Study of the Biscate Jobs Platform in Mozambique
World Bank - Let's Work Program Mozambique

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Abstract

This report presents the results of the analysis of data collected on workers and clients using Biscate, a digital labor market matching platform for informal services workers in Mozambique. The platform aims to facilitate labor market intermediation of workers performing various household services and clients looking for labor. Informational asymmetries and contractual uncertainties might undermine both demand and supply of household services in this market.

The hypothesis at the basis of this study are:

Service providers (workers) who join the platform are able to increase their earnings/contracts because they can access a bigger market (clients have access to information – and don't have to rely on informal networks to hire them).

Service providers (workers) who receive better scores and feedback in the platform get more contracts and increase their earnings more than others who get worse feedback.

Clients who use the platform increase their total demand of such services (contracting more services compared to what they were consuming before) because they have better access to information

Data was collected through Baseline and Follow-Up surveys implemented by the World Bank' Let's Work Program, of workers and clients using Biscate over a 2 years' period. Two independent cohort of workers were surveyed on between January of 2017 and December of 2018. We find that the workers who were active in the platform increased their revenues and profits after joining the platform (average profit increase by 127% and average revenues increased by 74%). Furthermore, the workers with more years of experience in their occupation, provide a significantly higher number of services after joining the platform.

The pooled results for clients using Biscate show that, between the baseline and follow-up surveys, clients demanded relatively more services from paid workers, suggesting that they are more willing to pay instead of performing services themselves.

Content

1. Introduction

Biscate is a private initiative that seeks to improve the functioning of the market for household services in Mozambique[1]. The initial target market included the following services (9 occupations) offered through the platform since its launch: mason, carpenter, plumber, locksmith, air-conditioned technician, painter, mechanic, electrician, and TV installer. The platform can connect informal skilled workers to customers by using a hybrid technology that integrates USSD[2] for non-smart phones (used by the workers) and channel the information to potential households or firm customers, with internet access using a web-based system. The platform aims to bridge gaps between potential service providers and clients, gaps which might be social or cultural (they do not interact normally), technological (they use different means of communication), or physical (they live in different parts of the city).

Internet-based platforms that provide matching services, such as the case of Biscate, have considerable potential to improve the functioning of the labor market. These platforms can raise demand, productivity and earnings and increase the volume of work in this sector, some of which might be due to displacing unpaid household labor. While in developed economies, most such services are provided through modern organizations that group workers into firms or associations and can be held legally responsible for the work performed, in Mozambique (as in many developing countries) such mechanisms are largely absent. Household services are generally purchased from unregistered individuals who often do not have an organized channel to communicate and offer their service in the market and can only rely on informal channels based on personal connections.

Such informational asymmetries and contractual uncertainties might undermine both demand and supply of household services. Uncertainty about the quality of the services likely restricts demand curve. Clients might opt not to consume a given service, or to provide it with unpaid family labor, thus lowering the equilibrium levels of employment and earnings for providers of household services. It also leads to barriers to entry. Once consumers have found someone who works satisfactorily, they will likely continue to use that person and share the information through family and friendship networks. It is difficult for new providers to enter such markets.

This report presents the main results of a non-experimental evaluation (study) carried out on Biscate. The study aims to quantify the potential effects of this platform (Biscate) on clients, both workers offering the service, and clients using the services. In particular, this study is an evaluation of Biscate that aims to quantify:

- For service providers (workers) who join the platform: (i) whether they increase their earnings/contracts overall and (ii) whether those who receive better scores and feedback in the platform get more contracts and increase their earnings more than others who get worse feedback.
- For service clients who use the platform: (i) whether clients (and firms or just "individuals") that use the platform increase their total demand of such services

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[1] Biscate allows service providers ("workers") from 18 different occupations to join the platform, then the potential clients can access this data through a web-based service, which also provides feedback of other workers' ratings on the quality of the service. During the pilot phase, market research was carried out to test the project's underlying assumptions and sound out potential clients' reactions. The official registration campaign was launched with Vodacom (partner cellular service provider) in October 2016.

[2] USSD is a Global System for Mobile (GSM) communication technology that is used to send text between a mobile phone and an application program in the network.

(contracting more services compared to what they were consuming before); (ii) whether Biscate clients are more satisfied with the outcomes (compared to previous satisfaction).

The main findings from this analysis suggest that the Biscate platform contributes positively to both workers' and clients' outcomes. The first part of the Report presents a description of the research scope and methodology, as well as the characteristics of the population using the platform. The second and third sections examine the main outcome variables for workers and clients, respectively, including the analysis of the number of services performed, and income derived from these activities. Finally, the conclusion and next steps are presented, while other analysis details can be found in the annexes.

2. Background Introductory Data

This section summarizes the main characteristics of the Mozambique informal sector using data from the recent Mozambique 2018 World Bank Enterprise Survey, which includes data on formal and informal firms, as well as data from the Mozambique National Census 2017 and the previous household budget survey, IOF 2014/2015. This section is meant to describe the population characteristics from which Biscate workers might be coming from.

According to the Mozambique National Census 2017, 50% of the Mozambican population is currently in the working-age range. 48.6% of the people working indicated that they are self-employed without a firm. Although the majority of workers are employed in agriculture[3] (two third of those employed), among the one third not in the agricultural sector 42% are in self-employment. This highlights the potential of a platform such as Biscate, which can be particularly useful for Mozambicans who are working on their own, in the services sector, in urban or peri-urban areas and looking for clients. While the data available do not distinguish between informal and formal employment, the informal sector is estimated to represent about 90 percent of the enterprises in Mozambique, but only contributing 31 percent to GDP (Medina and Schneider, 2018).

Identifying and surveying informal firms is not straightforward since - by definition - they are not included in the national business register. The World Bank Enterprise Analysis Unit conducted a survey between July and December of 2018 specifically targeting informal businesses.[4] According to the survey, most informal firms are self-employed workers (60.4%). 51% of the establishments have at least one woman as an owner. In addition, more than 70% of the total workers are dedicated to the reselling of goods, followed by manufacturing (16.52%) and services (10.76%).

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[3] IOF, 2014/2015.

