

## Introduction

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Small and medium-sized enterprises (SMEs) act as drivers of economic growth due to their positive impact in creating jobs and driving social change. However, their owner-managers (entrepreneurs) generally face a lot of stress in running a business through role conflicts, working long hours, high time pressure, coping with past failures and managing many economic demands. Such high-stress levels negatively affect these entrepreneurs' psychological functioning and well-being, which can distort their economic decision-making capacity and ultimately reduce their ability to achieve sustainable growth in their business (Fernet et al., 2016). By providing 80 percent of jobs across the continent, SMEs in Africa are a driving force of economic growth and job creation. Surprisingly, interventions to reduce or help entrepreneurs manage stress are seldom considered by policymakers.

This project examines the impact of a psychosocial intervention on the business performance of female entrepreneurs in Nigeria. In the short run, we expect the interventions to improve female entrepreneurs' mental resilience and stress management. At the end of the intervention, we are interested in testing how the cognitive function, preferences and beliefs of female entrepreneurs change and whether entrepreneurs exposed to treatment are more productive. In the long term, we aim to measure whether the intervention improves firm outcomes regarding employment, sales, profit, and job creation.

## Literature Review

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This project contributes to the literature in several fields. First, it contributes to the literature showing the importance of psychology-based mindset training on the business performance of business owners. This project relates to the study by Campos et al. (2018), which shows that personal initiative training delivers lasting improvement for business owners in West Africa. It also relates to studies involving interventions that can reduce the mental stress of entrepreneurs and generate business and economic gains (Ananat et al., 2017; López-Peña, 2022; Ridley et al., 2020).

Second, the project relates to the growing literature on the effect of workplace stress on absenteeism and lost productivity (Parks and Steelman, 2008) and stress management interventions that improve the work life and well-being of employees (Lamontagne et al., 2007; Richardson and Rothstein, 2008; van der Klink et al., 2001). This project differs from these studies by studying the impact of stress management interventions on employers' well-being (Barling and Cloutier, 2017).

Finally, it contributes to the literature that links entrepreneurial stress to business survival and performance (Kariv, 2008). Some studies theorize that entrepreneurial stressors are categorized as either challenges or hindrances. Challenge stressors promote growth and improve business performance, while hindrance stressors negatively affect the entrepreneur's well-being (Lerman et al., 2021). Other studies show that negative stress appraisals at the early stage of business launch are associated with higher psychological distress in the later stage of the business (Chadwick and Raver, 2019). This project examines how different stressors affect female entrepreneurs' business performance in Africa.

## Methodology

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For data collection, we partnered with two business accelerators/incubators to recruit female entrepreneurs in Lagos State, Nigeria. To qualify for the research project, participants needed to pass a screening process to demonstrate that they are female business owners with firms in Lagos. The final experimental sample is 300 firms. Although a consequence of this sample size is not detecting effects on firms' outcomes due to low statistical power, we plan to continue recruiting research participants in batches to increase the sample size.

We collected the baseline survey data through an online and phone survey. The survey contained questions related to stress and well-being; owner demographics (e.g., age, marital status, number of children); business characteristics such as revenue, profit, number of employees, sector, measures of executive control skills (mental flexibility, self-control, attention and stress tolerance); beliefs (from personality traits and locus of control about one's own and others); preferences (e.g., time, risk, and social preferences), and measures of labour productivity (such as number of days and hours worked).

## Early Insights

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Preliminary descriptive statistics from the baseline survey show some interesting characteristics of the female entrepreneurs recruited for the study. Figure 1 portrays the business sector composition of the sample. Four business sectors – trading, food processing, manufacturing, and consulting – comprise over 70 percent of all respondents. Under the business stage, 79 percent of the sample is in the growth and expansion stage (Figure 2). The average age of the respondents is 37 (Figure 3), and 69 percent are married.

