response garnered the vast majority of responses. ("I have no money" was the response of 78% of respondents). This response was categorized as a lack of capital but it's not clear if this was a lack of supply of capital or a lack of demand for capital as people were too poor to bear the risk of loans. More severe, there is a concern that such a blanket response may reveal a common reply rather than a thoughtful response to the underlying situation for the individual at hand. In short, it may encompass many other meanings besides a lack of capital. Additionally, the sheer

dominance of the response left little room for other potentially relatively important hindrances to be revealed. And, the structure of the question does not allow any room to identify the absolute level of difficulty imposed by a hindrance. This study takes a number of suggestions from this paper, creating a novel survey instrument that we feel is much better suited to capture the barriers to self-employment.

### 3. Context and Data

This study examines responses from residents of Khayelitsha, an African township approximately 26 kilometers from the CBD in Cape Town, South Africa. It is the largest African township in the Western Cape and, in 2001, had a population of approximately 329,000, the majority of whom (67%) are below the age of 30 (Census 2001). Over a third of Africans living in Cape Town reside in Khayelitsha. Their income levels and distribution closely resembles that of Africans in the larger metropolitan area (Magruder and Natrass, 2005).

According to the Census data from 2001, the unemployment rate was approximately 35%, with the majority of people earning less than R1,600 per month ( $\pm$ USD 220). Among young adults (15-24), only 22% had a grade-12 or post-grade-12 qualification. The majority of households in the township live in an informal dwelling, usually constructed out of a combination of wood and corrugated iron. It is important to note that living standards in Khayelitsha are not homogenous, and there are areas within Khayelitsha in which African professionals (teachers, nurses, [and](#) business people) reside. Most African adults living in Cape Town are isiXhosa-speakers due to strong historical and migrational ties between Cape Town and the Eastern Cape Province. Finally, Khayelitsha also has the second highest HIV prevalence in the Western Cape Province. In 2002, 24.9% ( $\pm$  4.2) of women attending antenatal clinics in the Cape Metropolitan Area were HIV-positive. The Western Cape had a 12.4% overall HIV prevalence (Shaikh and Abdullah et al 2003; Western Cape Department of Health 2003).

We are analyzing data from the 2005 Khayelitsha Survey, Wave III (KS-III). The base year data come from the Khayelitsha Mitchells Plain Survey (KMP). The aim of this survey was to explore ‘the extent to which livelihoods, and in particular labour market behaviour, involved individuals in multiple activities [because] high poverty and unemployment rates in South Africa necessitate that households involve their members in multiple activities as part of their livelihood strategies’ (SALDRU, 2003: 2). This survey used a two stage clustered sample approach. In 2004, a follow up survey (KS-II) was conducted

for respondents from the Khayelitsha area only. With innovative questions on the labour market and health outcomes, activities, and perceptions, these surveys have been a rich source of data for a variety of studies.

This study is based primarily on information contained in the Khayelitsha Survey, Wave III, which was in the field from October 2005 until January 2006. The KS-III attempted to re-interview the baseline sample from Khayelitsha, including some respondents who had attrited in Wave II.<sup>2</sup> The year 2000 sample consisted of 962 Khayelitsha residents. In 2005, 535 were successfully re-interviewed.<sup>3</sup> Re-contact rates are higher if we restrict the baseline to Khayelitsha residents in both 2000 and 2005 (for convenience called 5 year residents). In this case, our attrition rates drop to approximately 28 percent.<sup>4</sup> Given that we start with the baseline sample, the analysis will not be reflective of hindrances to self-employment faced by new migrants to Khayelitsha.

To account for the attrition in the round of data we use, when conducting univariate analysis, the data are re-weighted to account for attrition under the assumption that attrition was missing at random (MAR) after conditioning on a host of 2000 covariates.<sup>5</sup>

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<sup>2</sup> This led to an additional 34 completed surveys from those who did not complete in 2005. Due to cost considerations and the low probability of success, no attempt was made to relocate individuals from households where there were no completed interviews in 2004.

<sup>3</sup> Of those who were not re-interviewed, 17 people were known to live at a location in Khayelitsha but not available at the time the survey team came to visit; 23 refused to participate, 42 were known to have passed away, 157 were known to have moved, 131 were in households that could not be found, 34 were individuals not recognized by re-interviewed household members, and 25 were not found for various reasons that appear to be errors (interviewed the wrong person or not enough info on survey cover).

<sup>4</sup> This approach is similar to the previous review of attrition in the 2000-2004 panel by Magruder and Natrass (2005). It considers the eight individuals who moved within Khayelitsha as well as any individual who could not be re-contacted but had not moved outside Khayelitsha as part of the group of 5 year residents.

<sup>5</sup> Covariates include gender, age, age squared, years of education, years of education squared, total household income, household size, and dummy variables for whether an individual is employed, unemployed, or lives in a shack (all covariates from year 2000 values). We use probit regressions to construct weights  $\{\Pr(A=0|x,z)/\Pr(A=0|x)\}^{-1}$  as suggested by Fitzgerald, Gottschalk and Moffit (1998). A equals 1 if an individual attrites in 2005 and 0 otherwise, x in the case of identifying mean hindrance values will be simply a constant, and z variables are covariates listed above.

The KS-III survey includes a module specifically designed to address barriers to entry in self-employment. This new survey instrument makes a significant contribution for those attempting to identify hindrances to accessing self-employment opportunities in South Africa and elsewhere. It is well-suited for examining such barriers in many countries where entrepreneurial activity is limited, open (urban) unemployment is high and/or under-employment is rampant.

Individuals were asked to identify the extent to which 17 potential issues were a hindrance to his/her entry into self-employment. Answers were given on a 5 point Likert scale under the following categories: (1) not a problem; (2) small problem; (3) medium problem; (4) large problem; and (5) so large a problem that it prevents you from starting self-employment. The initial listing of hindrances was modified extensively by the survey team at University of Cape Town's Centre for Social Science Research (CSSR). Working side by side with the field workers, who were all extremely familiar with Khayelitsha, the team was able to capture sometimes difficult technical concepts and put them into everyday language in Xhosa.<sup>6</sup> The 17 potential constraints addressed in the survey are listed in Appendix 1. The wording for each question is presented (in English) along with the shorthand that we will use in presenting results.

These questions were asked to individuals who were not currently self-employed. Respondents answered based on a specific type of self-employment activity of their choosing. For the unemployed, responses were based on the self-employment activity s/he had defined to be the most likely activity s/he would enter. For current wage workers, answers were based on the self-employment activity the individual would most likely enter if they were retrenched.

Additionally, these individuals were asked the same 17 questions about a second activity, which was randomly assigned across respondents. The set of random activities included 1) selling small goods such as sweets, cigarettes, fruits or veg, etc. in the streets of Khayelitsha; 2) selling small goods such as sweets, cigarettes or clothing on the streets in the CBD; 3) opening a spaza shop from your home; or 4) making and selling furniture (males) or making and selling clothing (females) under the assumption that the government would train them

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<sup>6</sup> We point this out for two reasons. First, we feel this process was vital to the integrity and success of this work. Second, those seeking to replicate this approach should not underestimate the difficulty of parsing out particular elements within detailed economic concepts (for example, differentiating expected profits from the uncertainty over the expected profit before one enters a business and better understands the market or differentiating the risk associated with the variability of income streams from the risk of outright business failures and the risk associated with uncertainty over profit levels ).

in that skill first. The purpose of random assignment was to avoid selection issues associated with individuals focusing on the activity they would most likely enter. The rationale for each occupation was partly determined by popular activities, but we also wanted to assess activities with potentially different start-up costs and/or required skill levels.

There may be other more lucrative self-employment activities of which respondents are not aware. Our approach would not capture this “lack of awareness” which may also be a significant barrier to self-employment. Thus, this analysis does not preclude policies geared towards increasing skills or information for currently uncommon activities.

## **4. Methodological Concerns**

We analyze perceived (or self-reported) hindrances to self-employment. While this is not de facto evidence that such constraints limit engagement in self-employment, we believe analysis of such perceptions is quite useful lacking such de facto evidence. First, perceived hindrances are likely highly correlated with actual hindrances. In this case, identification of important hindrances is vital as it will help set policy makers on the proper path targeting the hindrances that have the greatest negative impact on entry into self-employment.

Second, to the extent that the stated perceptions guide behavior, understanding perceptions is vital whether those perceptions are true or false. Expanded models incorporating these perceptions may help analysts and policymakers better understand labour market outcomes. Additionally, if perceptions are false and still guiding behavior, policy makers will want to eradicate these errors in perception.

As discussed above, respondents rate the importance of hindrances on a 5-point scale. There are three major analytical challenges to aggregating across responses on the five point Likert scale in order to identify the dominant perceived hindrances to self-employment. First, the answers given are subjective and different individuals may have different interpretations of what it means to be “a large hindrance to entering self-employment” (i.e. what a “4” means). Secondly, the observed Likert scale is not necessarily a cardinal scale; the difference between a 3 and a 4 may be different than a difference between a 2 and a 3. Third, the function mapping underlying deterrent effects to stated hindrances is not a one-to-one function. In short, even for the same individual, not all “4s” are created equal.

In addressing these issues, we define three main assumptions in a fashion that parallels the work of Ferrer-i-Carbonell and Frijters (2004). We first define  $SH_{ih}$  as the stated hindrance level (1-5) of hindrance  $h$  for person  $i$ . We recognize that this stated hindrance will relate to some underlying scale of deterrence,  $DE_{ih}$ . We use assumptions that range from relatively weak to relatively strong as follows:

- A1 Stated hindrances are a positive monotonic transformation of the true underlying deterrent effect (i.e. to the reduction in the likelihood that a person enters self-employment), denoted by  $DE$  for deterrent effect. Thus, if  $SH_{ij} > SH_{ik}$  then  $DE_{ij} > DE_{ik}$ .
- A2 Stated hindrances are interpersonally ordinally comparable: if  $SH_{ih} > SH_{jh}$  then  $DE_{ih} > DE_{jh}$ .
- A3 Stated hindrances are interpersonally cardinally comparable:  $(SH_{ih} - SH_{jh}) = \omega(DE_{ih} - DE_{jh})$  with  $\omega$  being an unknown constant.

The fact that not all 4s are created equal, even for the same person, makes assumption A3 unachievable. For convenience, we will assume throughout this paper that the distribution of responses within a given stated hindrance value are uniformly distributed within cutoff points on the latent index.<sup>7</sup> Given that the stated hindrance is no longer tied to a specific value in the deterrent effect, we re-write assumption A3 as:

- A3' Stated hindrances are interpersonally cardinally comparable:  $(SH_{ih} - SH_{jh}) = \omega E[(DE_{ih} - DE_{jh}) | SH_{ih}, SH_{jh}]$  or  $\omega(E[(DE_{ih} | SH_{ih})] - E[(DE_{jh} | SH_{jh})])$  with  $\omega$  being an unknown constant.

