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Published in:
World Development

DOI:
[10.1016/j.worlddev.2022.105812](https://doi.org/10.1016/j.worlddev.2022.105812)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2022

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Czura, K., Englmaier, F., Ho, H., & Spantig, L. (2022). Microfinance loan officers before and during Covid-19: Evidence from India. *World Development*, 152, Article 105812.
<https://doi.org/10.1016/j.worlddev.2022.105812>

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Microfinance loan officers before and during Covid-19: Evidence from India



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ARTICLE INFO

Article history:

Accepted 4 January 2022

Available online 10 January 2022

JEL Codes:

J22

M54

G21

Keywords:

Microfinance

Loan officers

Covid-19

Work organization

India

ABSTRACT

The Microfinance industry has been severely affected by Covid-19. We provide detailed insights into how loan officers, the key personnel linking the lender to its borrowers, are affected in their performance and adapt their work to the pandemic. We use administrative records of an Indian Microfinance Institution and detailed panel survey data on performance, performed tasks, and work organization to document how the work environment became more challenging during the pandemic. Loan officers operate in a setting where work from home is hard to implement due to the nature of the tasks and technological constraints. The usual performance indicators appear to be mainly driven by external factors such as the nation-wide debt moratorium. Loan officers worked similar hours, but engaged less in planning activities and completed fewer of the usual tasks. Work perceptions and mental health of loan officers reflect these changes, and perceived stress was particularly high during the period of the debt moratorium.

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1. Introduction

With over 140 million borrowers worldwide the microfinance sector provides access to financial services to low-income households who are not served by traditional banks. The Covid-19 pandemic has created substantial new challenges for work environments in general and for the microfinance sector in particular. Beyond the immediate health and economic consequences, the pandemic has reversed recent trends of lowering poverty rates and has exacerbated pre-existing inequalities, leading to severe challenges for microfinance institutions. Collapsing household incomes during the pandemic, especially in the low-income population as documented e.g. by Kesar, Abraham, Lahoti, Nath, and Basole (2021), have drastically reduced the repayment capacity of a typical microcredit borrower (Ogden & Bull, 2020), threatening the collapse of the entire microfinance sector (Malik et al., 2020).

To bring financial services to the poor, microfinance institutions (MFIs) rely on frequent personal interactions (Breza, 2014; Giné &

Karlan, 2014) and social pressure to ensure traditionally high repayment rates (Besley & Coate, 1995; Czura, 2015; Czura, John, & Spantig, 2020). These tasks are carried out by MFIs' key personnel: loan officers. Loan officers travel to remote locations to interact with existing borrowers and acquire potential new borrowers, assess borrowers' creditworthiness, disburse loans, provide advice in financial matters, and collect loan repayments. Hence, loan officers link the lender to its borrowers and establish a trusting relation. Despite their crucial role in the functioning of an MFI, little is known about how loan officers organize their work and juggle these different tasks in general.

With the pandemic, loan officers face new challenges: In addition to the reduction in borrowers' repayment capacity, lockdowns and restrictions to social gatherings pose severe limitations on the usual operations (Pandey & Ojha, 2020). Malik et al. (2020) speculate about additional adverse effects of the pandemic: If pre-pandemic work incentives are still in place that tie loan officers' earnings to borrowers' repayment, loan officers may excessively pressure already vulnerable borrowers to repay. This would risk destroying the hard-to-build, trusting relation with the lender needed for any future interaction.

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In this study, we document how loan officers adapt to this challenging environment. We partner with one Indian MFI to provide detailed insights into the work environment of over 500 loan officers before and during the pandemic, both in terms of observed outputs and inputs. We combine administrative records of monthly performance indicators (outputs) with panel survey data on tasks and work organization (inputs) collected in December 2019 and December 2020. To better understand work and mental health issues during the pandemic in 2020, we collected additional survey data in May, June/July and October.

In India, the initial policy responses to the pandemic most relevant to the microfinance industry were a restrictive nation-wide lockdown (March 25 – May 31) and a debt moratorium (March 27 – August 31). The lockdown prohibited leaving home such that large parts of the population could not work implying a drastically reduced repayment capacity for microfinance borrowers.¹ The moratorium allowed all banks, including MFIs, to grant repayment breaks to their borrowers for installment payments of loans, to protect borrowers from unwilling default and debt traps. Many borrowers made use of this option (Rhyne & Duflos, 2020) and benefitted from repayment breaks while their livelihoods were severely affected by Covid-related restrictions. However, the moratorium did not cover MFIs themselves and their loan-based re-financing such that it further increased liquidity concerns and uncertainty in the sector with MFIs facing pressure from several sides.

We quantify the considerable responsibility loan officers carry. In terms of outputs, loan officers' performance is reflected in several dimensions: Pre-Covid, they handled on average 556 borrowers with an average total outstanding portfolio of 11.26 million INR (about 125,000 EUR at the time of writing). Each month, they managed to ensure timely repayment of over 90% of the repayment installments due. In terms of inputs, loan officers' tasks can be broadly classified into three categories: loan disbursement, collection of repayments, and acquisition of new borrowers. Loan officers completed tasks pertaining to all three categories on a daily basis and spent most of their time on the tasks of preparing group meetings as part of repayment collection (16%) and of identifying new borrowers (16%).

We document that previously used performance indicators, while still of interest to the operations of the MFI, become meaningless as incentive devices during the pandemic as they mainly appear to be driven by external circumstances such as the moratorium. For example, we document a drastic drop in repayment rates from 92% in March to 3% in April 2020. Only after the moratorium ended on August 31, these rates improved but remained at 22 percentage points below pre-pandemic levels. In terms of inputs, loan officers performed fewer of their usual work tasks, but neither the relative time spent on the tasks nor the overall working time changed. It is thus not surprising that we find evidence of demotivation as manifested in fewer planning activities and lower self-reported effort, which may also be driven by changes in the prioritization of tasks during the pandemic. The periods of the lockdown and the debt moratorium appear to be especially difficult: Workloads and perceived stress were increasing over six weeks in June and July. Reported ease of working deteriorated further from the lockdown and moratorium period until the end of 2020. In contrast, loan officers felt better supported by the organization and the additional measures it took and were less afraid of the bankruptcy of the MFI towards the end of the year. Similarly, perceived stress decreased as compared to mid-year.

Our results mainly contribute to two strands of literature, the impact of Covid on microfinance and the work of loan officers.

¹ For example, the urban poor, a population comparable to microfinance borrowers, experienced daily income drops of 60% (Lee, Sahai, Baylis, & Greenstone, 2020) to nearly 90% (Afridi, Dhillion, & Roy, 2020) during the lockdown.

The former has predominantly been described with respect to the industry and institutions as a whole (Ogden & Bull, 2020; Pandey & Ojha, 2020; Mujeri, Nargis, Akhter, & Muneer, 2020; Malik et al., 2020; Zheng & Zhang, 2021; Peprah, 2021) and the issues that borrowers face (Malik et al., 2020; Ogden & Bull, 2020). We focus on the crucial role loan officers play, especially during the pandemic. Smooth operations depend on staff's dedication in interacting with existing and potential borrowers. Operations can hence be severely affected by frustration, demotivation, and ultimately the lack of staff, which is why understanding loan officers' concerns is important.

To the best of our knowledge, Malik et al. (2020) is the only paper that also interviews loan officers about their experiences at the onset of the Covid lockdown. While most of their survey questions to 200 loan officers in Pakistan focus on borrower welfare, the authors also document high levels of stress of loan officers related to the drop of repayment rates and potential job loss. On the one hand, we confirm these findings and thereby contribute to a rapidly growing literature documenting negative effects of the pandemic on subjective well-being and mental health in various populations.² On the other hand, we go beyond their analysis in several ways. First, we provide a detailed description of loan officers' work tasks and organization allowing for an in-depth understanding of their perspective. Second, we complement our detailed panel survey data of loan officers with monthly administrative records that provide a more institutionally-focused perspective on their work. Third, by spanning a comparatively long time period, we can describe the dynamics before, right after the onset and several months into the pandemic. Lastly, we speak to their hypothesis that adverse incentives for loan officers will harm existing social capital between the lender and its borrowers. Our partner MFI took measures to pause the high-powered incentive scheme during the pandemic, resulting in loan officers supporting their borrowers' repayment efforts without increased pressure.

More general than the current pandemic, we provide quantitative evidence of loan officers' work environment, their output, and time use. Previous quantitative studies have studied loan officers with a primary focus on their outputs. Given that large parts of the job consist of unsupervised fieldwork, both theoretical and empirical work has investigated how information asymmetries can be overcome with different incentive schemes (Fuentes, 1996; Aubert, de Janvry, & Sadoulet, 2009; Warning & Sadoulet, 1998; Behr, Drexler, Gropp, & Guettler, 2020) or job rotation (Hertzberg, Liberti, & Paravisini, 2010; Drexler & Schoar, 2014; Bhowal, Subramanian, & Tantri, 2021). In addition, other quantitative studies shed light on preferences of loan officers (Labie, Méon, Mersland, & Szafarz, 2015; Sagamba, Shchetinin, & Yusupov, 2013; Agier & Szafarz, 2013) and how preferences and other characteristics of loan officers such as gender or cultural background affect repayment rates and performance of loans (Beck, Behr, & Guettler, 2013; Agier, 2012; van den Berg, Lensink, & Servin, 2015; Fisman, Paravisini, & Vig, 2017).