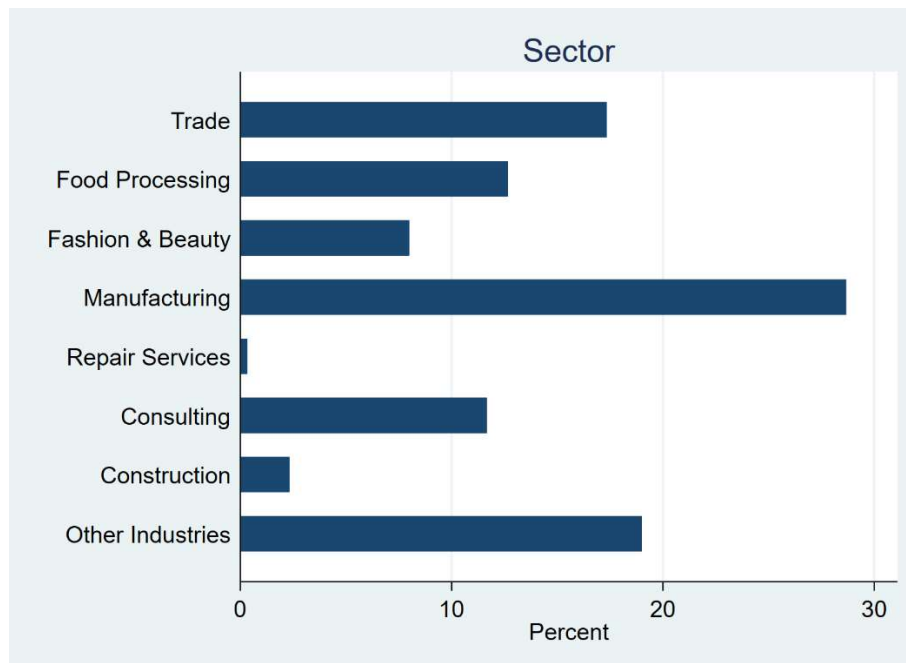


Figure 1: Respondent's business sectors

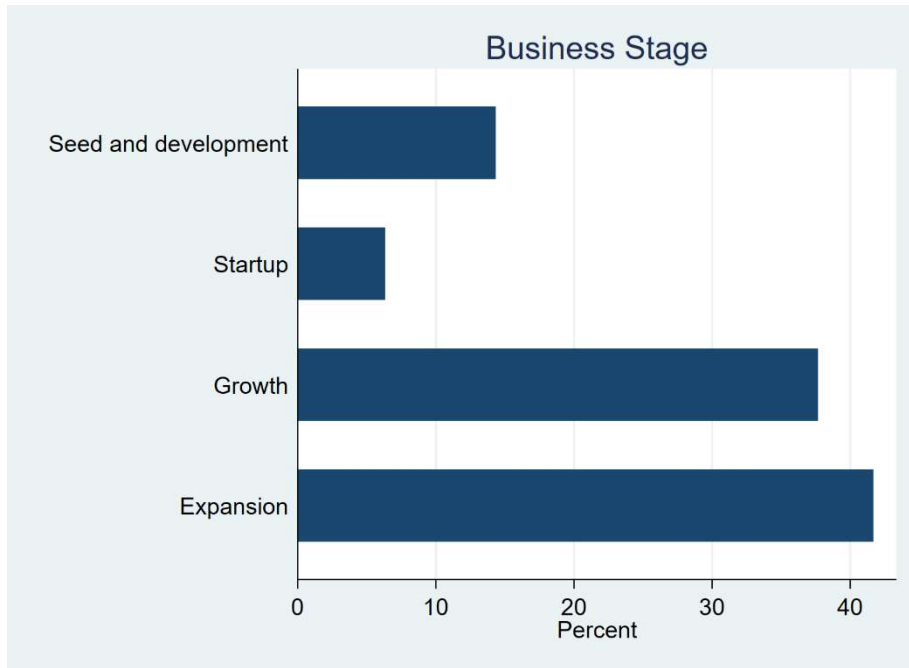


Figure 2: Respondent's stage of business

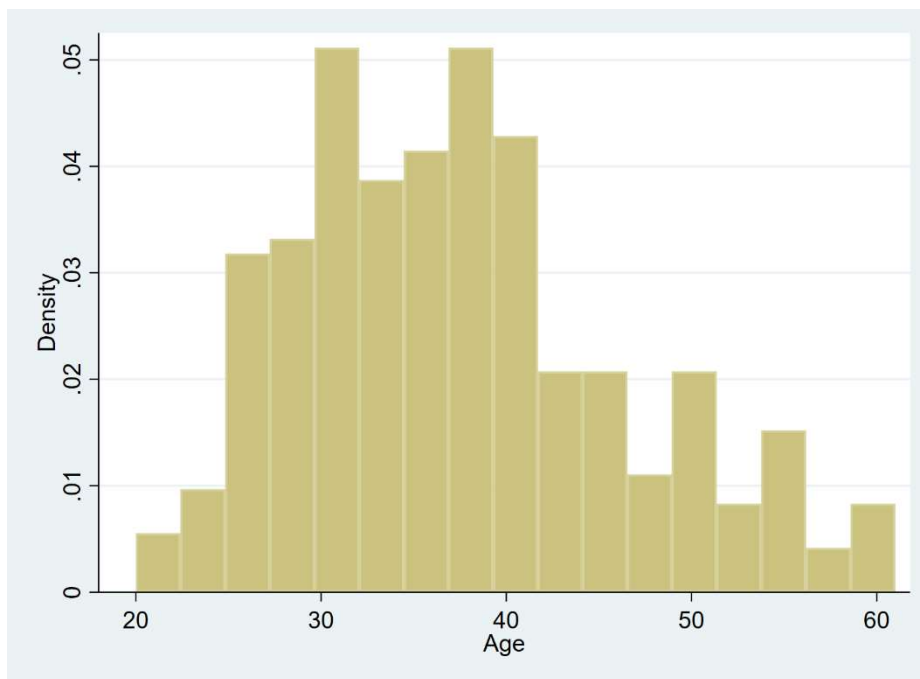


Figure 3: Age of business owners

To measure the level of stress and anxiety of the respondents, we use the Center for Epidemiological Studies-Depression Scale (CESD-10). Figure 4 shows that 57 percent of the respondents experience moderate mental distress, while 43 percent experience severe mental distress. A key takeaway is that none of the respondents suffer mild distress, highlighting the importance of stress/anxiety management for female entrepreneurs.