In our work, we will start with the restrictive cardinality assumption (A3'). This will allow us to use sample means to compare hindrances and determine which hindrances dominates the others, meaning that it causes at least as much reduction in the likelihood of entering into self-employment as the hindrance it dominates. In practice, the cardinality assumption will have the advantage of allowing the use of straight forward sample means and their familiar properties to quickly rank the hindrances. We will also be able to easily create an absolute measure to characterize the degree to which hindrances are of concern based on the level of each mean (independent of its rank).

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<sup>7</sup> Weaker assumptions are possible for particular aggregations of interest, particularly the average score used extensively in this paper. However, two normally distributed latent indices with a common mean but different variances can be used to easily show the vulnerability of these results to specific cutoff points if there aren't restrictions on the (within hindrance) distribution of latent index scores.

However, the cardinality assumption may well be invalid. Stepping back to assumption A2, we can relax the assumption of cardinality and use only ordinal comparisons. One common way to do this is to pick the point where you think the probability of hindrances would be quite large or “kick in.” Thus, it is common to see ordinal comparisons where one compares the percent of the population that chose a hindrance to be large or very large. This measure is convenient as it, like the sample mean analysis, only requires a comparison of 17 sample means (proportions). However, it is not a satisfying criterion for defining one hindrance as dominant over another as it does not take advantage of all of the available information.

Instead we will use an idea paralleling that of stochastic dominance in the poverty and risk literature. We shall call hindrance A more dominant than hindrance B if at each point on the cumulative density functions up to response 4 (large hindrance), the cumulative density function is higher for hindrance B (i.e. there is a higher proportion of individuals claiming hindrance B is no problem, claiming hindrance B is either no problem or a small problem, etc.).<sup>8</sup> If this holds, then any aggregation procedure based on a strictly positive monotonic transformation of the stated hindrance values (giving each observation equal weight) will rank Hindrance A over Hindrance B. The sample mean, using  $f(SH_{ih}) = SH_{ih}$  as the transformation function and assigning equal weight of  $1/n$  to each observation, is now seen as just one example among an infinite set of aggregation schemes that would produce the same outcome.<sup>9</sup>

Under Assumption A2 and our maintained assumption of a uniform density within intervals, this also implies that similar aggregations hold for the underlying latent index, DE as well. Conversely, whenever an aggregation procedure using a positive transformation (strictly or not) of stated hindrances finds that Hindrance A dominates Hindrance B, we can say the aggregation would reach a similar dominance conclusion if it were using the underlying latent index DE.

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<sup>8</sup> Note, by stated hindrance “5”, all cumulative density functions will equal 1. Therefore, this offers no useful information for our measures.

<sup>9</sup> Other measures, similar to the p-alpha poverty measures, might be considered to measure the severity of particular hindrances. Such measures would have difficulty relating to similar aggregation procedures on the underlying index without the cardinality assumption. An exception to that would be in the case where we have stochastic dominance as discussed above. Under our assumptions, similar to Foster and Shorrocks (1988), this would imply that the ranking of hindrances would be clear under all p-alpha measures.

While this seems rather strong evidence of dominance, it relies on the assumption that individuals share a common understanding of what it means to be a large hindrance (#4). We will also relax this assumption and provide evidence of dominance using only intrapersonal comparisons. The evidence presented here using this assumption is not nested within the framework of the previous rules. It is simply illustrative of the type of evidence one can present under the minimalist approach to assumptions. We present it only to test robustness of earlier results. In order to do this, we will focus on the percentage of individuals who ranked one hindrance above another. If 50 percent of people rank hindrance A over hindrance B and just 5 percent rank B over A (and 45 percent rank them as equal), this provides circumstantial support to our previous ideas that Hindrance A is the dominant hindrance. We do not offer assumptions under which this provides definitive proof of dominance, but it is often compelling if still circumstantial.

## 5. Results

### *Which self-employment activities do individuals imagine doing?*

Individuals who were not currently self-employed were asked to identify which self-employment activity they would be most likely to enter. The proportions choosing each activity are shown by gender in Table 1.<sup>10</sup>

Most activities selected are retail activities. Overall, running a spaza shop from home was the most common response with roughly a quarter of respondents from each gender selecting this activity. Selling goods on the streets of Khayelitsha was also a very popular response. Many of the activities we listed under production and services also include heavy retail components and some might argue they belong in this classification as well. Some production activities were also prevalent. For example, for women, making clothes for sale was an even more popular choice than opening a spaza. Various services, including offering cell phone services, were also mentioned.

### *What are the major deterrents to self-employment?*

Crime is the single most dominant perceived hindrance to entering self-employment. This will be shown convincingly using a variety of assumptions

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<sup>10</sup> 62 individuals could not imagine doing any self-employment activity and were thus excluded from the following analysis. These individuals are described further in the Robustness Checks section below.

and measures to determine when one hindrance can be said to be more severe than another. Other hindrances, such as the risk of business failure, a lack of access to startup capital, transport costs, and jealousy within the community if one is successful, are also shown to be important deterrents to self-employment in Khayelitsha.

We define two measures to determine *relative rankings* among hindrances. Using Measure 1, hindrance A is said to dominate hindrance B if the mean response for hindrance A is greater than the mean response for hindrance B. This measure is appropriate if stated hindrances are interpersonally comparable and cardinal in nature (i.e. using Assumption A3).

For Measure 2, hindrance A is said to dominate hindrance B if the proportion of individuals stating that hindrance A is a large or very large deterrent is greater than the proportion of individuals that state the same for hindrance B. This measure ignores useful information if the cardinality assumption is valid. In aggregating across individuals, this measure assigns a zero value to all individuals who answered 1 through 3 on the Likert scale and some constant *c* to those who answer with values 4 or 5. This measure implicitly relies on responses being interpersonally comparable.

Figure 1

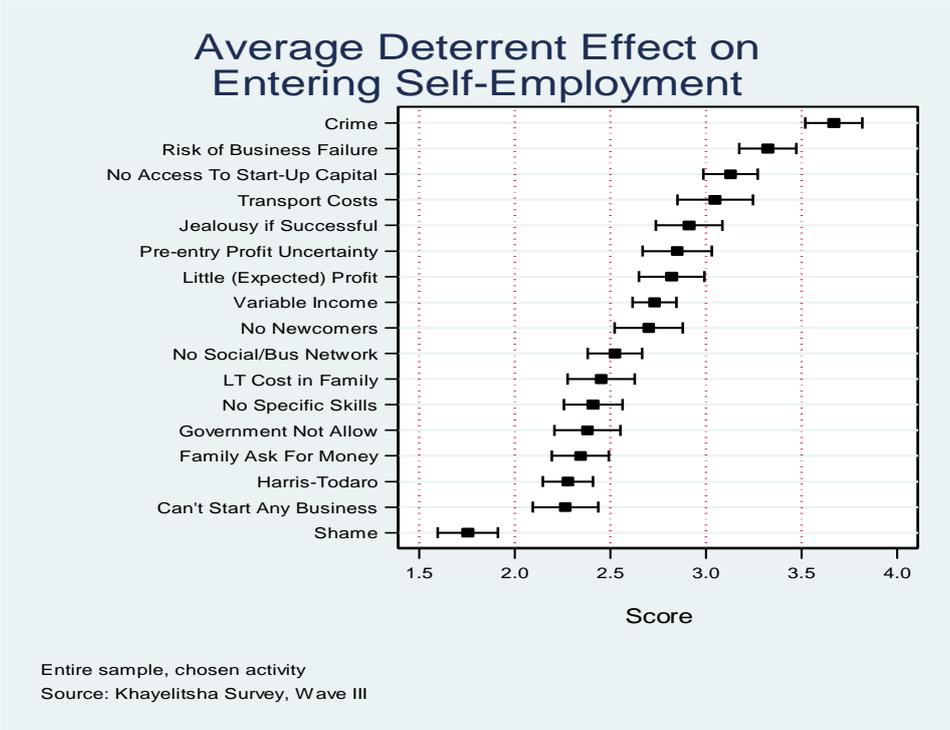


Figure 1 shows the sample mean and a 95 percent confidence interval for the population mean for each of the 17 hindrances using the entire sample and

response concerning respondents' chosen activity. A rough eyeball test suggests that, in this population, crime dominates all other hindrances. It is also immediately clear that shame is not a deterrent of concern for these activities as it is dominated by all other hindrances. In many other cases, we are unable to tell if a particular hindrance dominates another hindrance in the population of adult five year residents in Khayelitsha.

There are a number of reasons to be suspicious of conclusions made using such rough eyeball tests. For one thing, the positive covariance across most hindrances (not shown) can cause more statistically significant differences than if these were independent outcomes.<sup>11</sup> On the other hand, the fact that we are conducting multiple tests works against finding these differences as statistically significant. Table 2 allows the reader to assess whether these differences in population mean estimates are statistically significant at the 5 percent level under both a standard pairwise comparison and a comparison adjusted for the fact that we are conducting multiple pairwise comparisons using the Bonferroni-Holm method.<sup>12</sup>

The results after technical adjustment are generally but not universally consistent with a rough eyeball test of looking for non-overlapping confidence intervals. For example, the dominance of crime holds up for all cases except *risk of business failure*, which fails only after we use a Bonferroni-Holm adjustment. Table 2 also reveals that, despite our relatively limited sample size, we are able to gain very meaningful information with this approach. 85 of the 136 pairwise comparisons (62.5%) reveal statistically significant differences in the underlying population, even after the Bonferroni-Holm adjustment.

Under our second measure, using the same sample and activities, crime can again be shown to dominate all other hindrances. Figure 2 shows the proportions for each hindrance.

While relative rankings are important, we would also like to have some absolute criteria for determining what constitutes a "significant" hindrance. In Table 3,

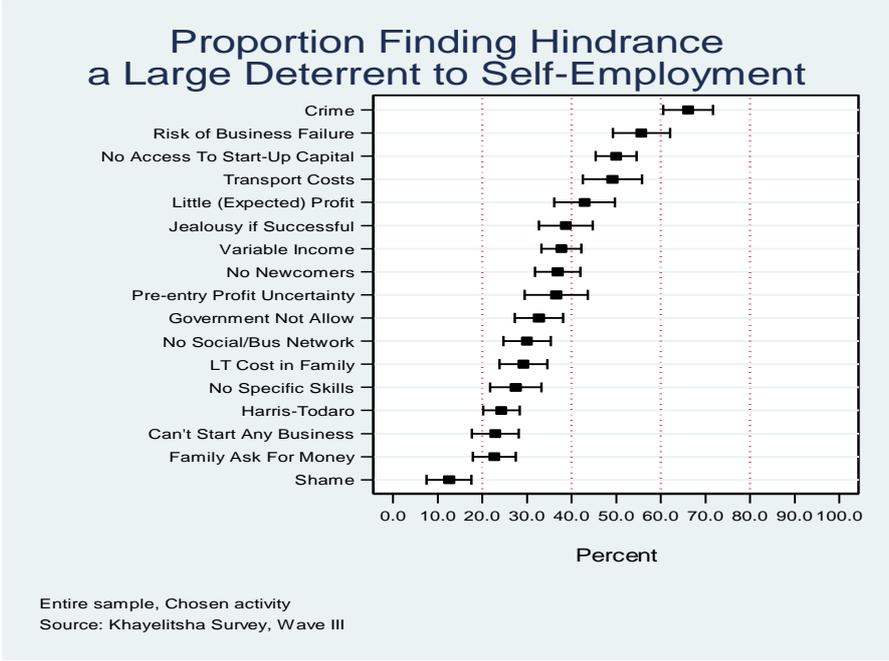
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<sup>11</sup> If  $\mu_{diff} = \mu_1 - \mu_2$ , then  $Var(\hat{\mu}_{diff}) = Var(\hat{\mu}_1) + Var(\hat{\mu}_2) - 2 * Cov(\hat{\mu}_1, \hat{\mu}_2)$ . Since most covariance terms are positive across these stated hindrance values, the standard errors of our estimated difference in mean stated hindrance value (without a Bonferonni correction) would generally be smaller than they would be if Figure 1 were comparing independent means with similar confidence intervals.

