Evaluating Micro-Entrepreneurship Development Programme through business plan competition: The case of YouWin Programme of Nigeria.

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Abstract

Policymakers in developing countries are increasingly exploring innovative approaches to address youth unemployment. One such innovation is the YouWin! Program, a business plan competition implemented in Nigeria. While prior research indicates that this program successfully created jobs, this research focuses on the persistence of this effect. Our findings reveal that the long-term impact did not align with the theoretical framework that underpinned the program's intended outcomes. It appears that the program's design and the grant disbursement process may have significantly contributed to an initial boost in its effectiveness, which gradually diminished, relative to the control group, after the grants were fully distributed.

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I Introduction

1.1 Background

The current generation of Africans entering the labour market is the most educated to date, yet their employment prospects are notably worse compared to previous generations (Filmer and Fox, 2014). This discrepancy can be attributed to the rapid increase in the number of young people seeking employment, surpassing the available job opportunities. Consequently, a significant portion of the youth population finds themselves either unemployed or underemployed. With over 250 million young people on the continent and an additional 10 to 12 million entering the labour market each year, they compete for only 3 million new jobs created within that period (Penar, 2021).

Addressing this challenge presents a significant dilemma for African policymakers, prompting them to explore various solutions to enhance economic opportunities for the youth. One popular strategy is to foster entrepreneurship and innovation by providing grants, training programs, and support to micro, small, and medium enterprises.

However, Shane (2009) argues that a substantial portion of new business founders in developing countries are not true entrepreneurs in the sense of building companies with the intention to scale and create jobs and wealth. Instead, these individuals start businesses primarily to substitute wage income, resembling self-employment rather than high-growth ventures. This phenomenon is more prevalent in developing countries where the informal sector plays a significant role due to high unemployment rates. Unemployed individuals are more inclined to start businesses as they face less downside risk compared to their employed counterparts. Shane (2009) further suggests that supporting these types of entrepreneurs does not lead to economic growth or job creation. Therefore, government support for start-ups should be targeted towards high-quality businesses with growth potential.

To achieve significant impact, governments relying on existing literature for policy formulation and program implementation require a mechanism to identify and prioritize entrepreneurs capable of building high-growth businesses. One common approach that has been implemented is the establishment of business plan competitions where entrepreneurs' ideas and execution strategies are rigorously assessed by business professionals and successful entrepreneurs.

1.2 Motivation

Many of the Sustainable Development Goals (SDGs) proposed by the United Nations align with at least one of the three transformational dimensions that jobs generate[1]. Hence, the result

[1] The World Bank suggests that jobs have three main transformational dimensions for individuals and society at large. 1). improvement in living standards 2). enhanced productivity, as workers' efficiency improves, leading

of this study will contribute to the debate among policymakers on the feasibility of youth entrepreneurship as a solution to the challenge of unemployment, consequently enabling them to achieve some of the SDGs.

1.3 Research Objective

The main objective of this study is to evaluate the causal impact of winning the business plan competition on financial performance, survival likelihood, and, ultimately, employment as well as the persistence of its effect.

1.4 Summary of findings

Using data collected from 1,841 eligible shortlisted[2] firms out of the total firms that participated in the YouWin! Program, we found that winning the business plan competition and receiving the attendant cash grants, which come with winning, have a positive impact on short-term sales and profits. This impact also translates into an improved probability of start-up and existing firm survival, ultimately leading to an increase in the number of jobs created. However, the evidence also suggests that the magnitude of this impact weakened in the long term. Based on empirical analysis, we argue that the decline in effect size could be attributed primarily to the poor targeting of high-growth entrepreneurs. Furthermore, the strength of the short-term effect might have been driven by the nature of the program's design, which allowed for external monitoring of the activities of firms assigned to treatment.

The remainder of this paper is organized as follows: Section 2 describes the theory of change for the YouWin! Program and how we measure impact persistence. Section 3 provides a summary of previous literature, while Section 4 describes the data sources, the YouWin! Program itself, the winner selection process, and the randomisation process. In Section 5, we present our empirical methodology. Moving on to Section 6, we present the main results of our analysis. In Section 7, we present an argument for the mechanism that supports our findings. To ensure the credibility of our work, Section 8 illustrates the validity checks that have been conducted. Finally, Section 9 concludes the paper.

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them to shift towards more productive jobs. 3). social cohesion, as jobs encourage unity among people from different ethnic and social backgrounds.

[2] This eligibility is defined further in the data description section (section 4). Out of these 1841 eligible firms, 729 firms were selected randomly as treated and the rest remained as control firms.

II Theory of Change and Measurement of Impact Persistence

2.1 Theory of Change

In this section we will theoretically argue why a randomly treated firm from the cohort of eligible firms should exhibit the desired impact of treatment. This is essentially called a "theory of change" in an impact evaluation exercise. The "theory of change" is a conceptual framework that outlines the causal relationships between different inputs, activities, outputs, outcomes, and impacts within a program. It elucidates the manner in which a specific intervention is anticipated to result in desired changes and outcomes.

We analyse and describe how the YouWin! program leads to job creation using this framework:

- ***Inputs:*** The core objective of the Program is to identify and attract high-growth entrepreneurs capable of initiating and expanding businesses. Therefore, a crucial aspect of the program is the availability of human capital, represented by prospective and existing business owners within the Program's context.

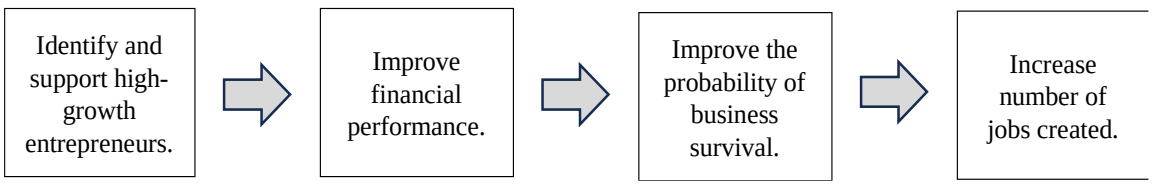
- ***Activities:*** Entrepreneurs engaged in various stages of a business plan competition, culminating in a group of candidates eligible for training and, ultimately, the final award in the form of conditional cash grants for competition winners.

- ***Outputs:*** The conditional cash grants are designed to alleviate cash and credit constraints faced by entrepreneurs, thereby empowering them to significantly augment capital investment.

- ***Outcomes:*** The amplified capital investment is expected to yield improvements in business performance for entrepreneurs, as well as enhance their likelihood of successful start-up and sustained operation.

- ***Impacts:*** Ultimately, the program is poised to yield the creation of additional jobs as businesses flourish and scale over time. This increasing job availability, in turn, leads to poverty reduction and minimization of social unrest.

Figure 2.1: Theory of Change Pathway



Source: Author's illustration

2.2 Measurement of impact persistence

In alignment with the theory of change, the mechanism driving job creation involves the government's identification and support of high-growth Micro, Small, and Medium Enterprises (MSMEs). This support is aimed at enhancing their financial performance, thereby increasing their likelihood of survival and their capability to generate employment opportunities.

According to the findings by McKenzie (2017), the YouWin! program demonstrates a positive impact on both the financial performance and the survival likelihood of existing businesses, as well as facilitating startups for new businesses. Furthermore, the program is linked to an increase in the workforce that firms are able to employ. McKenzie (2017) also proposes that the program's effect on employment is mediated by the removal of credit constraints. This, in turn, empowers firms to acquire more capital input and expand their labor force. Interestingly, his research indicates that the program did not lead to any significant changes in aspects such as business networks, mentorship, self-efficacy, or the utilization of alternative sources of financing. One step forward, this research seeks to see further if there is any persistence of impact that McKenzie (2017) has already investigated. Different ideas of persistence of impact are further elaborated in the next page under scenario 1, 2, and 3. To commence, we will elaborate on the process of determining the treatment effect. This effect is derived from the disparity between the average outcomes among the experimental winners of the business plan competition and the experimental non-winners. This can be mathematically expressed as:

$$(\mathbf{1}) \quad \tau = \bar{Y}_T - \bar{Y}_C$$

Where:

τ = *the treatment effect*
$\bar{Y}_T$ = *average outcome for the treatment group*
$\bar{Y}_C$ = *average outcome for the control group*

To observe the evolution of the treatment effect's persistence over time, we calculate the ratio of the treatment effect in comparison to the average outcome among the experimental non-winners across different time intervals. This is mathematically expressed as:

$$(\mathbf{2}) \quad \frac{\tau_t}{\bar{Y}_{Ct}} = \frac{\bar{Y}_{Tt} - \bar{Y}_{Ct}}{\bar{Y}_{Ct}}$$

Where:

τ_t = *the treatment effect in time t, that is, current period*
$\bar{Y}_{Tt}$ = *the average outcome for the treatment group in time t*
$\bar{Y}_{Ct}$ = *the average outcome for the control group in time t*

The treatment effect will be deemed persistent if Equation 1 maintains a consistent value greater than zero, indicating a continued positive impact subsequent to the treatment's implementation. Notably, McKenzie's (2015) findings have already established the positivity of the treatment effect. Building upon his conclusions, we proceed to investigate potential scenarios depicting the evolving relationship between the treatment effect and the outcome observed for the control group Equation 2 over the course of time.

Scenario 1: Reinforced Persistence (Increasing Magnitude of Treatment Effect Relative to the Control Group Over Time): This scenario will materialize if the experimental winners consistently exhibit a growth rate in outcomes that surpasses the growth rate observed among the experimental non-winners in subsequent periods following the initial detection of a positive treatment effect. This would signify a reinforcement of the treatment effect's positive impact. This supposition is derived from McKenzie's (2017) suggestion regarding the underlying impact mechanism.

If the elimination of credit constraints via grant provision is indeed the primary conduit through which impact is realized, then it is rational to anticipate the treatment effect gaining strength over time. McKenzie's (2015) findings indicate that the YouWin! program leads to enhanced sales and profits for experimental winners. Consequently, this group is expected to possess a greater pool of funds for reinvestment in capital inputs compared to the non-winners. This amplification of resources should further accentuate the treatment effect in relation to the average outcome for the experimental non-winners as time progresses, consequently engendering a positive evolution in the treatment effect over time.

This can be formally expressed as:

$$(\mathbf{3}).\ \frac{\Delta\tau_t}{\tau_{t-1}} = \left(\frac{\bar{Y}_{Tt} - \bar{Y}_{Ct}}{\bar{Y}_{Tt-1} - \bar{Y}_{Ct-1}}\right) - 1\ for\ \frac{\Delta\bar{Y}_{Tt}}{\bar{Y}_{Tt-1}} > \frac{\Delta\bar{Y}_{Ct}}{\bar{Y}_{Ct-1}}\ and\ \tau_0 > 0 \text{ for } t = 1,\ldots,T$$

Where:

$\Delta\tau_t$ *= the change in treatment effect in time t, that is, current period, t, effect less immediate past period, t-1, effect*
$\Delta\bar{Y}_{Tt}$ *= change in the average outcome for the treatment group in time t*
$\Delta\bar{Y}_{Ct}$ *= change in the average outcome for the control group in time t*
τ_{t-1} *= the treatment effect in time t-1, i.e., immediate past period*
$\bar{Y}_{Tt-1}$ *= the average outcome for the treatment group in time t-1*
$\bar{Y}_{Ct-1}$ *= the average outcome for the control group in time t-1*

Scenario 2: Balanced Persistence (Constant Magnitude of Treatment Effect Relative to the Control Group Over Time): This scenario will manifest if the experimental winners consistently experience an alteration rate in outcomes that matches the rate of change observed among the experimental non-winners in the periods following the initial identification of a positive treatment effect. This signifies that the relative treatment effect in relation to the average outcome for the experimental non-winners will sustain a steady state over time.