How exactly loan officers work and which problems they might face has been described in qualitative studies. Providing insights from two Zambian MFIs, Siwale and Ritchie (2012) document that loan officers are asked to fill several roles at once, with a focus on debt collection, similar to our context. Dixon, Ritchie, and Siwale

² A large bulk of the literature investigating the general relationship of mental health and the pandemic focuses on early outcomes, in particular effects of lockdowns (e.g. Altindag, Erten, & Keskin, 2021 for Turkey, Durizzo, Asiedu, Van der Merwe, Van Niekerk, & Günther, 2021 for Ghana and South Africa, Fetzer, Hensel, Hermle, & Roth, 2020 for the US, and Sibley et al., 2020 for New Zealand). Consistent with experiences from previous pandemics (see Brooks et al., 2020 for SARS, Ebola, and H1N1), most studies report negative psychological effects, including (post-traumatic) stress symptoms and anxiety (see e.g. Rajkumar, 2020 for a review of early evidence during Covid).

(2007) provide a detailed description of loan officers' work in a Zambian MFI that faces high delinquencies, resulting in loan officers focusing predominantly on their role as 'debt collectors'. In general, loan officers often face substantial discretion in reaching their targets that can result in an enhanced possibility to serve the poor (Canales, 2011) or in practices at odds with MFIs' social mission (Maître, 2018). We complement this qualitative evidence with our time use data, quantifying the relative importance of tasks that loan officers complete. While both the work environment and the incentive structure changed during the pandemic, we find that priorities did not change.

Lastly, the paper broadly relates to the literature that focuses on issues related to working during the pandemic. Given the need for social distancing, many studies have focused on the ability to work from home (see e.g. Dingel & Neiman, 2020; Gottlieb, Grobovšek, Poschke, & Saltiel, 2021) pointing out that there exists substantial heterogeneity across jobs, sectors, and countries with work from home being possible in as little as 4% of jobs in low-income countries (Garrote Sanchez et al., 2021).³ For the majority of workers in developing countries who cannot work from home, the focus so far has been on labor market outcomes such as having a job or receiving payments.⁴

Going forward, loan officers as the direct link between lender and borrowers are likely to continue to be of crucial importance for MFIs' operations and merit more attention. With tight budgets that limit the scope for bonus payments, soft factors such as well-being can play an important role. We find that only 56% of loan officers feel supported by their manager and colleagues, despite that 73% report a more stressful work environment during the pandemic. Given that the health impact of the current pandemic will also be related to mental health, this should also be reflected in personnel policies, not only in MFIs, but more generally (Hamouche, 2020).

2. Background and data

The Indian lockdown severely limited movement for the entire month of April 2020, with many restrictions lasting until the end of May. These restrictions severely affected the microfinance industry. On the one hand, MFIs usually reach out to their borrowers through field staff traveling to the villages of the borrowers to collect loan repayments. Hence, loan repayment collection efforts by MFIs were severely restricted during the nationwide lockdown. On the other hand, many microfinance borrowers run small-scale businesses, such as corner stores, which were severely affected by the lockdown restrictions in place. Hence, borrowers faced substantial difficulties in meeting their repayment obligations. For the microfinance sector, these repayment problems were intensified by the government-mandated debt moratorium allowing borrowers to pause their repayment installments for up to six months, which created drastic changes in cash flows and added to the general uncertainty since MFIs' refinancing loans were not covered by the moratorium. This section lays out in detail how the microfinance industry in India was affected by the pandemic and the government responses to address it, and then presents our setting and data to study how the pandemic affected our partner MFI.

³ For example, Hasan, Rehman, and Zhang (2021) find that only 10% of jobs in Pakistan can be done from home, whereas substantial heterogeneity exists between megacities and urban or rural areas.

⁴ The most comprehensive study of labor market impacts at the onset of the pandemic in developing countries across the globe is likely Khamis et al. (2021). They conduct phone surveys in 39 countries from April to July 2020 and report job loss for a third of the respondents. They also find that 20% of the workers who continue to work report partial or no payments, which corresponds to reports of partial or no payments for April or May in our sample.

2.1. Covid-19 pandemic in India and general implications for MFIs

The first Covid-19 case in India was reported on January 30, 2020 (Andrews et al., 2020). Even though cumulative reported numbers stood at comparatively few cases (536) on March 24, 2020, a nationwide lockdown was announced, effective on March 25 (see also Fig. 1 for the timing of main events and data collection). Notably, the Indian lockdown was very strict: Severe restrictions applied to leaving the home, and all but essential transport, services, and factories were suspended.⁵ A few restrictions were lifted starting April 20 with e.g. banks and MFIs allowed to open again, but the nation-wide lockdown essentially remained in place until the end of May.⁶ Afterwards, a more decentralized and incidence-based approach was taken, wherein restrictions were lifted faster in low-incidence areas.

Even though the Finance Minister announced an economic relief package on March 24, the direct implications of the lockdown were drastic, especially for the working poor.⁷ Lee et al. (2020) conduct phone surveys with a representative sample of poor and non-migrant workers (1400 respondents) in Delhi between March and May and report a drop in income and days worked by 57% and 73%, respectively. Using a large-scale survey of nearly 5000 respondents across 12 states of India between April and May, Kesar et al. (2021) find that two-thirds of respondents lost their work. The few informal workers who were still employed during the lockdown experienced a larger than 50% drop in their incomes. Similarly, Afridi et al. (2020) conduct a phone survey of 413 respondents in India during April 2020, and report the pandemic's effects on the urban poor's economic livelihood, physical and emotional well-being. The vast majority (90%) of respondents were unable to continue working and those who were employed during the lockdown saw their daily income fall by 87%.

As part of the relief efforts, the Reserve Bank of India (RBI) announced a debt moratorium on March 27, for initially three months (until May 31), that was later extended until the end of August 2020. The moratorium was applicable to all loans with a fixed duration and repayment schedule, that were outstanding as of March 1, 2020. It allowed all banks, financial institutions, and non-banking finance companies, including MFIs to grant a repayment break to their borrowers for installment payments of loans. Borrowers could decide themselves whether to make use of the moratorium. This option was clearly beneficial for liquidity-constrained borrowers who would avoid being classified as 'in default' and facing corresponding consequences such as a downgrade of the credit score. However, it was also costly as interest on the outstanding loan amount would continue to accrue. While the costs and benefits of a moratorium were hard to communicate to microfinance borrowers due to technological and literacy constraints, many Indian MFIs managed to quickly offer moratoria to their borrowers (SaDhan, 2020) and the majority of borrowers of small finance banks and MFIs made use of this opportunity (Rhyne & Duflos, 2020).

⁵ For example, other than for emergencies, people were not allowed to leave their homes. Only essential goods were transported; all other road, air, and rail services were suspended. Schools were closed. The severity of the lockdown is reflected in the government stringency index (Hale et al., 2021) that measures restrictions on a scale from 0 to 100: India scored 100 during the nationwide lockdown period as compared to 73 for the US and 80 for the UK during the first Covid wave in 2020.

⁶ For example, agricultural business and their suppliers were allowed to open after April 20 and cargo transportation resumed. Some further relaxations were introduced on May 4 and May 18.

⁷ Beyer, Franco-Bedoya, and Galdo (2021) use data on electricity consumption and nighttime light to document the drop in economic activity in India, estimating a negative growth effect of 3.4% and 20.8% for the first and second quarter of 2020, respectively. Ceballos, Kannan, and Kramer (2020) document negative impacts on farmers in Haryana and Odisha and Auerbach and Thachil (2021) on urban slums in Bhopal and Jaipur.

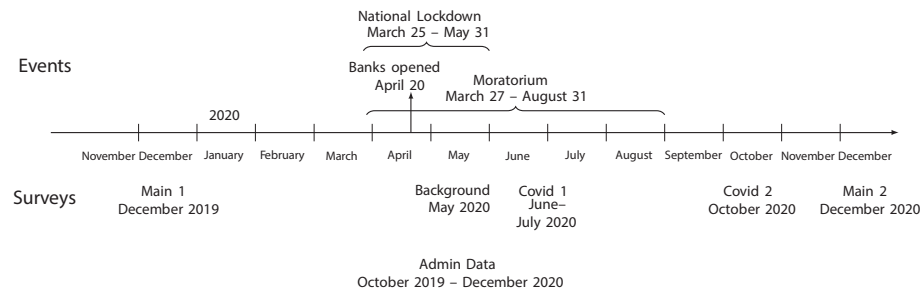


Fig. 1. Timeline of Data Collection and Main Policy Events.

The moratorium was not applicable to the loans that MFIs used to re-finance their lending activities and that they themselves would need to pay back to their lenders. However, the RBI announcement also contained several measures that were to ease liquidity constraints for the entire financial market. Most of those appeared to have benefited commercial banks with investment grade, but not the MFIs (CGAP, 2020). Thus, while microfinance borrowers either paused repayments or even requested additional loans for more liquidity, MFIs struggled to meet their own refinancing requirements.⁸

2.2. Our setting

We partner with a large Indian MFI that operates mostly in Northern India.⁹ It grants poor women financial resources for income-generating activities with the goal to eradicate poverty. In 2019, this MFI served a total of over 700,000 active borrowers who held loans worth about 14.4 billion INR (approximately 165 million EUR). The MFI operates in eight states via a total of over 400 branches. Branches consist of a branch manager and three to six loan officers (LOs). As typical for MFIs, loan officers are the main field staff and thus the organization's link to its borrowers. Loan officers are responsible for acquiring borrowers and ensuring their loan repayment, for which they rely on face-to-face interactions. Loan officers meet existing borrowers regularly in so-called borrower centers and additionally on a case-by-case basis. Borrower centers group borrowers based on geographic proximity and meet each week at a designated time and location. Each loan officer is assigned specific centers where they lead the meetings with the main purpose of ensuring repayment of outstanding loan installments. Company-provided smart phones and a specific app help with the documentation of borrowing and repayment operations. Additionally, the official job description entails many other tasks, such as selecting potential villages for expanding operations, targeting new customers, forming new groups and centers, verifying and recommending loan proposals, as well as monitoring the loan utilization.