<sup>12</sup> The Bonferroni-Holm method (Holm 1979) corrects for the fact that we are simultaneously testing 136 pairwise comparisons ((17 X 16) / 2). We do not reject the null of a common mean at the five percent level unless the pairwise comparison with the lowest p-value has a p-value less than .05/136. If this is statistically significant, the threshold is updated when testing the others to .05/135, .05/134, and so on.

we classify hindrances as significant, severe, or critical if they meet specific thresholds. In this table, hindrances may fall into more than one classification if the 95 percent confidence interval falls across multiple designations. The designations are shown in Table 3. Bold lettering denotes the position of the sample mean.

Figure 2



Crime stands as the lone hindrance deemed critical. Severe hindrances include risk of business failure, no access to start-up capital, transport costs, jealousy if successful, and pre-entry profit uncertainty.

Appendix 2 shows these figures for the sample of unemployed only. Confidence intervals are considerably larger, as one would expect given the smaller sample size. Results are not appreciably different though there is some movement of relative positions and a bunching of the top four hindrances. In particular, there is some evidence that this sub-sample has a higher mean response for lack of access to capital and transport costs.

Appendix 3 includes similar graphs of average deterrent effects for each of the randomly assigned activities. The rankings of specific hindrances vary across the different activities, yet, for four of the five activities randomly assigned, crime, risk of business failure, lack of access to capital and transport costs rank as the top four hindrances. Crime is again on top for all activities except selling goods in the streets of Khayelitsha where it is slightly below, though essentially,

tied with the risk of business failure. The importance of jealousy seems to fall to the middle of the pack in these settings.

Returning to our investigation of the relative position of hindrances, we may find the two previous aggregation schemes unsatisfactory. The first assigns values that imply the difference in the stated hindrance levels correspond to proportionally similar differences in the underlying entity while the second assigns a zero value to small or medium hindrances and the same value to large and very large impacts. The truth is we simply aren't sure how to weight each response because we don't have a solid understanding of the mapping of the underlying entity to the stated hindrances. Thus, we fall back to a new measure:

Using Measure 3, a hindrance A is said to dominate Hindrance B if, for a randomly selected individual, the  $\Pr(SH_A \leq x) \geq \Pr(SH_B \leq x)$ , for  $x = 1, 2, 3, 4$ . This measure is essentially a first degree stochastic dominance criteria, but for the first four points of the distribution.<sup>13</sup> While this criterion may leave more pairwise relationships without a clear dominant hindrance as compared to Measures 1 or 2, it is substantially more robust. Satisfying Measure 3 implies satisfying Measure 1, Measure 2 and any other aggregation scheme that aggregates based on a positive monotonic transformation of stated hindrance values. Figure 3 shows an example where crime dominates concerns over low (expected) profits.

Figure 3

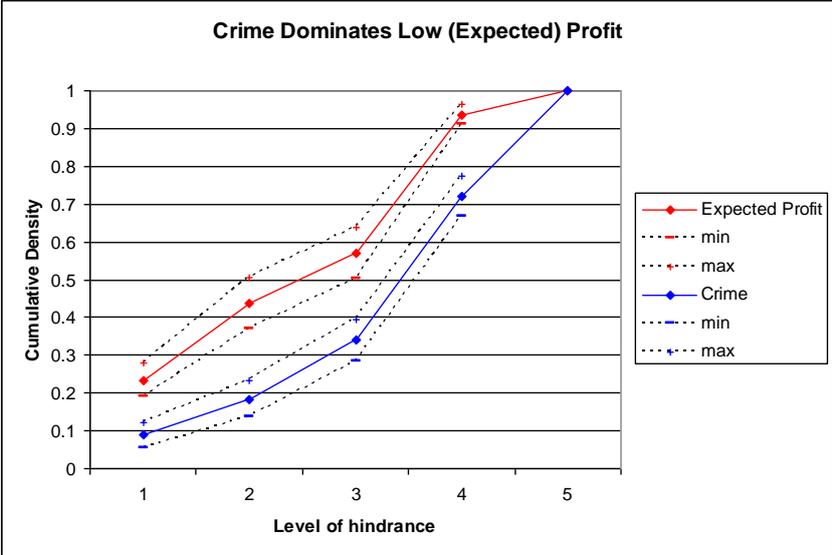


Table 4 shows a matrix of results testing for dominance under our third measure. Again, there are 136 pairwise comparisons. A “1” in the table denotes

<sup>13</sup> Note:  $\Pr(SH_i \leq 5) = 1$  for all hindrances.

dominance within the sample, i.e. the cumulative relative frequency within the sample is lower for each of the first four values. A “2” denotes that this difference is statistically significant at the 95 percent level for each of the first four values. In other words, dominance has been demonstrated for the underlying population.

The dominance of crime, even under this stringent criterion, is statistically significant for all hindrances except the risk of business failure. The lack of statistical significance is driven by the fact that the proportion saying that crime was “not a problem” was lower but not statistically significantly different than the proportion saying risk of business failure was “not a problem.” For responses 2 - 4, the lower cumulative density estimate for crime was statistically significant.

Other severe hindrances also show signs of their dominating other hindrances under this approach. Each hindrance can be compared on a case by case basis, but aggregating down the columns gives a quick first approximation of how detrimental hindrances are compared to other hindrances under this more robust approach. Risk of business failure (25), a lack of access to startup capital (22), transport costs (19), and jealousy if successful (17) are again shown to be severe hindrances. Under this approach to relative rankings, pre-entry profit uncertainty does not dominate many other hindrances.<sup>14</sup>

This approach does have a significant assumption built in. The assumption is that the answers are interpersonally comparable, meaning that one person’s mapping of the real effect on entering self-employment to the stated hindrance values exactly matches the mapping given by all other individuals. In other words, the deterrent effect that just causes one individual to say “4- large problem” instead of “3- medium problem” must be the exact same threshold point that causes all other respondents to begin to say “4- large problem.”

We now eliminate this assumption and seek to assign dominance using only within person comparisons. In this way we define a new measure for assigning dominance. Using Measure 4, hindrance A is said to dominate hindrance B if the proportion of individuals who rank hindrance A at least one point higher than hindrance B (on the 5 point Likert scale) is 25 percentage points higher than the

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<sup>14</sup> This hindrance has fewer observations for than others due to the introduction of this question into the survey after some surveys had been sent to the field. While the increased sample size will result in larger confidence intervals, this is not the primary reason for a lack of dominance. Instead it is driven by the smaller percentage of individuals labeling this a large or very large hindrance, as was evident in its rather low relative position in Table 3, proportion column.

proportion of individuals that rank hindrance B at least one point higher than hindrance A.

Table 5 shows within person comparisons across hindrances. The upper left cell implies that 23.1 percent of the sample gave a stated hindrance value for Low (Expected) Profit that was at least one point higher than the same person's stated hindrance value for Pre-entry Uncertainty over Profit. The cell below shows that 31.8 percent of the sample gave a stated hindrance for Pre-entry Uncertainty over Profit that was at least one point higher than the stated hindrance for Low (Expected) Profit. (The rest had equal values.) The differential is just 8.7 percent. This is clearly a muddied case where we would not view this as strong evidence that one dominates the other either way. In contrast, 53 percent of individuals gave crime a higher hindrance value than low (expected profit) while just 14 percent did the opposite. This differential is such that, using Measure 4 as our criterion, we would say that crime dominates low expected profit. This cell is therefore shaded in Table 5.

Using this fourth measure, crime again dominates almost all other hindrances. Exceptions include the risk of business failure, where it had a 16 percentage point advantage, and access to start-up capital and transport costs, where it held more than a 20 percentage point advantage.

There is something intuitively appealing and rather convincing about this approach. If some people continually overstate the difficulty of problems they face and others continually understate these problems, this allows them to still contribute in a convincing fashion by showing proper rankings. However, in many ways this measure is terribly unreliable. For example, it is easy to show that it is possible for hindrance A to dominate hindrance B under Measure 4, yet be dominated by hindrance B under Measures 1 and 2. Even more disturbing, the relationship to the underlying entity (DE) is completely lost. The 50 percent who rank A over B may be doing so based on a 1 unit change in the underlying entity, while the 20 percent who rank B over A may be doing so based on a 1000 unit change in the underlying entity.

With this caveat in mind, we present this as highly circumstantial evidence that crime again dominates all other hindrances. We also see that risk of business failure, transport costs and no access to startup capital are again asserting dominance over a number of other hindrances. Jealousy if successful dominates just four other hindrances but no other hindrance dominates anything but shame. Additionally, jealousy would dominate seven other hindrances if the differential threshold were dropped to 20 percentage points. Thus, there is still some substantial evidence of its importance under this approach.

Therefore, under a variety of measures, we can determine that crime is the most dominant hindrance faced by Khayelitsha residents as they consider self-employment. The risk of business failure, a lack of access to start-up capital, transport costs, and jealousy if successful are also consistently shown to dominate most other hindrances. A number of other hindrances also show signs of being significant hindrances in an absolute sense.

## **Robustness Checks**

There are a few important caveats that we need to investigate. First, sixty-two adults (or 13% of possible respondents) were not asked the extensive set of questions about hindrances to self-employment because they could not imagine any type of self-employment activity that they might attempt. There may be concern that, in the process, we lost information from a selective group who face important and distinctively different barriers to entry into self-employment. Fourteen individuals (23%) of this group were 60 years old or above (versus 5 percent for those answering questions on hindrances). Five others cited health or disability issues. For others under 60, 15 individuals simply professed to have no interest in self-employment without further clarification and four others said they were not patient enough for self-employment. Five individuals cited a fear of crime, four others claimed such work was too risky, three cited a lack of profitability and one other cited a lack of access to start-up capital. Thus, this survey feature appears to have omitted a number of observations from older or disabled individuals that would not be in our relevant potential labour pool. Comments from the group that opted out of this section even though we would be interested in their responses generally point to the same constraints that we have highlighted previously.