Consequently, the treatment effect will exhibit a change rate equivalent to that observed in both the average outcome alteration for the treated and control groups. This can be formally expressed as:

$$(\mathbf{4}) \quad \frac{\Delta\tau_t}{\tau_{t-1}} = \left(\frac{\bar{Y}_{Tt} - \bar{Y}_{Ct}}{\bar{Y}_{Tt-1} - \bar{Y}_{Ct-1}}\right) - 1 \; for \; \frac{\Delta\bar{Y}_{Tt}}{\bar{Y}_{Tt-1}} = \frac{\Delta\bar{Y}_{Ct}}{\bar{Y}_{Ct-1}} \; and \; \tau_0 > 0 \text{ for } t = 1, \ldots, T$$

Scenario 3: Bell-shaped Persistence (Initial Increase, Followed by Decrease of Effect Relative to the Control Group Over Time): This scenario will transpire if the experimental winners exhibit a rate of change in outcomes that initially surpasses the rate of change seen among the experimental non-winners for a fixed duration, culminating at time "k." Subsequently, beyond time "k," the rate of change in outcomes for the experimental non-winners either overtakes or becomes equal to that of the winners. In this scenario, the relative treatment effect size in relation to the average control outcome experiences an initial growth, followed by a subsequent decline or sustained constancy in the long term. This pattern suggests that the change in treatment effect assumes a negative trajectory or aligns with the rate of change for both the treated and control outcomes. This is formally expressed as:

$$(\mathbf{5}) \quad \frac{\Delta\tau_t}{\tau_{t-1}} = \begin{cases} \left(\frac{\bar{Y}_{Tt} - \bar{Y}_{Ct}}{\bar{Y}_{Tt-1} - \bar{Y}_{Ct-1}}\right) - 1 \; for \; \frac{\Delta\bar{Y}_{Tt}}{\bar{Y}_{Tt-1}} > \frac{\Delta\bar{Y}_{Ct}}{\bar{Y}_{Ct-1}} \; and \; \tau_0 > 0 \text{ for } t = 1, \ldots, k \\ \left(\frac{\bar{Y}_{Tt} - \bar{Y}_{Ct}}{\bar{Y}_{Tt-1} - \bar{Y}_{Ct-1}}\right) - 1 \; for \; \frac{\Delta\bar{Y}_{Tt}}{\bar{Y}_{Tt-1}} \leq \frac{\Delta\bar{Y}_{Ct}}{\bar{Y}_{Ct-1}} \text{ for } t = k+1, \ldots, T \end{cases}$$

III Literature Review

Dejaeghere and Baxter (2014) highlight that governments often consider youth entrepreneurship as a response to rising youth unemployment. However, Kararach (2014) argues that the effectiveness of such programs hinges on the availability of comprehensive support services, including business mentoring, financial assistance, market access facilitation, management training, and networking opportunities.

De Mel et al. (2014) examine the impact of a combined intervention involving training and the provision of cash grants on a representative sample of female entrepreneurs in Sri Lanka, encompassing both new and existing businesses. The study spanned a two-year period with four rounds of follow-up surveys. Their findings indicate that sole business training had no impact on the business outcomes of women with existing businesses. Yet, a combined intervention of training and cash grants yielded a substantial but transient effect on these outcomes. The study observed a noteworthy influence of training on the business outcomes of new entrepreneurs. Similarly, Berge et al. (2015) analyse the impact of business training and cash grants, both individually and in combination, on the business outcomes of microenterprises in Tanzania. The cost of providing business training and cash grants was comparable. The study notes that while the joint intervention positively affected male entrepreneurs, there was no significant effect on female entrepreneurs. Contrarily, each intervention alone had minimal impact on the business outcomes of both male and female entrepreneurs. Lastly, Grimm et al. (2021) evaluate the short-term effects of a targeted government support program in Burkina Faso, aimed at small- and medium-scale entrepreneurs in agribusiness. The support took the form of cash grants and matching grants. Despite higher investments, grant beneficiaries did not register elevated sales, profits, or employment in the short term.

McKenzie (2017) stands out as the sole study that extensively analyse the YouWin! Program to the best of our knowledge. Employing both experimental (randomised control trial) and non-experimental (propensity score matching) methods, McKenzie's findings indicate that the four-day training had no significant effect on the likelihood of starting a business or securing employment. However, both estimation techniques demonstrate that the winning entrepreneurs, i.e., the treatment group, exhibited a significantly higher likelihood of starting and sustaining their businesses compared to the non-treated group. Additionally, winning existing businesses displayed a greater likelihood of survival compared to the control group. Moreover, competition winners experienced improved financial performance in terms of profitability and sales, resulting in increased job creation.

This study contributes to the existing literature by extending McKenzie's work (2017). It delves into assessing the persistence of the YouWin! Program's effects and empirically proposes a mechanism elucidating observed patterns over time. The study's findings bear substantial policy implications, aiding policymakers in making informed decisions and prioritizing programs that yield optimal returns on investment costs.

IV Data Description and Randomisation Process

This study utilises the survey data collected on a set of applicants who enrolled for the first edition of the YouWin! Program. The survey rounds include a baseline survey and four different follow-up surveys which were conducted by TNS RMS Nigeria Limited. The datasets are publicly available on the World Bank database[3].

The main outcome variables to be analysed are financial performance, the survival rate of business, and the number of jobs created.

4.1 The YouWin! Program

The Youth Enterprise with Innovation in Nigeria (YouWin!) program emerged in 2011 during the tenure of the Goodluck Jonathan-led administration. This large-scale business plan competition was primarily established to foster innovation and spur job creation. Its central objective was to provide crucial support to young entrepreneurs in conceptualizing, expanding, and realizing their business ideas. The program was carefully crafted to offer financial backing and guidance to inventive business concepts and startups.

Eligibility for the program was extended to Nigerian citizens aged 18 to 45 who harboured innovative ideas spanning all sectors of the economy. The program's promotion encompassed television and radio broadcasts, prompting interested individuals to apply online by submitting comprehensive business plans and detailed project descriptions. These applications underwent evaluation by the Enterprise Development Center (EDC) of Pan-African University—a sibling institution of the Lagos Business School. Successful applicants advanced through subsequent phases of the selection process.

Candidates who made the shortlist embarked on an intensive four-day business training regimen. This training was designed to bolster their entrepreneurial acumen and competencies, addressing crucial areas such as business planning, financial management, marketing strategies, and operational oversight.

Post-training, participants were provided the platform to refine and present their business plans in a competitive format. This phase entailed pitching their concepts to a panel of judges who assessed the feasibility and potential impact of the proposed endeavours.

Winners of the business plan competition were rewarded with financial backing in the form of grants, which were to be allocated to either initiate or expand their businesses. These grants were intended to cover a range of expenses including startup costs, working capital, equipment procurement, and other business-related outlays. In addition to the financial support, winners

[3] See Figure 4.2 for the program & survey timeline.

received ongoing business development assistance, mentorship, and access to networks that could aid in navigating the challenges inherent in establishing and managing their ventures.

The inaugural edition of the YouWin! program—the focus of this paper's evaluation—elicited a remarkable 23,844 applications. Out of this pool, the top 6,000 applicants, as determined by the EDC, were invited to participate in the intensive four-day business training. Ultimately, 1,200 winners were selected, each set to receive awards averaging around US$50,000. These grants were disbursed in installments, contingent upon entrepreneurs meeting specific criteria.

4.2 Winner selection process

Stage 1 – Promotion, Application submission, and Application Assessment

The YouWin! Program was extensively promoted across diverse media platforms, encompassing television, radio stations, and newspapers with the widest readership. The Ministry of Youth Development, in conjunction with private vendors, also facilitated program promotion through road shows conducted in major cities within each of the country's geopolitical zones.

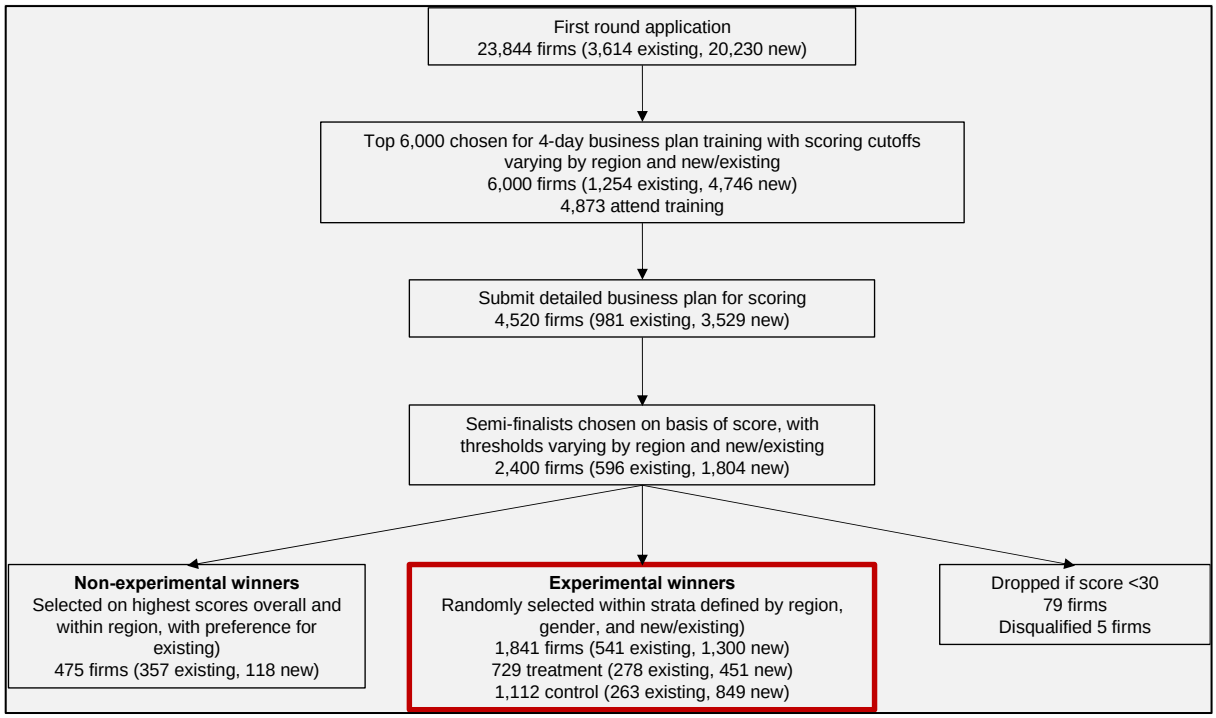
To participate, eligible applicants were mandated to register on a designated website by the deadline of November 25, 2011. Subsequently, these applicants were categorized into the six geopolitical regions of the nation based on their indicated business intent. The assessment and grading of applications were predicated on several factors: the perceived quality and feasibility of the business idea, the potential of the proposed business to generate employment, the founders' competencies and grasp of the market dynamics, and the likelihood of achieving success.

As a result of this rigorous evaluation, a total of 6,000 candidates were identified for progression to the subsequent stage of the process. The selection was conducted based on specific criteria, including geographic location, business type (new or existing), and the obtained score.

Stage 2 – Business plan training and winner selection

The candidates who successfully advanced to this stage underwent a comprehensive business plan training scheduled from December 6 to December 20, 2011. This training was conducted across the six geopolitical regions of the Federation. Upon completing the training, participants were tasked with developing their initial concept notes—submitted in the first round—into full-fledged business plans. They were granted until January 22, 2012, to finalize and submit these detailed business plans.

Figure 4.1: Winner Selection Flowchart



Source: McKenzie (2017)

Subsequently, a joint team comprising members from the Enterprise Development Center (EDC) and PwC undertook the evaluation and grading of these submitted business plans. This evaluation was based on specific predetermined criteria. This meticulous process further winnowed down the pool of applicants to 2,400 semi-finalists. The selection process began by identifying the highest-scoring 450 existing businesses and the highest-scoring 150 new businesses on a national scale. This was followed by the selection of the top 300 businesses per geopolitical region, excluding the 600 highest-scoring applicants on the national level.

From this group of 2,400 semi-finalists, the final step involved selecting 1,200 winners. These selections were guided by the following categories:

- 300 National Merit Winners (highest scorers nationwide)
- 180 Zonal Merit Winners (highest scorers within each geopolitical zone)
- 720 Ordinary Merit Winners (randomly selected winners after excluding national and zonal merit winners, as well as business plans that fell below a pre-established threshold score)[4].

[4] By randomly selecting winners from semi-finalists with similar attributes, the risk of corruption through nepotism or subjective bias is eliminated in the selection process.

4.3 Randomisation Process

This paper exclusively employs data gathered from the experimental group, which consists of firms as the subject with 1,841 individual firms comprising both experimental winners and experimental non-winners, as illustrated in Figure 2.3.

The selection of the 720 ordinary winners was executed through a two-step stratification process. The objective was to attain 120 ordinary winners from each region. The initial step entailed the random selection of 50% of existing businesses in each region, with gender as the stratifying criterion. Subsequently, the remaining slots—equivalent to the difference between 120 and the count of existing businesses chosen per region—were assigned to new businesses, with gender as the stratification factor as well.

4.4 Interventions

Cash Grants

This involved the allocation of cash grants to competition winners, with the disbursal occurring in four installments. These payments were subject to specific conditions that business owners were required to meet. Initially, qualifying for the first tranche necessitated the fulfillment of administrative prerequisites. These included tasks such as registering the business with the Corporate Affairs Commission (CAC), entering into a legal agreement with the Federal Ministry of Finance, establishing a corporate account with designated partner banks tailored to their region, and participating in a validation procedure to verify their age, identity, and business assertions.

Subsequent disbursements, denoted as tranches 2 to 4, were contingent upon the accomplishment of predetermined business and job creation milestones. These milestones were evaluated by designated organizational entities.

The execution of business ideas and the provision of support to awardees over a one-year period were overseen by the Small and Medium Enterprises Development Agency (SMEDAN) along with a consortium of consultants backed by the Department for International Development (DFID). These entities were tasked with aiding awardees in actualizing their business concepts and validating the achievement of milestones, a prerequisite for each tranche payment.