Similar to other MFIs, the operations of our partner were severely affected by the pandemic. The lockdown resulted in a standstill of most operations as field staff was not allowed to travel and conduct center meetings. Loan officers were encouraged to

stay in regular contact with their borrowers via phone. Moratoria were agreed upon with borrowers and most collection efforts were paused. Similarly, no new loans were disbursed. After the clarification by the Ministry of Home Affairs on April 15 that MFIs provide essential services and are allowed to operate in specified areas, our partner opened its offices in a staggered manner starting April 20.

In addition to severe restrictions on the general operations, the lockdown also affected the repayment capacity of borrowers. In a qualitative interview on May 12, 2020, the managing director of our partner MFI expressed concerns about the viability of the livelihoods of its borrowers and the resulting drop in repayments if borrowers struggle to make ends meet (comparable to Malik et al., 2020). Not only did the lockdown restrictions make it impossible for the borrowers to work – most borrowers such as shop owners were simply not able to work from home – but also their household income from other sources, such as remittances from family migrant workers, dried up since migrant workers returned home from the cities during the lockdown. While trying to cater to the needs of its borrowers, the lender faced high uncertainty as it had to seek loan-restructuring agreements with its own refinancing lenders on an individual basis. The lockdown also meant that it became more difficult for the lender to coordinate, support, and monitor the remote work of loan officers, even with the advanced technological equipment already in place. Despite the short notice of the lockdown, around 76% of loan officers returned to their home district; only around 24% could not travel home and had to stay at or close to the branch. The MFI expected that loan officers would continue to support their borrowers. In our sample, as described below, around 90% of loan officers self-reported that they continued working during April and May. There was substantial heterogeneity from where work was done. 29% of loan officers worked exclusively from home, whereas 32% worked exclusively at the branch. In May, only 31% also completed some field work.

The lender took several measures to better monitor effort during remote working and to encourage loan officers to return to working in the open branch offices in late April. For example, a specific app was installed on loan officers' work mobile phones that allowed the lender to closely monitor loan officers' effort with respect to the number of borrower contacts. Days on which the app was used would be considered work days. Salaries for working at home were officially tied to effort as measured by the app and ranged between 80 and 100% of the regular salary; not working at home during the lockdown would still be remunerated with 80% of the regular salary. For loan officers working in one of the 150 branches that had reopened on April 20, the usual salary payment date of April 30 was only honored if they had returned to the branch. In the interview, the director justified these measures by the reluctance of loan officers to return to the branch and the necessity of being at the branch for conducting many operations such as loan disbursement. This policy appeared to achieve its

⁸ In a survey of 78 Indian MFIs in April, more than half of the MFIs projected having trouble repaying their loans after July 2020 (SaDhan, 2020).

⁹ We started our collaboration with our partner in 2018 to study the effects of incentive schemes on loan officers' work organization and performance. In this paper, we rely on data collected for the initially planned study before the start of the pandemic as well as additional data collected especially for this study after the onset of the pandemic.

goal: while only 15% of loan officers came to the branch in the week of April 20, around 85% came in the first two weeks of May.¹⁰

2.3. Data

We collect data from 150 branches of our partner in the states of Uttar Pradesh and Madhya Pradesh, in which most of its branches are located. All branches are located in Northern India, in (the surroundings of) Allahabad, Gwalior, Jabalpur, Jaipur, Lucknow, Moradabad, Saharanpur, and Varanasi, and they are randomly selected from all branches that employ at least three loan officers and offer the standard group loan.¹¹ All 655 loan officers who were employed in these branches were invited to participate in the study.

Our data come from two main sources: administrative data from the lender about the loan officers' performance and survey data from interviewing loan officers in online questionnaires. The administrative data comprise 592 loan officers who consented to participating in the study. The data cover the period October 2019 to December 2020 and indicate per loan officer and per month (i) how many borrowers are being handled, (ii) the loan amount outstanding, (iii) the percentage of complete repayments as a fraction of outstanding repayment (the collection percentage), (iv) the portfolio at risk (PAR) as the percentage of the gross loan portfolio that is overdue by more than 30 days, and (v) turnover of loan officers. In addition, the data contain information about basic demographic characteristics of loan officers.

The main survey data cover online questionnaire modules distributed to loan officers in December 2019 and January 2020 ("Main survey 1") and a year later in December 2020 and January 2021 ("Main survey 2"; see also Fig. 1).¹² These modules collect detailed information about loan officers' work and the work environment, such as tasks and time allocation, work style, and subjective measures of effort. Individual characteristics such as reciprocal preferences, locus of control, and perception of leadership in the branch are elicited at baseline. Cognitive abilities, financial literacy, and the understanding of the incentive structure for bonus payments are elicited in a background survey in May 2020 ("Background survey"). Two additional surveys are run to address the effect of the Covid pandemic on loan officers' work: First, "Covid survey 1" consists of a short questionnaire on workload, well-being, and perceived stress that is repeatedly administered for six consecutive weeks in June and July. Second, "Covid survey 2" administered in October elicits information on the work environment during and after the first nationwide lockdown. We include some items from Covid survey 1 and 2 in the Main survey 2.

The links to the online questionnaires for data collection are distributed to loan officers via chat groups on their work smart phones. To reduce the time loan officers spend on filling out the questionnaires, most surveys are administered in several parts for which links are sent on consecutive days.¹³

¹⁰ However, in contrast to the measures the managing director explained in the interview, we do not find a statistically significant relationship between working at the branch and receiving salary payments in our data collected from loan officers: For those who worked during April and May, only 42% indicated having received their salaries for both months and 30% reported they have not been paid for either. While we do not have administrative data on salary payments to verify these self-reported salary payments, we interpret the discrepancies with the views expressed in the qualitative interview and the loan officer data as indications that especially these two months were chaotic and stressful in several dimensions.

¹¹ Other types of branches that focus exclusively on individual-liability borrowers or serve as a branch of business correspondence for a large commercial bank are excluded from our sample population since their operations and incentives work differently.

¹² All variables are described in detail in Appendix B.

¹³ Main 1 consisted of five, Main 2 of four, Background of two, and Covid 2 of three parts. Some loan officers have not filled out all parts of a survey, so that the sample size per survey may differ across variables.

A video message explaining the details and procedures of the study was sent to all loan officers in the sample before the first survey. All participants provided written consent before the start of Main 1 and indicated consent to continue participating before filling in subsequent surveys. To incentivize participation the following measures were taken: Our partner was opposed to providing financial incentives for survey participation, but allowed filling in the surveys during regular work hours. All respondents who completed at least 80% of the surveys received a certificate of participation. A team of research assistants as well as branch managers of the lender followed up with loan officers to encourage participation.

Response rates varied across surveys, also due to loan officers leaving their job. From the initially invited 655 loan officers, 596 participated in Main 1 (91%).¹⁴ Around a year later, 509 loan officers working in the sample branches participated in Main 2, and 308 (47% of the initially invited) completed both Main 1 and Main 2. We note that average sample characteristics do not differ statistically significantly between all those who completed Main 1 and those who completed both surveys. Fig. A.3 presents an overview of response rates in all surveys and Section 4.4 discusses implications of this in detail.

On average, four loan officers are employed per branch in our sample (see Table 1). They are on average 26 years old, most of them have a college degree (87%) and half of them are married. Nearly all loan officers are men (94%). At their current branch, they have been for a little less than two years on average and they have worked for the organization for an average of 2.5 years.¹⁵

3. Empirical approach

Our empirical approach considers two angles: First, we provide a detailed description of the work environment of loan officers before the pandemic. Then, we document how the work environment has changed with the onset of the pandemic. We consider several measures to describe the work environment: First, we use administrative data from the lender that document the outputs of loan officers and which usually provide the basis for performance assessments. Second, we use the data collected in our main surveys with detailed descriptions on loan officers' tasks and work organization. Third, we use our survey data on mental health, that is subjective well-being and perceived stress, which have been elicited at several points in time after the onset of the pandemic (Covid 1 throughout June and July 2020, as well as Main 2 in December 2020/January 2021).

The first set of measures of the work environment are based on the administrative data which comprise monthly output measures per loan officer. To better understand the effects of the moratorium, we aggregate the analysis of the monthly administrative data for three distinct periods in our sample: (i) pre-Covid pandemic (October 2019 until March 2020), (ii) Covid pandemic with debt moratorium (April 2020 until August 2020), and (iii) Covid pandemic without debt moratorium (September 2020 until December 2020). We estimate the following regression equation:

$$y_{im} = \alpha + \beta_1 \text{Covid during moratorium}_{im} + \beta_2 \text{Covid after moratorium}_{im} + \epsilon_{im} \quad (1)$$

where y_{im} is the outcome variable for respondent i in month m ; $\text{Covid during moratorium}_{im}$ is a binary variable equal to one if

¹⁴ Four of the loan officers who participated in Main 1 only joined in November or December 2019, such that we do not have administrative data for them for the entire period. These four loan officers are not included in the analysis of performance indicators.