[4] The Mozambique Informal Sector Business Survey covers unregistered establishments in three regions in the country: Beira, Nampula and Maputo. It follows an area-based sampling methodology using an Adaptive Cluster Sampling method with geographic area rather than an establishment or a business unit as a primary sampling unit. Informal firms in each geographic area complete a short form questionnaire with basic information. Then, a randomly selected subset of the enumerated businesses is given a 20-minute questionnaire. It is a part of the wider Mozambique 2018 World Bank Enterprise Survey.
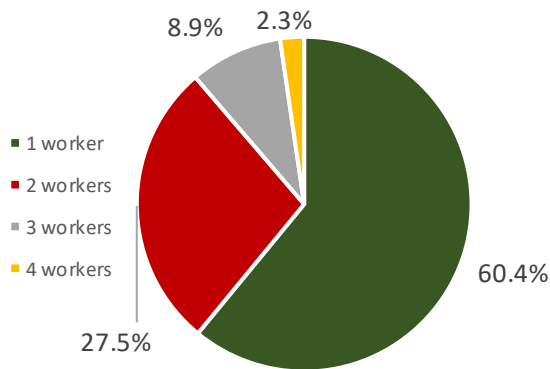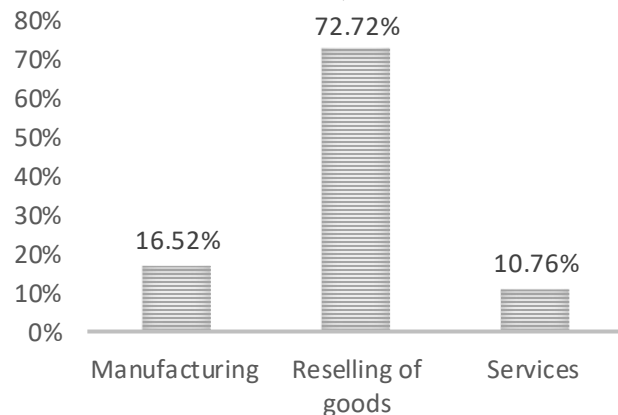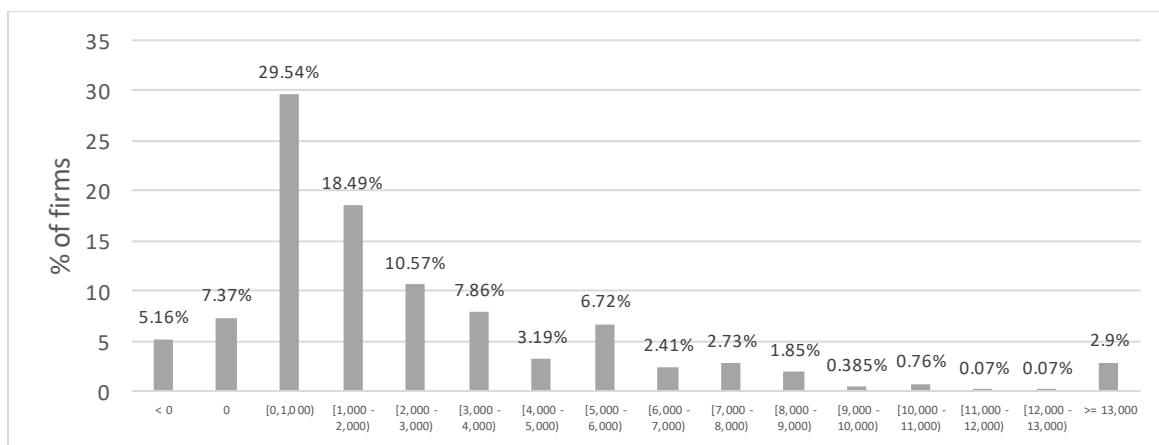
Figure 2.1 Number of workers (% of firms)

- 1 worker
- 2 workers
- 3 workers
- 4 workers

8.9% 2.3%

60.4%

27.5%

Figure 2.2 Main business activity (% of firms)

Manufacturing	16.52%
Reselling of goods	72.72%
Services	10.76%

Source: World Bank Informal Enterprises' Survey 2018.

According to the Mozambique Informal Sector Business Survey, during a regular month, the mean of total sales per worker[5] per month is 4,405 MZN and the median is 2,500 MZN. The mean profits per worker, per month, is 2,394 MZN and the median is 1,000 MZN.

Figure 2.3 Distribution of profits per worker per month

% of firms

< 0	0	[0,1000)	[1,000 - 2,000)	[2,000 - 3,000)	[3,000 - 4,000)	[4,000 - 5,000)	[5,000 - 6,000)	[6,000 - 7,000)	[7,000 - 8,000)	[8,000 - 9,000)	[9,000 - 10,000)	[10,000 - 11,000)	[11,000 - 12,000)	[12,000 - 13,000)	>= 13,000
5.16%	7.37%	29.54%	18.49%	10.57%	7.86%	3.19%	6.72%	2.41%	2.73%	1.85%	0.385%	0.76%	0.07%	0.07%	2.9%

The Mozambique 2018 *World Bank Enterprise Survey* indicates that, compared to formal microenterprises, informal firms sell about 14 times less, make 17 times lower profits and are 2-3 times less productive. Evidence suggests that key differences in performance between formal and informal firms are explained by factors like the quality of inputs (including human capital and business practices) as well as the returns of these factors (Aga *et al.*, 2019). However, there is a group of "high potential" informal firms that in their characteristics resemble formal businesses and produce on par with them, which correspond to 7.6% of informal firms. Informal firms might require different targeting than formal enterprises because of their lower levels of skills, human capital and access to finance (Aga *et al,* 2019).

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[5] Including both self-employed or workers working for somebody else (an informal micro firm).

3. Background information on Biscate

Self-employed services workers in Mozambique tend to advertise their services through signs in the streets or by talking to their limited circle of friends and family. Information asymmetry seems to represent an important barrier for such workers to access potential clients, who live in different areas, have access to different networks and in many cases, also struggle to find the clients. Consequently, the founders of Biscate decided to tap into this market opportunity and to create a Platform to allow workers to advertise their services to their potential clients. As most of these workers are not connected to the internet, Biscate uses a USSD technology that allows them to connect without internet network, using non-smart types of mobile phones. Biscate was launched in October of 2016. By March 2020, there were around 32,500 active workers in the platform.

Figure 3.1 Biscate Platform, Main Menu for Clients, 18 different services, April 2020
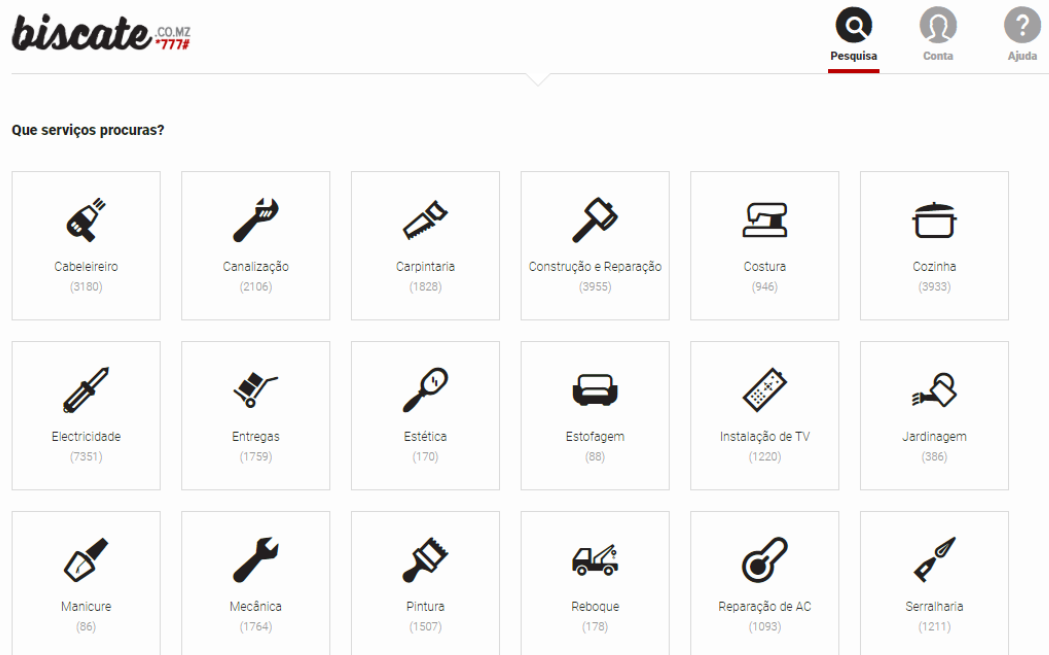
Occupations include: hair stylist, plumber, carpenter, construction & repair, tailor, cook, electrician, delivery, beautician, upholsterer, TV installer, gardener, manicure, mechanics, painter, tow driver, AC repair, and locksmith.