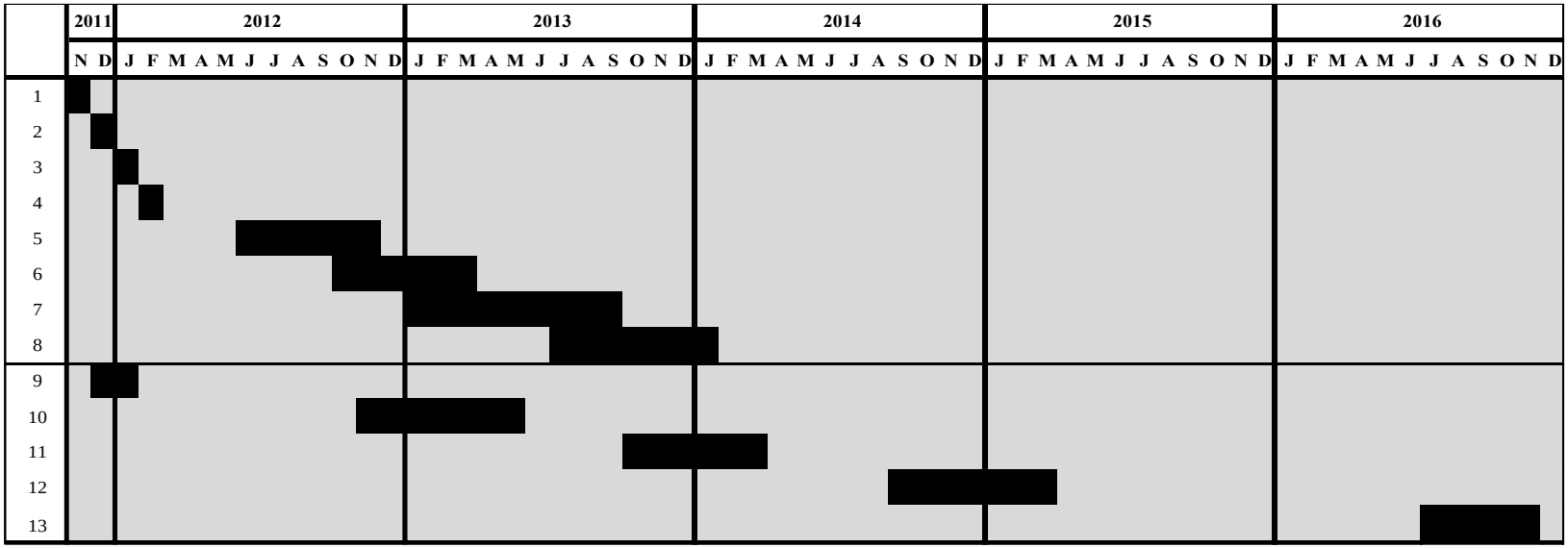
Figure 4.2: **Program and Survey Timeline (1st Edition of YouWin! Program)**[5]

Program Timeline

1 Application due
2 Business plan training
3 Business plan submitted
4 Winners Announcement
5 First tranche payment
6 Second tranche payment
7 Third tranche payment
8 Fourth tranche payment

Follow-up Survey Timeline

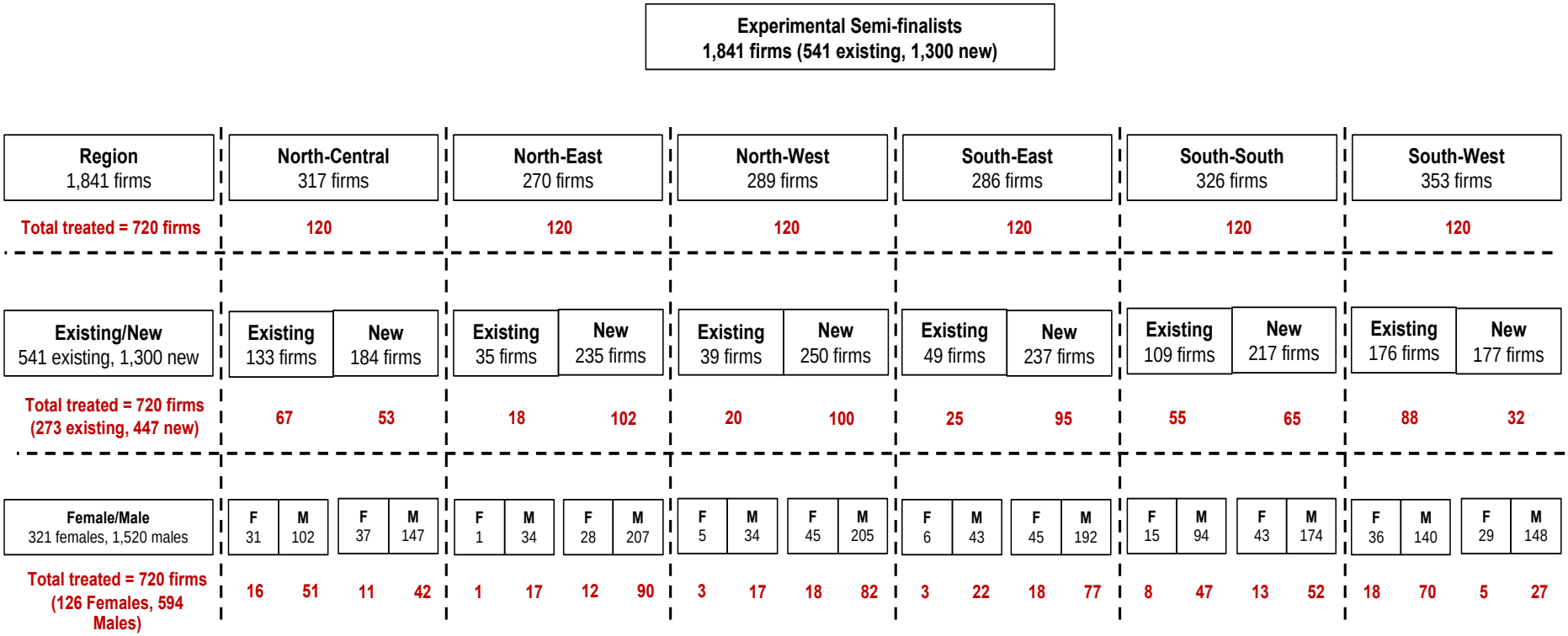
9 Baseline survey
10 1st follow-up survey
11 2nd follow-up survey
12 3rd follow-up survey
13 4th follow-up survey



Source: Author's Illustration

[5] The dark-shaded area represents the period covered for the outlined activities.

Figure 4.3: Randomisation Process (before adjustments[6])



Source: Author's Illustration

[6] The randomization process generated 720 firms as experimental winners and 1,121 firms as experimental non-winners. However, after the verification of assigned winners, some firms were disqualified, and so had to be replaced by randomly selecting similar firms from the control pool. After this adjustment, we have a group of 729 firms randomly assigned as winners, of which 13 were disqualified) and a control group of 1,112 firms.

Table 4.1: Grants Disbursement Schedule

Tranche	% of funding requirement	Requirements/milestones
1	10%	Payable after completion of validation exercise, registration with CAC, signing of legal agreement with Federal Ministry of Finance, and opening of a corporate account with assigned partner banks for their region
2	45%	Payable for purpose of physical capital acquisition and working capital
3	55%	Payable after achieving 25% of 1st year target annualized turnover per business plan with firm-specific employment trigger that averaged 3.7 workers.
4		Payable after achieving 40% of 1st year target annualized turnover per business plan with firm-specific employment trigger that averaged 5.5 workers.

Mentoring

Winners of the competition were afforded the chance to partake in a mentoring initiative meticulously devised to augment their prospects of triumph as entrepreneurs. These mentors were seasoned local entrepreneurs and adept business managers who offered personalized mentoring to awardees on a voluntary basis for a duration of one year. Each mentor was obligated to dedicate up to 2 hours per month per mentee, with this commitment spanning a minimum of one year within the program.

Post-award training

All recipients of the award were entitled to access supplementary training curated to amplify the proficiencies acquired during the Stage 2 sessions. This post-award training was tailored to further hone and refin e their entrepreneurial skills.

4.5 Balance check on baseline characteristics

Table 4.2 presents a comprehensive summary of statistics pertaining to both the treated group (experimental winners) and the control group (experimental non-winners). This presentation encompasses an aggregate-level evaluation as well as a firm-type level dissection that distinguishes between existing and new firms.

Moreover, Table 4.2 undertakes a comparative examination of specific baseline characteristics between the treated and control groups across all strata. In experimental studies, the utilization of baseline data regarding pivotal observable traits among eligible units serves as a standard practice to ascertain the equilibrium of groups post-randomization (Glennerster and Takavarasha, 2013). The outcomes of this comparison signify the absence of noteworthy differences in the majority of baseline characteristics between the two groups. This attests to the reliability of the randomization outcomes.

When considering the overall landscape, we observe that the average age of entrepreneurs within the experimental sample is approximately 30 years, with a substantial proportion of male entrepreneurs. Furthermore, nearly 70% of these entrepreneurs have attained a maximum educational level of university education. Notably, about 48% of entrepreneurs are involved in, or intend to operate within, sectors like crop & animal cultivation and manufacturing.

Table 4.2: Balance Test

	POOLED			EXISTING			NEW		
	Treat	Control	Diff.	Treat	Control	Diff.	Treat	Control	Diff.
Female	0.17	0.17	0.00	0.18	0.17	(0.01)	0.17	0.18	0.00
	(0.38)	(0.38)	(0.02)	(0.38)	(0.38)	(0.03)	(0.38)	(0.38)	(0.02)
Age	30.34	30.13	(0.21)	31.99	31.85	(0.14)	29.33	29.60	0.27
	(4.68)	(4.84)	(0.23)	(4.39)	(4.37)	(0.38)	(4.57)	(4.85)	(0.27)
Married	0.40	0.41	0.01	0.50	0.56	0.05	0.34	0.36	0.02
	(0.49)	(0.49)	(0.02)	(0.50)	(0.50)	(0.04)	(0.47)	(0.48)	(0.03)
High School or lower	0.12	0.10	(0.02)	0.13	0.12	(0.02)	0.11	0.10	(0.01)
	(0.32)	(0.31)	(0.02)	(0.34)	(0.32)	(0.03)	(0.31)	(0.30)	(0.02)
University education	0.67	0.70	0.03	0.63	0.67	0.04	0.69	0.71	0.02
	(0.47)	(0.46)	(0.02)	(0.48)	(0.47)	(0.04)	(0.46)	(0.45)	(0.03)
Postgrad education	0.06	0.07	0.01	0.08	0.12	0.04	0.05	0.06	0.01
	(0.24)	(0.26)	(0.01)	(0.27)	(0.32)	(0.03)	(0.22)	(0.23)	(0.01)
Lived abroad	0.08	0.09	0.02	0.10	0.11	0.02	0.06	0.09	0.03
	(0.26)	(0.29)	(0.01)	(0.30)	(0.32)	(0.03)	(0.24)	(0.28)	(0.02)
Choose risky option	0.57	0.54	(0.02)	0.57	0.53	(0.04)	0.57	0.55	(0.02)
	(0.50)	(0.50)	(0.02)	(0.50)	(0.50)	(0.04)	(0.50)	(0.50)	(0.03)
Has internet access	0.51	0.51	0.00	0.57	0.61	0.04	0.47	0.48	0.01
	(0.50)	(0.50)	(0.02)	(0.50)	(0.49)	(0.04)	(0.50)	(0.50)	(0.03)
Owns a computer	0.86	0.86	0.01	0.87	0.88	0.01	0.85	0.86	0.01
	(0.35)	(0.34)	(0.02)	(0.33)	(0.32)	(0.03)	(0.36)	(0.35)	(0.02)
Owns a satellite dish	0.68	0.66	(0.02)	0.67	0.71	0.04	0.68	0.64	(0.04)
	(0.47)	(0.48)	(0.02)	(0.47)	(0.46)	(0.04)	(0.47)	(0.48)	(0.03)
Owns a freezer	0.54	0.57	0.03	0.57	0.61	0.04	0.51	0.55	0.04
	(0.50)	(0.50)	(0.02)	(0.50)	(0.49)	(0.04)	(0.50)	(0.50)	(0.03)
Crop & animal sector	0.20	0.21	0.01	0.16	0.16	(0.00)	0.22	0.22	0.01
	(0.40)	(0.41)	(0.02)	(0.37)	(0.36)	(0.03)	(0.41)	(0.42)	(0.02)
Manufacturing sector	0.28	0.24	(0.04)	0.28	0.26	(0.02)	0.28	0.24	(0.04)
	(0.45)	(0.43)	(0.02)	(0.45)	(0.44)	(0.04)	(0.45)	(0.43)	(0.03)
Trade sector	0.04	0.05	0.00	0.06	0.05	(0.01)	0.04	0.05	0.01
	(0.21)	(0.21)	(0.01)	(0.23)	(0.22)	(0.02)	(0.19)	(0.21)	(0.01)
IT sector	0.10	0.08	(0.02)	0.15	0.14	(0.01)	0.07	0.06	(0.00)
	(0.30)	(0.27)	(0.01)	(0.36)	(0.35)	(0.03)	(0.25)	(0.24)	(0.01)
Concept note score	58.83	59.10	0.27	57.18	56.61	(0.58)	59.85	59.87	0.02
	(9.98)	(9.51)	(0.47)	(8.61)	(7.89)	(0.71)	(10.62)	(9.83)	(0.60)
Business plan score	50.65	53.07	2.42***	45.78	45.35	(0.43)	53.65	55.46	1.81***
	(9.34)	(9.55)	(0.45)	(7.49)	(7.72)	(0.66)	(9.11)	(8.77)	(0.52)
Sample size	729	1112	1841	278	263	541	451	849	1300

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

V Identification strategy

The identification strategy employed in this study exploits the exogenous variation introduced by the random allocation of winners during the implementation of the YouWin! program in Nigeria. The methodology hinged on a Randomised Control Trial (RCT) framework, which was adopted to assess the causal impact of the program on the targeted intermediate and primary outcome variables, as outlined in the theory of change, for each of the survey rounds.

