LSETF

LAGOS STATE EMPLOYMENT TRUST FUND

REPORT ON LAGOS MSME LOAN PROGRAMME:

Beneficiaries and Patterns of Default (2017 -2021)

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INTRODUCTION

This report was borne out of a research partnership between the Lagos State Employment Trust Fund (LSETF) and the Abdul Latif Jameel Poverty Action Lab (JPAL) affiliated researchers. The objective of the partnership is a rigorous and independent impact evaluation to understand how the MSME Loan Program affects beneficiaries and how the design of communication and collections strategies affects the sustainability and long-run impacts of the program.

In view of the above, the following researchers independently co-authored this report which describes the behavior of over 12,000 borrowers, from the inception of the MSME Loan Programme in 2017 through 2021.

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EXECUTIVE SUMMARY

This report contains an analysis of Lagos State Employment Trust Fund (LSETF) MSME Loan Programme beneficiaries and their repayment behavior. It describes the behavior of over 12,000 borrowers, from the inception of the MSME Loan Programme in 2017 through 2021. The analysis in Section 1 focuses on the loan portfolio, default rates and patterns of repayment behaviour, while Section 2 assesses the predictable determinants of loan default.

The key findings from our analysis are:

- The typical business in the loan portfolio operates in the wholesale/retail trading sector. Beneficiaries are roughly equally split by gender, and are 42 years old on average.
- The majority of loans are granted to existing microenterprises (ME loans), but most of the value of the portfolio is loaned to small and medium enterprises (SME loans). The average size of ME loans has been N375,000, the average MES (microenterprise start-up) loan has been N175,000, and the average SME loan is almost ten times larger, at N3.18 million;
- The overall default rate in the portfolio is around 60%. The proportion of non-performing loans is highest on average for MES loans. SME borrowers with past-due amounts appear more likely to continue repayments than the ME or MES borrowers in similar situations.
- Almost all borrowers make at least one payment, suggesting that they understand that payments are due and are technically capable of making payments. However, most defaulting loans become delinquent early in the repayment period (within the first 6 months) and never catch up.
- Both demographic features of borrowers and the credit score assigned at the time of application are predictive of loan performance.
- However, more stringent screening based on owner demographics and the current credit scoring system are likely to yield only small improvements in the overall performance of the loan portfolio.

THE MSME LOAN PROGRAMME PORTFOLIO

The data we analyzed covers 12,485 loans made by LSETF to micro, small, and medium businesses from 2017 to 2021. This section describes who the LSETF borrowers are, their locations, and what businesses they are engaged in.

Who are beneficiaries?

The beneficiaries of the LSETF MSME Loan Programme are small businesses in Lagos State. Four business sectors – trading, services, fashion and beauty, and agriculture – make up a combined total of over 77% of all beneficiaries (Figure 1). The single most funded group are wholesale and retail traders with businesses that were already established at the time of loan application; this group constitutes almost one-third (31.53%) of all businesses that benefited from LSETF loan programs.