The World Bank (WB) Let's Work Program conducted a first round of surveys in 2017 on a sample of workers and clients using Biscate, randomly selected and stratified by province and occupation (workers). The data showed that a significant number of the total of 68,000 workers initially registered in the Biscate Platform were not active or had subscribed without knowing exactly the function of the platform. This was negatively impacting the efficiency of the Platform, since clients were contacting workers who were either not answering or answering but not able to perform the service. Following this insight, UX sent a message to all workers in the platform requesting them to confirm that they were willing to continue as active workers in the Platform. Workers who did

not verify their profile were hence removed from Biscate, reducing the number of workers in the platform from 68,000 to 23,000 workers[6].

Additionally, after finishing the first round of surveys, in early 2018, Biscate introduced a new feature that allowed clients to rate the workers' services. This feature aimed to provide more information on price and quality of services performed. The Biscate algorithm started displaying workers with better reviews on top of the list. This allowed this evaluation to also include quality as a variable for increased profits.

The 2nd round of surveys was conducted with a more gender balanced group of workers, after the ratings' feature was properly working in this app and after the list of workers available was properly cleaned. The survey was completed on July 2018, and the results from such surveys encouraged UX to start working on new features for the app. For instance, starting from April 2020, Biscate developers have been working and testing an algorithm to connect clients with workers who have already expressed their availability to perform the service, since the best-ranked workers may not always be available. This feature will rapidly match the client with a set of available workers, disclosing their ranking information.[7]

As showed above, this evaluation has been an iterative process, where both WB and UX have learned and adapted by looking at the results of the surveys and the evolution of the platform during this process, and by providing insights and recommendations to improve the Platform. Consequently, the Biscate Platform has enhanced its functionality over time, to fit the specific needs of workers and clients in Mozambique.

In this Report, the main findings for workers and clients using the Platform are presented. This analysis explores the potential of private sector initiatives to improve the functioning of the informal labor market, in terms of better jobs outcomes: volume of work, productivity and earnings.

4. Evaluation scope and methodology

In Mozambique, the services provided through the Biscate platform are generally purchased from unregistered individuals, who depend on informal networks to advertise their services and to look for clients. On the other hand, potential clients are largely unaware of these suppliers and face uncertainty about the quality and prices of the services available.

Given this asymmetry of information, demand for such services may be suppressed, which in turns lower the employment and earnings levels of workers performing such activities. This asymmetry of information could also act as a barrier to entry this market. Once consumers have found someone who works satisfactorily, they will likely continue to use that person and share the information through family and friendship networks. Thus, it is difficult for new providers to enter such markets. Internet-based information sharing services like Biscate have considerable potential to improve the functioning of the household services sector, raising demand, earnings and, possibly,

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[6] The latest estimate of workers using the platform is 32, 500 workers, as of March, 2020

[7] Additionally, based on the results from the 2nd round of WB surveys, Biscate developers are also working on adding a new feature, which can allow workers to register in more than one primary occupation, as well as change their primary occupation profile shown in the Platform. This feature will allow workers to expand their potential clients' portfolio by performing multiple occupations, according to their specific set of skills.

productivity, while increasing the volume of work in this sector (some of which might be due to displacing unpaid household labor).

To evaluate different potential contributions of the Biscate initiative, this study follows a group – or "cohort" – of people over time, to measure outcomes resulting from different exposures to a program[8]. The evaluation follows the target population (a sample of the Biscate users – both workers and clients) over two years. This approach facilitates the analysis of multiple outcomes at the same time; however, it cannot prove causality between the use of Biscate and the outcomes observed, especially considering the lack of a control group to serve as counterfactual.

The first study hypothesis, regarding the supply side, is that workers using the service perform more work and increase their incomes because of using the platform. Furthermore, the increase is also a function of the quality of the work, as reflected in user-generated feedback. The study uses a before/after comparison of workers who join the platform and analyses the correlation between the workers' participation in the platform on their income levels and contracts.

The baseline data is collected through phone surveys of a random sample of workers who just registered in the platform, using recall questions to see what services they were selling in the previous week. This baseline reflects workers' outcomes before joining the Biscate platform. The first group (baseline W1) included 600 workers. A second group (baseline W2) included 269 workers. After six to nine months, there was a follow-up survey conducted with both groups, asking workers about their profits in the previous week, similarly to baseline surveys, with the difference of having been exposed to the platform for a number of months. 76% and 61% workers from the first and second group were successfully reached, respectively. It is relevant to mention that only 2% from the first cohort were female workers while the percentage for the second group was 33%. An "active worker" is defined as a worker who provided at least one service. Some of the workers were active at the baseline, at the follow-up, at both periods, or neither.

The same survey approach was adopted for the clients using Biscate, including a baseline and a follow-up survey. The baseline data is collected through a sample of clients as they join the platform (through the app). The survey included questions referring to the services they bought in the past month and what works they conducted themselves using unpaid household labor.

This study included also a gender analysis. At first there were few women workers registered in the Biscate platform because the occupations offered in the platform were traditionally male-dominated. In March 2017, the scope of the service was expanded to include new occupations, some of which are traditionally undertaken by women as well. Indeed, nine new occupations included in the platform also include women workers: gardener, tailor, hairdresser, delivery, kitchen worker, beautician, tow truck driver, upholsterer, and manicurist. While the main research question remains the same as for the other group (W1) (i.e., if women workers who use the service get more work and increase their incomes), the evaluation includes a gender specific analysis to understand differences in performance.

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[8] Similar to Observational Cohort Studies (OCS), that follow a group – or "cohort" – of people with defined characteristics to measure outcomes, resulting from different exposures to a condition, treatment, program, event and/or set of experiences. For instance, the Panel Study of Income Dynamics (PSID) is a longstanding OCS conducted in the USA, which studies a longitudinal panel survey of families living in this country, since 1968. However, in the case of the Biscate OCS, the panel is restricted to the workers and clients using the Biscate platform, which entails that the results could not be extrapolated to the general population in Mozambique and it is over a limited period of time.

5. Supply Side – Workers' Analysis

5.1 First Cohort of Workers' Analysis

The first survey conducted on the first cohort (W1) of workers[9] is based on a stratified random sampling of the overall population of individuals registered in Biscate, by occupation and by province. The weights for sampling workers and clients were computed weekly, according to the characteristics of the population (which also changes weekly due to new workers' and clients' registrations).

Over the period of January - August 2017, a total of **593** workers (W1) were successfully interviewed (Annex II - Table 1). Then, from December 2017 to March 2018, the same cohort of workers (W1) was contacted again for a follow-up interview, successfully reaching 76% of them (Annex II – Table 2). The analysis of the data shows that there was a small reduction in the number of Biscate-active workers. In the baseline measurement, 40% of the workers were active in the platform, while in the follow-up only around 37% of them were active. Additionally, the average number of services per worker, per week, diminished by 17%, from an average of 1.28 in the baseline measurement, to an average of 1.06 services per worker in the follow-up. In other words, follow-up interviews showed fewer active workers in the platform, and fewer services performed by workers.