Within this framework, the treated group is comprised of the winners selected from the competition. These individuals were chosen from a pool of entrepreneurs, each having an equal opportunity to become a winner. Correspondingly, the control group encompasses the non-winners as determined by the random selection process.

Given the nature of the survey data, the practicality of employing the difference-in-differences estimation method is hindered. This is due to the absence of pre-existing data on outcome variables prior to or at the juncture of announcing the winners. As a result, no baseline data exists for comparison. Consequently, the study resorts to methods suitable for analysing cross-sectional data, distinct from those used for panel data analysis.

The equation to be estimated for each survey round is as follows:

$$Y_i = \beta_0 + \beta_1 Treatment_i + \beta_0 X_i + \varepsilon_i$$

Y_i = set of desired outcome variables for firm i
$Treatment_i$ = indicator for the treated group
X_i = set of control variables for firm i
ε_i = error term for firm i

The vector of outcome variables, denoted as *Y*, encompasses a range of variables that gauge various facets of firms' financial performance. This includes metrics like sales and profits at each survey round. Additionally, the vector comprises indicators assessing the survival rate of businesses, which is represented by a binary variable taking a value of 1 if the firm is operational during the survey period, and 0 if it is not. The number of hours worked per week by the owner is included as an intensive measure of whether a firm is in operation. The number of workers employed at the time of the survey, along with binary variables indicating the presence of more than 10 or 25 employees (taking values of 1 if true and 0 if not), represents variables assessing job creation by firms.

The *Treatment* variable is dichotomous, taking the value of 1 for firms classified as experimental winners and 0 for experimental non-winners. In contrast, the vector of control variables, denoted as *X*, encompasses several factors. These consist of a binary gender variable, with a value of 1 indicating that the firm's owner is female and 0 otherwise. The region variable is categorical and designates the geopolitical zone in which the firm operates. Furthermore, a variable quantifying entrepreneurs' business acumen, measured by their total scores in the

business plan assessment, is included. Lastly, a binary dummy variable serves as a proxy for firm size, taking the value of 1 if the firm operates in a low-capital industry and 0 otherwise.

In addition to the balancing test conducted in Section 4.5, a falsification test was executed to further validate the treatment as the actual cause of any observed impact. We conducted a different randomization exercise, following the same procedure outlined in Section 4.3, to reassign firms within the experimental sample into a "pseudo-treated" group and a "pseudo-control" group. Subsequently, we conducted an auxiliary analysis using the model specification as described earlier. We can reasonably deduce that the treatment was responsible for the impact if there is no statistically significant difference between the pseudo-treated group and the pseudo-control group. This research could not perform any pre-programme parallel trend analysis due to the lack of data at the baseline and no data for the pre-baseline period. However, following Imbert and Papp (2015) we used firm level control variables within our full regression specification.

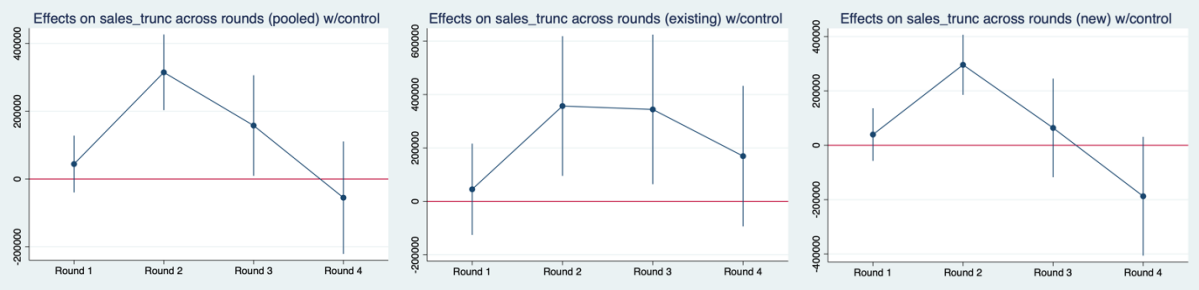
VI Results

The theory of change predicts that the business plan competition will result in improved financial performance for businesses, an increase in the likelihood of business survival, and an increase in job creation. Thus, implying a positive correlation among these measures. Our results, as shown in Appendix 1, suggest that there exists a positive correlation among these factors.

6.1 Impact on Financial Performance

Financial performance evaluation of the firms is based on adjusted sales and profits, accounting for inflation. In Table 6.1, we present the treatment's impact on sales and profits across the four survey rounds. Figures 6.1 and 6.2 complement this data, providing a visual representation of the effect's pattern across rounds, categorized by existing, new, and combined (existing and new) firms. Notably, these findings align with the concept of bell-shaped persistence, as outlined in Equation 5.

Figure 6.1[7]: Impact on Sales, across the survey rounds



Source: Author's Illustration

For existing firms, the baseline control mean for sales exhibited an average growth rate of 2.4% per round. This resulted in an increase from N509,699 in Round 1 to N546,863 in Round 2. In contrast, new firms demonstrated a notably higher average growth rate of 33.0% per round, with sales escalating from N271,467 in Round 1 to N638,537 in Round 4. This divergence highlights that new businesses inherently possessed greater growth potential than existing ones, without considering the treatment's impact.

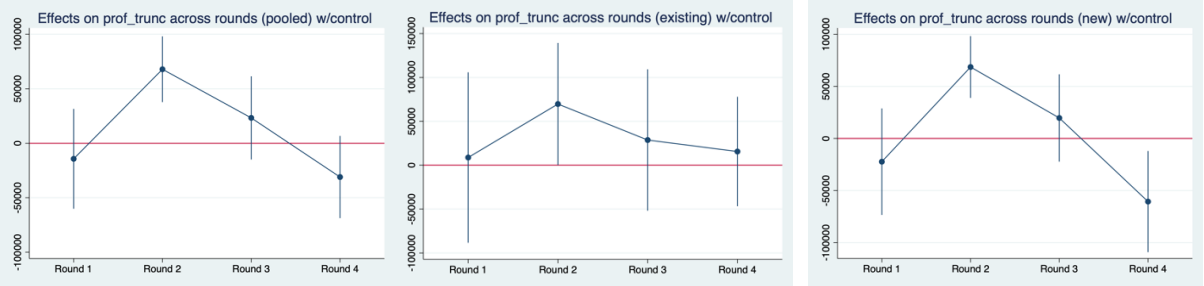
On an aggregate level, as shown in Panel A of Table 6.1, the treatment led to sales increases of 13.5%, 84.9%, 34.6%, and -9.0% in Round 1, Round 2, Round 3, and Round 4, respectively, relative to the baseline control mean. However, the effects were not statistically significant at the 5% level in Rounds 1 and 4. This suggests that the treatment's influence on sales exhibited a delayed manifestation, becoming significantly pronounced only in the second survey round.

[7] See Table 6.1 for the corresponding regression table.

Subsequently, the effect waned in the third round, ultimately fading to insignificance in Round 4.

Upon closer examination of the data, Panel B of Table 6.1 presents results for existing firms, while Panel C delves into results for new firms. The delayed treatment effect on sales is evident for both existing and new firms. Importantly, the magnitude of the effect diverges in Round 2: new firms experienced more than a twofold increase in sales relative to the baseline control mean, while existing firms saw a rise by a factor of 0.54. This disparity persisted through Round 3, where the effect for existing firms increased slightly, but for new firms, it became statistically insignificant. By Round 4, the treatment effect lost statistical significance for both existing and new businesses, indicating sales had equalized between the treatment and control groups.

Figure 6.2[8]: Impact on profit, across the survey rounds



Source: Author's Illustration

Similarly, the treatment's impact on profits exhibited a delayed effect, logically following the pattern observed for sales. It's worth noting that the treatment's effect on profits for existing firms was statistically insignificant in Round 3 and had a negative effect in Round 4.

6.2 Impact on business survival and start-up

In our analysis, we thoroughly evaluate business survival using both extensive and intensive measures.

Our results, presented in Panel A of Table 6.2, consistently demonstrate that winning the business plan competition has a statistically significant impact on business survival and the entrepreneurs' commitment to their businesses. This effect holds true across all survey rounds. When we segment the dataset into existing and new firms, as shown in Panels B and C of Table 6.2, the results remain consistent.

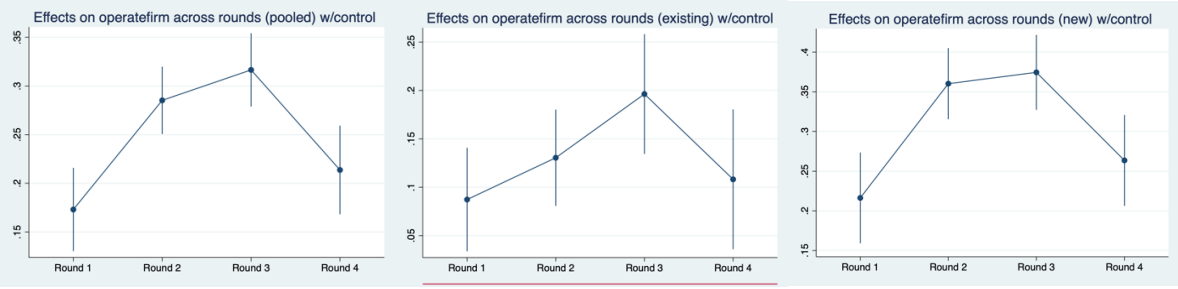
[8] See Table 6.1 for the corresponding regression table.

TABLE 6.1: IMPACT ON BUSINESS SALES AND PROFITS

	Sales				Profits			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Panel A: Pooled firms								
Treatment effect	44.239	314.745***	157.793**	-55.014	-14.307	67.907***	23.250	-31.021
	(42.716)	(56.862)	(75.589)	(84.538)	(23.346)	(15.379)	(19.470)	(19.229)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	326.600	370.941	455.884	610.548	188.376	119.020	133.092	167.619
Sample size	1,418	1,648	1,531	965	1,418	1,647	1,532	965
Panel B: Existing firms								
Treatment effect	45.236	357.034***	344.249**	169.431	8.718	69.687**	28.656	15.553
	(86.957)	(133.100)	(142.477)	(133.777)	(49.402)	(35.417)	(40.996)	(31.686)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	509.699	660.535	509.975	546.863	257.025	206.305	192.151	148.455
Sample size	423	497	468	350	423	497	469	352
Panel C: New firms								
Treatment effect	39.411	296.006***	63.917	-187.607*	-22.314	68.598***	19.667	-60.609**
	(49.362)	(56.349)	(92.457)	(111.343)	(26.051)	(15.113)	(21.353)	(24.720)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	271.467	278.177	438.490	638.537	167.705	91.061	114.099	176.149
Sample size	995	1,151	1,063	615	995	1,150	1,063	613

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Existing and new refers to firm status at time application. Rounds 1, 2, 3, and 4 are 1, 2, 3, and 5 years after application. Sales and profits are in 1,000s of real naira per month. Refer to Appendix 2 for the regression tables with the full model specification.