¹⁵ All those who completed Main 1 are on average 26 years old, male (91%), married (53%), holders of a college degree (84%), 32 months with the company and 22 months in their current branch.

Table 1
Summary statistics.

	Mean (SD)
<i>Branch Characteristics</i>	
No of LOs per branch	4 (1)
<i>LO Characteristics</i>	
Age	26 (4)
Male (%)	94 (23)
Married (%)	53 (50)
College Degree (%)	87 (34)
Seniority at company (in months)	31 (26)
Seniority at branch (in months)	23 (22)
N(LOs)	308

Notes: Data from Main 1 (December 2019). Summary statistics on Branch and loan officer (LO) characteristics at our Main 1 survey for LOs who answered both our Main 1 and Main 2 surveys. Standard deviations in parentheses. *Seniority at company* captures the number of months LOs work in the company as of December 2019, and *Seniority at branch* captures the number of months LOs work in the current branch as of December 2019.

the observation falls in period (ii) April 2020 to August 2020, and zero otherwise; *Covid after moratorium*_{*m*} is a binary variable equal to one if the observation falls in period (iii) September 2020 to December 2020 and zero otherwise; and ϵ_{it} is the error term.

The second set of measures of the work environment are based on the data that comprise observations from the pre-Covid survey Main 1 survey (December 2019) and the post-Covid Main 2 survey (December 2020). To document the changes in loan officers' work tasks and work organization, we estimate the following regression equation:

$$y_{it} = \alpha + \beta \text{Dec20}_t + \epsilon_{it} \quad (2)$$

where y_{it} is the outcome variable for respondent i in survey main t , Dec20_t is a binary variable equal to one if the observation is from the second main survey, i.e. Main 2 in December 2020, and zero otherwise; and ϵ_{it} refers to the error term.

The third set of measures of the work environment are based on the survey data on loan officers' mental health elicited throughout June and July in the Covid 1 survey and in December in the Main 2 survey. We estimate:

$$y_{it} = \alpha + \beta \text{Surveyround}_t + \epsilon_{it} \quad (3)$$

where - all else being equal to the specification in Eq. 2 - Surveyround_t runs from one to six and indicates the survey round week t in which the measure was collected. Additionally, we use variants of Eq. 2 to estimate the changes in mental health from June/July to December.

The administrative data used to estimate Eq. 1 comprises all loan officers employed during October 2019 to December 2020 on a monthly basis. To keep samples comparable across analyses and data sets, we restrict our analysis to those loan officers who also complete Main 1 survey. Similarly, we construct a balanced panel with our survey data and hence restrict our main analysis to loan officers whom we observe at several points in time. This ensures that our results are not driven by changes in sample composition. In Section 4.4 we discuss to what extent this restriction influences our results.

4. Results

We first present how measures of the work environment with respect to output measures, that are usually used as key performance indicators for loan officers, have changed during the pandemic. Second, we present how measures of the work environment with respect to loan officers' work tasks and work organization have changed during the pandemic. Last, we present how measures of the work environment with respect to loan officers' mental health have changed.

4.1. Work output and performance indicators

In our administrative data, the lender documents loan officers' output on various dimensions. These are usually used as indicators for each loan officer's performance and the salary bonus payment is tied to these measures.¹⁶ On average, loan officers handle 556 borrowers in our pre-Covid sample period October 2019 to March 2020 (see Table 2) with an average total loan portfolio value of 11 million Indian Rupees. The average share of outstanding repayments loan officers have collected, i.e. the collection percentage, is above 90%, and the average share of the loan portfolio that is overdue for more than 30 days, i.e. the portfolio at risk (PAR), is 11% (see Table 2).

Fig. 2 presents descriptive statistics of the evolution of monthly performance indicators over time from October 2019 to December 2020 with the dashed vertical lines indicating March 2020, at the end of which both the lockdown and the moratorium were put in place. The number of borrowers was increasing before the pandemic with a maximum of 616 borrowers that loan officers handled on average in March 2020. After the nationwide lockdown, the total number of borrowers per loan officer fell and stabilized on a significantly lower level of 476 borrowers on average in November 2020. Similar to the number of borrowers, the loan amount outstanding peaked in March 2020 with an average portfolio size per loan officer of 12.5 million INR and fell until August 2020 to a level of October 2019 (10 million INR). After the end of the moratorium, it increased again to around 11 million INR. Both the repayment performance of borrowers and the PAR decreased substantially, in particular in the months covered by the debt moratorium for borrowers: the collection percentage fell by around 96% in April to August 2020 compared to the 91.9% collection percentage in March 2020; the PAR gradually increased to a maximum of 24.2% in August 2020, i.e. an increase of 131% compared to March 2020. After the moratorium was removed, the PAR normalized again to its March 2020 level of around 10%. The deterioration of performance did not translate into higher loan officer turnover. In the pre-pandemic period, loan officer turnover was negligible: 3% turnover in January 2020 and 1% in March 2020. Turnover during the lockdown stayed on the same level as in March 2020 and dropped to zero turnover from July to December 2020. Fig. A.1 presents estimated differences of the administrative indicators as compared to March 2020. Results mirror the patterns that we see in the raw data, clearly showing the above discussed changes. Recalling the duration of the debt moratorium from late March to August 2020, many performance indicators deteriorated during exactly the same time period.

In order to better understand the role of the debt moratorium for performance indicators, we aggregate the monthly performance data to distinguish the periods before (October–March), during (April–August) and after the moratorium (September–December) and estimate Eq. 1. Table 2 shows that, compared to

¹⁶ For example, the average quality of the loan portfolio as measured by the portfolio at risk (PAR) determines whether the loan officer receives any bonus at all. The number of borrowers a loan officer is responsible for determines among other output measures the bonus level.

Table 2

Administrative indicators before, during and after the moratorium (October 2019 – December 2020).

	Performance Indicators				
	Number of Borrowers (1)	Loan Amount Outstanding (in mil.) (2)	Collection Percentage (3)	PAR (4)	Turnover Incidence (5)
During Moratorium (Apr20-Aug20)	26.0355*** (6.6013)	0.1325 (0.1299)	−88.4054*** (0.6153)	8.1097*** (0.2624)	−0.0055* (0.0029)
After Moratorium (Sep20-Dec20)	−69.2191*** (10.3319)	−0.1828 (0.1783)	−22.0537*** (1.3123)	−0.6548* (0.3433)	−0.0158*** (0.0021)
Pre-Moratorium (mean) (Oct19-Mar20)	556.4618	11.2579	92.2251	10.9174	0.0158
Observations	8065	7395	8065	8065	8079
N (LOs)	592	592	592	592	
R ²	0.0206	0.0005	0.7523	0.0994	0.0040
p-value (During = After)	0.0000	0.0508	0.0000	0.0000	0.0000

Notes: Dependent variables: *Number of Borrowers* represents the total number of borrowers per LO. *Loan Amount Outstanding* is the accumulated outstanding loan amount (in millions, Indian Rupees) per LO. *Collection Percentage* is the percentage of the outstanding loan amount that a LO collected within a given month. *PAR* is the percentage of gross loan portfolio that is overdue by more than 30 days per LO. *Turnover Incidence* takes a value of 1 in a LO's last working month and 0 for all other months that LO works at the company. OLS regressions with standard errors clustered at the loan officer level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