However, the analysis shows positive results for workers in terms of profits and revenues. The average active worker's profit doubled and the average active worker's revenue more than doubled. This is related to the fact that the workers increased the number of hours worked in the platform. In other words, even if, with time, workers performed less services, they were longer ones and with higher revenues. It is important to note that the workers were asked about services performed (not specifically related to the platform) hance it might include also activities performed outside of the Biscate platform.

Table 5.1. Cohort W1, Baseline and Follow-up (Per active worker, per month)

	Baseline	Follow-Up	Variation
Average number of services offered	1.3	1.1	-19%
Average hours worked	11.4	44.9	293%
Average profit (MZN)	3161.2	5953.2	88%
Average revenue (MZN)	4095.7	10071.4	146%

Averages for each period correspond exclusively to active workers, defined as those who provided at least one service.

Note: According to the WB Informal Enterprises' Survey, the average profit per worker[10] in the Mozambican Informal Sector, per month, is 2,394 MZN

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[9] This first group of workers consisted of mason, carpenter, plumber, locksmith, AC technician, painter, mechanic, electrician, and TV installer.

[10] Including both self-employed informal workers or workers employed by an informal micro firm.

5.2 Second Cohort of Workers' Analysis

The W2 sample included 9 different occupations: gardeners, tailors, hairdressers, delivery services, kitchen workers, beauticians, tow truck drivers, upholsterers, and manicurists. The first survey of this cohort was conducted between August 2017 to March 2018. In the initial stage **269** workers[11] were successfully interviewed (see Annex II - Table 5), who were contacted again for a follow-up interview, from June to July 2018, successfully reaching 61% of them (164 workers, see Annex II - Table 6). There are some results that follow the same trend as in W1 cohort. For instance, there is a meaningful increment in terms of profits and revenues, between baseline and follow-up results, since the average revenue per worker more than doubled and the average profit per worker increased around 67%, as shown in Figure 5.

On the other hand, the W2 cohort showed more positive results in terms of the number of active workers[12] and number of services per worker. In the case of active workers, the number increased from 52 active workers to 75, and the average number of services offered per worker also increased of around 12%. These results are different to the ones observed for the cohort W1, since the W1 cohort exhibited a contraction in the number of active workers and services performed per worker. In simple terms, the analysis from both cohorts of workers (W1 and W2) show an increment in the average level of revenues and profits between both measurements, but only the W2 cohort showed an increment in the number of active workers and services per worker as well.

Table 5.2. Cohort W2, Baseline and Follow-up
(Per active worker, per month)

	Baseline	Follow-Up	Variation
Average number of services offered	1.2	1.3	12%
Average hours worked	8.1	16.0	97%
Average profit (MZN)	1427.1	2382.2	67%
Average revenue (MZN)	1484.6	3517.7	137%

Averages for each period correspond exclusively to active workers, defined as those who provided at least one service

Note: According to the WB Informal Enterprises' Survey, the average profit per worker in the Mozambican Informal Sector, per month, is 2,394 MZN

5.3 Compiled workers' analysis

The results for the variables of interest of the analysis conducted on the compiled database (W1 + W2) follow a similar pattern as the Cohort W2, as expected since this represents 73% of the whole sample. In the compiled database, female workers represented 20% of the total. The average number of services declined in 11% but the hours increased, which suggests that workers engaged

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[11] The target was 300.
[12] Workers who provided at least one service

in services with a longer duration. In addition, revenues and profits increased in 127% and 74%, respectively. This suggests a positive effect of the usage of Biscate App for workers that provided services through it.

Table 5.3. Descriptive Analysis for W1 and W2, Baseline and Follow-up
(Per active worker, per month)

	Baseline	Follow-Up	Variation
Average number of services offered	1.3	1.1	-11%
Average hours worked	10.7	36.0	236%
Average profit (MZN)	2788.6	4846.5	74%
Average revenue (MZN)	3534.7	8040.3	127%

Averages for each period correspond exclusively to active workers, defined as those who provided at least one service.

It is important to notice that around 4 out of every 10 workers interviewed were not active at any of the periods (baseline and follow-up). Furthermore, 20% of the 862 workers were only active at the baseline survey, and 20% of them were only active at follow-up. Of the remaining workers, 116 were active at both surveys (baseline and follow-up), meaning only about 13.5% from the total of 862 workers interviewed in the surveys. This constrains the size of the database, since a significant portion of the observations have missing values in relevant variables such as revenues and profits, given the lack of services performed during the week of the interviews.

5.3.1 Baseline Survey Analysis, All Workers

This section presents the results of a series of regression analysis to understand what variables are correlated with workers' profits and with the number of services performed, during the week of the baseline survey. A Poisson Regression is used. The dependent variable is defined by the number of services performed by the worker in the previous week. We use an OLS when the dependent variable is defined as the total of workers' profits earned during the previous week. It is important to notice that the second regression only considers workers who actually performed services, excluding individuals who did not work during the week of reference from the analysis. For both models, the independent variables are the same: the level of education, age, tenure, a dummy indicating if they are working in their main area of specialization (main occupation) and a dummy for male gender. Finally, it is important to recall that errors[13] are clustered at the provincial level.

According to the regression results, only the variable "years of experience" (tenure) has a positive and significant correlation with the number of services offered at baseline. The coefficient suggests that tenure increases the number of services performed. This might imply that workers with more experience are getting more work opportunities in the platform. On the other hand, a higher level of education is associated with a lower level of profits. This result can be explained by the fact that

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[13] Residual variable produced by a statistical or mathematical model

the Biscate platform is targeted to services that do not require high formal education degrees, rather good technical skills acquired on the job.

Table 5.4. Predictors of Number of Services and Total Profits at Baseline

	(1)	(2)
		Total profits
	Number of services provided	(MZN)
Level of education	0.00761	-918.7*
	(0.183)	(-2.067)
Age	-0.000150	200.6
	(-0.0266)	(1.182)
Male	0.231	2,518
	(1.256)	(1.782)
Number of people in the HH	0.0222	-190.7
	(1.240)	(-0.843)
Tenure	0.00261***	-12.44
	(3.643)	(-1.509)
Main profession	-0.0204	1,681
	(-0.0731)	(1.664)
Constant[14]	-1.236**	2,280
	(-2.499)	(0.452)
Observations	609	242
R-squared		0.041

(1) Poisson Regression where the dependent variable is number of services offered; (2) Ordinary Least Squares Regression where the dependent variable is total profits (LCU)
Robust t-statistics (OLS) and z-statistics (Poisson) in parentheses; *** p<0.01, ** p<0.05, * p<0.1

5.3.2   Follow-up Survey Analysis, All Workers

The same analysis with the same parameters is performed for the follow-up surveys. The results suggest that women perform proportionally more services than men. However, it is important to recall that only 1 out of every 10 workers in the sample is a woman. Results also show that, similarly to the case of the regression results for the baseline survey, workers' years of experience (defined as tenure) is positively associated with the number of services performed by the worker, in the week of the interview. In this case, the *Main Profession* dummy variable is showing a positive and significant coefficient, which indicates that workers who perform services in their

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[14] Poisson regression estimate when all variables in the model are evaluated at zero.

main area of expertise, performed a significantly higher number of services. This is intuitive since it suggests that the more specialized workers are performing more work, relative to the ones who are relatively less experienced in that occupation. In terms of the regression conducted with the level of profits as a dependent variable, the estimations from the OLS model suggest that an increase in the number of years of experience (tenure) is positively and significantly associated with a higher level of profits. These results are in line with the ones observed for the baseline surveys.