Second, some potentially important hindrances may have been inadvertently omitted from our list. For example, we did not ask about concerns over personal health issues or health of those in the home being a potential deterrent. To assess this, we asked respondents if there were other issues that prevented them from entering self-employment. Twenty-five percent of the sample said yes. Unfortunately, when asked to specify, fifty percent of the respondents gave an ambiguous response along the lines of “no money” and fifteen percent mentioned problems of “finance.” Cichello (2005) highlights the variety of issues that may underlie such a response, pointing out that this should not automatically be assumed to mean a lack of access to start-up capital. Eleven percent of the responses did explicitly note a lack of start-up capital. The authors were not able to discern any other cluster of similar answers that made up more than five percent of responses, though responses about crime made up three

percent of responses. Only two responses mentioned health concerns. In short, these responses did not appear to identify any prominent constraint that we had not already asked about.

Third, many of our respondents had never seriously considered the business activity that they listed. There may be a concern that we should not weight these responses equally since they may be ignorant of the true deterrent effect of particular constraints. Figure A.4-1 shows the top hindrances for those respondents who either had past experience in this type of business activity or seriously considered starting such a business. The top five hindrances are exactly the same five severe hindrances we have identified from the group as a whole. Interestingly, access to start-up capital moves up in relative rank and even surpasses crime, though not to a statistically significant degree.

Fourth, the current self-employed also addressed barriers to entry and/or problems they currently face or previously faced. This analysis is not directly comparable to the previous results. Respondents answered on a five point Likert scale from strongly disagree to strongly agree. For some items there is no link to the constraint actually being a deterrent from them entering (or continuing) this business. For example, a respondent may agree that s/he does not have friends who can help her/him succeed in this business, but that is not the same as saying that this lack of connections deters her/him from entering. As a second example, a respondent may strongly agree that “I make little or no money in this type of business” thinking that s/he makes little money. But making little money may not actually stop her/him from entering self-employment if s/he is currently earning no money. Nonetheless, the results from this group reinforce our previous argument. While profit concerns come out on top, using sample means, all five severe constraints come in the next six places (see Figure A.4-2). The biggest fall in relative position was for problems associated with a lack of access to startup capital. Since these are active self-employed, a clearly selective group, this is not altogether surprising.

Finally, there may be other problems that hinder the potential self-employed. Poor marketing knowledge, an ignorance of potential profitable opportunities and other hindrances may well be hurting individuals without them being aware of it. Along these lines, choosing a marginally profitable activity may, itself, be a problem.

## 6. Discussion of the Five Severe Hindrances

We briefly discuss the five dominant constraints in order to offer additional information from the survey on the expected constraints related to access to finance and to offer some insight from the existing literature on other less often discussed constraints, such as crime and jealousy within the community. While our emphasis is on how each constraint impacts entry into self-employment, it is equally valid to consider how additional self-employment would impact each constraint. For example, increased self-employment rates might well lead to lower crime rates or lower transportation costs.

### Crime

Other research in South Africa has also linked crime and reduced small-scale self-employment activities. For example, Gough, Tipple and Napier (2003) found that crime is a major problem for household based enterprises (HBEs) in Mamelodi, a low income township area of Pretoria. Respondents in their survey noted being “highly affected by the risk of being targeted by criminals.” Respondents felt having a HBE “opens you up to risk because outsiders enter your domestic space.” Additionally, they noted, suppliers do not want to make deliveries in such high crime areas, increasing the costs imposed on the self-employed living in such areas. The authors determined:

‘The high crime rate in South Africa influences the type of HBE operated, the importance of strong structures and security hardware, hours of operation, distribution of target clientele, profitability from turnover, overhead expenses for security, and losses arising from direct criminal incidents.’ (Gough, Tipple and Napier, 2003)

Chandra et al. (2002) found that crime was perceived as a major deterrent to entrepreneurs in the informal sector when studying the Black informal sector in Johannesburg. However, the authors downplayed these results based on other objective indicators:

‘Perceptions of crime among informal businesses are far more pervasive than the reality. Crime and theft seem to constrain 50 percent of the informal businesses; and over 60 percent identified greater safety and security on the streets as the leading action required of local authorities for stronger business growth. In reality, only 30 percent of the firms were victimized by crime in 1998.’ (Chandra et al., 2002)

We believe the objective indicators in the Chandra et al. (2002) analysis may be entirely consistent with the perceptions data. First, this is a survey of existing firms and we do not know how many other firms have previously collapsed due to crime. More importantly, the reasoning seems to neglect the fact that those who were not robbed still lived with the uncertainty regarding whether they would be robbed, an event that can have extremely large costs. Chandra et al. (2002) show that approximately 17% of these crimes were physical attacks. Additionally, since many of these businesses are located in the owner's home, break-ins may well leave one with psychic losses greater than the value of stock taken.

Suppose 40 percent of the population could be sure that they would not be a robbery victim. That leaves 60 percent of the population knowing there is a 50 percent chance of being robbed this year. If this represents a calamitous event, under standard preferences, this would be worthy of more concern than having a higher (even 100) percent chance of other relatively mild annoyances. In other words, it's entirely plausible that having a 30 percent chance of being a victim of crime would be the dominant concern for 60 percent of the population.

Past evidence from other locations also tends to identify crime as an important hindrance to entrepreneurial activity. Cichello (2005) found evidence of crime affecting hours of work and causing business failures in Khayelitsha/Mitchell's Plain. Skinner (2005) tallied that 16 percent of informal enterprise owners interviewed in Durban reported being a victim of crime in 2001. Twenty percent of such owners deemed safety and security a major problem. Neither study, however, placed crime as the dominant hindrance as our results (and arguably the Johannesburg data in Chandra et al. (2002)) suggest.

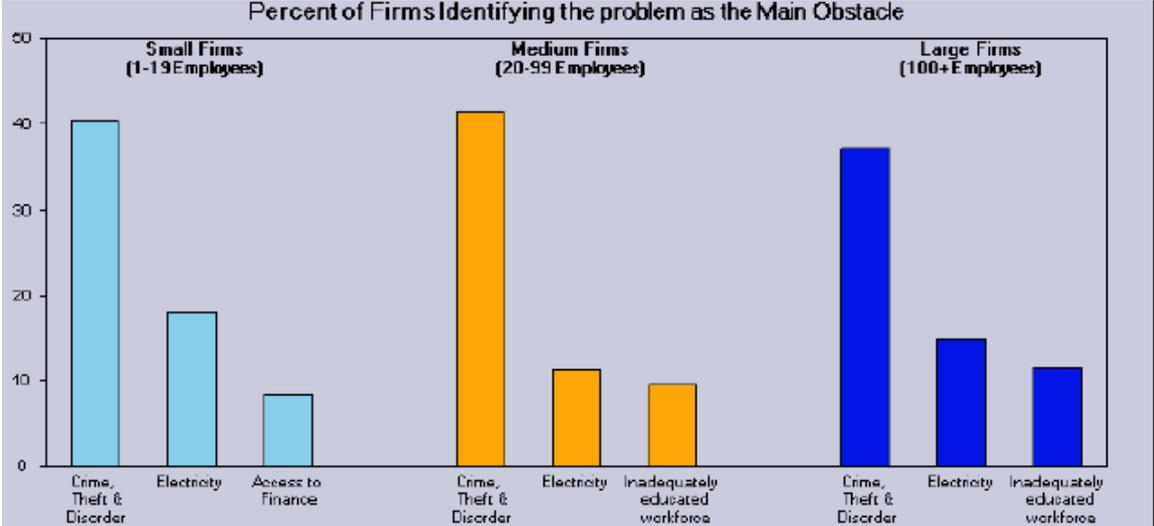
Evidence also suggests that the impact of crime on business activity is not limited to the self-employment activity in township areas. Chandra et al (2001b) found that crime and violence is one of the two main constraints to growth for large manufacturing firms in Johannesburg. Chandra et al (2001a) found that 61 percent of SMMEs in Johannesburg were victims of crime in 1998-99. Skinner (2005) referred to a study by Kesper that 47% of SMMEs in Durban reported being victims of crime in 2001.<sup>15</sup> Crime is also perceived to be a major obstacle to larger businesses in the World Bank Enterprise Surveys. Firms of all sizes listed crime as their main obstacle in the 2007 Enterprise Survey (See Figure 4 below).

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<sup>15</sup> See Kesper, A. 2003. Constraints to growth and employment in South Africa – evidence from the Durban formal small, medium and micro enterprise survey, Research Report for the Durban City Council.

A study commissioned by the South African Presidency, which interviewed 446 small businesses in Cape Town, Durban and Johannesburg/Guateng, found that seventy percent of small business owners felt they or their staff were vulnerable to crime at the work place and seventy-five percent felt they or their staff were at serious risk of crime walking to and from work (McDonald, 2008). Fifty-four percent had been victimized in the past year, with burglary and robbery being the most common crimes in township/informal settlement areas. The average business (among all businesses, not those victimized) experienced 1.36 crimes over the previous year. McDonald (2008) also found that among crimes in township/informal settlement areas, over 30 percent of crimes had accompanying property damage, approximately 20 percent involved guns, and approximately 10 percent involved violence.

Figure 4



Source: Reprinted from World Bank (2008)

Interestingly, in comparing the perceptions of crime to objective data on crime outcomes, McDonald (2008) found a large amount of overlap for burglary, but a large differential for robbery. A far greater percentage of businesses (60%) perceive robbery to be prevalent in their area as compared to only about 20 percent who actually experienced a robbery. The authors hypothesized that this difference was likely due to the fact that robberies are generally carried out with guns. News of such attacks would likely travel throughout the community. Additionally, individuals would be more likely to worry about being a victim of an armed robbery than other crimes such as shoplifting, where the percentage who perceive it as a problem in their area dramatically lags the percentage of owners who have experienced such a crime (McDonald, 2008). This latter point carries particular weight given that McDonald (2008) found that the negative

psychological impacts on those who were victims of robbery are much more severe than those who were victims of other crimes.

McDonald (2008) also demonstrated that the direct costs of crime are exceedingly high for small businesses, particularly for the smallest firms where turnover is under R10,000 per year. For these firms, using the median costs of reported crimes for their revenue bracket, the expected cost of crime in a given year was over twenty percent of their annual total revenue. This percentage declined markedly as the turnover categories increase. Thus, for self-employment activities with low turnover in particular, the cost of crime was particularly damaging.

## **Access to Start-up Capital**

We identify a lack of start-up capital as a major constraint to engaging in self-employment. This result is consistent with the empirical literature analyzing South Africa (Skinner (2005), Cichello (2005), Kingdon and Knight (2004) and Chandra et al. (2002)). According to these previous studies, the majority of new small businesses rely on their own savings or assistance from relatives or friends for start-up capital.

Thus, we asked additional questions on where respondents would find access to capital. Respondents were asked about how they would gain access to R500 to start a hypothetical business. Eighteen percent stated that they could never get access to R500. Five hundred rand may have been too low to truly capture how start-up capital hinders entry into self-employment. When asked how much money it would take to start the self-employment activity of their choice, only 23 percent of individuals gave values of R500 or less.<sup>16</sup> However, among those currently self-employed, 72 percent of individuals had started self-employment on R500 or less.