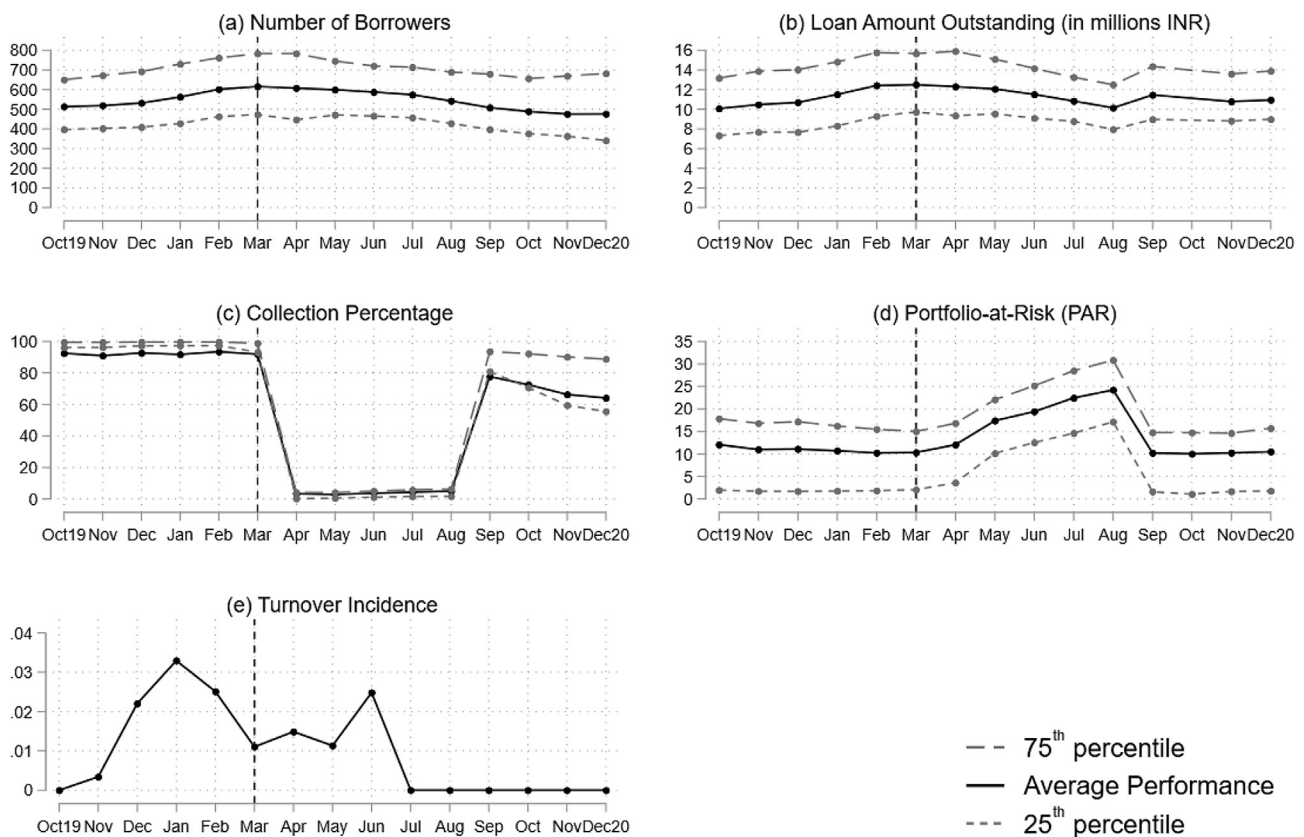


Fig. 2. Administrative Indicators: October 2019 - December 2020. Notes: Administrative indicators: *Number of Borrowers* represents the total number of borrowers per LO. *Loan Amount Outstanding* is the accumulated outstanding loan amount (in millions, Indian Rupees) per LO. *Collection Percentage* is the percentage of the outstanding loan amount that a LO collected within a given month. *PAR* is the percentage of gross loan portfolio that is overdue by more than 30 days per LO. *Turnover Incidence* takes a value of 1 in a LO's last working month and 0 for all other months that LO works at the company. The sample covers 592 LOs who participated in our baseline survey and for whom we have data for the entire time span. The vertical dashed line indicates March 2020 as the first month in which Covid-related policies were in place.

the period October to March, the average number of borrowers was 4% higher during the moratorium (Column 1).¹⁷ In the period after the moratorium, however, the number of borrowers handled per loan officer dropped by an average of 69 borrowers or 12% compared to before the pandemic. The size of the loan portfolio as measured by

the loan amount outstanding did not change significantly over the entire period (Table 2, Column 2). This might be related to the large drop of 88% in the collection percentage during the moratorium (Table 2, Column 3): While no new loans were disbursed during that time, old ones were not repaid due to the moratorium, leaving the size of the portfolio unchanged. The large drop in collection rates during the moratorium was accompanied by a 74% increase in PAR (Table 2, Column 4). In the period after the moratorium, the PAR slightly improved by 6% compared to before the pandemic (Column

¹⁷ This is likely due to the increase in borrower numbers in early 2020 and the moratorium protecting existing borrowers. While no active recruitment of new borrowers took place in this period, borrower numbers decreased only slowly during the moratorium; see also Fig. 2.

4), but the collection percentage remained 24% lower (Table 2, Column 3).¹⁸

To summarize, the lockdown and the moratorium adversely impacted loan officers' outcomes with collection rates drastically dropping and PAR rates increasing. This challenging work environment has been even more pronounced after the nationwide lockdown was over but the moratorium was still in place. The drop in collection rates and PAR seems to be an expected, almost mechanical, consequence of the debt moratorium. While these outcome measures were important performance indicators before the pandemic, they did not accurately reflect loan officers' performance during the lockdown and debt moratorium period.

4.2. Work tasks and organization

In this section, we shed light on how loan officers adjusted to the drastic changes in outcome measures that were heavily influenced by external regulations. We examine how loan officers' tasks and work organization changed with the onset of the Covid pandemic. The nationwide lockdown affected the work environment substantially since travel restrictions made working from the branch office and visiting borrowers more difficult. We first describe loan officers' work tasks in detail and then analyze how these changed in response to the pandemic using our Main surveys 1 and 2 from December 2019 and December 2020. Loan officers' work comprises different tasks in three main categories. The first category is the organization of loan disbursements. This includes verifying and checking loan application documents, collecting additional information on borrowers and their creditworthiness, and informing borrowers about different products. Before the Covid pandemic, all loan officers did engage in at least one of those activities during the last working day – the most common task within this category is the verification of loan applications – and they spent around 40% of their working time on tasks in this category (Table 3, Panel A).

The second category is the collection of loan repayments. This includes preparing and conducting the weekly meetings, reminding borrowers of upcoming and outstanding repayments, and providing financial advice broadly speaking. Before the Covid pandemic, 99% have completed at least one of the tasks during their last working day – most commonly, they spent time on preparing meetings – and they spent on average 45% of their working time on tasks in this category (Table 3, Panel B).

The third category is the acquisition of new borrowers which includes identifying potential new borrowers and new villages to expand operations to. Before the pandemic, 97% completed this task during the last working day and they spent on average 16% of their working time on tasks in this category (Table 3, Panel C). While loan disbursement and collection are at the heart of loan officers' work, expanding the borrower base is a secondary task. This is not only reflected in the share of their working time loan officers spend on each of the categories, but also in the bonus payment incentive structure: if collection rates do not clear a certain threshold, no bonus is paid for any task. In contrast, the acquisition of borrowers entails a comparatively small piece-rate bonus.

Table 3 sets out the results from estimating Eq. 2 which compares the tasks and time use before and after the onset of the pandemic. The overall changes in the work environment with severe

limitations to interacting with borrowers due to the social distancing, are also reflected in changes in the incidence of performing tasks (Table 3, Column 2): Fewer loan officers report to verify loan applications (-5%), to collect borrowers' information (-4%), to inform borrowers about other loans (-5%), to prepare group meetings (-7%), and to support borrowers (-5%). However, we do not see any change in the relative time allocated to any of these tasks (Table 3, Column 4).

In addition to the main tasks and the time spent on performing these, the pandemic may have affected loan officer's work style, that is the way they organize their work. We have collected data on several dimensions of a loan officer's work style which we aggregate in four indices (see also Appendix B):¹⁹ First, a *planning* index captures the extent to which loan officers plan their work day (based on five variables on general planning, the use of checklists and reminders, and the difficulty of planning). Second, an *effort* index captures the extent to which loan officers exert effort in the three main categories of tasks (disbursement, repayment and acquisition). Third, *objective work time* measures self-reported working time on a normal day. Last, a *subjective work time* index comprises four variables on the perceived working time, such as working over-time or reducing work breaks.

Before the onset of the pandemic, the vast majority of participants engaged in planning activities. Ninety-one percent of loan officers planned their everyday working life and they used a variety of tools (see Table A.2, Panel A, Column 1): checklists (88%), reminders (83%), and performance targets (91%). Despite these planning efforts, loan officers found it difficult to stick to their work plan (60%) and to reach their performance targets (54%). Overall, this results in a planning index of 67% in December 2019 (see Table 4, Column 1). Effort is measured by an index indicating activities in three main categories: (1) loan disbursement, (2) repayment, and (3) acquisition of new borrowers or new loans. Regarding loan disbursement (see Table A.2, Panel B1, Column 1), loan officers, for example, assessed the housing situation of borrowers who applied for a home improvement loan (92%) or borrowers' background in case of applications for additional loans (69%). To increase loan repayments, loan officers engaged in a variety of activities (see Table A.2, Panel B2, Column 1), such as acquiring information on borrowers' business (95%) and loan usage (93%). To encourage loan repayment, they built up pressure themselves (91%) and via the borrower groups (88%). Loan officers pursued many activities to acquire new borrowers and market different loan products to existing borrowers (see Table A.2, Panel B3, Column 1): for example, they advised individual borrowers on available loan products (96%) and advertised these loan products to all borrowers (86%). Further, they identified potential villages to expand lending operations to (95%). Overall, this results in an effort index of 74% in December 2019 (see Table 4, Column 2). Loan officers reported average work days of 10.8 hours. This includes commuting times from the branch to remote villages and reflects the exhausting nature of the job, even in normal times.

Around ten months after the onset of the pandemic we observe substantial shifts in the work style: Overall planning and effort as measured by our indices designed pre-pandemic have decreased by 3.5% and 3.2%, respectively (Table 4, Columns 1 and 2), while the indices for objective and subjective work time as a more general measure of effort have not changed significantly.

We investigate the changes in the planning and effort index further and analyze how the individual components that feed into the

¹⁸ We investigate to what extent these estimates are sensitive to the definition of the moratorium period by including March in the 'during moratorium' period. Table A.1 shows that results remain qualitatively the same. In line with what Fig. 2 would suggest, the estimates for number of borrowers and loan amount outstanding are more sensitive to this alternative definition (they change size and in the case of loan amount outstanding also significance), whereas the estimates for collection percentage, PAR and turnover vary slightly in magnitude.

¹⁹ Individual variables measure normalized agreement on a five-point Likert-scale between zero and one to statements about planning activities, effort, and perceived work time. These variables are aggregated to the indices as unweighted averages of the variables. All indices are positively coded: a higher measure translates to a better index, that is more planning, or higher effort.