Table 5.5 Predictors of Number of Services and Total Profits at Follow - Up

	(1) Number of services	(2) Total profits
Level of education	-0.00749	-118.2
	(-0.412)	(-0.561)
Age	0.00599	-37.23
	(0.529)	(-0.163)
Male	-0.297*	1,670
	(-1.775)	(1.411)
Number of people in the HH	0.000577	-298.5
	(0.0353)	(-0.857)
Tenure	0.00206*	45.55**
	(1.773)	(3.062)
Main profession	1.111***	1,352
	(4.378)	(1.046)
Constant	-1.769***	2,192
	(-4.498)	(0.404)
Observations	611	241
R-squared		0.065

(1) Poisson Regression where the dependent variable is number of services offered; (2) Ordinary Least Squares Regression where the dependent variable is total profits (LCU)
Robust t-statistics (OLS) and z-statistics (Poisson) in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

6. Demand Side - Relationship between Workers Ratings and Demand

The analysis in this section uses the latest Biscate Platform database, as of February 2020, including the information from all the workers registered as of that date (a total of 32,511 workers, from the 18 occupations included in the Platform). Unfortunately, most of the workers don't have comments or ratings posted on their profile, meaning that there is currently still limited information available for clients on quality of services provided. About 85% of the workers do not have comments posted on their profiles, and around 99% of them don't have ratings posted.

The 15% of the workers (about 4,900) who do have at least one comment on their profile, have also a higher number of requests for their services. On average, workers with at least one comment on their profile have 13 times more requests than workers without comments. Also, workers with ratings on their profiles have around 5.7 times more requests than workers without ratings. This seems to suggest that the rating feature is indeed important in securing more works. However, the direction of causality is not proved. For instance, workers performing more services can be more likely to receive comments or ratings, and this could also explain the results shown in the table below.

Table 6.1 Relationship between workers ratings and demand for their services

A) Number of workers in the database
32,511

B) Workers with at least one comment by clients
4,905
15%

C) Average number of requests per worker	
13	(workers with at least one comment)
3	(average for all workers)
1	(workers without comments)

D) Workers with at least one rating by clients
359
1%

E) Average number of requests per worker	
	(workers with at least one positive rating, at least one serviced rated with 4 stars or more)
17	(workers with at least one ratting)
3	(average for all workers)
3	(workers without comments)

7. **Clients' Data Analysis**

The regressions analysis conducted on clients' data shows that educational levels are correlated with higher probabilities of hiring at least one paid service, as well as with hiring more paid services in general, as Figure 10 shows. A positive coefficient for columns 2 and 4 means that an increase in one unit of the predictive variables (sex, nationality, age, level of education etc.) leads to an increase in the number of paid and unpaid services. For column 3 and 4, a positive coefficient means that predictive variables increase the probability of hiring a service. However, it is important to remember that the coefficients for these models are not useful to provide the magnitude of the marginal effects and only the signs from the significant coefficients can be used to draw conclusions (such as level of education for predicting the chance of hiring at least one service) (Wooldrige, 2012).

Table 7.1 Predictors for the demand for services on Biscate at Baseline

Independent variables	Baseline - Clients (t0)			
	Number of paid services	Hiring at least one (paid) service	Number of unpaid services	Performing at least one (paid) service
Sex	-0.047	-0.294**	0.026	0.005
Nationality	0.182**	0.495***	0.104	-0.2
Age	0.002	0.008	0	-0.01
Being from a big city (Maputo or Sofala)	0.036	0.217	0.145**	0.355***
Level of education	0.115***	0.242***	0.038**	0.085**
Number of people in the household	-0.0407***	-0.072*	-0.018	-0.021
Responsible for the household	0.012	-0.143	-0.034	0.037
Constant	-0.287***	-2.24***	0.124	-1.049**

Note:OLS estimations on the variables of interest (n=448); all individual controls included; standard errors clustered at the province level.
*p<0.1; **p<0.05; ***p<0.01
Probit regressions

Table 7.2 Predictors for the demand for services on Biscate at Follow - Up

Independent variables	Follow-up - Clients (t1)			
	Number of paid services	Hiring at least one (paid) service	Number of unpaid services	Performing at least one (paid) service
Sex	0.111	0.389	-0.07	-1.236***
Nationality	-0.183*	-0.095	0.019	(omitted)
Age	0.005	0.01	0	0.009
Being from a big city (Maputo or Sofala)	0.102	0.286	-0.0144	-0.294
Level of education	0.028***	0.068***	0	0.084*
Number of people in the household	-0.001	0.018	0.002	0.039
Responsible for the household	0.06	0.159	0.011	0.581***
Constant	-0274*	-2.282***	0.073	-3.088***

Note:OLS estimations on the variables of interest (n=448); all individual controls included; standard errors clustered at the province level.
*p<0.1; **p<0.05; ***p<0.01
Probit regressions

The t-test results suggest that the total number of clients' paid services declined over time (Figure 11). However, this is also associated with a faster decline in the number of household services performed by themselves. The total number of hours that the clients worked to perform services at

home decreased from 3.17 to 0.23 hours per week (significant at 5% level). Meanwhile, they were still hiring 5.5 hours of paid services per week, in the follow-up measurement, compared to 6.9 hours in the baseline measurement. This implies that the ratio *hired services / services conducted by themselves* decreased, which allowed clients to have more time to perform other activities. Another important finding is that, between one survey and the other, clients registered on Biscate did not decrease the probability of hiring at least one service, while the probability of clients performing the services themselves decreased. Therefore, Biscate may have increased the efficiency of this market allowing clients to hire services when needed, instead of performing services themselves because of lack of information.

Table 7.3 T-Test Clients - demand for services on Biscate
T-test - comparison of means - Clients