Among those who felt they could get access to R500, 37 percent would rely on friends or family, 31 percent would rely on a bank loan, and 23 percent would rely on their own savings as the primary source of this start-up capital. In comparison, among those who are currently self-employed, 41 percent relied on friends or family, 20 percent relied on savings, and just 5 percent received a bank loan for their start-up capital. 20 percent of the current self-employed used money from a government welfare payment for their start-up capital, an option that just 4 percent of the non-self-employed respondents cited as a source in the

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<sup>16</sup> This percentage remains unchanged if we restrict our sample to the unemployed only.

hypothetical case. The differences between these two groups could be driven by the larger start-up capital needed for the hypothetical self-employed activities compared to lower values required by those actually self-employed. Alternatively, respondents in the hypothetical case may be significantly overestimating their ability to get a bank loan.

Asked how long it would take them to get access to R500 to start a business, twenty-six percent of respondents estimated that it would take more than one month but less than three months and an additional twenty-six percent stated it would take longer than three months. These percentages are actually identical to those recorded for the self-employed when describing how long it took to get their start-up capital.

## **Risk of Business Failure**

The risk of business failure is one reason why self-employment carries more risk than taking a wage job with a stable monthly salary from an established company. Facing such risk, individuals may choose to avoid self-employment options with a higher expected profit for the lower risk alternative of remaining unemployed.<sup>17</sup> This represents risk mitigation behavior along the lines described in Morduch (1995).

The exact wording in the survey was “One unlucky month when business is not going well could suddenly cause the whole business to fail.” Thus, one may prefer to think of this constraint as the risk of *sudden* business failure. Failures in capital markets that do not allow existing businesses to rebound from random shocks could be a primary cause of this risk. Such shocks could be large fluctuations in revenue or costs or a loss of existing stock or equipment. While the lack of access to start-up capital represents a clear failure of the supply of start-up capital, the risk of business failure results in a limited demand for start-up capital. In both cases, there is failure of capital markets, but the latter emphasizes the need for additional financial products, such as insurance or short-term loans, for businesses that are currently operating.

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<sup>17</sup> We assume the unemployed have access to some positive consumption level through other means, such as living with relatives. This risk of business failure is distinct from concerns about lower utility resulting from variable income streams (Deaton (1997), Dercon (2002)). Respondents were also asked specifically about the potential deterrent effect of any excess variability in income associated with self-employment activities and the effect was less than that of the risk of business failure.

This hindrance may be capturing various other risks besides those associated with failures in financial markets. The meaning of “unlucky” is left open to interpretation. For example, the unlucky event could be a theft or robbery. If the loss of stock (i.e. an unexpected transitory cost) affecting an otherwise profitable business causes the business to fail, then this is capturing a financial market failure. However, if the business closes because a robbery frightens an individual from engaging in this activity, it will not be fixed by policies that improve insurance, credit or savings markets. Similarly, if the unlucky event is a temporary or serious illness of the self-employed individual, or an illness to an individual whom the self-employed individual must care for, or the death of one where the self-employed must attend the funeral, then these are again not capturing our original intent. Therefore, we remain open to the exact meaning of this constraint and suggest future qualitative and quantitative work following up on the issue.

## Transport Costs

The high transport costs faced by residents of Khayelitsha are a result of apartheid era spatial planning which sought to keep city centres ‘white’ and to keep other race groups further away, typically on the outskirts of the town or city. As a result, those considering self-employment are often distant from their main markets and/or their main suppliers. This legacy continues to negatively impact millions of South Africans every day, in Khayelitsha and elsewhere. Not surprisingly, a lack of access to transport and/or high transport costs have also been noted in surveys of informal business owners in Johannesburg and Durban (Chandra et al. 2002, Skinner 2005)

The government has attempted to reduce these transportation costs for residents of Khayelitsha with the provision of Metrorail trains and subsidized buses. However, this survey suggests these costs may significantly hinder those who would like to be self-employed.

One reason may well be that state-led interventions tend to be met with resistance, from varying sources, eliciting protest actions and even violence. For example, in 2000, there were multiple attacks on Golden Arrow busses in Khayelitsha as they attempted to expand (subsidized) bus service. Random bus drivers and commuters on the Cape Flats were shot. Three taxi owners were later convicted of organizing these efforts.<sup>18</sup> More recently, there has been the

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<sup>18</sup> See <http://www.news24.com/xArchive/Archive/Three-convicted-for-Cape-taxi-violence-20020425> and <http://news.bbc.co.uk/2/hi/africa/854000.stm>

strong resistance from taxi organisations to the taxi recapitalisation programme, implemented by the South African government to upgrade and modernise the minibus taxi fleet, with a view to improving safety in particular. Thus, attempts to intervene in the transport market need to take care to engage all stake-holders. This can be a long, time-consuming process that has proven difficult in the past.

## **Jealousy if Successful**

The dominance of the ‘jealousy if successful’ hindrance over so many other potentially important hindrances to self-employment may have come as a surprise to many, particularly since jealousy seems to be a common social phenomenon in all societies.<sup>19</sup> In order to better understand this hindrance, where the meaning of “jealousy” and “successful” may be open to significant interpretation, we offer some perspective from literature outside of economics.

The importance of jealousy within some African societies has featured mainly in the ethnographic studies that include an interest in the relationship between witchcraft and society. These studies have tended to be long-term ethnographies with some of the more well-known being Ashforth (2005) and Comaroff and Comaroff (1999) in South Africa, and Farmer (1993) in Haiti.

The dominant view amongst these anthropologists, especially Ashforth (2005), attributes feelings and fears of jealousy to living in a socio-economically, culturally and politically insecure world with witches. This is especially the case in a developing country like South Africa, in places like Soweto or Khayelitsha, where the history of racial segregation, socio-economic inequality, globalization and indigenous belief systems intersect.

Jealousy is said to result in accusations of witchcraft leveled against those who are more successful. According to Ashforth (2005), “In every instance, the answer to the question ‘Why would they do witchcraft?’ is ‘Because of Jealousy.’ In everyday usage in Soweto, the commonplace English word ‘jealousy’ encompasses the envy of others’ goods and good fortune as well as fears of rivals’ obtaining what one already has” (2005:70). Ethnographic research suggests there have been heightened levels of jealousy, gossip and witchcraft accusations since the end of Apartheid and the rise of the Black middle class (Ashforth 2005). Being accused of witchcraft is in some ways

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<sup>19</sup> Cichello et al. (2011) demonstrates that, in 2006, this hindrance was thought to be relatively insignificant by a group of 21 research economists actively engaged in researching South African labour markets.

representative of being accused of using occult forces for selfish gain at the expense of others. It is therefore unsurprising that many people fear jealousy, as fearing jealousy also means fearing occult forces and losing face within one's own community.

What is surprising is that despite high levels of poverty, some people perceive their own community members to be so malicious, that a basic income from low-level self-employment activities would be perceived as success, and even more so, a "malicious" success. Whereby before the end of Apartheid, poverty was shared by all in places like Khayelitsha and Soweto and inequalities could be collectively blamed on the racist regime, the coming into power of the African National Congress, and affirmative action and black economic empowerment have benefited numerous, yet still a minority of community members. These community members are able to send their children for better education, drive expensive vehicles, build better houses within the townships, or purchase property in the city's suburbs. Yet, others are still left behind. If there is a feeling that socio-economic inequality is increasing both intra-rationally and now inter-rationally, levels of jealousy and accusations of witchcraft would be expected to increase.

There may be other explanations for why jealousy if successful is such a powerful deterrent to self-employment activities. Further research must be conducted to explore the community and individual level links between fears of jealousy and potential profit-making activities.

## **7. Conclusion and Policy Discussion**

Crime is perceived to be the most important hindrance to self-employment in Khayelitsha. How can policy makers respond? First, there needs to be more analysis to determine where the crime is taking place, and what forms of crime are affecting different types of people and business operations.

Second, strategies need to respond to the types of crime that are being perpetrated. If the self-employed are being victimized while selling their goods, policymakers might consider creating special trading zones, where traders can work together (with police) to discourage criminal activity. Urban commercial zones with improved street lighting, cameras, enhanced security or stiffer penalties for criminal activity within the zone might be considered.<sup>20</sup> If the self-

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<sup>20</sup> Similar and additional suggestions can be found by reviewing Chandra et al. (2002), Lund and Skinner (2003), and McDonald (2008).

employed are being targeted as they move to and from their selling locations, policymakers might place more emphasis on establishing permanent, secure stalls or off-site storage of business goods and/or cash nearby (possibly within the aforementioned commercial zones). The latter items would also help if the self-employed are being targeted for night-time robberies in their homes. In these discussions, the self-employed should be brought in as collaborative decision-makers.

Third, detailed impact evaluations of these crime prevention efforts need to be utilized in order to assess which techniques are most cost-effective at reducing crime and also whether crime reduction actually leads to increased participation in self-employment activities. Detailed impact evaluation of existing crime prevention strategies would also help our understanding. Assessing the impact of City Improvement Districts, where businesses- typically in city centers- agree to impose an extra levy to provide enhanced private police protection, is one example. Another would be to look at the impact of general criminal justice strategies for the township areas, such as Community Peace Programs, where the goal is to provide a dispute resolution system outside the police structures in order to reduce violence.<sup>21</sup> Proper evaluations of such programs or other strategies to lower the crime faced by the self-employed would allow us to get past perceptions and move to de facto evidence. It would help to form an important piece within the broader call by Stone (2006) for a more comprehensive examination of the impact of crime on economic growth in South Africa.

Yet, crime is not the only perceived hindrance preventing Africans in the Cape Town area from entering self-employment. Other factors found to be important include the risk of business failure, a lack of access to start-up capital, the high cost of transport, and jealousy within the community if one is successful.

The risk of impending business failure weighing on the minds of the potential self-employed may be caused by a variety of reasons. The intent of the question was to identify whether individuals felt that self-employment was too risky because they were likely to find themselves unable to borrow money and recover if their otherwise profitable business were to experience a one-time financial shock. However, the responses may well be picking up a variety of non-financial shocks that emerge suddenly. Short-term shocks due to theft of stock that include violence and leave individuals afraid of such work, a spell of bad health for the individual or for someone they must care for, required attendance at the funeral of another, or simply a bad month of selling, etc. can

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<sup>21</sup> The authors would like to thank Julie Berg, Public Law Dept. at the University of Cape Town for the description of these programs.

all lead to immediate failure. Future survey work is needed to identify which of these are most prevalent.

What is clear is that simply providing start-up capital is not enough. Microfinance organizations should plan on working with their clients over an extended period of time. Identifying when liquidity issues and other “unlucky events” that commonly cause business failure are likely to arise and identifying solutions to overcome these problems would provide a vital service to clients and encourage others to attempt self-employment as well.