Table 3
Work tasks and time use.

Dependent variable	Incidence (0/1)		Time Spent (share of total 0–1)	
	Dec19 (1)	Dec20 (2)	Dec19 (3)	Dec20 (4)
<i>Panel A: Disbursement</i>				
Verify loan applications	0.9891	−0.0474*** (0.0157) ^{†††}	0.1337	0.0003 (0.0048)
Collect borrowers' information	0.9574	−0.0388* (0.0212)	0.1307	−0.0035 (0.0049)
Inform borrowers about other loans	0.9740	−0.0446*** (0.0164) ^{††}	0.1392	−0.0013 (0.0060)
<i>Panel B: Repayment</i>				
Prepare group meetings	0.9819	−0.0652*** (0.0188) ^{†††}	0.1619	0.0028 (0.0070)
Remind defaulting borrowers	0.9594	0.0000 (0.0165)	0.1451	−0.0020 (0.0059)
Support borrowers	0.9522	−0.0478** (0.0210) [†]	0.1382	0.0019 (0.0059)
<i>Panel C: Acquisition</i>				
Identify potential new borrowers	0.9670	0.0110 (0.0142)	0.1644	0.0067 (0.0077)

Notes: Data from December 2019 (Main 1) and December 2020 (Main 2). Each row shows the results estimating Eq. 2 with the dependent variable indicated. Dependent variables are reported as *Incidence 0/1* where 1 refers to the LO performing the task, and 0 otherwise, or as *Time spent (share of total 0–1)* which captures the share of the total working time spent on performing the task. In Columns 1 and 3, *Dec19* shows the mean of the dependent variable in Main survey 1, and in Columns 2 and 4, *Dec20* shows the estimated coefficient. The number of LOs in these regressions ranges from 258 to 276, depending on the task. OLS regressions with standard errors clustered at the loan officer level in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ indicate significance levels based on un-adjusted p-values; [†] $p < 0.1$, ^{††} $p < 0.05$, ^{†††} $p < 0.01$ indicate significance levels based on multiple-testing adjusted p-values as in Aker et al. (2012).

Table 4
Working styles.

	Planning (1)	Effort (2)	Objective Work Time (in minutes) (3)	Subjective Work Time (4)
Dec20	−0.0236** (0.0117)	−0.0235** (0.0114)	−10.1375 (14.6223)	−0.0029 (0.0145)
Dec19 (mean)	0.6696	0.7429	648.3436	0.7684
Observations	554	540	582	574
N (LOs)	277	270	291	287
R ²	0.0058	0.0059	0.0008	0.0001

Notes: Data from December 2019 (Main 1) and December 2020 (Main 2). Dependent variable: *Planning* is a normalized index capturing how well LOs plan their work (e.g., using reminders and checklists, and following through with their plans). *Effort* is a normalized index capturing how much effort LO exerts on main work dimensions (enforcing repayments, marketing, and assessing borrowers). *Objective Work Time* captures the self-reported working time in minutes during a normal day. *Subjective Work Time* is a normalized index capturing the subjectively perceived working time of LOs (e.g., often working overtime or skipping lunches). All variables feeding into the indices are in Table A.2 and in Appendix B. OLS regressions with standard errors clustered at the loan officer level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

index have changed across survey rounds. Table A.2 displays the results for all individual components. The change in the planning index is primarily driven by a reduction in planning the work day and setting own performance targets (see Table A.2, Panel A, Column 4). The change in the effort index is mostly driven by components related to repayment and borrower acquisition. For tasks related to repayment, we observe reduced effort in information acquisition on borrower's business activities and their loan usage, as well as in reduced effort in encouraging repayment of delinquent borrowers by regular follow-ups to increase pressure and emphasizing dynamic incentives (no access to future loans for delinquent borrowers; see Table A.2, Panel B2, Column 4). For tasks related to acquiring new borrowers and disbursing new loans to existing borrowers, we observe reduced effort in providing information to existing borrowers about other loan products, in identifying new potential areas to expand to, and in advertising the loan products to new borrowers in existing and new areas, also with the help of current borrowers (see Table A.2, Panel B3, Column 4). Most notably, however, is the large increase in allowing borrowers who

did not repay at the meeting to repay later in the evening (Table A.2, Panel B2, Column 4). This offers an alternative interpretation for the reduced effort in extracting borrower repayments: Loan officers recognize the repayment problems borrowers face in the pandemic and try to support repayment efforts without increased pressure. In December 2020, collection rates were still lower than usual (Fig. 2), such that repayment of an installment was more important than the timing. Becoming more lenient regarding the timing of repayment, as also indicated by the other changes related to enforcing repayments, is consistent with a change in the objective function. We therefore caution to interpret our findings as reductions in effort in the sense of loan officer's slacking on their assigned tasks. While our survey measures certainly capture effort before the pandemic, we may not capture all dimensions in which loan officers provide effort during the pandemic due to adjustments in the objective function. This is consistent with the fact that we do not find any reduction in the overall working time and an increase in perceived stress as we will discuss in the next section.

4.3. Mental health

The pandemic has led to many changes for loan officers: output measures dropped and performance measures previously in place became useless for assessing individual performance; loan officers' work organization deteriorated with lower planning and effort while their work time did not adjust. These severe changes may also affect loan officers' mental health, in particular since the pandemic has led to high levels of uncertainty in many aspects of life and substantial negative impacts of the pandemic on mental health have been documented for many populations (Rajkumar, 2020). Based on our Covid survey 1, that specifically addresses the effects of the pandemic, we analyze the changes in mental health in terms of subjective well-being and perceived stress.

We first document how mental health has changed over the course of six weekly surveys in June and July 2020. Recall that in June and July the moratorium was still in place and the usual performance indicators were low: the number of borrowers continued to decrease, collection percentages remained very low, and the PAR kept increasing (see Fig. 2). In the weekly surveys, we measure subjective well-being by the WHO-5 Well-Being Index, which elicits whether respondents have felt cheerful, calm and active, and perceived stress by the Perceived Stress Scale 4 (PSS-4), which elicits whether respondents have felt in control of their life (see Appendix B for details). Subjective well-being did not change much during these six weeks (Fig. 3, Panel a), but perceived stress increased significantly over time (Fig. 3, Panel b).²⁰

We analyze how levels of well-being and perceived stress in June/July 2020 compare to levels in December 2020. In Table 5, we compare the average measures of subjective well-being and perceived stress over the six weekly surveys in June and July 2020, as well as the first and the last observation of these measures, to the same measure in the main survey in December 2020. Subjective well-being increased moderately by 5.6% compared to the average measure in June/July, but the effect is only statistically significant at the 5-percent level and not statistically significant for all measures (Table 5, Column 1). Perceived stress decreased in December as compared to June/July for all measures by around 13.2% (Table 5, Columns 4 to 6).

Mental health indicators appear to covary with the challenges in the work environment: during the time of deteriorating performance indicators in June and July, we find a significant increase in perceived stress levels. Toward the end of the year, perceived stress has declined and subjective well-being has improved compared to summer 2020.

We investigate the improvements in mental health further by analyzing changes in the perception of the ease of working, the support they receive from the organization, and job-related anxiety in earlier vs. later stages of the pandemic. Data on the earlier stages of the pandemic are from the Covid 2 survey in which loan officers were asked to recall their experiences during and shortly after lockdown (see Table A.3, Column 1). During the lockdown, 59% of loan officers reported that they had a hard time concentrating on their tasks or that work became more stressful, and only 45%

feel properly technically equipped to complete their work. Despite these setbacks during the lockdown, 68% and 71% reported feeling supported by their managers and colleagues, respectively, during the period of March to October. Nonetheless, 62% felt demotivated and 51% feared that the lender might close its business.

We assess how these views have changed in December 2020. First, we compare the ease of working during lockdown (March–May 2020) with the ease of working afterwards (June–December 2020). We find a large drop in the perceived ease of working of around 14% (Table 6, Column 1). This drop is driven by new tasks that loan officers are expected to perform, an increase in the work load, and the work being considered more difficult and stressful—also with respect to interacting with borrowers (see Table A.3, Panel A, Columns 2 and 4). Second, we analyze how supported loan officers felt by their employer in these difficult times. We compare the perceived fairness and support by the organization for March–October 2020 to November–December 2020 and find an increase in the perceived fairness and support by 9% (Table 6, Column 2). This increase is driven by new supportive tools that the lender provides, supportive branch manager, and an increase in the perceived fairness of payment rules after the onset of the pandemic (see Table A.3, Panel B, Columns 2 and 4). For example, the share of loan officers considering their branch manager very supportive increases by 18% in later months during the pandemic compared to earlier months, and the share of loan officers considering the new tools to track loan officer effort with respect to borrower contact supportive increases by 14%. Last, we measure job anxiety and demotivation for the same time span and find that job-related anxiety decreased by 9% (Table 6, Column 3). The decrease is driven by enhanced meaning of work: loan officers increasingly felt they can support and help their borrowers (the share of loan officers agreeing to this statement increases by 23%). In addition, fears about the lender's economic viability decreased as the share of loan officers fearing that the MFI will close its business decreases by 54% (see Table A.3, Panel C, Columns 2 and 4).