Variable	Groups	Observations	Mean	SD	P-value
Number of hired services	Baseline (t=0)	453	0.328	0.703	0.0463**
	Follow up (t=1)	446	0.246	0.516	
Number of unpaid services	Baseline (t=0)	453	0.331	0.638	0.0000***
	Follow up (t=1)	453	0.013	0.199	
Having contracted at least one (paid) service (dummy var.)	Baseline (t=0)	453	0.225	0.418	0.3914
	Follow up (t=1)	451	0.201	0.401	
Having performed at least one (unpaid) service (dummy var.)	Baseline (t=0)	453	0.251	0.434	0.0000***
	Follow up (t=1)	453	0.006	0.081	
Number of hours of the paid services contracted	Baseline (t=0)	453	6.931	62.512	0.6517
	Follow up (t=1)	453	5.454	30.603	
Number of hours of the unpaid services performed	Baseline (t=0)	453	3.176	28.074	0.0277**
	Follow up (t=1)	453	0.228	4.654	
Ratings for prices of the paid services performed	Baseline (t=0)	102	3.893	0.828	0.0063***
	Follow up (t=1)	93	4.224	0.84	
Ratings for quality of the paid services performed	Baseline (t=0)	102	4.289	0.789	0.0017***
	Follow up (t=1)	96	4.625	0.687	
Ratings for duration of the paid services performed	Baseline (t=0)	102	3.696	1.022	0.0000***
	Follow up (t=1)	96	4.381	0.895	
Number of services (t=0 + t=1)	At least one paid service	899	0.288	0.619	0.0000***
	At least one unpaid service	899	0.173	0.5	
Number of services (t=0)	At least one paid service	453	0.328	0.703	0.9525
	At least one unpaid service	453	0.331	0.638	
Number of services (t=1)	At least one paid service	446	0.246	0.516	0.0000***
	At least one unpaid service	446	0.013	0.2	
Total hours spent in services (t=0 + t=1)	At least one paid service	906	6.193	49.194	0.0112**
	At least one unpaid service	906	1.702	20.165	
Total hours spent in services (t=0)	At least one paid service	453	6.931	62.512	0.2445
	At least one unpaid service	453	3.176	28.074	
Total hours spent in services (t=1)	At least one paid service	453	5.454	30.603	0.0004***
	At least one unpaid service	453	0.228	4.654	

*p<0.1; **p<0.05; ***p<0.01

8. Conclusions

This study examined several outcomes of informal workers using a platform that matches them with clients in Mozambique. The two cohorts of workers surveyed experienced an increase in their revenues and profits between the baseline (just before registration) and the follow-up measurement. These results can be considered an encouraging indication that the platform has the potential to add value to the economy and labour market of Mozambique.

At the same time, we acknowledge that these results could be influenced by external factors, not attributable to the Biscate platform, such as the business cycle or increased individual performances not driven by the platform. Future studies could include a control group with workers and clients who do not have access to Biscate and some form of randomization to determine the magnitude of the causal effects of the platform, which could also vary across time.

Some important aspects emerging from this study are nonetheless noteworthy such as: (i) workers' years of experience in the same occupation were positively associated with the number of services provided, while the years of education were negatively associated with the level of profits (for the first cohort of workers). The positive relationship of experience rather than formal schooling could be driven by the importance of technical and other on the job skills in the services sector, which may not be provided by formal general education.

Another important aspect that was part of the study conducted was analyzing the effect of the rating system, which was introduced before the round of surveys on the second cohort of workers. As of February 2020, around 99% of the workers did not have a rating posted on their profiles, indicating that this feature might need further refining. That said, the remaining 1% who have at least one rating posted have performed around 6 times more services than those without scores. This indicate the importance of mechanism to assess quality in work performed for services workers, or more generally the importance of information mechanisms in labor market intermediation.

The pooled results for clients using Biscate show that, between baseline and follow-up, clients reduced the number of hired services from workers ("biscateiros"), which indicates that the overall demand for hired services did not increase. However, it is important to mention the significant increase of the number of paid services relative to unpaid services, meaning that clients are more likely to hire workers instead of performing the services by their own. Specifically, at baseline, for each unpaid service, 1.3 paid services were demanded while at follow-up, this number increased to 13.9.

9. Annex: Additional Tables

Table 1 Interviews Baseline W1A

Interview dates, 2017	Contacts attempted	Females interviewed	Males interviewed	N. of validated questionnaires	Response rate
January_23-January_29 2018?	128	1	41	42	33%
February_06-February_12	140		47	47	34%
February_20-February_26	145		54	54	37%
March_6-March_12	168		49	49	29%
March_20-March_26	215	4	73	77	36%
April_3-April_9	77		27	27	35%
April_17-April_23	134		50	50	37%
May_1-May_7	127	2	56	58	46%
May_15-May_21	112	3	62	65	58%
May_29-June_4	108		46	46	43%
June_5-June_11	12		12	12	100%
June_12-June_18	39		14	14	36%
June_19-June_25	30		21	21	70%
June_26-July_02	13		5	5	38%
July_03-July_09	28		5	5	18%
July_17-July_23	4		4	4	100%
July_24-July_30	38		9	9	24%
July_31-August_06	24		8	8	33%
Total	**1542**	**10**	**583**	**593**	**38%**

Table 2 Follow up interviews W1A

Interview dates, 2017 and 2018	Females interviewed	Males interviewed	Number of validated questionnaires
Dez_04-Dez_10		45	45
Dez_11-Dez_17		43	43
Dez_18-Dez_24	3	93	96
Fev_05-Fev_11		31	31
Fev_12-Fev_18		26	26
Fev_19-Fev_25	3	19	22
Jan_15-Jan_21		4	4
Jan_22-Jan_28		105	105
Jan_29-Fec_04	1	11	12
Mar_12-Mar_18	2	50	52
Mar_05-Mar_11		12	12
Total	**9**	**439**	**448**

Table 3 - Individual Fixed Effects (W1)

Investigating Biscate - W1 - Different Dependent - Individual Fixed Effects

	I Profit	II Revenue	III Cost	IV Hours	V Profit x Hour
Exposure	363.8	722.6***	125.9	2.259*	71.35*
	0.26	3.32	1.51	2.04	2.53
Obs	768	767	749	753	768
Adj. R2	0.0203	0.1160	0.0399	0.0482	0.0880

*p<0.1; **p<0.05; ***p<0.01

Table 4 - T-Test (W1)

T-test - comparison of means - Workers 1					
Variable	Groups	Observations	Mean	SD	P-value
Services provided	Baseline (t=0)	448	0.55	0.891	0.0025***
	Follow up (t=1)	448	0.397	0.546	
Total profit (per worker) of the services provided	Baseline (t=0)	448	1340.7	8293.78	0.1305
	Follow up (t=1)	448	2219.2	9061.06	
Marginal profit (Profit per hour per worker of the services provided)	Baseline (t=0)	448	99.09	494.21	0.0042***
	Follow up (t=1)	448	211.87	669.52	
Total costs (per worker) of the services provided	Baseline (t=0)	448	519.28	3094.29	0.0256**
	Follow up (t=1)	448	1466.55	8416.19	
Total revenue (per worker) of the services provided	Baseline (t=0)	448	1737.03	9802.4	0.0309**
	Follow up (t=1)	448	3754.29	17151.25	
Total hours of the services provided	Baseline (t=0)	448	4.85	12.1	0.0042***
	Follow up (t=1)	448	16.75	86.94	

Note:*p<0.1; **p<0.05; ***p<0.01

Table 5 - Interviews Baseline W2A

Interview dates, 2017 and 2018	Contacts attempted	Females interviewed	Males interviewed	Number of validated questionnaires	Response rate
July_31-August_06	56		8	8	14%
Ago_07-Ago_13	86	5	5	10	12%
Ago_14-Ago_20	111	2	16	18	16%
Ago_21-Ago_27	112	4	3	7	6%
Ago_28-Sep_03	147	3	16	19	13%
Sep_04-Sep_10	117	7	18	25	21%
Sep_11-Sep_17	122	1	9	10	8%
Sep_18-Sep_24	122	18	24	42	34%
Sep_25-Out_01	105	7	14	21	20%
Out_02-Out_08	100	14	9	23	23%
Out_09-Out_15	88	6	14	20	23%
Out_16-Out_22	46	2	3	5	11%