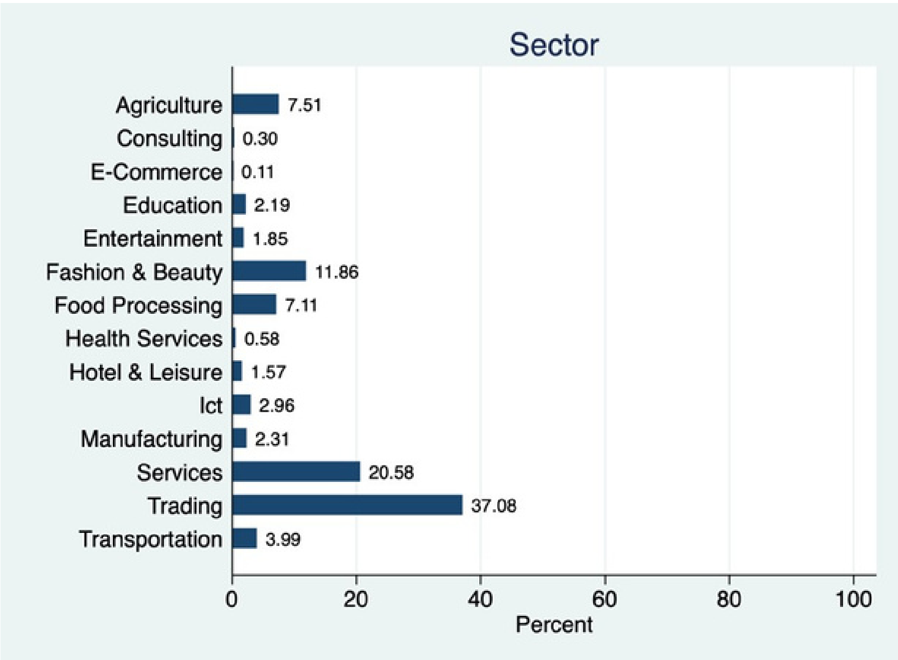

Figure 1: Loan beneficiary's business sectors

The business owners in the LSETF portfolio are split roughly equally by gender (51.91% female). The median age is 42 (Figure 2), and 42.5% are married.

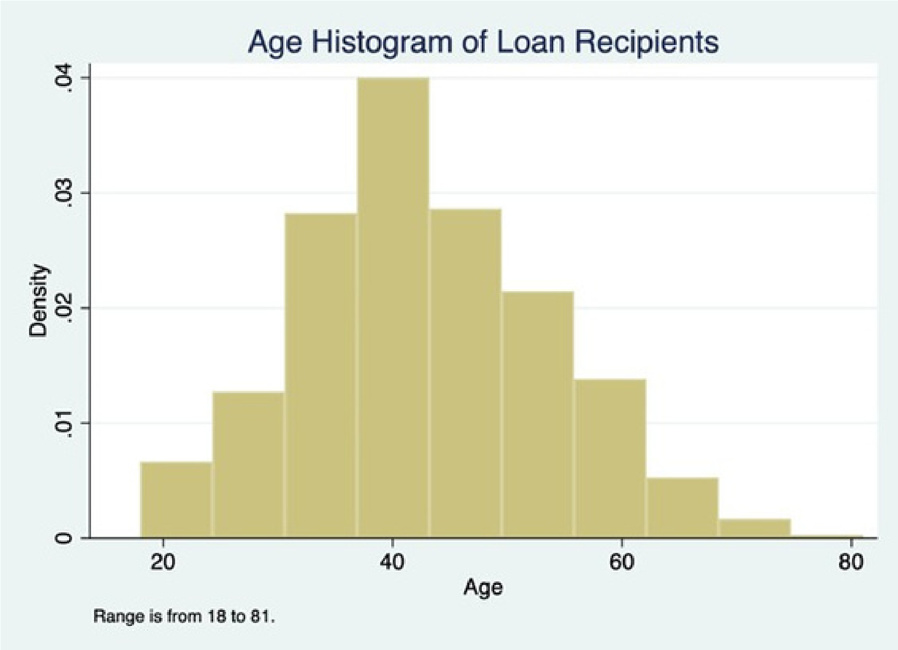

Figure 2: Age of business owners

Beneficiary businesses are spread throughout Lagos State (Figure 3). The top six out of Lagos' twenty local government areas (LGAs) have a combined share of more than half of LSETF-supported businesses. Specifically, 55.16% of these beneficiaries are located in Alimosho, Ikorodu, Mushin, Ifako-Ijaye, Kosofe, and Oshodi-Isolo local government areas.