Moral hazard and imperfect information problems will, of course, make it difficult to directly insure businesses when they face a random negative financial shock or to indirectly insure them through access to loans when they have recently performed poorly. However, micro-lending organizations throughout the world have made efforts to provide reasonable services along these lines. Mechanisms such as (forced) precautionary savings and temporary emergency loans for otherwise profitable businesses may help overcome liquidity problems. Such lending agencies may also try to create a labour pool to supply temporary help to deal with temporary closures for health (of individual or other) or funerals if these are seen to affect the long term prospects for these small businesses. If a group liability scheme is imposed, fellow group members may be a reliable pool from which to draw.

While the previous hindrances might suggest that it is the demand for start-up capital that is failing, the supply of capital is also a major issue. There was a large proportion of individuals that found a lack of access to start-up capital to be a large or very large hindrance to self-employment. Government and NGO attempts to offer microfinance in Khayelitsha appear to have been ineffectual at serving this level of micro-entrepreneur at the time of this survey or they were simply much too small in scope to have a major impact. Future work identifying how such programs can better market themselves and better serve these potential clients are clearly needed.

High transport costs are also a severe deterrent. Such costs may be amplified to some degree in Khayelitsha due to its lengthy distance from City Centre. In terms of policy, the most obvious strategy is to lower transport costs via extensions of subsidized services. This could apply to transport of individuals, of goods, or both. Examples include an expansion of existing subsidized bus routes and allowing cargo cars on existing metro cars. Given the history of violence resulting from previous attempts to lower transport costs, such policies must take into account expected responses by taxi associations. Given that transport costs currently suppress the amount of trade (and resulting transport), there may well be the possibility of a win-win solution.

Indirect policies may also help lower transportation costs for the self-employed. For example, having more storage facilities for street traders in the CBD, may also help reduce the transport without directly confronting the taxi industry. Additionally, efforts to pool the self-employed to negotiate collective rates for the transport of goods to and from Khayelitsha may also lower the costs these individuals face. This would be made easier if there were reliable and safe storage hubs within the township areas as well.

Finally, jealousy within the community if one has a successful business is also a major hindrance to starting a business. The emergence of such a culturally embedded hindrance requires innovation and creativity on the part of policy makers and NGOs. At a minimum, they need to be aware of its potential power over individual's choice of employment. More qualitative work is needed to identify how this jealousy manifests itself.

The authors advocate for more research on all of these hindrances, particularly the issues which get less attention, such as crime and jealousy. Focus group work would enhance our knowledge of how these hindrances impact the potential self-employed. It is our hope that new policies and programs that help individuals address these five key hindrances will be attempted and that program evaluation studies be completed to offer de facto evidence on any resulting increase in self-employment participation rates and profits for affected areas or individuals.

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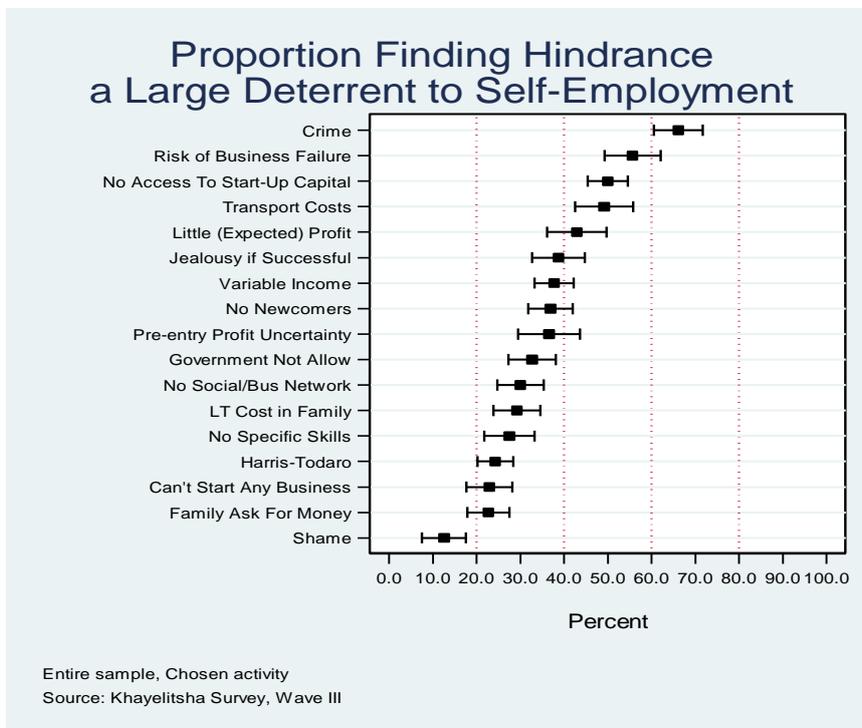
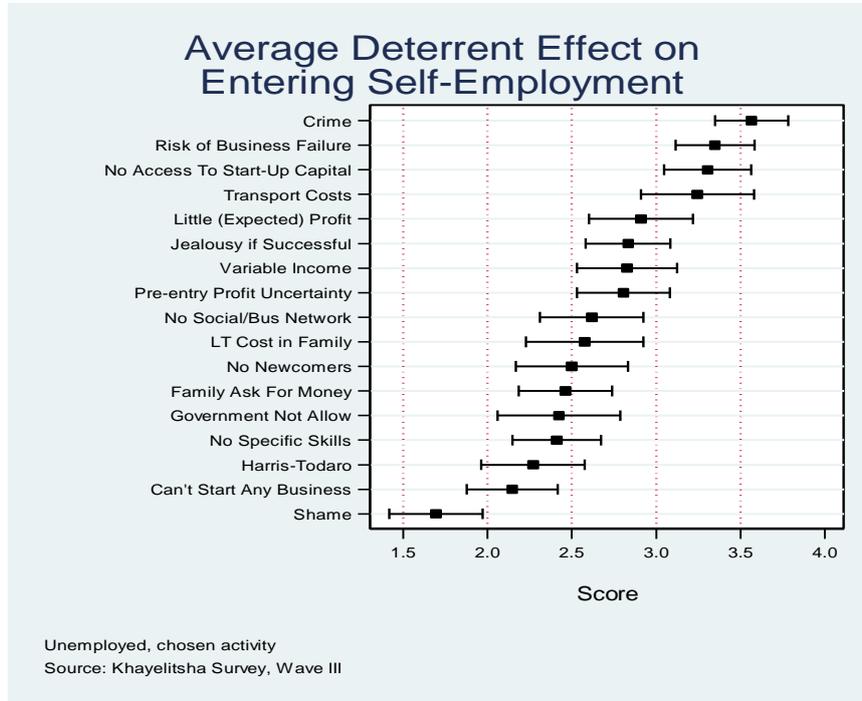
# Appendix A

*Table A.1: Wording used for each hindrance*

<b>Hindrance</b>	<b>Wording in survey</b>	<b>Short hand on graphs</b>
# 1	I will make little or no money in this type of business.	Little (Expected) Profit
# 2	I cannot be sure that I will make money until I actually start this business	Pre-Entry Profit Uncertainty
# 3	The government does not allow people like me to do this type of activity or charges permit fees to enter this activity.	Government Not Allow
# 4	Those who are currently doing this activity will not allow newcomers like me to join in.	No Newcomers
# 5	I do not have the skills or ability to do this particular type of work.	No Specific Skills
# 6	I do not know how to start a business.	Can't Start Any Business
# 7	I will be embarrassed if I do this type of work.	Shame
# 8	I am afraid I will be robbed if I do this kind of work.	Crime
# 9	If I make too much money at this type of business people in the community will be jealous.	Jealousy if Successful
# 10	I cannot get anyone to loan me the money I need to buy stocks or other materials I need to start the business.	No Access to Start-Up Capital
# 11	Sometimes I will not be able to eat or pay accounts because the money from this type of business will change from month to month.	Variable Income
# 12	One unlucky month when business is not going well could suddenly cause the whole business to fail.	Risk of Business Failure
# 13	I will have less time to look for a better job.	Harris-Todaro
# 14	I do not have friends and relatives who can help me succeed in this business.	No Social/Bus. Network
# 15	The transportation costs to get myself or my products where they need to be are too expensive.	Transport Costs
# 16	Other family members will ask me for money for their needs.	Family Ask for Money
# 17	If the business were to fail, I would no longer be able to receive the same level of material support from the household that I currently enjoy.	LT Cost in Family

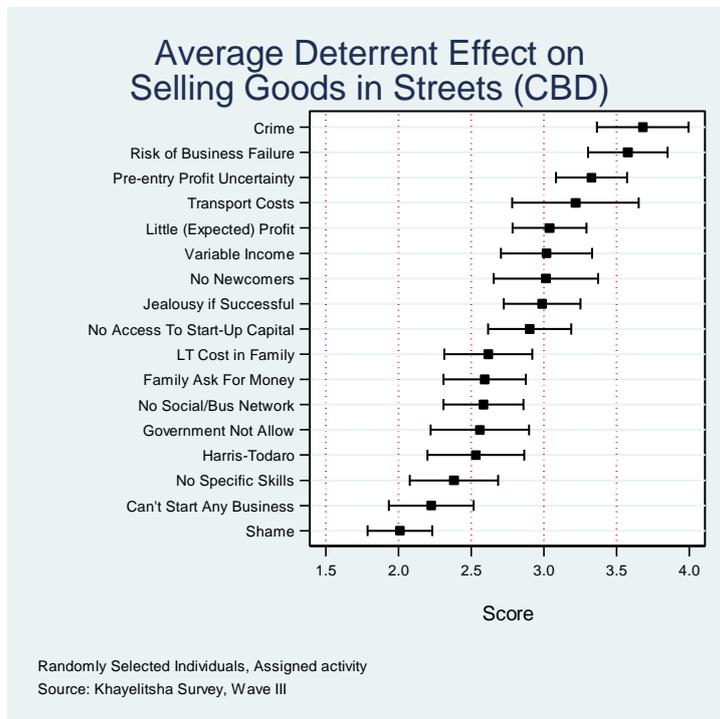
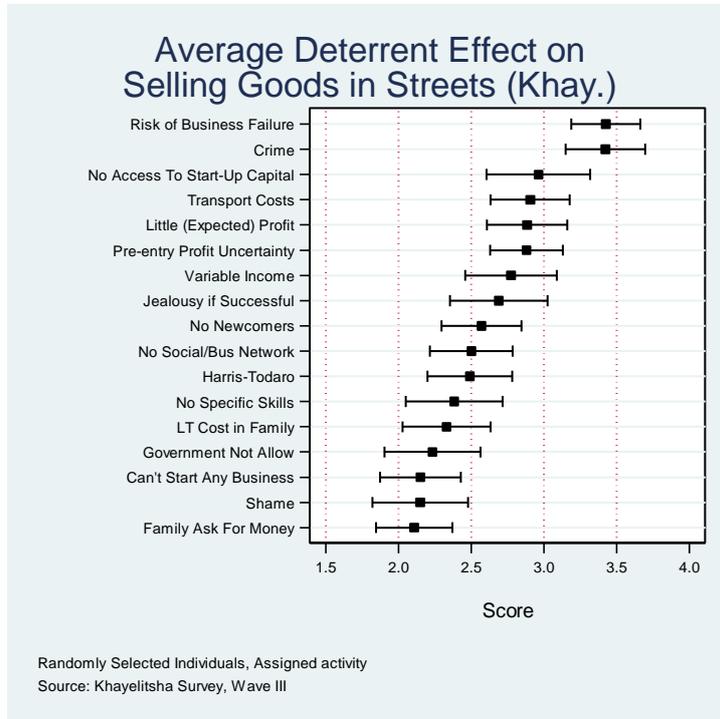
# Appendix B