Out_23-Out_29	59	6	8	14	24%
Out_30-Nov_5	57	2	9	11	19%
Nov_27-Dez_03	50	5	5	10	20%
Dez_04-Dez_10	32		5	5	16%
Dez_11-Dez_17	46		4	4	9%
Dez_18-Dez_24	28	4	3	7	25%
Fev_26-Mar_04	19	2	8	10	53%
Total	**1503**	**88**	**181**	**269**	**18%**

Table 6 - Interviews follow-up W2A

Interview dates, 2018	Females interviewed	Males interviewed	Number of validated questionnaires
Jul_02-Jul_08	7	28	35
Jun_11-Jun_17	4	8	12
Jun_18-Jun_24	23	43	66
Jun_25-Jul_01	21	30	51
Total	**55**	**109**	**164**

Table 7 - T-Test Results (W2)

T-test - comparison of means - Workers 1					
Variable	Groups	Observations	Mean	SD	P-value
Services provided	Baseline (t=0)	164	0.37	0.05	0.026**
	Follow up (t=1)	164	0.59	0.06	
Total profit (per worker) of the services provided	Baseline (t=0)	164	452.50	249.99	0.0970*
	Follow up (t=1)	164	1089.42	289.80	
Marginal profit (Profit per hour per worker of the services provided)	Baseline (t=0)	164	80.49	18.80	0.0598*
	Follow up (t=1)	164	179.52	48.95	
Total costs (per worker) of the services provided	Baseline (t=0)	164	21.65	15.61	0.0373**
	Follow up (t=1)	164	519.30	237.44	
Total revenue (per worker) of the services provided	Baseline (t=0)	164	470.73	251.31	0.0359**
	Follow up (t=1)	164	1608.72	478.10	
Total hours of the services provided	Baseline (t=0)	164	2.58	0.73	0.0604*
	Follow up (t=1)	164	7.33	2.41	

Note:*p<0.1; **p<0.05; ***p<0.01

Table 8. - Stepwise – W1

	(1) treat_only	(2) tenure - 1	(3) tenure - 2	(4) Tenure - 3	(5) Educ - 1
Exposition	878.5	965.0	963.9	901.2	994.9
	(1.07)	(1.17)	(1.20)	(1.07)	(1.25)
Tenure		12.14***	11.60***	9.504**	
		(6.79)	(7.33)	(3.78)	
Female		-1125.8*	-740.3	-1063.1*	-1020.2*
		(-2.53)	(-1.89)	(-2.49)	(-2.69)
Education		-312.0	-312.4	-305.4	-357.0*
		(-1.95)	(-1.95)	(-2.04)	(-2.42)
Self Employed		822.4			1085.8
		(1.48)			(1.96)
Main Profession			1171.7*		1588.7**
			(3.01)		(4.08)
Obs.	896	896	896	896	896
Adj. R2	0.00144	0.0164	0.0174	0.0163	0.0107
Estimator	ols	ols	ols	ols	ols
Fixed Eff.	No	No	No	No	No
Cluster SE	province	Province	Province	Province	Province
Dep. Var	Profit	Profit	Profit	Profit	Profit

Table 9. Provincial fixed effects / including outliers (W1)

Investigating Biscate - W1 - Different Dependent

	I	II	III	IV	V
	Profit	Revenue	Cost	Hours	Profit x Hours
Exposure (Biscate)	888.7	2093.4	1026.2	11.98*	108.4**
	-1.07	-1.68	-2.2	-2.31	-3.49
Woman	586.9	981.2	453.5	1.333	74.10**
	-1.09	-1.33	-1.74	-0.75	-3.91
Age (years)	48.87	34.56	-19.91	0.298	-0.192
	-0.91	-0.43	(-0.49)	-0.89	(-0.07)
Education	-310	-511.9	-189.2	-2.151*	16.12
	(-2.01)	(-2.22)	(-2.09)	(-2.37)	-2.22
HH Size	-119.5	-133.6	10.99	-0.401	-7.479
	(-1.28)	(-1.08)	-0.2	(-0.73)	(-0.86)
Tenure	10.01**	17.22**	8.277*	0.0855	0.147
	-4.42	-3.33	-2.45	-1.89	-0.87
Self Empl.	718.4	1653.6*	961.6**	4.319	-2.259
	-1.33	-2.47	-3.61	-1.83	(-0.04)
Main Occup.	1376.2*	2007.3**	546.5*	5.144	102.5**
	-2.57	-4.25	-2.62	-2.06	-4.06
Province FE	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)
Gaza	-821.8*	-117.8	716.6***	51.72***	-262.2***
	(-3.00)	(-0.35)	-7.45	-25.94	(-29.58)
Inhambane	-3854.8***	-3768.5***	161.7***	-8.827***	-231.1***
	(-25.16)	(-23.33)	-4.86	(-6.74)	(-29.45)
Manica	-3063.7***	-2657.6***	378.8**	-4.406	-237.8***
	(-16.76)	(-11.73)	-3.45	(-2.16)	(-25.18)
Maputo	-2950.4***	-2338.9***	722.6***	-5.925*	-194.9***
	(-17.19)	(-11.18)	-8.38	(-2.82)	(-23.86)
Nampula	-3508.1***	-3315.5***	49.17	-6.605***	-186.3***
	(-46.66)	(-30.30)	-0.81	(-7.12)	(-41.31)
Niassa	-3366.3***	-3309.4***	52.32	-6.355**	-271.9***
	(-16.78)	(-11.58)	-0.51	(-3.72)	(-21.72)
Sofala	-907.2***	-243.6	654.5***	2.825**	-184.8***
	(-5.95)	(-1.08)	-6.5	-3.54	(-18.90)
Tete	-3261.6***	-3213.5***	65.46	-8.739***	-264.5***
	(-24.63)	(-21.49)	-1.3	(-6.56)	(-29.41)
Zambezia	-2124.7***	-799.7**	1320.1***	-1.466	-264.1***
	(-18.59)	(-3.41)	-8.83	(-0.90)	(-26.49)
Constant	2583.2	2221.9	-421.7	2.805	56.12
	-1.59	-1.09	(-0.60)	-0.59	-0.7
Obs.	896	896	896	896	896
Adj. R2	0.0235	0.0171	0.00941	0.0485	0.00985
Estimator	ols	ols	ols	ols	ols
Fixed Eff.	Yes	No	No	No	No
Cluster SE	province	province	province	province	province
Dep. Var	Profit	Revenue.	Cost	Hours	Profit x Hours

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10. Provincial fixed effects / no outliers (W2)