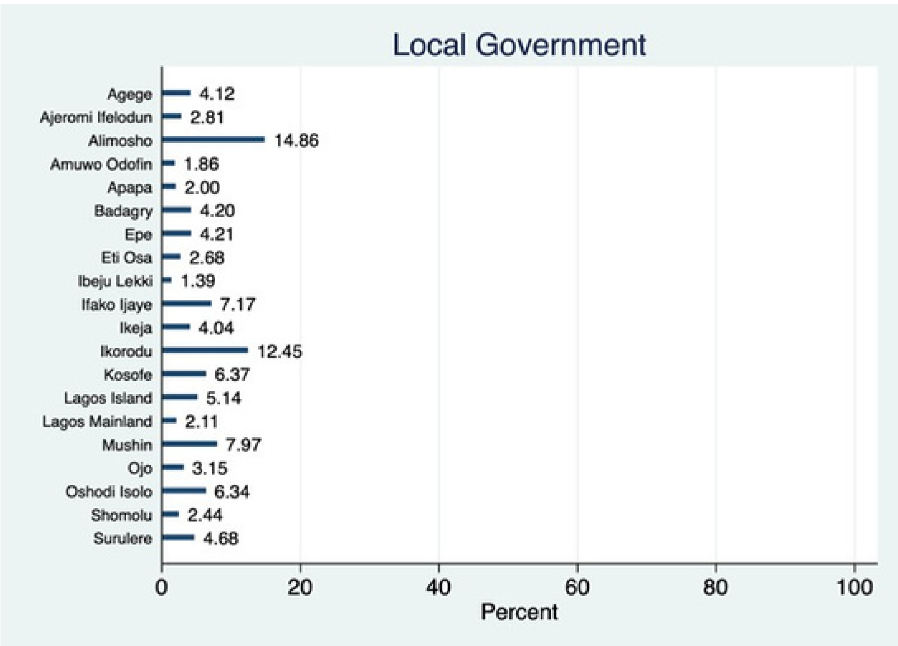

Figure 3: Loan shares by local government area

What type of loans has LSETF made?

About three-quarters (74.32%) of loans were made to existing microenterprises (ME loans), 13.37% were made to new or start-up microenterprises (MES loans), about one-tenth (11.27%) were made to small and medium enterprises (SME loans), the rest (1.04%) to "nano" enterprises (Figure 4).

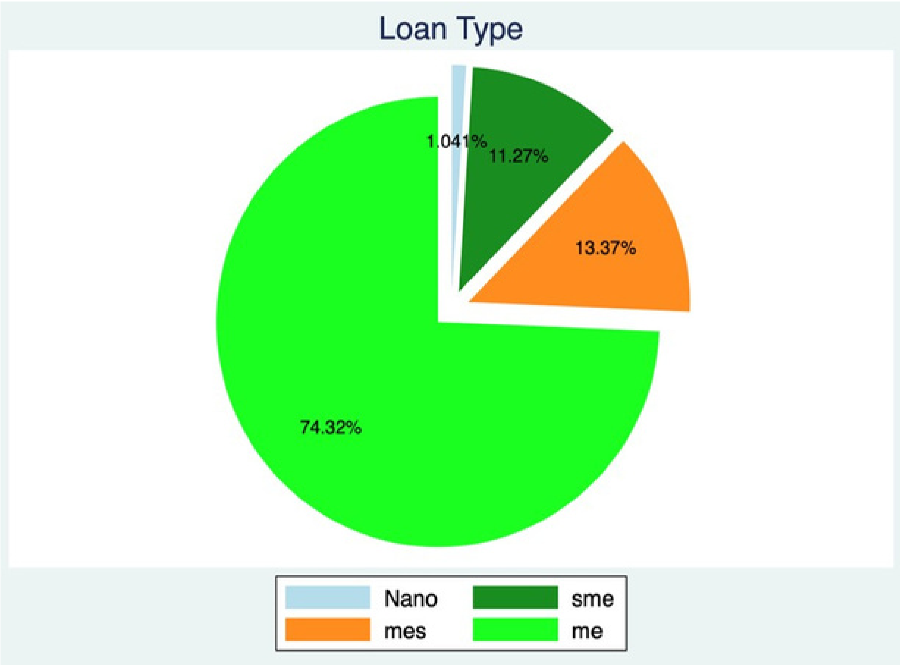

Figure 4: LSETF loans by type

The data shows that the Loan Programme commenced with a focus on existing microenterprises (ME loans) in 2017 and 2018 (Figure 5). While ME loans continue to make up the majority of loans over time, the number of new disbursements has fallen. Disbursement across all loan types hit a bottom in 2020 amidst the COVID-19 pandemic. Available data as of Q1 of 2022 suggests that the number of total loans granted has not returned to pre-pandemic levels.