Figures B.1 and B.2.: Deterrent Effects for the Unemployed Sub-sample

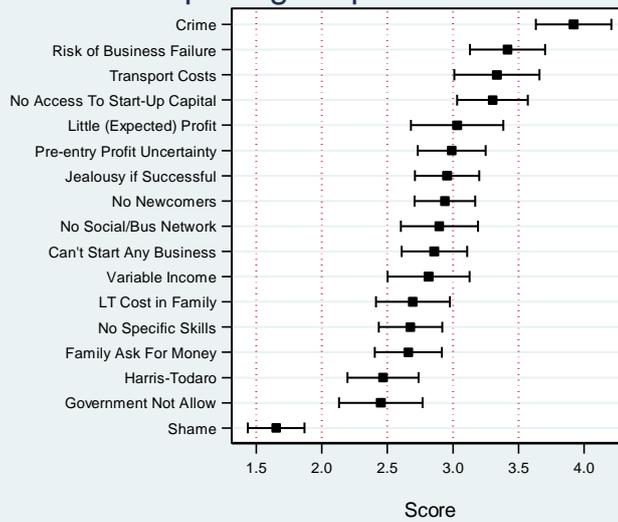


# Appendix C

Figures C.1-C.5: Average Deterrent Effect for Randomly Assigned Activity Sub-sample

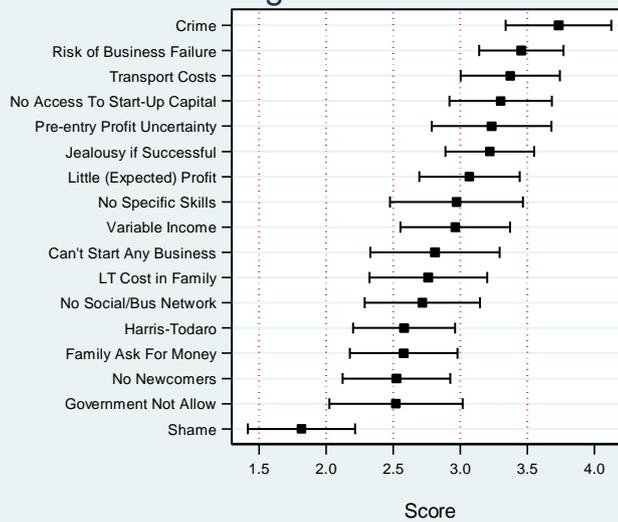


## Average Deterrent Effect on Opening a Spaza



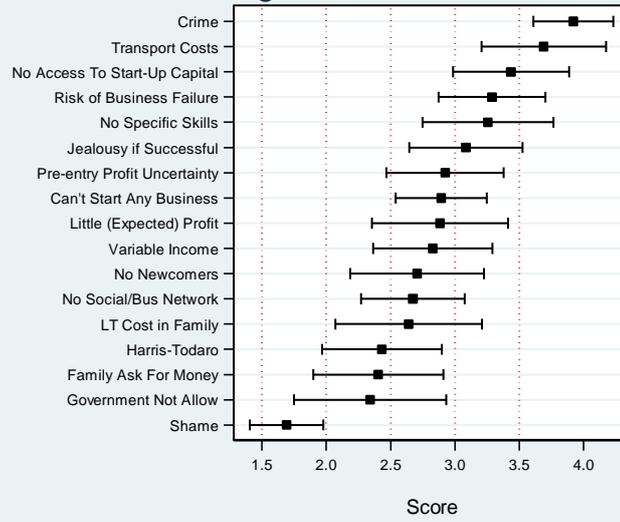
Randomly Selected Individuals, Assigned activity  
 Source: Khayelitsha Survey, Wave III

## Average Deterrent Effect on Making Clothes



Randomly Selected Females, Assigned activity  
 Source: Khayelitsha Survey, Wave III

## Average Deterrent Effect on Making Furniture



Randomly Selected Males, Assigned activity  
 Source: Khayelitsha Survey, Wave III

# Appendix D: Analysis of Caveats

Figure D.1: Seriously Considered or Previously Ran This Type of Business

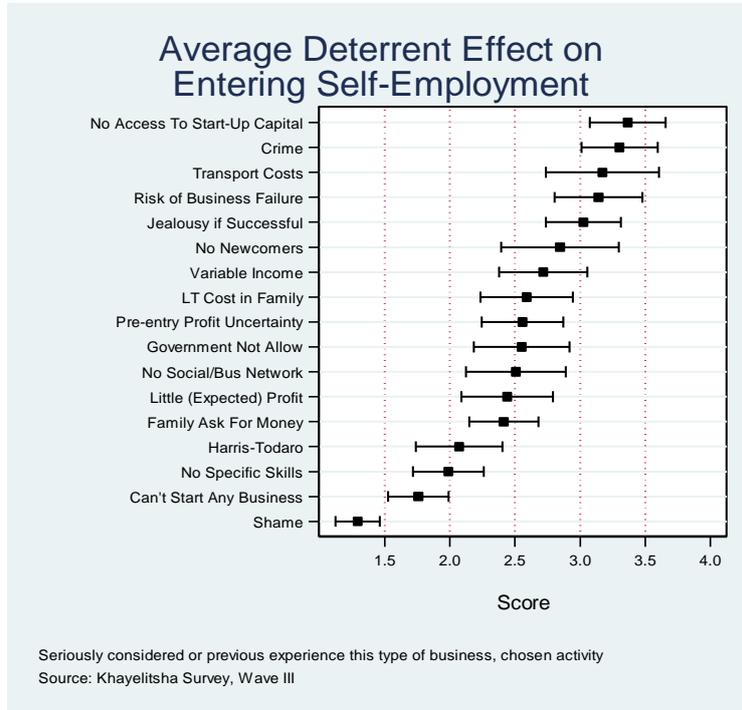
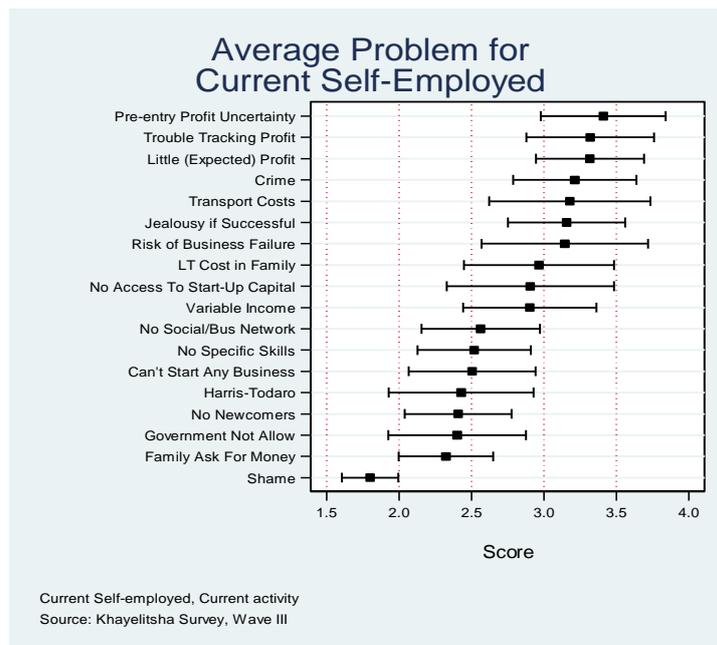
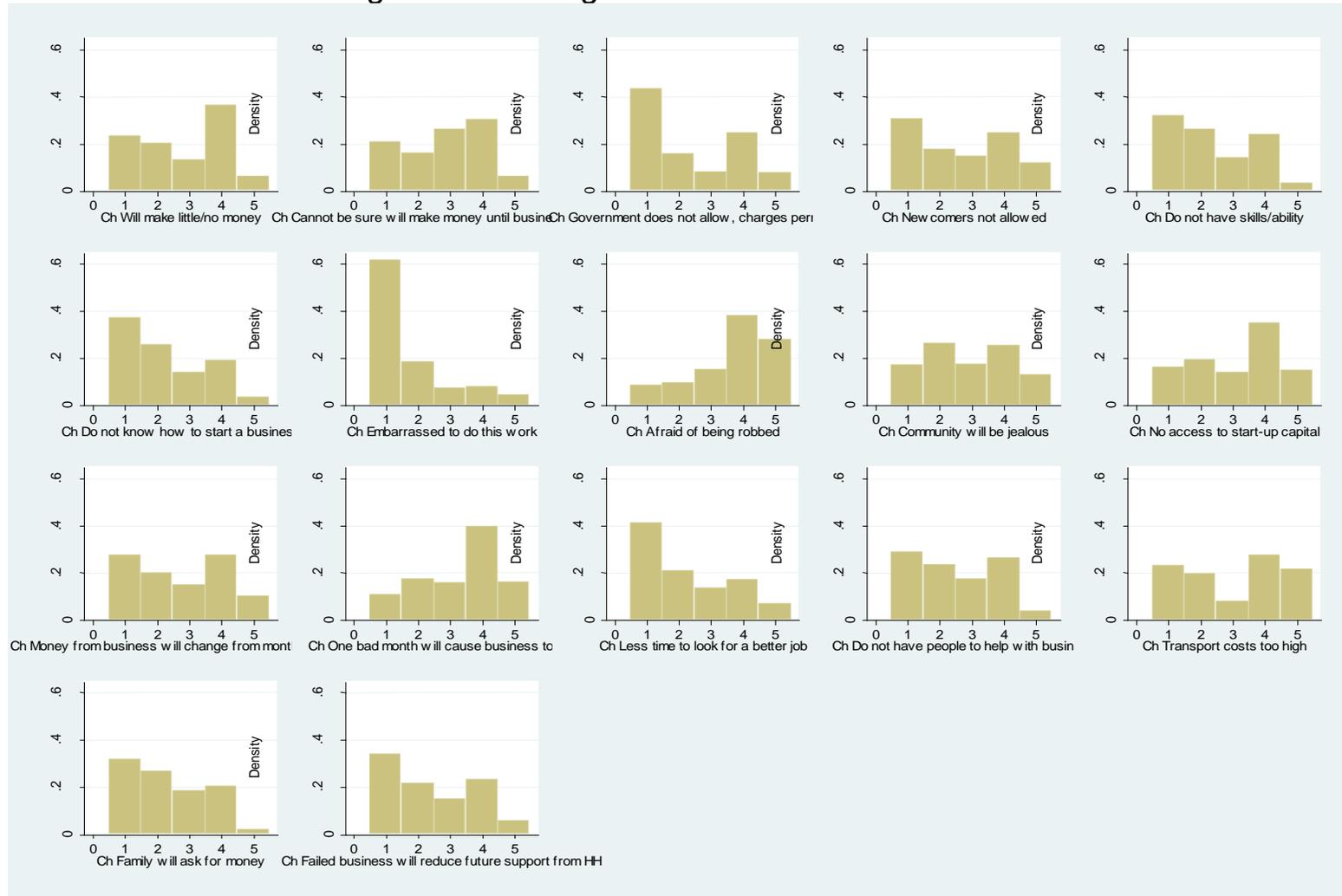