Investigating Biscate - W2 - Different Dependent

	I	II	III	IV	V
	Profit	Revenue	Cost	Hours	Profit x Hours
Exposure (Biscate)	714.2**	1183.8***	466.0***	5.542*	75.19
	-3.5	-5.12	-7.56	-2.85	-1.47
Woman	1060.4	1066.3	8.851	5.852	30
	-1.47	-1.16	-0.03	-1.99	-0.7
Age (years)	130.6	190.5	59.77*	0.527	-2.706
	-1.31	-1.93	-3.1	-1.72	(-0.82)
Education	-23.04	75.22	97.33	-0.0618	26.65
	(-0.10)	-0.3	-1.94	(-0.21)	-1.74
HH Size	114.3	151.4	37.3	-0.295	-8.844
	-0.71	-0.82	-1.23	(-0.43)	(-0.74)
Tenure	4.503	12.99	8.473	0.0472	0.432
	-1.2	-1.36	-1.38	-1.11	-1.41
Self Empl.	895.8	1196.7*	303.0**	5.121**	-28.04
	-2.17	-2.55	-3.53	-4.62	(-0.55)
Main Occup.	-200	129.9	320.6	3.666	109.4
	(-0.26)	-0.16	-2.12	-1.65	-1.58
Province FE	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)
Gaza	-2522.7***	-3681.7**	-1157.5	-13.22**	1.202
	(-5.64)	(-4.44)	(-2.18)	(-3.74)	-0.07
Inhambane	-623.1***	-345.8	277.5*	15.87***	26.66
	(-7.57)	(-2.09)	(-2.49)	-20.93	-1.94
Manica	-2002.0*	-2150.1*	-150.2	-0.991	-23.85
	(-2.87)	(-3.10)	(-1.31)	(-0.48)	(-0.85)
Maputo	-721.9	-1001.4*	-278	-5.619***	91.08***
	(-2.24)	(-2.28)	(-1.19)	(-10.63)	-6.45
Nampula	-1213.9***	-1053.3***	167.9*	-6.163***	-10.41
	(-21.97)	(-10.48)	-2.53	(-11.55)	(-0.73)
Niassa	-921.4**	-961.5	-40.91	-9.975**	5.62
	(-3.61)	(-2.24)	(-0.21)	(-3.35)	-0.25
Sofala	-1505.8**	-1433.9**	68.35	-5.476***	-2.408
	(-4.44)	(-3.44)	-0.43	(-4.83)	(-0.12)
Tete	-700.3**	-524.0*	174.1	-4.458*	295.2***
	(-3.31)	(-2.62)	-1.36	(-2.60)	-42.26
Zambezia	-1310.7***	-2055.1**	-744.4	-5.272*	64.74*
	(-6.55)	(-4.00)	(-2.23)	(-2.38)	-2.96
Constant	-3924.6	-7133.2**	-3193.0**	-17.85	-145.4
	(-1.69)	(-3.43)	(-4.64)	(-1.28)	(-1.50)
Obs.	327	327	327	327	327
Adj. R2	0.0568	0.0808	0.0739	0.0711	-0.00324
Estimator	ols	ols	ols	ols	ols
Fixed Eff.	Yes	No	No	No	No
Cluster SE	province	province	province	province	province
Dep. Var	Profit	Revenue.	Cost	Hours	Profit x Hours

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11. - Stepwise – W2

	(1) treat_only	(2) 3 step - 1	(3) 3 step - 2	(4) 3 step - 3	(5) 3 step - 4	(6) 3 step - 5
Exposition	638.1**	741.9***	662.6**	704.5***	619.6**	646.1
	(4.43)	(6.73)	(4.43)	(4.86)	(3.36)	(2.17)
Tenure		2.849	9.878*	10.15	10.01	10.02
		(0.77)	(2.45)	(2.09)	(2.26)	(2.03)
Female		724.5	547.7	584.0	684.6	546.7
		(1.62)	(1.48)	(1.42)	(1.53)	(1.52)
Self Employed					788.6	
					(1.85)	
Obs.	326	325	325	325	325	325
Adj. R2	0.00534	0.0639	0.0218	0.0228	0.0310	0.0225
Estimator	ols	ols	ols	ols	ols	ols
Fixed Eff.	No	No	No	No	No	No
Cluster SE	province	Province	Province	Province	Province	Province
Dep. Var	Profit	Profit	Profit	Profit	Profit	Profit

Table 12. Gender & Exposure to Biscate – W2

Intestigating Biscate - W2A - Interaction

	(1) Tot. Profit	(2) Tot. Revenue	(3) Tot. Cost	(4) Tot Hours	(5) Tot. Profit x Hours
Exposition	-1.486	-2.741	-1.256	0.00871	-0.108
	(-0.22)	(-0.24)	(-0.24)	(0.27)	(-0.41)
Woman	-2816.6	-7673.1	-4856.5	0.987	-295.8**
	(-1.14)	(-1.31)	(-1.36)	(0.06)	(-2.49)
Exp x Gender	7.105	25.03	17.93	-0.0399	0.950
	(0.70)	(1.00)	(1.16)	(-0.60)	(1.67)
Age (years)	74.03	145.6**	71.59**	0.509	-12.03*
	(1.39)	(2.65)	(2.48)	(0.96)	(-2.25)
Education	72.31	223.8	151.5	-1.102	40.23*
	(0.43)	(1.01)	(1.73)	(-1.80)	(1.99)
HH Size	38.15	107.9	69.74	-0.476	-28.72
	(0.30)	(0.66)	(1.14)	(-0.36)	(-1.71)
Tenure	26.00	53.85	27.85	0.165	2.101***
	(1.45)	(1.56)	(1.55)	(0.92)	(3.96)
Self Empl.	1286.8**	2050.7***	763.9***	10.57*	102.4
	(3.20)	(3.60)	(3.36)	(2.15)	(0.96)
Main Occup.	627.8	867.4	239.6	4.914	134.4**
	(1.05)	(0.97)	(0.75)	(1.50)	(2.26)
Obs.	163	163	163	163	163
Adj. R2	0.117	0.196	0.212	0.0752	-0.00276
Estimator	ols	ols	ols	ols	ols
Fixed Eff.	No	No	No	No	No
Dep. Var	Tot. Profit	Tot. Revenue	Tot. Cost	Tot Hours	Tot. Profit x Hours

t statistics in parentheses
$^* p < 0.1$, $^{**} p < 0.05$, $^{***} p < 0.01$

Table 13. Total Cost – Oaxaca Blinder twofold decomposition

	-1	-2
	Tot. Cost 1	Tot. Cost 2
overall		
Gr. 1	660.9	660.9
	-1.21	-0.95
Gr. 2	452.0*	452.0*
	-2.17	-2.25
Diff.	208.9	208.9
	-0.32	-0.24
Explained Diff	303.4	2.775
	-0.84	-0.01
Unexplained Diff	-94.43	206.1
	(-0.21)	-0.36
explained		
Exposition	-39.02	-47.27
	(-1.39)	(-0.88)
Age	114.6	105.9
	-1.17	-1.16
Education	-12.42	-14.28
	(-0.45)	(-0.45)
HH Size	40.53	18.17
	-1.01	-0.52
Tenure	109.5	121.1
	-0.42	-0.42
Self Empl.	87.97*	91.04*
	-2.08	-2.03
Main Occup.	2.21	0.149
	-0.25	-0.02
unexplained		
Exposition	4582.7	9907.8**
	-1.45	-2.77
Age	4936.5	5130.3
	-1.14	-1.08
Education	3543.8	3222.8
	-0.64	-0.53
HH Size	2526.7	2091.5
	-1.71	-1.55
Tenure	400.8	52.56
	-0.3	-0.04
Self Empl.	2275.3	3006.6
	-1.11	-1.2
Main Occup.	600.8	1000.2
	-0.73	-0.94
Obs.	163	163
Grouping	sex	sex
Obs. 1	55	55
Obs. 2	108	108
Fixed Eff.	No	Yes
Decomp.	2way	2way

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