Figure 6.3[9]: Impact of likelihood of business startup/survival, across survey rounds (extensive measure)



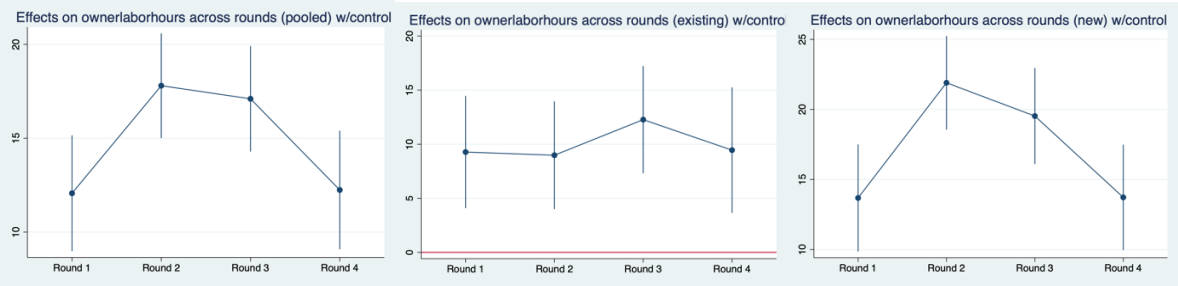
Source: Author's Illustration

Examining the trend of effect sizes across survey rounds, Figures 6.3 and 6.4 reveal a common pattern. In many cases, there is an initial increase in the size of the effect from one round to the next, followed by a subsequent decline over time. For the aggregated dataset, winners of the business competition experienced a considerable boost in business survival. They were respectively 17.3, 28.5, 31.7, and 21.4 percentage points more likely to have their businesses operational than non-winners in Rounds 1, 2, 3, and 4. Further analysis by firm type reveals that this effect is primarily driven by new firms. In the existing firm category, winners were 10%, 15.4%, 25.8%, and 14.1% more likely to operate their businesses in Rounds 1, 2, 3, and 4, respectively, compared to non-winners in the same category. In contrast, the new firm category witnessed even more substantial survival rates among winners, with increases of 39.3%, 63.3%, 69.3%, and 51.5% in Rounds 1, 2, 3, and 4, respectively, relative to non-winners.

It's important to note that the average baseline control mean for the probability of survival over the four rounds was 81% for existing firms, while new businesses exhibited a lower average of 54.3%. This disparity aligns with the "Lindy effect," suggesting that the longer something endures, the higher its chances of persisting. Within our experimental framework, this implies that the competition may have motivated new entrepreneurs to initiate ventures that might not have existed without the competition's incentive. The relatively lower survival probability for new businesses creates fertile ground for the treatment to significantly impact their survival prospects compared to their existing counterparts.

[9] See Table 6.2 for the corresponding regression table.

Figure 6.4[10]: Impact on owner's hour worked per week, across survey rounds (intensive measure)



Source: Author's Illustration

Regarding the time commitment of entrepreneurs, existing non-winning entrepreneurs dedicated an average of 37.8 hours per week to their businesses, whereas winning counterparts devoted an average of 47.8 hours per week. Among new firms, non-winners contributed an average of 21.8 hours per week, while winners invested an average of 39 hours per week across the four survey rounds.

Analyzing the relative magnitude of the treatment effect on weekly hours worked compared to the baseline control average, existing firms experienced increases of 21.4%, 22.0%, 38.9%, and 26.5% in Rounds 1, 2, 3, and 4, respectively. For new firms, these figures were substantially higher at 54.8%, 91.5%, 100.3%, and 72.2% for Rounds 1, 2, 3, and 4, respectively. This trend signifies a rise in the relative treatment effect's size from the point of treatment administration up to Round 3, followed by a subsequent decline from Round 3 to Round 4.

Considering the observed trend in the treatment effect's size across both extensive and intensive measures of business survival, coupled with the different forms of persistence described in Section 2.2, the findings suggest that the treatment effect follows a bell-shaped persistence pattern, as depicted in Equation 5.

6.3 Impact on employment

The core objective of the program's design and implementation was to address youth unemployment in Nigeria. Consequently, assessing the program's effectiveness in achieving this goal requires a thorough examination of its impact on job creation.

To comprehensively assess the program's influence on employment, we consider both intensive and extensive employment measures.

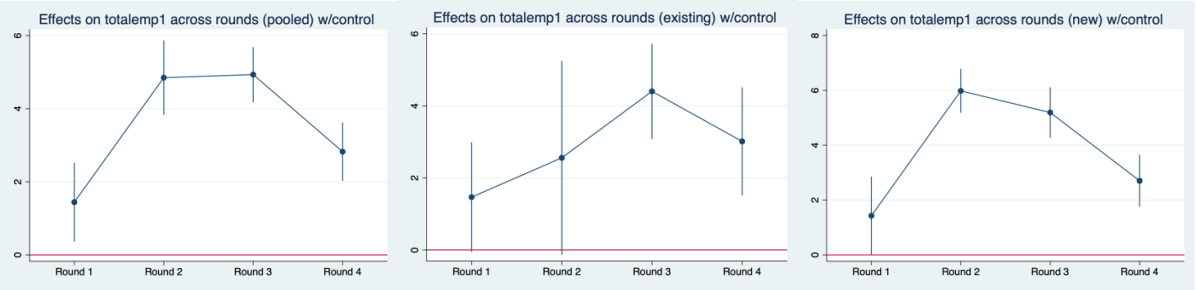
[10] See Table 6.2 for the corresponding regression table.

TABLE 6.2: IMPACT ON START-UP AND SURVIVAL

	Extensive				Intensive			
	Operates a firm at the time of survey				Weekly hours worked in self-employment			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Panel A: Pooled firms								
Treatment effect	0.173***	0.285***	0.317***	0.214***	12.067***	17.798***	17.099***	12.243***
	(0.022)	(0.018)	(0.019)	(0.023)	(1.572)	(1.423)	(1.433)	(1.610)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	0.624	0.634	0.593	0.572	29.188	27.975	22.390	22.889
Sample size	1,453	1,686	1,562	1,469	1,416	1,529	1,336	1,265
Panel B: Existing firms								
Treatment effect	0.087***	0.130***	0.196***	0.108***	9.278***	8.984***	12.273***	9.454***
	(0.027)	(0.025)	(0.031)	(0.037)	(2.639)	(2.535)	(2.519)	(2.953)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	0.871	0.844	0.759	0.768	43.263	40.869	31.589	35.636
Sample size	432	505	477	434	423	458	409	383
Panel C: New firms								
Treatment effect	0.216***	0.360***	0.374***	0.264***	13.677***	21.902***	19.527***	13.718***
	(0.029)	(0.023)	(0.024)	(0.029)	(1.950)	(1.704)	(1.750)	(1.918)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	0.550	0.569	0.540	0.513	24.950	23.928	19.471	19.007
Sample size	1,021	1,181	1,085	1,035	993	1,071	927	882

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Existing and new refers to firm status at time application. Rounds 1, 2, 3, and 4 are 1, 2, 3, and 5 years after application. Refer to Appendix 3 for the regression tables with the full model specification.

Figure 6.5[11]: Impact on total employment, across survey rounds (intensive measure)



Source: Author's Illustration

Aggregate data reveals that non-winning firms averaged 4.3 workers, while winning firms averaged 7.9 workers across the four survey rounds. Breaking this down by firm category, non-winning existing firms averaged 6.5 workers, whereas winning existing firms averaged 9.4 workers. In the new firm category, non-winners averaged 3.7 workers, while winners averaged 7.5 workers during this period.

Furthermore, we examined the productivity of workers by evaluating the sales-per-worker ratio. Within the existing firm category, each worker in the control group generated an average of N85,657 in sales, while their counterparts in the treated group generated N83,591. In the case of new firms, workers in the control group contributed, on average, N109,910 to sales, whereas those in the treated group contributed only about N61,280 on average.

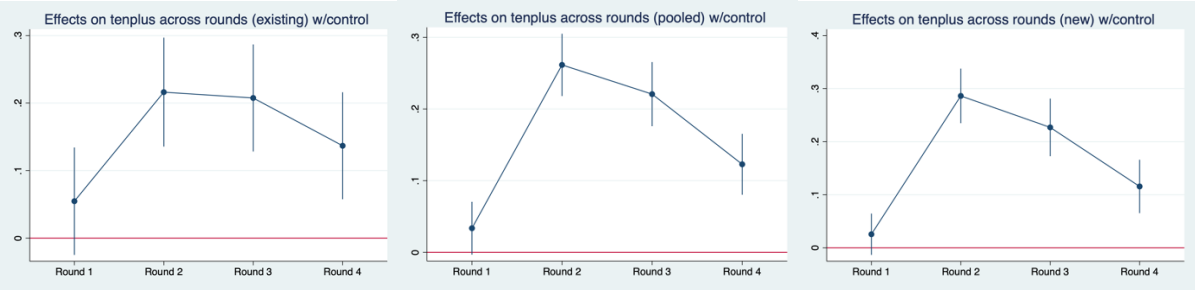
The pooled dataset analysis reveals significant treatment effects, registering at 33.0%, 108.4%, 117.1%, and 65.1% for Rounds 1, 2, 3, and 4, respectively, relative to the baseline control mean. These effects hold statistical significance at the 1% level. However, when we analyze the data separately for existing and new firms, an interesting pattern emerges. In Round 1, the treatment effect for both firm types does not reach statistical significance at the 5% threshold, hinting at a potential delayed impact. Similarly, the effect remains statistically insignificant at the 5% level for existing firms in Round 2. This implies that the impact of winning the business competition on job creation for existing firms only becomes noticeable in Rounds 3 and 4. In contrast, the treatment's influence becomes evident for new firms starting from Round 2.

Additionally, mirroring the trend observed in the relative size of the treatment effect using the pooled data, a similar pattern is observed for existing and new firms. This involves an initial increase in the effect's size, followed by a subsequent decline. This highlights the intricate and evolving nature of the treatment's impact on job creation across different firm types and survey rounds.

[11] See Table 6.3 for the corresponding regression table.

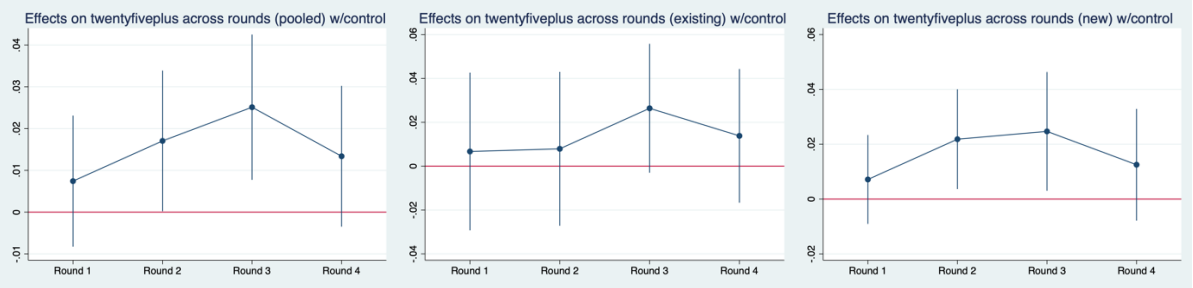
Figure 6.6[12] (extensive measures)

Panel A: Impact on likelihood of having 10 or more employees, across survey rounds



Source: Author's Illustration

Panel B: Impact on likelihood of having 25 or more employees, across survey rounds



Source: Author's Illustration

A comprehensive analysis of the data sheds light on the transition of firms from micro-enterprises to small enterprises, as defined in Nigeria.[13] On average, control group firms have a 12.4% probability of employing 10 or more workers, while treated firms have an average probability of 15.9% in this context.

In Rounds 1 and 2, existing businesses in the control group were roughly three times more likely to have 10 or more workers compared to new businesses in the control group. However, this disparity diminished in Rounds 3 and 4, primarily due to a significant decrease in the probability of existing firms in the control group employing 10 or more workers, while this probability slightly increased for new firms in the control group. We observe a delayed treatment effect on the winners, with the impact only becoming statistically significant from Round 2 to Round 4 for both existing and new firms. Notably, the size of the treatment effect consistently declined in Rounds 3 and 4. Regarding staff strength of 25 or more, the impact of

[12] See Table 6.3 for the corresponding regression table.

[13] Micro-enterprises and small enterprises have staff strength ranging from 1 to 9 employees and 10 to 49 employees, respectively.

winning was statistically significant only for new firms in Rounds 2 and 3, while it remained insignificant for existing firms throughout the survey rounds.

In summary, the results illustrating the trend in the treatment effect size across survey rounds suggest a bell-shaped persistence, as shown in Equation 5. This indicates a positive short-term impact that gradually diminishes over time, underscoring the complex dynamics of the program's effect on job creation across diverse firm categories and survey periods.