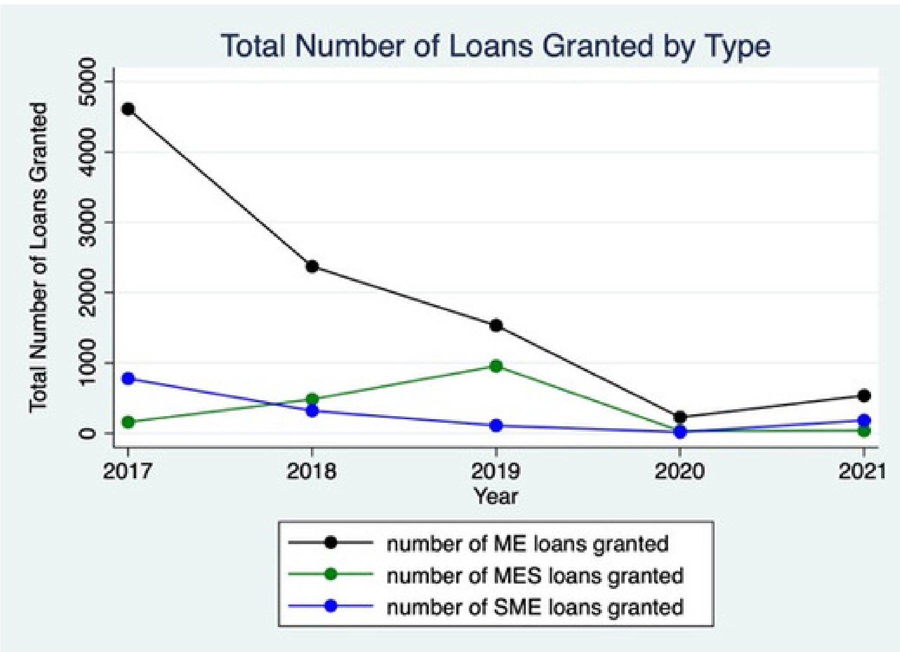

Figure 5: Loans types granted to businesses

While a relatively small number of loans are to SMEs, they make up a larger part of the portfolio by loan value due to their much larger average loan size (Figure 6). Over the entire period (2017 - 2021), the average size of ME loans has been N375,000, the average MES loan has been N175,000, and the average SME loan is almost ten times larger, at N3.18 million.

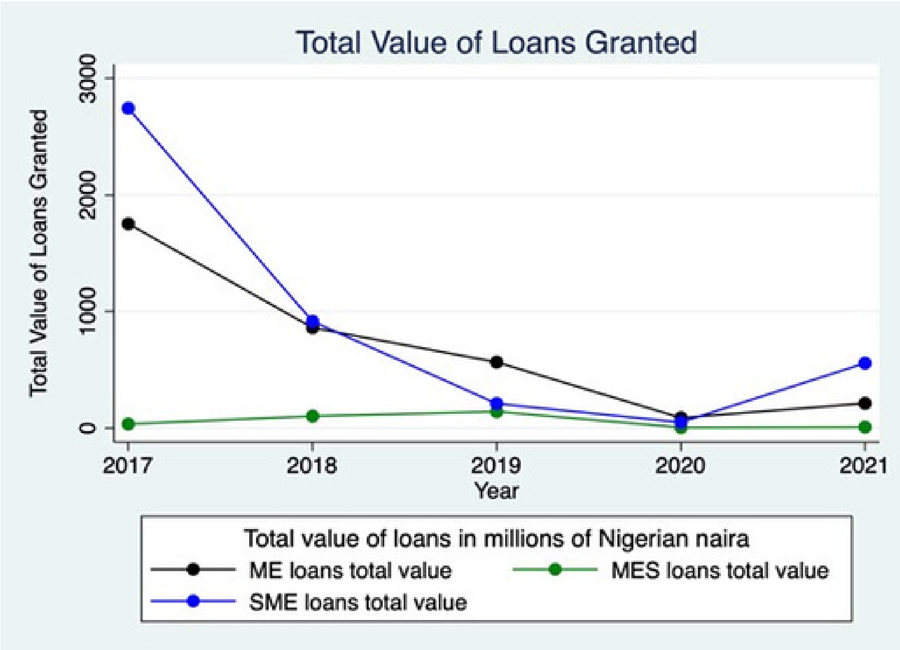

Figure 6: Value of LSETF loans to businesses

What type of loans has LSETF made?

Next, we describe loan repayment behaviours and explore patterns of default. We use the following indicators to evaluate loan performance:

1. Performing status: the proportion of non-performing loans, defined as the percentage of borrowers with at least one day past due;
2. Days past due: the time beyond the loan repayment date in days;
3. Percent past due: the ratio of the loan amount that is past due to the total value of the loan disbursed;
4. Time to default: the (number of) days between disbursement and becoming past due.