4.4. Robustness

In our main analyses, we restrict our sample to loan officers whom we observe at several points in time. Given that loan officers leave and enter our sample and that some who remain in the sample do not answer all surveys, as outlined in detail in Fig. A.3, we also replicate our main analyses including all respondents who participated in a given survey.²¹

Assessing the robustness of our results regarding work tasks and time use, Table A.4 replicates Table 3. All results are qualitatively the same; we only see a smaller reduction in information provision about other loans and in support of borrowers, rendering the measurement less precise. Our results regarding working styles (as shown in Table 4) are less pronounced when including all observations, but qualitatively the same (Table A.5).²² Note that these two analyses are likely to be the most sensitive to this robustness check as the time span between the two surveys that are being compared is the largest (Main 1 in December 2019 vs. Main 2 in December 2020).

²⁰ Fig. A.2 shows the raw data. To provide an intuitive interpretation of the effect size, we classify respondents as experiencing mild, moderate or high levels of stress using the standard cutoff points on the perceived stress scale. In the first week of our surveys, 32% experience mild, 64% moderate and 4% high levels of stress. In the sixth and last week, these percentages change to 26%, 72% and 2%, respectively. The stress levels are in the range of those that Fenn, Chacko, Thomas, and George (2021) measure in 1073 adults in the third week of April in Kerala. They also use the PSS-4 scale and find 34% with mild, 57% with moderate and 8% with high stress. Grover et al. (2020) conduct an online survey of 1685 adults in India also in the third week of April and find 26% with mild, 70% with moderate and 4% with severe stress using the 10-item version of the perceived stress scale.

²¹ We analyze both leaving the sample and non-response in Main 2 in December 2020 as compared to Main 1 in December 2019 more formally in Table A.8, predicting both variables with background characteristics (Columns 1 and 2), reported behavior in Main 1 in terms of planning, effort, and work time (Columns 3 and 4), and administrative indicators (Columns 5 and 6). None of the coefficients is large and the only variable that is significantly correlated at the 5% level or above with either leaving the sample or non-response is 'seniority at the company' that predicts leaving the sample. This may be explained by promotions.

²² The main difference is that the coefficient on the planning index is smaller and thus not statistically significant. All other estimates are similar in size and precision.

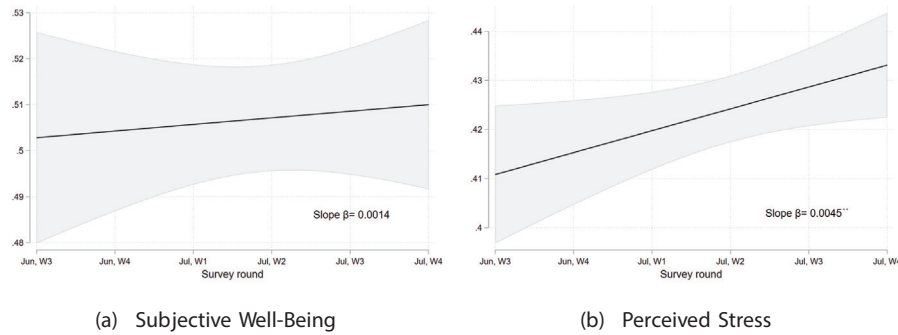


Fig. 3. Mental Health in June and July 2020. Notes: Data from June–July 2020 (Covid 1). Mental health measured in the Covid survey 1 in six consecutive weeks from the third week of June to the fourth week of July 2020 as (a) *Subjective Well-Being* elicited through a self-reported questionnaire (WHO-5 Well-Being Index) and normalized to a range from 0 to 1; and (b) *Perceived Stress* elicited through a self-reported questionnaire Perceived Stress Scale 4 (PSS-4) and normalized to a range from 0 to 1. Graphs show OLS estimates of the equation $y_{it} = \alpha + \beta \text{Surveyround}_t + \epsilon_{it}$, with standard errors clustered at the loan officer level and inverse probability weighting, where weights reflect the ratio of total response rates over the weekly survey participation. The grey shaded areas represent the 95% confidence intervals. The number of loan officers is 459. Significance levels of the slope coefficient β are indicated as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5
Mental health.

Jun/Jul20 based on:	Subjective Well-Being			Perceived Stress		
	Average (1)	First Obs. (2)	Last Obs. (3)	Average (4)	First Obs. (5)	Last Obs. (6)
Dec20	0.0299* (0.0179)	0.0140 (0.0200)	0.0338* (0.0185)	−0.0527*** (0.0112)	−0.0451*** (0.0139)	−0.0521*** (0.0122)
Jun/Jul20 (mean)	0.5104	0.5264	0.5066	0.4240	0.4164	0.4234
Observations	640	640	640	640	640	640
N (LOs)	320	320	320	320	320	320
R^2	0.0034	0.0007	0.0037	0.0301	0.0170	0.0246
p-value (First = Last)		0.1496			0.4754	

Notes: Data from June–July 2020 (Covid 1) and December 2020 (Main 2). Dependent variables: Subjective well-being is elicited through a self-reported questionnaire WHO-5 Well-Being Index normalized to a range from 0 to 1. Perceived stress is elicited through a self-reported questionnaire Perceived Stress Scale 4 (PSS-4) normalized to a range from 0 to 1. *Average* refers to the average across all observations per loan officer in our Covid 1 survey. *First Observation* refers to the first, *Last Observation* to the last observation for each loan officer, which are the same in case of only one observation. *p-value (First = Last)* from a test of difference between the estimated coefficients. OLS regressions with standard errors clustered at the loan officer level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6
Work perceptions.

	Work Ease (1)	Fairness & Support (2)	Job Anxiety & Demotivation (3)
Later months	−0.0664*** (0.0121)	0.0576*** (0.0180)	−0.0437*** (0.0104)
Earlier months (mean)	0.4712	0.6441	0.5080
Observations	374	414	414
N (LOs)	187	207	207
R^2	0.0732	0.0174	0.0373

Notes: Data for earlier months from Covid 2 (October 2020) and for later months from Main 2 (December 2020). Dependent variables: *Work Ease* is a normalized index (range 0 to 1) where the Covid 2 survey recalls the period during the lockdown (from March to May 2020) and the Main 2 survey recalls the period after the lockdown (from June to December 2020). *Fairness & Support* is a normalized index (range 0 to 1), where the Covid 2 survey recalls the period since the lockdown (from March to October 2020) and the Main 2 survey recalls the period from November to December 2020. *Job Anxiety & Demotivation* is a normalized index (range 0 to 1), where the Covid 2 survey recalls the period since the lockdown (from March to October 2020) and the Main 2 survey recalls the period from November to December 2020. All indices are positively coded, i.e., a higher score indicates a higher perception. OLS regressions with standard errors clustered at the loan officer level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

To assess the robustness of our mental health results, Table A.6 includes all loan officers who responded at least once to the Covid 1 survey in June or to Main 2 in December 2020. It replicates Table 5 that only includes respondents who answered at both points in time. The coefficients on mental well-being become smal-

ler and are not statistically significant. In contrast, the decrease in perceived stress remains qualitatively and quantitatively similar in our robustness check.

Lastly, Table A.5 shows that results regarding work perceptions presented in Table 4 remain similar when including loan officers who only responded to either Covid 2 in October 2020 or Main 2 in December 2020. The only exception is the coefficient on perceived fairness and support that increases, while the size of the other two coefficients remain the same. Overall, these robustness checks suggest that our main analysis does not introduce bias even though it restricts the sample.

5. Conclusion

In this study, we document the regular work tasks and the work organization of microfinance loan officers and study how these were affected by the Covid pandemic. The typical administrative indicators used to assess loan officers' performance, that are also reflected in the bonus payments, became useless during the pandemic for performance assessment: Being driven by external factors such as the debt moratorium for borrowers, they failed to reflect loan officers' effort properly.

Similar to the administrative performance measures, our planning and effort indices are based on the tasks loan officers faced before the onset of the pandemic. We find that fewer of the initial tasks were completed. However, this does not imply that effort provision was necessarily lower given that new tasks were intro-

duced and hours worked remained the same. It rather appears that loan officers used the limited margins available to adapt to the crisis, for example by becoming more lenient regarding the timing of repayments. Nonetheless, work became more difficult. This has led to increased stress during the debt moratorium. Towards the end of 2020, when external factors hindering work performance such as the moratorium were reduced, measures for perceived stress and subjective well-being improved again.

We see two direct implications of our findings. First, our paper questions the continued use of established performance indicators in times of crises as these may be driven by external factors and no longer reflect the performance appropriately and hence become unsuitable for incentivizing effort and performance. The administrative data suggest that it would have been impossible to reach pre-Covid performance thresholds required for bonus payments. Our partner MFI has recognized this and suspended the usual bonus scheme for the time of the pandemic. This closely relates to the point of [Malik et al. \(2020\)](#) that variable incentive structures based on pre-crisis criteria can lead to worries about income and adverse incentives for loan officers such as demanding repayments from clients instead of informing them about the debt moratorium. Without variable incentives in place, we do not find support for adverse effects and increased pressure of loan officers towards their borrowers. Instead, we find that loan officers support borrowers by offering more lenient repayment options and by reducing activities to extract repayment. They also feel that they can support their borrowers in times of need which may foster their intrinsic motivation. Nonetheless, loan officers suffered from the changes to the work environment in terms of increased workload and stress. Beyond the issues related to variable incentives that [Malik et al. \(2020\)](#) discuss, we believe that a fair incentive scheme is important to maintain motivation of loan officers. In this regard, the high level of perceived fairness and support both from managing personnel and new tools and its increase from October to December 2020 as well as the simultaneous drop in demotivation that we find are encouraging.