TABLE 6.3: IMPACT ON EMPLOYMENT

	Intensive				Extensive							
	Total Employment				Firms with 10+ workers				Firms with 25+ workers			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Panel A: Pooled firms												
Treatment effect	1.442***	4.848***	4.931***	2.823***	0.034*	0.261***	0.221***	0.123***	0.007	0.017**	0.025***	0.013
	(0.548)	(0.518)	(0.384)	(0.407)	(0.019)	(0.022)	(0.023)	(0.022)	(0.008)	(0.009)	(0.009)	(0.009)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	4.366	4.472	4.210	4.338	0.113	0.123	0.127	0.132	0.015	0.016	0.014	0.018
Sample size	1,409	1,659	1,505	1,468	1,409	1,659	1,505	1,468	1,409	1,659	1,505	1,468
Panel B: Existing firms												
Treatment effect	1.466*	2.557*	4.402***	3.013***	0.055	0.216***	0.208***	0.137***	0.007	0.008	0.026*	0.014
	(0.772)	(1.368)	(0.673)	(0.763)	(0.040)	(0.041)	(0.040)	(0.040)	(0.018)	(0.018)	(0.015)	(0.016)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	6.852	8.134	5.571	5.510	0.212	0.231	0.170	0.162	0.032	0.038	0.014	0.020
Sample size	422	500	461	434	422	500	461	434	422	500	461	434
Panel C: New firms												
Treatment effect	1.428*	5.982***	5.193***	2.702***	0.026	0.286***	0.227***	0.116***	0.007	0.022**	0.025**	0.013
	(0.728)	(0.407)	(0.468)	(0.482)	(0.020)	(0.026)	(0.028)	(0.026)	(0.008)	(0.009)	(0.011)	(0.010)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control mean	3.618	3.305	3.773	3.991	0.083	0.088	0.114	0.123	0.010	0.009	0.014	0.180
Sample size	987	1,159	1,044	1,034	987	1,159	1,044	1,034	987	1,159	1,044	1,034

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Existing and new refers to firm status at time application. Rounds 1, 2, 3, and 4 are 1, 2, 3, and 5 years after application. Refer to Appendix 4 for the regression tables with the full model specification.

VII Possible mechanisms supporting the bell-shaped persistence pattern

The evidence strongly supports a consistent pattern of diminishing persistence in both the absolute treatment effect size and the relative effect size compared to the baseline control mean. In this section, we explore and evaluate two theories that may explain this observed trend.

Firstly, we consider the "convergence theory." This theory suggests that the treatment merely accelerates the growth of the treated group toward maturity. It posits that these firms would eventually reach this level without the treatment, albeit over a longer time frame. Therefore, the reduction in the treatment effect is attributed to firms in the control group naturally approaching maturity, albeit at a slower pace. However, this theory appears less plausible, as it implies that micro and small enterprises achieve maturity within a span of less than five years, the duration between announcing winners and completing the fourth survey round.

The second explanation pertains to the behavior of winning firms, supported by existing literature, exemplified by Kremer et al (2013). This hypothesis argues that behavioral factors may either inhibit or foster firm growth. It suggests that winning the business plan competition initially elevates entrepreneurs' aspirations, driving them to innovate more during the early stages compared to the control group. However, this heightened motivation may not be sustainable over the long term, as entrepreneurs may revert to their inherent preferences, which might not necessarily prioritize profit maximization.

Additionally, the conditional nature of receiving grants and the oversight provided by SMEDAN and DFID could have acted as incentives for entrepreneurs to invest more effort in their businesses, resulting in better performance during the initial rounds. However, as these organizations gradually reduced their monitoring activities, entrepreneurs may have relaxed their efforts, leading to a decline in performance compared to the initial stages.

This behavioral hypothesis finds support in the data, particularly in the number of hours committed to their businesses. Winners of the existing and new business categories dedicated an average of 51 and 42 hours per week, respectively, during the grant disbursement phase. In contrast, in the post-disbursement phase, when monitoring was no longer required, winners in both categories reduced their commitment to an average of 37 and 36 hours per week, respectively. Moreover, when considering the average number of hours worked per week at the aggregate level, winners increased their weekly hours by 4.5 between Round 1 and Round 2, coinciding with the period of disbursing the 2nd, 3rd, and 4th tranches of grants. Conversely, non-winners reduced their weekly hours by 1.2.

These findings have policy implications, suggesting that business plan competitions may not effectively identify entrepreneurs with a preference for sustained high growth. This realization challenges the initial assumptions of the program's theory of change. This outcome aligns with Banerjee et al (2023), who discovered that the behaviors of microenterprise owners diverge from profit maximization, reflecting their private or social preferences after the withdrawal of intervention (subsidy).

VIII Checks for validity of the treatment effect

Conducting a placebo test is a popular technique to validate the effect of a treatment in a randomised control trial environment. The placebo treatment test and placebo outcome test are the two standard methods employed by economists to validate the efficacy of a treatment. In the context of this business plan competition program, performing a placebo treatment test was not factored into the program design, thus making it impractical to carry out this test.

However, as an alternative, we generated a pseudo-treatment assignment using Stata, following the randomisation process as described in Section 4.3. Using the randomised pseudo-treatment assignment would imply that some of the experimental control group participants were designated as "pseudo-winners," while some of the experimental treated group participants were considered "pseudo-non-winners."

The objective of this approach was to assess whether the differences observed in the main analysis between the actual treatment and control groups could be attributed to the treatment itself. If the analysis involving the pseudo-treatment assignment yielded statistically insignificant differences between the pseudo-treatment and pseudo-control groups, it would offer strong evidence to suggest that the observed effects in the main analysis can indeed be attributed to the actual treatment.

Upon performing this auxiliary analysis with the pseudo-treatment assignment, the finding emerged that there were no statistically significant differences between the pseudo-treatment and pseudo-control groups, at the 99% confidence level. See Appendix 5, 6, and 7. This outcome lends support to the conclusion that the real treatment, i.e., winning the business plan competition, is the driving force behind the observed effects in the main analysis.

Furthermore, the main analysis demonstrated the use of multiple outcome measures to examine the impact of winning the business plan competition across various desired outcomes. These measures encompassed financial performance, startup/survival likelihood, and employment. The crucial finding is that the impact of the treatment remained consistent across the different measures employed for each outcome. This consistency enhances the robustness of the conclusions drawn from the analysis.

IX Conclusion

The analysis brings forth significant insights regarding the impact and persistence of the business plan competition on various outcomes. Despite observing significant positive effects on business survival, start-up, sales, profits, and employment, we note that the anticipated trend of increasing treatment effect magnitude over time, considering the elimination of credit constraints as a mechanism, is not observed. Instead, the effect size seems to diminish over time. This result prompts considerations for policy implications and potential areas of improvement.

Our findings align with the research of Fafchamps et al. (2014), which indicates that the way capital is received significantly influences how it is utilized in a business. Their study suggests that when capital arrives in the form of a conditional grant, it helps business owners resist the urge to divest. This is in contrast to unconditional cash grants, which are similar to retained profits. Their research also suggests that unconditional cash grants are more likely to be effectively invested in businesses if the owners demonstrate strong self-control.

When we combine these findings with those from Banerjee et al. (2023), which indicate that entrepreneurs often exhibit behaviors not aligned with profit maximisation after the intervention ends, a broader picture emerges. This suggests that the pattern of the treatment effect observed in the YouWin! Program might indicate a limitation. Specifically, the program may not be effectively identifying entrepreneurs with a preference for profit maximization or high-growth potential.

As a result, there could be a need to refine the program's selection criteria, focusing on identifying and nurturing high-growth entrepreneurs. This adjustment could maximize the program's impact and better align with its objectives.

Nevertheless, given the difficulties associated with identifying high-growth entrepreneurs in developing countries, policymakers might opt for a more straightforward approach. For instance, directing the program towards established businesses with a proven history of high growth or those that adhere to best corporate governance practices, which can help manage entrepreneurs' self-control, may lead to more sustained and enhanced effects over time. This is imperative as other African nations are already replicating this program.

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APPENDIX 1: CORRELATION MATRIX

	Sales	Profits	Operate firms	Owners labour hours	Total employment	10+ workers	25+ workers
Sales	1.000						
Profits	0.459	1.000					
Operate firms	0.218	0.230	1.000				
Owners labour hours	0.210	0.218	0.745	1.000			
Total employment	0.263	0.252	0.426	0.371	1.000		
10+ workers	0.254	0.214	0.315	0.266	0.632	1.000	
25+ workers	0.154	0.190	0.098	0.073	0.608	0.310	1.000

APPENDIX 2a: IMPACT ON SALES AND PROFITS (POOLED FIRMS)

	Sales				Profits			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	44.239	314.745***	157.793**	-55.014	-14.307	67.907***	23.250	-31.021
	(42.716)	(56.862)	(75.589)	(84.538)	(23.346)	(15.379)	(19.470)	(19.229)
Existing	367.229***	414.973***	242.430**	126.144	118.114***	107.138***	76.148***	1.560
	(70.284)	(86.110)	(103.686)	(109.714)	(36.914)	(22.800)	(28.218)	(23.220)
Female	-106.623**	-65.325	-115.687	-92.774	-73.953***	-20.329	1.043	-43.328**
	(49.670)	(72.576)	(90.030)	(96.963)	(27.776)	(18.272)	(30.917)	(18.268)
North-East	-19.166	73.132	-133.215	-172.819	-103.672**	-33.637	-87.005**	-17.668
	(87.804)	(93.374)	(145.891)	(163.379)	(49.910)	(32.468)	(41.531)	(33.404)
North-West	40.564	93.783	42.427	40.065	-24.035	-43.382	-44.285	-33.314
	(88.696)	(101.895)	(159.033)	(177.319)	(63.894)	(29.236)	(49.036)	(32.576)
South-East	-104.693	-5.981	107.172	151.331	-100.442**	-61.227**	-109.090***	-16.666
	(81.089)	(74.127)	(158.921)	(175.012)	(50.375)	(25.781)	(39.866)	(34.127)
South-South	-174.289**	16.078	-232.193**	-236.089*	-96.577*	-23.032	-109.071***	-32.353
	(78.358)	(86.480)	(118.080)	(129.953)	(52.793)	(29.307)	(40.716)	(32.873)
South-West	-118.601	167.830	36.920	46.076	-116.712**	-32.853	-71.648*	-20.770
	(80.050)	(103.436)	(137.129)	(142.745)	(50.725)	(28.293)	(41.674)	(30.241)
Low cap. industry	-96.115**	-199.584***	-85.163	-81.806	-15.612	-26.679*	6.850	9.188
	(41.610)	(53.424)	(82.820)	(95.031)	(27.050)	(15.041)	(21.286)	(22.116)
Business plan score	9.976***	0.547	3.556	1.219	1.511	-0.368	0.363	-0.465
	(3.588)	(4.280)	(5.030)	(5.088)	(2.039)	(1.090)	(1.357)	(1.188)
Constant	-169.230	250.882	284.481	571.757*	171.447	155.789**	163.347*	212.491***
	(208.415)	(247.078)	(312.019)	(337.890)	(119.124)	(68.353)	(84.661)	(71.226)
Observations	1,418	1,648	1,531	965	1,418	1,647	1,532	965
R-squared	0.039	0.061	0.016	0.014	0.021	0.055	0.021	0.007

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 2b: IMPACT ON SALES AND PROFITS (EXISTING FIRMS)

	Sales				Profits			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	45.236	357.034***	344.249**	169.431	8.718	69.687**	28.656	15.553
	(86.957)	(133.100)	(142.477)	(133.777)	(49.402)	(35.417)	(40.996)	(31.686)
Female	-87.195	32.421	-122.725	-23.729	20.647	50.869	51.356	-5.373
	(108.178)	(188.437)	(171.853)	(182.772)	(76.652)	(54.103)	(69.693)	(33.365)
North-East	-41.866	143.874	-131.777	-239.066	-102.209	19.180	-124.964	-109.720**
	(211.491)	(229.168)	(287.033)	(282.259)	(70.080)	(90.545)	(78.964)	(45.647)
North-West	-26.116	151.569	-322.939	-339.271	94.865	-53.413	-161.990**	-108.796**
	(191.614)	(303.757)	(240.249)	(233.162)	(144.277)	(68.323)	(64.932)	(42.860)
South-East	-290.456**	37.459	142.495	78.384	-137.217**	-40.654	-100.061	-92.017*
	(124.709)	(168.878)	(339.500)	(320.805)	(61.412)	(66.998)	(95.394)	(48.513)
South-South	-252.251*	77.012	-155.409	-226.734	-38.676	-36.818	-124.567	-72.425
	(146.094)	(198.640)	(230.035)	(229.389)	(80.200)	(59.388)	(77.611)	(50.949)
South-West	-127.022	309.670*	78.631	34.741	-72.821	-21.945	-101.242	-26.089
	(130.096)	(187.076)	(211.584)	(215.060)	(69.288)	(51.548)	(67.222)	(48.444)
Low cap. industry	-178.900**	-392.871***	-156.717	-160.513	-61.153	-41.591	45.023	-9.819
	(81.719)	(129.740)	(145.847)	(138.038)	(43.732)	(34.589)	(41.012)	(31.493)
Business plan score	10.630*	-7.205	-2.267	-2.634	-4.918	-2.650	-0.687	-0.912
	(6.163)	(8.546)	(9.608)	(9.975)	(3.671)	(2.352)	(3.018)	(2.109)
Constant	240.821	979.504***	711.627	800.331	539.943***	353.810***	284.062*	237.101***
	(212.570)	(368.164)	(498.953)	(524.156)	(149.084)	(117.536)	(148.548)	(84.869)
Observations	423	497	468	350	423	497	469	352
R-squared	0.033	0.037	0.021	0.018	0.025	0.018	0.019	0.019