Figure 7 shows that non-performance rates have been relatively high across all categories of loans and all years of the Loan Programme. We found that the proportion of non-performing loans is highest on average for MES loans. The default rates for MES loans were approximately 70% in 2017, 79% in 2019, and 22% in 2021. For ME loans, the default rates were 59% in 2017, 60% in 2019, and 40% in 2021. The default rates for SME loans were 69% in 2017, 60% in 2019, and 18% in 2021. While the graph shows a lower rate of non-performance in 2021 in all loan categories, this does not necessarily imply an improvement in loan delinquency rates. Rather, it reflects in part the recent repayment moratorium to borrowers by LSETF due to the COVID-19 pandemic and the disbursement of new loans that are yet to be due for full repayment.

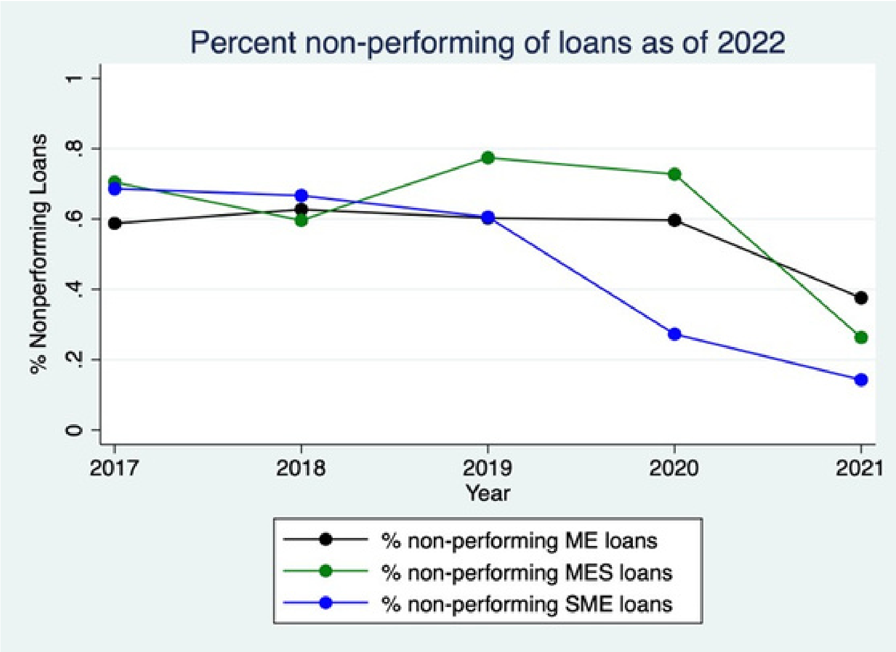

Figure 7: Proportion of non-performing loans by type and disbursement year

Figure 8 shows how many months it takes for the beneficiaries to default under each loan category. Most defaults taking place within the first 12 months after disbursement. This is more pronounced under ME and MES loans. For SME loans, the rate of default is flatter over time, and fewer beneficiaries stop paying in the first 12 months. There are two main takeaways from this analysis. First, there are few beneficiaries who never make a payment, which suggests that they understand that it is a loan and are technically capable of making a payment. Second, one-third of ME and MES borrowers default in the first six months after disbursement, but only 7% of SME borrowers do. Beneficiaries under the SME category are more likely to continue making payments after having previously had past due amounts.