Figure A.4.2: Currently Self-Employed



# Appendix E

Figure E.1: Histograms of Individual Hindrances



*Table 1: Activity Individual Would Undertake if Self-employed, by Gender*

Activity	Percent choosing Activity			
		Female	Male	Total
	<i>Retail</i>	<i>53.4</i>	<i>55.2</i>	<i>54.1</i>
Sell goods on the side of the street in Khayelitsha (like sweets and cigarettes, fruit or vegetables)		17.5	12.8	15.6
Sell small goods on the side of the street in town (CBD) (like sweets and cigarettes, or clothing)		6.4	2.9	5.0
Run a spaza shop from your house		22.3	28.5	24.8
Selling meat/chicken		6.4	8.7	7.3
Other retail		0.8	2.3	1.4
	<i>Production</i>	<i>35.5</i>	<i>25.1</i>	<i>31.2</i>
Make food for sale		5.2	4.1	4.7
Brew beer for sale		1.6	5.2	3.1
Make clothes for sale		27.1	10.5	20.3
Furniture making and selling		0.4	2.9	1.4
Farming		0.4	1.2	0.7
Other production		0.8	1.2	1.0
	<i>Services</i>	<i>11.2</i>	<i>19.7</i>	<i>14.6</i>
Be a hairdresser or beautician		4.0	0.0	2.4
Transport services (e.g. operate a taxi)		1.2	8.1	4.0
Phone services		3.2	2.3	2.8
Other services		2.8	9.3	5.4
Number of observations		249	174	423

Source: *Khayelitsha Survey, Wave III*

**Table 2: Matrix of Statistical Significance for Different Mean Hindrance Levels (alpha=.05)**

<b>Hindrances</b>		h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	h11	h12	h13	h14	h15	h16	h17
Little (expected) profit	h1								2		1		2				1	
Pre-entry profit uncertainty	h2								2		1		2					
Government not allow	h3	2	1		1				2	2	2	2	2				2	
No newcomers	h4								2	1	2		2				1	
No specific skills	h5	2	2		2				2	2	2	2	2				2	
Can't start any business	h6	2	2		2	1			2	2	2	2	2		1	2		
Shame	h7	2	2	2	2	2	2		2	2	2	2	2	2	2	2	2	2
Crime	h8																	
Jealousy if successful	h9								2				2					
No access to start-up capital	h10								2				1					
Variable income	h11								2	1	2		2				1	
Risk of business failure	h12								1									
Harris-Todaro	h13	2	2		2				2	2	2	2	2		1	2		
No social/bus. network	h14	1	1						2	2	2	1	2				2	
Transport costs	h15								2				1					
Family ask for money	h16	2	2		2				2	2	2	2	2		1	2		
LT cost in family	h17	1	2		1				2	2	2	2	2				2	
Sum		14	14	2	12	3	2	0	31	18	22	15	28	2	5	19	2	2

A "1" denotes that the column hindrance dominates the row hindrance using a standard pairwise comparison test at a 5 percent level of significance. In other words, the comparison of means test is rejected if the pvalue is < .05.

A "2" denotes that the column hindrance dominates the row hindrance using a 5 percent level of significance that adjusts for multiple comparisons. The Bonferroni-Holm method of adjustment was used with the pvalue threshold set at .05/(136-j) after listing the p-values from smallest to largest (1, 2, ... j ... 136).

Source: *Khayelitsha Survey, Wave III*

Table 3: Classification of Significant Hindrances

Classification of Hindrance	Average hindrance level	Proportion stating hindrance is large or very large deterrent to entry into self-employment
<b>Critical</b> mean > 3.5 Prop. > 66%	<b>Crime</b>	<b>Crime</b>
<b>Severe</b> mean > 3.0 Prop. > 50%	<b>Risk of Business Failure</b> <b>No Access To Start-Up Capital</b> <b>Transport Costs</b> Jealousy if Successful Pre-entry Profit Uncertainty	Crime <b>Risk of Business Failure</b> <b>No Access To Start-Up Capital</b> Transport Costs
<b>Significant</b> mean > 2.75 Prop. > 33%	No Access To Start-Up Capital Transport Costs <b>Jealousy if Successful</b> <b>Pre-entry Profit Uncertainty</b> <b>Little (Expected) Profit</b> Variable Income No Newcomers	Risk of Business Failure No Access To Start-Up Capital <b>Transport Costs</b> <b>Little (Expected) Profit</b> <b>Jealousy if Successful</b> <b>Variable Income</b> <b>No Newcomers</b> <b>Pre-entry Profit Uncertainty</b> Government Not Allow No Social/Bus Network LT Cost in Family No Specific Skills

Entire Sample, Chosen Activity

Hindrances may fall in more than one category if the 95 percent confidence interval for the population parameter falls over two regions. **Bold** lettering denotes the position of the sample mean.

Source: *Khayelitsha Survey, Wave III*

**Table 4: Matrix of First Order Stochastic Dominance results**

<b>Hindrances</b>		h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	h11	h12	h13	h14	h15	h16	h17
Little (expected) profit	h1								2		1		2				1	
Pre-entry profit uncertainty	h2								2		1		2					
Government not allow	h3				1				2	1	2	1	2				2	
No newcomers	h4								2	1	1		1				1	
No specific skills	h5	1	1		1				2	2	2	1	2		1	2		
Can't start any business	h6	1	1		2				2	2	2	2	2		1	2		1
Shame	h7	1	1	1	2				2	2	2	2	2	1		2		1
Crime	h8																	
Jealousy if successful	h9								2		1		1					
No access to start-up capital	h10								2				1					
Variable income	h11								2	1	2		2				1	
Risk of business failure	h12								1									
Harris-Todaro	h13				2				2	2	2	1	2				2	
No social/bus. network	h14	1	1						2	2	2	1	2				2	
Transport costs	h15								2									
Family ask for money	h16	2	1		1	1			2	2	2	1	2		1	2		
LT cost in family	h17	1			1				2	2	2	2	2			2		
Sum		7	5	1	10	1	0	0	31	17	22	11	25	1	3	19	0	2

A "1" denotes that the column hindrance dominates the row hindrance within the sample. In other words the cumulative relative frequency is higher for the row hindrance for the "no hindrance" to "large hindrance" responses.

A "2" denotes that the column hindrance dominates the row hindrance within the population. In other words the cumulative density function within the population is higher for the row hindrance for the "no hindrance" to "large hindrance" responses at the 5 percent significance level. (This analysis does not adjust for multiple comparisons.)

Source: *Khayelitsha Survey, Wave III*

**Table 5: Within Person Comparisons, Percentage of individuals giving hindrance A a score at least one point higher than the score for the hindrance B**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	25
2 dominates	23.1																
dominates 2	31.8																
3 dominates	24.7	27.9															
dominates 3	39.5	43.2															
4 dominates	29.1	28.5	33.3														
dominates 4	36.8	37.4	21.6														
5 dominates	25.0	24.3	31.5	27.8													
dominates 5	38.7	39.0	24.8	33.0													
6 dominates	22.0	19.7	28.9	21.9	17.0												
dominates 6	43.6	43.9	30.5	37.0	27.3												
7 dominates	11.4	14.9	17.4	14.2	14.2	17.8											
dominates 7	58.0	62.6	40.8	50.9	48.8	45.4											
8 dominates	52.7	54.5	56.3	55.3	63.6	66.0	80.6										
dominates 8	13.5	13.6	13.8	15.1	13.7	9.0	5.6										
9 dominates	38.6	33.0	45.9	39.7	43.1	49.1	66.0	18.5									
dominates 9	35.2	31.7	25.0	25.2	22.2	18.9	10.8	50.0									
10 dominates	39.7	38.9	47.6	41.1	47.9	52.1	65.7	23.3	40.4								
dominates 10	27.4	29.3	19.4	26.1	18.8	16.4	12.0	43.9	30.1								
11 dominates	32.4	28.7	36.9	31.9	31.9	37.8	55.9	17.1	26.3	21.7							
dominates 11	31.2	34.1	24.8	31.5	24.2	20.3	12.6	56.0	39.4	42.1							
12 dominates	43.4	43.5	52.2	46.9	54.0	56.6	73.7	20.0	44.0	36.2	45.2						
dominates 12	21.3	17.4	19.5	20.1	17.2	12.9	10.1	36.4	22.2	26.1	14.6						
13 dominates	22.7	18.3	30.8	24.0	25.3	33.0	44.5	12.0	17.2	16.2	16.5	13.3					
dominates 13	45.2	47.7	31.6	39.8	34.6	33.7	16.9	63.0	49.9	52.4	39.8	61.2					
14 dominates	27.5	24.2	34.7	27.2	30.9	35.3	51.5	14.1	25.4	15.5	27.6	14.5	35.1				
dominates 14	38.4	36.9	25.4	33.4	27.1	22.5	15.4	60.1	43.7	42.3	32.7	52.0	24.3				
15 dominates	39.7	36.3	42.2	39.3	45.1	49.7	62.3	21.8	34.0	33.1	36.7	23.3	47.8	44.7			
dominates 15	27.5	24.4	16.7	23.0	17.8	15.2	11.1	40.6	28.4	32.0	17.9	32.5	16.1	17.4			
16 dominates	25.1	24.1	29.5	26.3	27.5	31.8	47.9	13.0	19.2	15.6	19.1	10.6	36.1	22.7	15.2		
dominates 16	38.8	44.8	26.5	38.7	33.3	28.9	15.6	63.2	47.4	49.7	36.1	53.2	29.5	32.2	47.4		
17 dominates	29.1	25.2	33.4	28.5	30.6	34.1	50.5	15.9	23.5	17.6	21.5	13.2	35.6	26.9	17.1	27.9	
dominates 17	36.5	40.6	26.1	35.4	30.6	25.8	16.0	55.7	44.2	41.1	29.7	46.9	21.6	28.3	39.5	19.4	

Hindrance Guide	
h1	Little (expected) profit
h2	Pre-entry profit uncertainty
h3	Government not allow
h4	No newcomers
h5	No specific skills
h6	Can't start any business
h7	Shame
h8	Crime
h9	Jealousy if successful
h10	No access to start-up capital
h11	Variable income
h12	Risk of business failure
h13	Harris-Todaro
h14	No social/bus. network
h15	Transport costs
h16	Family ask for money
h17	LT cost in family

Source: *Khayelitsha Survey, Wave III*