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 2c: IMPACT ON SALES AND PROFITS (NEW FIRMS)

	Sales				Profits			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	39.411	296.006***	63.917	-187.607*	-22.314	68.598***	19.667	-60.609**
	(49.362)	(56.349)	(92.457)	(111.343)	(26.051)	(15.113)	(21.353)	(24.720)
Female	-124.314**	-121.237*	-133.147	-144.483	-120.384***	-53.019***	-21.974	-70.414***
	(56.038)	(64.518)	(110.327)	(113.195)	(23.277)	(12.226)	(32.723)	(20.702)
North-East	22.872	122.884	-57.269	-42.599	-84.066	-20.541	-48.181	45.922
	(115.879)	(104.662)	(170.945)	(196.383)	(75.672)	(33.356)	(50.068)	(45.705)
North-West	88.265	127.914	157.540	227.645	-27.874	-23.294	5.035	28.937
	(117.190)	(107.058)	(191.867)	(222.757)	(86.354)	(31.680)	(61.525)	(44.723)
South-East	-30.801	-28.524	104.987	228.760	-111.225	-62.484**	-96.674**	29.885
	(96.265)	(74.559)	(181.587)	(202.226)	(70.984)	(25.685)	(45.503)	(42.969)
South-South	-116.332	-1.710	-270.193**	-216.473*	-127.416*	-7.662	-91.634**	11.138
	(90.032)	(74.332)	(127.671)	(130.997)	(73.706)	(30.829)	(46.498)	(45.132)
South-West	-118.705	48.078	-31.222	24.391	-167.993**	-44.154	-54.603	-32.069
	(92.582)	(105.343)	(190.250)	(197.677)	(72.222)	(29.787)	(52.347)	(35.552)
Low cap. industry	-54.283	-101.787**	-51.636	-37.472	13.539	-17.952	-10.862	27.177
	(48.273)	(48.006)	(101.305)	(128.175)	(33.922)	(14.184)	(23.818)	(31.133)
Business plan score	10.008**	6.227	8.809	5.887	4.657*	1.116	1.789	1.136
	(4.995)	(4.417)	(6.092)	(6.447)	(2.694)	(1.147)	(1.426)	(1.535)
Constant	-220.621	-61.948	4.052	297.504	13.382	70.565	70.739	100.299
	(312.893)	(266.963)	(358.140)	(407.906)	(169.973)	(73.882)	(91.186)	(102.880)
Observations	995	1,151	1,063	615	995	1,150	1,063	613
R-squared	0.015	0.033	0.012	0.022	0.022	0.034	0.013	0.021

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 3a: IMPACT ON START-UP AND SURVIVAL (POOLED FIRMS)

	Extensive				Intensive			
	Operates a firm at the time of survey				Weekly hours worked in self-employment			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	0.173***	0.285***	0.317***	0.214***	12.067***	17.798***	17.099***	12.243***
	(0.022)	(0.018)	(0.019)	(0.023)	(1.572)	(1.423)	(1.433)	(1.610)
Existing	0.234***	0.150***	0.134***	0.112***	15.933***	7.666***	6.333***	9.344***
	(0.029)	(0.026)	(0.029)	(0.034)	(2.170)	(2.070)	(2.086)	(2.410)
Female	-0.029	-0.040	-0.069**	-0.130***	-4.625**	-2.992	-5.296***	-7.011***
	(0.030)	(0.026)	(0.028)	(0.032)	(1.888)	(1.854)	(1.912)	(1.965)
North-East	-0.098**	-0.001	-0.003	-0.115**	-2.359	0.622	-4.795*	-8.627***
	(0.040)	(0.040)	(0.042)	(0.045)	(3.065)	(2.765)	(2.828)	(3.033)
North-West	-0.136***	0.025	0.027	-0.225***	-7.006***	0.930	-6.247**	-14.463***
	(0.038)	(0.039)	(0.041)	(0.043)	(2.706)	(2.686)	(2.728)	(2.793)
South-East	-0.175***	0.018	0.012	-0.165***	-3.210	5.061**	1.146	-8.014***
	(0.037)	(0.035)	(0.037)	(0.040)	(2.835)	(2.531)	(2.718)	(2.662)
South-South	-0.236***	0.068**	0.005	-0.161***	-7.929***	6.398**	-4.100	-9.149***
	(0.035)	(0.033)	(0.035)	(0.038)	(2.704)	(2.518)	(2.571)	(2.655)
South-West	-0.110***	0.068**	0.004	-0.080**	-6.788***	7.288***	-2.306	-0.799
	(0.032)	(0.032)	(0.034)	(0.036)	(2.601)	(2.496)	(2.330)	(2.665)
Low cap. industry	0.050**	0.033	0.016	-0.004	4.742***	1.001	2.804*	2.637
	(0.023)	(0.021)	(0.022)	(0.025)	(1.676)	(1.519)	(1.522)	(1.670)
Business plan score	0.000	-0.001	-0.000	-0.003**	0.048	-0.221**	-0.127	-0.173
	(0.002)	(0.001)	(0.001)	(0.002)	(0.106)	(0.098)	(0.099)	(0.112)
Constant	0.690***	0.600***	0.579***	0.870***	27.084***	34.325***	30.275***	36.795***
	(0.094)	(0.086)	(0.092)	(0.101)	(6.526)	(6.199)	(6.241)	(6.929)
Observations	1,453	1,686	1,562	1,469	1,416	1,529	1,336	1,265
R-squared	0.147	0.162	0.164	0.122	0.129	0.142	0.143	0.140

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 3b: IMPACT ON START-UP AND SURVIVAL (EXISTING FIRMS)

	Extensive				Intensive			
	Operates a firm at the time of survey				Weekly hours worked in self-employment			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	0.087***	0.130***	0.196***	0.108***	9.278***	8.984***	12.273***	9.454***
	(0.027)	(0.025)	(0.031)	(0.037)	(2.639)	(2.535)	(2.519)	(2.953)
Female	0.086***	0.031	0.003	0.010	2.940	-3.118	-6.758**	-2.935
	(0.024)	(0.031)	(0.041)	(0.050)	(3.024)	(3.366)	(3.385)	(4.596)
North-East	-0.030	0.038	-0.018	-0.167**	-0.657	-2.734	-1.191	-11.762**
	(0.048)	(0.063)	(0.076)	(0.080)	(5.069)	(5.143)	(5.068)	(5.905)
North-West	0.044*	0.072	0.039	-0.261***	4.270	0.641	-4.183	-15.038**
	(0.024)	(0.057)	(0.070)	(0.084)	(4.773)	(4.973)	(5.955)	(6.346)
South-East	-0.061	0.055	0.103**	-0.145**	4.927	9.234**	10.323**	-5.344
	(0.049)	(0.054)	(0.049)	(0.067)	(4.634)	(4.514)	(5.060)	(5.459)
South-South	-0.131***	0.091**	0.067	-0.097**	2.027	9.269**	-2.230	-8.854**
	(0.043)	(0.041)	(0.045)	(0.047)	(4.252)	(4.156)	(3.939)	(4.442)
South-West	-0.046	0.112***	0.029	-0.144***	-4.179	10.690***	2.843	-4.754
	(0.031)	(0.037)	(0.043)	(0.043)	(3.344)	(3.648)	(3.157)	(3.886)
Low cap. industry	0.082***	0.017	0.038	0.088**	4.954*	1.098	3.942	4.640
	(0.026)	(0.025)	(0.031)	(0.035)	(2.732)	(2.567)	(2.600)	(2.980)
Business plan score	-0.003*	-0.003	-0.001	-0.005**	-0.136	-0.369**	-0.169	-0.106
	(0.002)	(0.002)	(0.002)	(0.002)	(0.181)	(0.167)	(0.173)	(0.203)
Constant	1.021***	0.886***	0.769***	1.074***	46.910***	51.272***	37.576***	44.418***
	(0.085)	(0.094)	(0.107)	(0.110)	(8.463)	(8.258)	(8.552)	(9.593)
Observations	432	505	477	434	423	458	409	383
R-squared	0.096	0.081	0.096	0.077	0.049	0.067	0.088	0.051

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 3c: IMPACT ON START-UP AND SURVIVAL (NEW FIRMS)

	Extensive				Intensive			
	Operates a firm at the time of survey				Weekly hours worked in self-employment			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	0.216***	0.360***	0.374***	0.264***	13.677***	21.902***	19.527***	13.718***
	(0.029)	(0.023)	(0.024)	(0.029)	(1.950)	(1.704)	(1.750)	(1.918)
Female	-0.075*	-0.073**	-0.100***	-0.176***	-7.614***	-3.355	-4.473*	-8.067***
	(0.040)	(0.034)	(0.037)	(0.038)	(2.313)	(2.194)	(2.352)	(2.108)
North-East	-0.149***	-0.008	-0.005	-0.086	-5.423	1.654	-7.174*	-8.003**
	(0.057)	(0.052)	(0.055)	(0.060)	(4.067)	(3.485)	(3.684)	(3.633)
North-West	-0.203***	0.017	0.021	-0.200***	-11.494***	1.402	-8.393**	-14.115***
	(0.054)	(0.052)	(0.054)	(0.057)	(3.573)	(3.338)	(3.466)	(3.233)
South-East	-0.249***	-0.004	-0.023	-0.161***	-8.267**	3.070	-3.193	-8.062**
	(0.049)	(0.045)	(0.048)	(0.051)	(3.605)	(3.067)	(3.414)	(3.165)
South-South	-0.307***	0.062	-0.029	-0.184***	-14.296***	4.994	-5.986*	-8.930***
	(0.050)	(0.047)	(0.049)	(0.054)	(3.521)	(3.170)	(3.424)	(3.334)
South-West	-0.166***	0.039	-0.011	-0.017	-8.684**	4.260	-6.829**	3.135
	(0.057)	(0.050)	(0.053)	(0.057)	(3.989)	(3.452)	(3.347)	(3.708)
Low cap. industry	0.040	0.045	0.012	-0.043	5.101**	1.027	1.968	1.850
	(0.033)	(0.028)	(0.030)	(0.033)	(2.114)	(1.873)	(1.902)	(2.030)
Business plan score	0.001	0.001	0.001	-0.002	0.112	-0.061	-0.069	-0.208
	(0.002)	(0.002)	(0.002)	(0.002)	(0.143)	(0.128)	(0.128)	(0.136)
Constant	0.671***	0.509***	0.509***	0.784***	27.312***	24.923***	28.924***	37.902***
	(0.141)	(0.122)	(0.128)	(0.140)	(8.954)	(8.202)	(8.149)	(8.419)
Observations	1,021	1,181	1,085	1,035	993	1,071	927	882
R-squared	0.083	0.142	0.154	0.106	0.081	0.129	0.130	0.094

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 4a: IMPACT ON EMPLOYMENT (POOLED FIRMS)

	Intensive				Extensive				Extensive			
	Total Employment				Firms with 10+ Workers				Firms with 25+ Workers			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	1.442***	4.848***	4.931***	2.823***	0.034*	0.261***	0.221***	0.123***	0.007	0.017**	0.025***	0.013
	(0.548)	(0.518)	(0.384)	(0.407)	(0.019)	(0.022)	(0.023)	(0.022)	(0.008)	(0.009)	(0.009)	(0.009)
Existing	3.727***	4.268***	2.008***	1.650***	0.162***	0.159***	0.093***	0.064**	0.031**	0.038***	0.011	0.007
	(0.584)	(0.991)	(0.498)	(0.574)	(0.028)	(0.031)	(0.032)	(0.031)	(0.012)	(0.014)	(0.012)	(0.010)
Female	-1.332***	-1.060**	-0.112	-1.166**	-0.028	-0.052**	-0.027	-0.051**	-0.007	-0.005	0.014	-0.009
	(0.472)	(0.468)	(0.543)	(0.571)	(0.023)	(0.025)	(0.028)	(0.025)	(0.009)	(0.009)	(0.013)	(0.009)
North-East	-1.074	0.786	0.112	-0.918	-0.064	0.035	0.062	-0.017	-0.013	-0.003	-0.015	-0.013
	(0.726)	(0.854)	(0.720)	(0.733)	(0.039)	(0.041)	(0.043)	(0.042)	(0.015)	(0.019)	(0.017)	(0.018)
North-West	-0.958	0.176	-0.047	-2.252***	-0.037	0.013	0.028	-0.082**	-0.006	-0.013	-0.009	-0.024
	(0.663)	(0.810)	(0.734)	(0.791)	(0.038)	(0.039)	(0.041)	(0.037)	(0.016)	(0.017)	(0.017)	(0.015)
South-East	-1.217	-0.595	-0.485	-1.973***	-0.099***	-0.013	-0.022	-0.035	-0.013	-0.033**	-0.024	-0.029*
	(1.199)	(0.682)	(0.690)	(0.717)	(0.034)	(0.035)	(0.036)	(0.037)	(0.016)	(0.014)	(0.016)	(0.016)
South-South	-2.027**	0.260	-1.069	-2.131***	-0.124***	-0.009	-0.051	-0.094***	-0.017	-0.023	-0.018	-0.025
	(0.848)	(1.142)	(0.678)	(0.715)	(0.033)	(0.035)	(0.035)	(0.035)	(0.015)	(0.016)	(0.016)	(0.016)
South-West	-1.816***	-1.236*	-1.603**	-1.848**	-0.094**	-0.078**	-0.048	-0.068*	-0.024	-0.034**	-0.038***	-0.027*
	(0.606)	(0.700)	(0.627)	(0.732)	(0.037)	(0.033)	(0.035)	(0.036)	(0.016)	(0.015)	(0.014)	(0.016)
Low cap. industry	-0.775*	-1.244***	-0.505	-0.634	-0.043**	-0.081***	-0.041*	-0.028	0.000	-0.021***	-0.013	0.000
	(0.450)	(0.480)	(0.364)	(0.385)	(0.019)	(0.021)	(0.022)	(0.022)	(0.008)	(0.007)	(0.008)	(0.009)
Business plan score	0.041	0.069**	0.032	0.009	0.002	0.002*	0.003*	0.001	0.001	0.001**	0.001	0.001
	(0.030)	(0.030)	(0.027)	(0.026)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Constant	2.991	0.548	2.779*	5.392***	0.067	-0.000	-0.023	0.113	-0.022	-0.031	-0.004	0.009
	(1.836)	(1.814)	(1.617)	(1.531)	(0.081)	(0.089)	(0.095)	(0.089)	(0.033)	(0.037)	(0.036)	(0.028)
Observations	1,409	1,659	1,505	1,468	1,409	1,659	1,505	1,468	1,409	1,659	1,505	1,468
R-squared	0.039	0.101	0.136	0.060	0.059	0.135	0.086	0.042	0.012	0.020	0.016	0.007