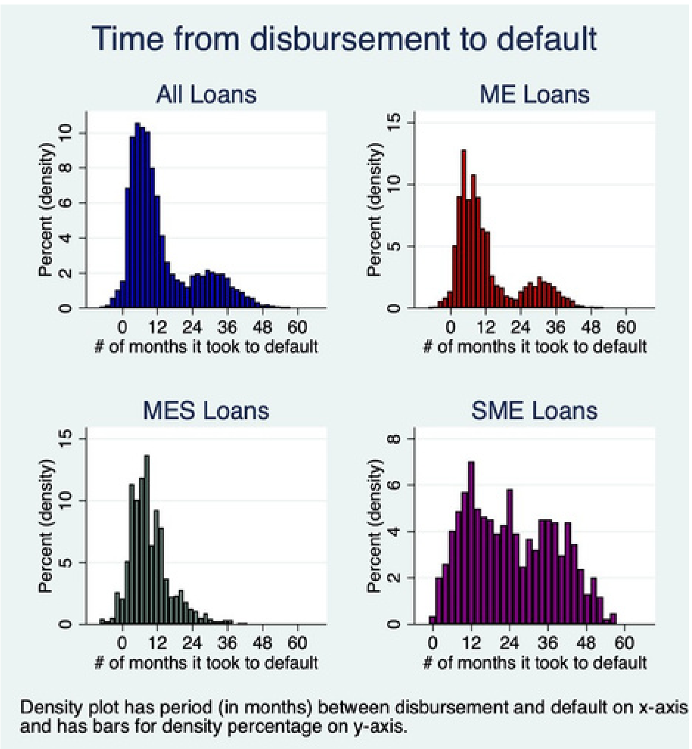

Figure 8: Length of time from disbursement to default

DETERMINANTS OF REPAYMENT BEHAVIOR

While the previous section describes repayment behavior in the overall LSETF portfolio, in this section, we analyze whether the characteristics of borrowers that are observable by LSETF at the time of the lending decision are predictive of those repayment behaviors.

The characteristics available to us in the data for all or most borrowers were:

- Loan characteristics: loan type, year of disbursement
- Demographics of the business owner: gender, age, marital status
- Business characteristics: sector of operation, location
- Credit score: score provided by Indicina or PwC based on evaluation of the application

Correlates of loan performance

We estimated several regression models that relate these characteristics to outcomes such as performing status, past-due percent (PDP), and willingness/capacity to repay. Figures 9 and 10 show the results of Model 1, which relate loan performance to the loan type, disbursement year, owner demographics, and business sector. The point estimates in these figures show the level of the outcome associated with each characteristic relative to an omitted base category – for instance, the first value on the left of Figure 9 shows that MES loans are about 11.5 percentage points more likely to be non-performing compared to ME loans, which are the base category. Bars show 95% confidence intervals around each estimate. Characteristics with estimates to the left of the red line are associated with better performance (e.g., less likely to be non-performing), while those to the right are associated with worse performance (e.g., more likely to be non-performing).

Figure 9 shows the role of loan type and owner demographics from Model 1 (which also controls for sector and year, not shown here). We see that both MES and SME loans are more likely to be non-performing than ME loans and have a higher average amount past due as a percent of the disbursed loan value. MES loans are 11.5 percentage points more likely to be non-performing and have 16 percentage points higher PDP. SME loans are 6.5 percentage points more likely to be non-performing and have a 4.5 percentage point higher PDP.

Owner demographics are also strongly predictive of loan performance, with men and married people having worse repayment records and older business owners (age 40 and above) having better repayment records. All of these estimates hold other factors constant – for instance, male borrowers are more likely to have non-performing loans even when controlling for the fact that they are also more likely to have an SME loan and less likely to be married compared to female borrowers.