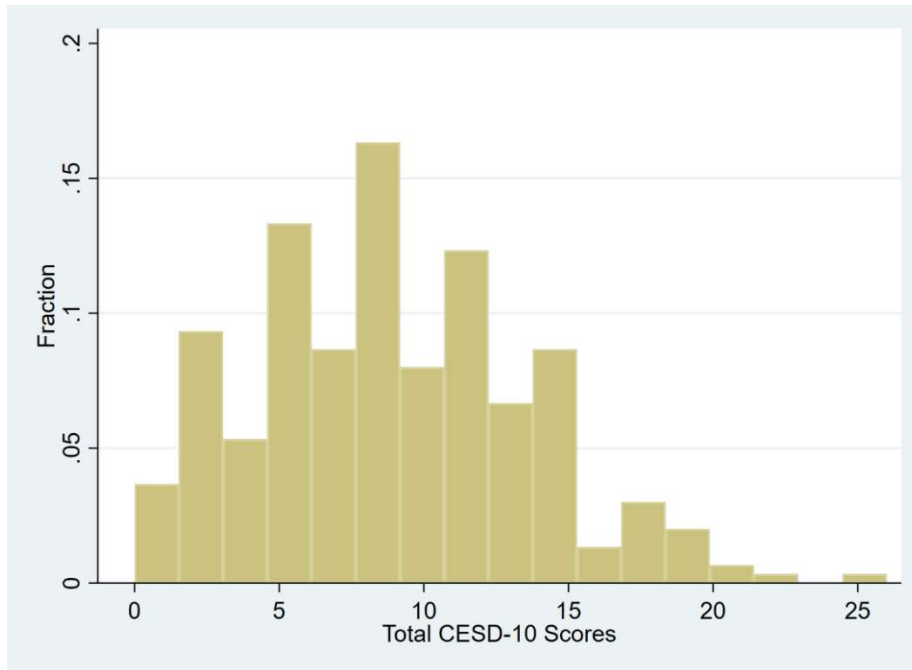


Figure 4: Anxiety scores

Figure 5 shows the role of female entrepreneur traits and skills on mental distress. We capture traits and skills using measures such as locus of control, executive skills and personality traits. The locus of control measures the extent to which individuals believe they can determine events in their own lives or the extent to which they feel dependent on factors that are beyond their control. Executive skills measure cognitive abilities that help people set goals, regulate impulses and complete steps to achieve their goals. It covers abilities such as emotional control, sustained attention, mental flexibility, stress tolerance, etc. Personality trait index makes it possible to describe human personality traits in terms of diverse behaviors and experiences. This index is measured using five broad but different personality dimensions such as openness, conscientiousness, extraversion, agreeableness, and neuroticism. All measures are self-reported by female entrepreneurs in the survey. We see that owners' locus of control and risk preference are more likely to contribute to mental distress while executive function skills are likely to reduce mental distress. Within our sample, the locus of control belief increases the probability of mental distress by 33 percent and the willingness to take risk increases the likelihood of mental distress by 5.6 percent. In other words, the extent to which female entrepreneurs attribute control over events in life to themselves as opposed to outside factors and high-risk appetite increases their mental stress. In contrast, we find that executive function skills reduce the mental distress of female entrepreneurs by 19 percent. Hence, the importance of training in emotional control, sustained attention, mental flexibility and stress tolerance for female entrepreneurs.

The results regarding locus of control is consistent with several studies in the psychology literature that show a strong relationship between locus of control orientation and mental distress (Benassi et al., 1988; Cheng et al., 2013; Yu and Fan, 2016). In addition, the executive function skills result also relate with literature that mental distress is associated with impairment in the executive function skills of the individual (Snyder, 2013; Zuckerman et al., 2018). The results regarding personality traits also coincides with the literature that explore personality traits as predictors and causes of economic success and healthy well-being (Almlund et al., 2011). In line with these literatures, we think that interventions that change personality and improve executive skills are promising avenues for addressing economic and business constraints faced by female entrepreneurs.