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 4b: IMPACT ON EMPLOYMENT (EXISTING FIRMS)

	Intensive				Extensive				Extensive			
	Total Employment				Firms with 10+ Workers				Firms with 25+ Workers			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	1.466*	2.557*	4.402***	3.013***	0.055	0.216***	0.208***	0.137***	0.007	0.008	0.026*	0.014
	(0.772)	(1.368)	(0.673)	(0.763)	(0.040)	(0.041)	(0.040)	(0.040)	(0.018)	(0.018)	(0.015)	(0.016)
Female	0.825	0.316	0.967	1.371	0.046	-0.036	-0.005	0.013	0.013	0.019	0.028	0.019
	(1.038)	(1.227)	(1.172)	(1.583)	(0.061)	(0.055)	(0.058)	(0.060)	(0.028)	(0.026)	(0.027)	(0.027)
North-East	-2.109	2.993	-1.784	-2.307	-0.227***	0.100	-0.013	-0.075	-0.024	0.036	-0.058**	-0.045**
	(1.469)	(1.947)	(1.389)	(1.457)	(0.080)	(0.099)	(0.095)	(0.095)	(0.040)	(0.055)	(0.024)	(0.022)
North-West	-1.173	0.442	-1.145	-3.917***	0.014	0.004	-0.018	-0.119	-0.028	-0.028	-0.029	-0.046**
	(1.249)	(1.358)	(1.598)	(1.403)	(0.099)	(0.092)	(0.099)	(0.082)	(0.037)	(0.036)	(0.040)	(0.021)
South-East	-2.248*	-0.543	-0.927	-2.175	-0.139*	-0.055	-0.119	-0.028	-0.034	-0.058**	-0.040	-0.022
	(1.349)	(1.103)	(1.299)	(1.402)	(0.084)	(0.080)	(0.077)	(0.079)	(0.035)	(0.023)	(0.032)	(0.032)
South-South	-2.846**	2.748	-1.896	-1.855	-0.241***	-0.032	-0.130**	-0.071	-0.041	-0.001	-0.021	-0.005
	(1.441)	(2.744)	(1.255)	(1.417)	(0.060)	(0.065)	(0.062)	(0.064)	(0.030)	(0.034)	(0.032)	(0.032)
South-West	-2.218**	-0.385	-2.815**	-2.630**	-0.153**	-0.103*	-0.102*	-0.077	-0.033	-0.037	-0.066***	-0.035
	(0.979)	(1.101)	(1.113)	(1.291)	(0.061)	(0.057)	(0.057)	(0.056)	(0.030)	(0.026)	(0.024)	(0.024)
Low cap. industry	-0.202	-2.012*	0.419	0.172	-0.043	-0.092**	-0.001	-0.048	0.015	-0.023	-0.014	0.003
	(0.790)	(1.195)	(0.683)	(0.728)	(0.042)	(0.043)	(0.043)	(0.041)	(0.019)	(0.017)	(0.014)	(0.016)
Business plan score	0.003	0.038	-0.041	-0.003	-0.000	-0.000	-0.003	0.001	0.001	0.001	0.001	0.001
	(0.049)	(0.062)	(0.049)	(0.056)	(0.003)	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	8.392***	6.509***	8.661***	7.199***	0.365***	0.320**	0.373***	0.202	0.013	0.015	0.009	0.007
	(2.264)	(2.429)	(2.341)	(2.289)	(0.133)	(0.131)	(0.129)	(0.131)	(0.048)	(0.057)	(0.051)	(0.043)
Observations	422	500	461	434	422	500	461	434	422	500	461	434
R-squared	0.026	0.022	0.105	0.055	0.060	0.076	0.069	0.036	0.010	0.021	0.038	0.016

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 4c: IMPACT ON EMPLOYMENT (NEW FIRMS)

	Intensive				Extensive				Extensive			
	Total Employment				Firms with 10+ Workers				Firms with 25+ Workers			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Treatment	1.428*	5.982***	5.193***	2.702***	0.026	0.286***	0.227***	0.116***	0.007	0.022**	0.025**	0.013
	(0.728)	(0.407)	(0.468)	(0.482)	(0.020)	(0.026)	(0.028)	(0.026)	(0.008)	(0.009)	(0.011)	(0.010)
Female	-2.289***	-1.640***	-0.585	-2.125***	-0.063***	-0.060**	-0.040	-0.077***	-0.016***	-0.015**	0.008	-0.019**
	(0.496)	(0.393)	(0.579)	(0.472)	(0.020)	(0.027)	(0.031)	(0.026)	(0.005)	(0.007)	(0.014)	(0.008)
North-East	-0.239	-0.003	1.609**	-0.103	0.022	0.043	0.153***	0.008	-0.001	-0.012	0.003	-0.004
	(0.920)	(0.954)	(0.798)	(0.869)	(0.044)	(0.047)	(0.050)	(0.049)	(0.016)	(0.019)	(0.020)	(0.024)
North-West	-0.261	-0.301	1.231	-1.391	0.012	0.032	0.106**	-0.060	0.007	-0.013	0.005	-0.016
	(0.829)	(0.973)	(0.805)	(0.921)	(0.040)	(0.044)	(0.047)	(0.043)	(0.018)	(0.020)	(0.018)	(0.020)
South-East	-0.706	-1.035	0.090	-1.557**	-0.054	0.004	0.031	-0.028	-0.002	-0.027	-0.011	-0.028
	(1.472)	(0.846)	(0.759)	(0.766)	(0.036)	(0.038)	(0.040)	(0.042)	(0.016)	(0.017)	(0.017)	(0.019)
South-South	-1.379	-1.058	-0.301	-2.083***	-0.043	0.012	0.012	-0.103**	-0.000	-0.033**	-0.011	-0.036**
	(1.055)	(0.828)	(0.749)	(0.738)	(0.036)	(0.040)	(0.040)	(0.041)	(0.015)	(0.016)	(0.017)	(0.018)
South-West	-1.796**	-1.591*	-0.694	-1.285	-0.052	-0.051	-0.013	-0.060	-0.022*	-0.029	-0.014	-0.020
	(0.710)	(0.851)	(0.708)	(0.812)	(0.042)	(0.039)	(0.042)	(0.047)	(0.013)	(0.018)	(0.018)	(0.022)
Low cap. industry	-0.961*	-0.813**	-0.895**	-0.950**	-0.035*	-0.074***	-0.059**	-0.015	-0.007	-0.020***	-0.011	0.000
	(0.543)	(0.376)	(0.412)	(0.432)	(0.019)	(0.022)	(0.026)	(0.025)	(0.007)	(0.006)	(0.009)	(0.011)
Business plan score	0.071*	0.076**	0.087***	0.032	0.004**	0.003*	0.007***	0.002	0.001	0.001*	0.001	0.001
	(0.042)	(0.030)	(0.033)	(0.030)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	1.043	0.329	-1.044	3.950**	-0.073	-0.072	-0.277**	0.060	-0.039	-0.021	-0.019	-0.004
	(2.658)	(1.963)	(2.016)	(1.862)	(0.089)	(0.108)	(0.123)	(0.108)	(0.042)	(0.038)	(0.047)	(0.037)
Observations	987	1,159	1,044	1,034	987	1,159	1,044	1,034	987	1,159	1,044	1,034
R-squared	0.015	0.191	0.141	0.054	0.020	0.140	0.100	0.041	0.011	0.021	0.010	0.011

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 5: PSEUDO IMPACT ON BUSINESS SALES AND PROFITS

	Sales				Profits			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Panel A: Pooled firms								
Pseudo Treatment	-32.274	-31.891	145.436*	209.707**	-5.585	-16.219	-14.720	-6.811
	(42.395)	(59.445)	(82.931)	(96.096)	(26.018)	(16.085)	(20.178)	(21.202)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	1,418	1,648	1,531	965	1,418	1,647	1,532	965
Panel B: Existing firms								
Pseudo Treatment	-31.935	-97.525	181.922	136.779	-11.911	-44.202	-18.244	-31.333
	(85.218)	(133.604)	(143.356)	(136.470)	(49.952)	(36.114)	(40.540)	(30.657)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	423	497	468	350	423	497	469	352
Panel C: New firms								
Pseudo Treatment	-37.754	-7.680	121.802	242.071*	-7.127	-3.489	-14.626	7.644
	(48.573)	(60.909)	(99.891)	(130.762)	(30.880)	(16.041)	(22.688)	(29.613)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	995	1,151	1,063	615	995	1,150	1,063	613

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 6: PSUEDO IMPACT ON START-UP AND SURVIVAL

	Extensive				Intensive			
	Operates a frim at the time of survey				Weekly hours worked in self-employment			
	Round1	Round2	Round3	Round4	Round1	Round2	Round3	Round4
Panel A: Pooled firms								
Pseudo Treatment	0.016	-0.011	-0.002	-0.006	-0.245	-2.386	-1.712	0.169
	(0.023)	(0.021)	(0.023)	(0.025)	(1.598)	(1.502)	(1.529)	(1.627)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	1,453	1,686	1,562	1,469	1,416	1,529	1,336	1,265
Panel B: Existing firms								
Pseudo Treatment	-0.002	-0.016	0.013	-0.004	-0.525	-3.580	1.136	0.285
	(0.026)	(0.025)	(0.032)	(0.036)	(2.635)	(2.592)	(2.600)	(3.023)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	432	505	477	434	423	458	409	383
Panel C: New firms								
Pseudo Treatment	0.024	-0.013	-0.012	-0.009	-0.203	-2.196	-3.378*	0.160
	(0.032)	(0.029)	(0.030)	(0.033)	(2.002)	(1.842)	(1.912)	(1.935)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	1,021	1,181	1,085	1,035	993	1,071	927	882

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

APPENDIX 7: PSEUDO IMPACT ON EMPLOYMENT

	Intensive				Extensive			
	Total Employment				Firms with 10+ Workers			
	Round 1	Round 2	Round 3	Round 4	Round 1	Round 2	Round 3	Round 4
Panel A: Pooled firms								
Pseudo Treatment	0.028	-0.305	-0.292	-0.196	-0.016	-0.036*	-0.022	0.012
	(0.609)	(0.508)	(0.382)	(0.422)	(0.019)	(0.022)	(0.022)	(0.021)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	1,409	1,659	1,505	1,468	1,409	1,659	1,505	1,468
Panel B: Existing firms								
Pseudo Treatment	-0.296	-0.783	0.144	0.045	-0.030	-0.086**	-0.032	0.013
	(0.816)	(1.272)	(0.712)	(0.818)	(0.041)	(0.043)	(0.042)	(0.042)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	422	500	461	434	422	500	461	434
Panel C: New firms								
Pseudo Treatment	0.063	-0.130	-0.567	-0.389	-0.013	-0.012	-0.021	0.009
	(0.809)	(0.426)	(0.450)	(0.493)	(0.020)	(0.025)	(0.026)	(0.025)
Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	987	1,159	1,044	1,034	987	1,159	1,044	1,034

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1