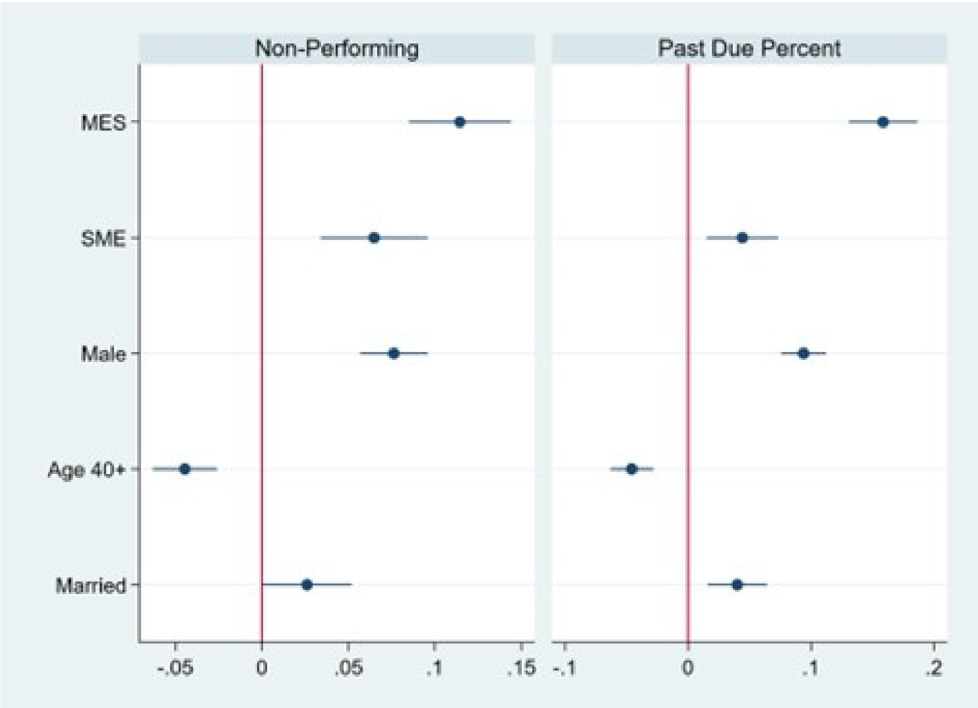

Figure 9: Demographic predictors of loan status
Note: Coefficients for loan type describe outcomes relative to ME loans. Bars show 95% confidence intervals around coefficients. Estimates are from a regression model that includes loan type, borrower demographics, business sector, and year of disbursement.

Figure 10 shows more results from Model 1 describing the relationship between business sectors and repayment behavior. Each point estimate shows the outcome level relative to the most common sector, the trading sector. While performance does vary across sectors, the wide error bars that overlap with the red line at zero show that these differences are mostly not statistically significant. However, fashion and beauty, food processing, and services all have statistically significant differences in their past-due percentages relative to trading ranging from 3 - 5 percentage points lower.

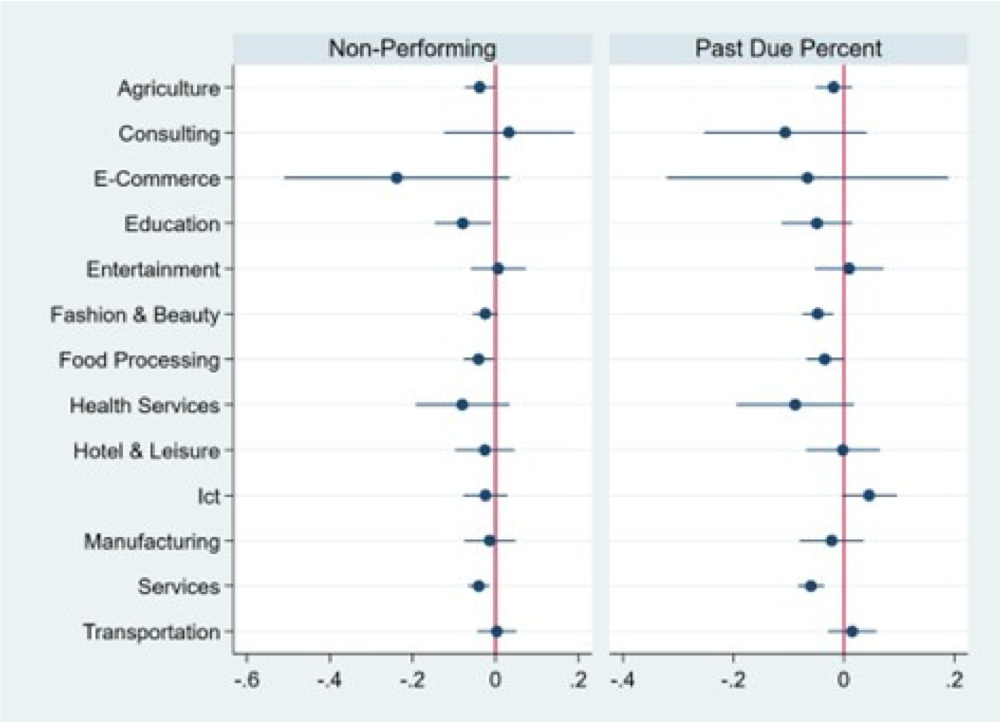

Figure 10: Sector predictors of loan status
Note: Coefficients describe outcomes relative to business loans in the trading sector. Bars show 95% confidence intervals around coefficients. Estimates are from a regression model that includes loan type, borrower demographics, business sector, and year of disbursement.