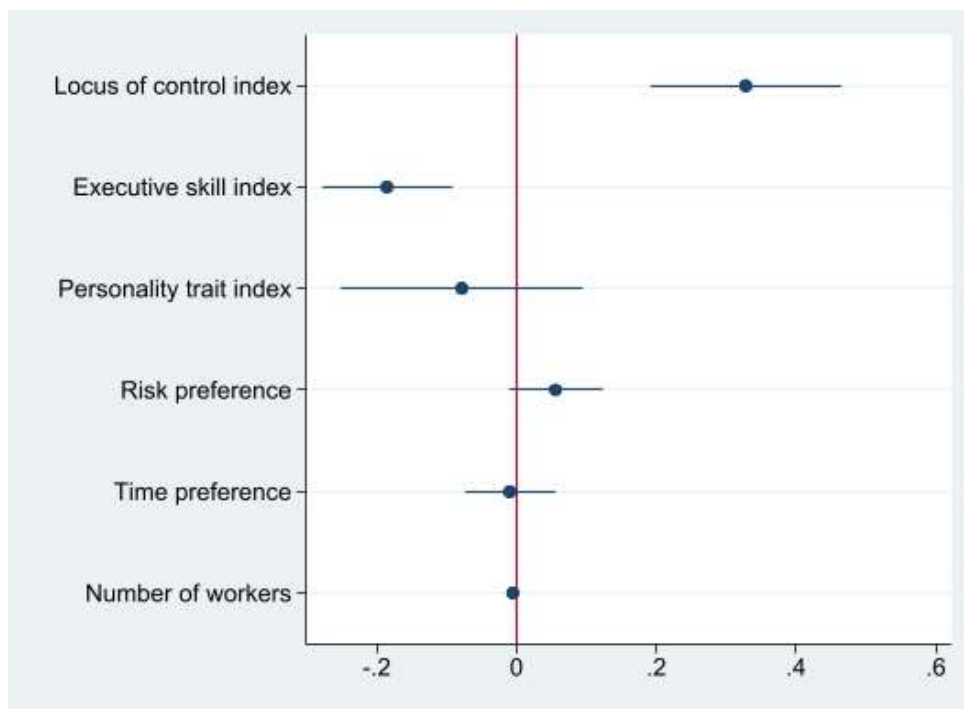


Figure 5: Predictors of business stress

Note: Coefficients for mental distress describe outcome relative to female entrepreneurs surveyed. Bars show 95% confidence intervals around coefficients. Estimates are from a regression model that includes age, educational level and marital status of female entrepreneurs, business sector, and year business was founded.

In addition to these early insights about study participants, the authors have learnt a couple of important lessons during this project. First, it is essential to work with local partners that have a large community of female entrepreneurs since they have the trust and collaboration of these entrepreneurs. Second, given the sensitivity of the research, it is also important to engage the female entrepreneurs actively by giving them updates and informing them ahead of time of possible events that require their participation. Third, verifying whether the respondents are actually female entrepreneurs is vital. Local partners play a key role in this verification process since they are able to identify female entrepreneurs within their network. Fourth, incentives for research participation are a serious issue for this type of research. Female entrepreneurs are sensitive to time away from their work; we found that monetary incentives for women to participate is effective in this kind of research. In addition, one should be flexible in fixing appointments with female entrepreneurs and acknowledge their busy schedules.

## Conclusion and next steps for the study

This project examines the impact of stress management intervention on the business performance of female entrepreneurs in Africa. Specifically, it considers whether these interventions improve business outcomes such as employment, sales revenue and profit through the executive function skills of these entrepreneurs. The project also presents an opportunity to test whether returns on investment in stress treatment outweigh the cost. A recent study shows that for every US\$1 invested in the scale-up treatment of anxiety, there is a US\$5 return in improved health and productivity outcomes (Chisholm et al., 2016). To our knowledge, this is the first project to assess the return on investment of stress management intervention for female entrepreneurs in Africa.

The next steps for this study involve the following. First, we hope to organize a webinar to create awareness for the research participants on corporate well-being and stress management. Second, we will invite some research participants to experience a stress management intervention through virtual reality to explore the

impact. Finally, there will be two follow-up surveys within 6 and 12 months after the intervention. With these, we will assess and analyze the impact of stress management interventions on business performance, cognitive function and economic preferences of female entrepreneurs. We hope to conclude the research by September 2023.

## Acknowledgment and Disclaimer

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This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada. The views expressed herein do not necessarily represent those of IDRC or its Board of Governors.

Supporting the development of small and growing businesses (SGBs) in developing countries is key to enabling job creation and poverty alleviation. Although the evidence base in this area is expanding, there is still much we do not understand about how to best support firm growth and create quality jobs. To address this gap, the Small and Growing Business (SGB) Evidence Fund, a joint effort of the International Growth Centre (IGC) and the Aspen Network of Development Entrepreneurs (ANDE), supports collaborations between researchers and practitioners to understand the most effective ways to support SGBs and the economic and social impact of SGB growth.



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