Finally, we looked at the credit score based on the loan application assessment. In Figure 11, we show the predictive value of the score alone and then of the score in combination with other observable features of the loan application (borrower demographics, business sector, and year). We see that score alone (in blue in Figure 11) is predictive of both performing status and past due percentage – a 10-point higher score corresponds to a roughly 3.5 percentage point lower probability of the loan being non-performing, and a 4.3 percentage point lower past due percentage. However, we could not interpret the scores for around one-third of the loan portfolio – these were either measured on a different evaluation scale that was not comparable to the main one or missing entirely from the data we received. Loans with missing or zero scores performed substantially better, suggesting that they were selected in some alternative way that the research team is unaware of.

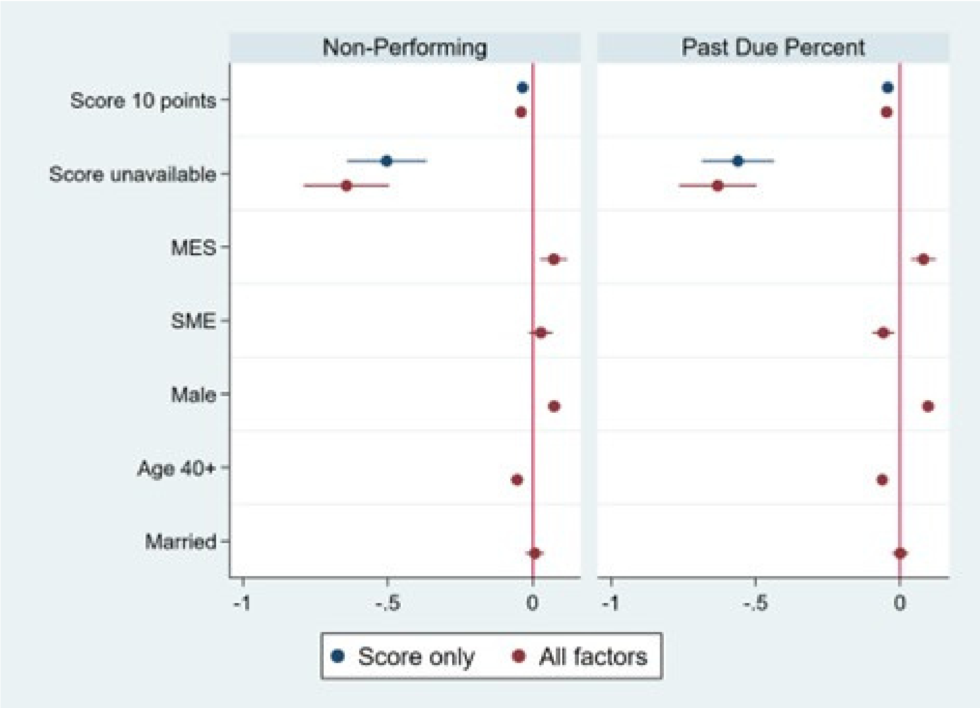

Figure 11: Loan status and credit scores
Note: Coefficients for sectors describe the probability of outcome relative to loans to businesses in the trading sector. Bars show 95% confidence intervals around coefficients. Estimates are from a regression model that also includes the year of disbursement.

Although credit score is a statistically significant predictor of loan performance, the size of the explanatory power is small relative to the portfolio's overall performance. For instance, if all loans in the current portfolio with scores below 65 had been rejected, the average credit score for disbursed loans would be raised from 71 to 77. Our coefficient estimate above implies that the overall non-performance rate would decrease by less than three percentage points from a base of 60% non-performance. Our analysis suggests, therefore, that applying more restrictive standards under the current credit scoring system might make very small improvements in the portfolio's overall performance, but is not likely to yield large improvements.

CONCLUSION

The insights from the report have highlighted the strength and weaknesses of our credit review system. In view of that, LSETF is looking at going a step further to research other ways of ensuring that we significantly de-risk lending to small businesses while ensuring optimal prediction of repayment behaviour.

We are sincerely grateful to the JPAL team of affiliated researchers for the independent research and objective insights which will in no small measure ensure that we make data-backed policy decisions towards ensuring access to finance for Nano, Micro, Small & Medium Enterprises in Lagos state.

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