A second implication that our paper highlights is the strong reliance on personal interactions and mobility in providing financial services to the poor, reinforcing the importance of face-to-face contact that [Malik et al. \(2020\)](#) discuss. While they document that some microfinance leaders are concerned about going digital within a business model that relies on personal, physical interactions of loan officers and clients, we document how and with which consequences loan officers operate under mobility restrictions and when personal interactions are limited. Regarding possible future developments, [Malik et al. \(2020\)](#) point out that substantial technological investments by the MFIs and digital knowledge of borrowers will be necessary before a transition to a digital microlending model can take place. In our sample, only around half of the loan officers feel properly equipped technically to complete their work, which underlines this concern. In addition to these requirements, and maybe more fundamentally, loan officers have to be able to reach their borrowers remotely if face-to-face interactions are not possible. Several loan officers reported that borrowers were difficult to reach via phone and the majority acknowledged that interactions with borrowers have become more difficult. This difficulty may relate to loan officers concentrating on fewer of their initial tasks while continuing to work their regular

hours. Reaching borrowers remotely may not only increase workloads for loan officers but may also exacerbate moral hazard problems if defaulting borrowers decide not to be reachable. Arguably, evading contact with loan officers is easier when the interaction is sought remotely. Another aspect of face-to-face meetings that has received limited attention so far is that such regular meetings between borrowers and the lender might contribute to high repayment rates by sustaining a strong repayment norm ([Czura et al., 2020](#); [Giné & Karlan, 2014](#)). Moving to remote transactions could thus severely affect repayment rates if repayment enforcement via contact with the loan officer and prevailing norms is weakened. While our context is special in that it examines classical lending operations during times of crisis, the above will need to be considered and explored more systematically before introducing digital microcredit that relies on remote transactions only.

We see our study as a detailed and quantitative description of the tasks and work organization of loan officers and how these are affected by the pandemic. Future research needs to identify ways to adjust operations, incentives and the work environment to better cope with future large exogenous crises.

CRediT authorship contribution statement

Kristina Czura: Conceptualization, Methodology, Writing - review & editing, Project administration, Funding acquisition. **Florian Englmaier:** Conceptualization, Funding acquisition. **Hoa Ho:** Methodology, Formal analysis, Visualization. **Lisa Spantig:** Conceptualization, Methodology, Writing - original draft, Supervision, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We heartily thank our partner MFI for the implementation support they provided. This study would not have been possible without their support. We also like to thank LEAD at Krea University for research support and Jithin Jose, Shashank Sreedharan, and Sayan Bhattacharjee for excellent research assistance during a difficult period of time. We also thank Neslihan Sakarya and participants at the Internal Organizational Economics Seminar at LMU Munich, and the UNU-WIDER Development Conference (2021) for feedback and comments.

Kristina Czura and Florian Englmaier acknowledge funding from CRC TRR 190 (project number 280092119). Hoa Ho acknowledges funding through the International Doctoral Program "Evidence-Based Economics" of the Elite Network of Bavaria. Lisa Spantig acknowledges funding from GCRF@Essex. Data and replication files: <https://doi.org/10.7805/Microfinance-India-2022>.

Appendix A. Additional tables and figures

See [Tables A.1–A.9](#) and [Figs. A.1–A.3](#).

Table A.1

Robustness check: administrative indicators before, during and after the moratorium (October 2019 – December 2020).

	Performance Indicators				
	Number of Borrowers (1)	Loan Amount Outstanding (in mil.) (2)	Collection Percentage (3)	PAR (4)	Turnover Incidence (5)
During Moratorium (Mar20-Aug20)	43.0290*** (6.4223)	0.5592*** (0.1287)	-73.2978*** (0.6522)	6.5090*** (0.2462)	-0.0062** (0.0030)
After Moratorium (Sep20-Dec20)	-57.9963*** (10.5195)	0.0518 (0.1818)	-22.1181*** (1.3407)	-0.7612** (0.3513)	-0.0167*** (0.0024)
Pre-Moratorium (mean) (Oct19-Feb20)	545.2390	11.0234	92.2894	11.0238	0.0167
Observations	8065	7395	8065	8065	8079
N (LOs)	592	592	592	592	
R ²	0.0240	0.0029	0.5332	0.0724	0.0042
p-value (During = After)	0.0000	0.0016	0.0000	0.0000	0.0000

Notes: Robustness check for Table 2 including March 2020 in the period (ii) Covid pandemic with debt moratorium. Dependent variables: *Number of Borrowers* represents the total number of borrowers per LO. *Loan Amount Outstanding* is the accumulated outstanding loan amount (in millions, Indian Rupees) per LO. *Collection Percentage* is the percentage of the outstanding loan amount that a LO collected within a given month. *PAR* is the percentage of gross loan portfolio that is overdue by more than 30 days per LO. *Turnover Incidence* takes a value of 1 in a LO's last working month and 0 for all other months that LO works at the company. OLS regressions with standard errors clustered at the loan officer level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2

Planning and effort components.

Dependent variable	Incidence (0/1)		Normalized Score (0–1)	
	Dec19 (1)	Dec20 (2)	Dec19 (3)	Dec20 (4)
<i>Coefficient Panel A: Planning</i>				
I plan my everyday work life	0.9081	-0.0772*** (0.0279) ^{††}	0.8254	-0.0726*** (0.0235) ^{†††}
I use checklists to organize my work	0.8750	-0.0404 (0.0277)	0.7877	-0.0202 (0.0218)
I use reminders to manage my work	0.8321	-0.0382 (0.0296)	0.7777	-0.0458** (0.0218)
I aim to achieve specific performance levels	0.9135	-0.0865*** (0.0274) ^{†††}	0.8148	-0.0677*** (0.0209) ^{†††}
It is difficult to stick to my work plan	0.5970	-0.0896** (0.0374) ^{††}	0.5951	-0.0476* (0.0280)
It is difficult to reach the targeted performance	0.5448	0.0261 (0.0397)	0.5690	-0.0047 (0.0285)
<i>Coefficient Panel B: Effort</i>				
<i>B1. Disbursement</i>				
I assess borrowers' housing situation for home improvement loans	0.9198	-0.0420* (0.0250)	0.8359	-0.0420** (0.0201) [†]
I only assess borrowers' background if switch from JL to IL	0.7290	0.0382 (0.0328)	0.7118	0.0134 (0.0243)
I only assess borrowers' background if request additional loans	0.6932	0.0758** (0.0341) [†]	0.6989	0.0275 (0.0233)
I identify eligible JL borrowers to switch to IL	0.8598	0.0152 (0.0252)	0.7917	-0.0057 (0.0193)
I actively approach eligible JL borrowers to switch to IL	0.6212	0.0379 (0.0343)	0.6506	0.0085 (0.0235)
<i>B2. Repayment</i>				
I actively gain information on borrowers' business activities	0.9476	-0.0787*** (0.0242) ^{†††}	0.8736	-0.0833*** (0.0206) ^{†††}
I actively gain information on borrowers' loan usage	0.9321	-0.0453* (0.0244)	0.8472	-0.0462** (0.0198) [†]
I encourage loan repayments by building up pressure	0.9125	-0.0456* (0.0240)	0.8432	-0.0532*** (0.0186) ^{††}
I caution that no further loans for defaulting borrowers	0.9057	-0.0528** (0.0218) [†]	0.8415	-0.0491*** (0.0175) ^{††}
I ask group leaders to remind defaulting borrowers	0.4566	0.0264 (0.0384)	0.5047	0.0274 (0.0273)
I ask other group borrowers to remind defaulting borrowers	0.8788	-0.0152 (0.0284)	0.8002	-0.0142 (0.0212)
I allow other group borrowers to repay for a defaulting borrower	0.8981	-0.0038 (0.0242)	0.8198	-0.0170 (0.0197)
I allow defaulters to repay in the evening	0.5132	0.2113*** (0.0363) ^{†††}	0.5406	0.1519*** (0.0271) ^{†††}
<i>B3. Acquisition</i>				
I regularly inform borrowers about available loan products	0.9551	-0.0487** (0.0200) ^{††}	0.8642	-0.0543*** (0.0181) ^{††}

(continued on next page)

Table A.2 (continued)

Dependent variable	Incidence (0/1)		Normalized Score (0–1)	
	Dec19 (1)	Dec20 (2)	Dec19 (3)	Dec20 (4)
I provide the best information on available loan products	0.9339	–0.0506** (0.0235) [†]	0.8414	–0.0545*** (0.0198) ^{††}
I advertise utilities that the company sells	0.8702	–0.0420 (0.0261)	0.7863	–0.0248 (0.0192)
I advertise other loan products to all borrowers	0.8594	–0.0547* (0.0307)	0.7900	–0.0352 (0.0227)
I identify interested borrowers for other loan products	0.8727	–0.0637** (0.0291) [†]	0.7903	–0.0337 (0.0219)
I advertise other loan products to interested borrowers	0.8165	–0.0037 (0.0316)	0.7640	–0.0215 (0.0226)
I identify potential villages to expand	0.9538	–0.0192 (0.0192)	0.8769	–0.0442** (0.0175) ^{††}
I market the company in new and existing areas	0.9621	–0.0379** (0.0185)	0.8674	–0.0511*** (0.0163) ^{†††}
I ask borrowers to encourage others to join	0.9624	–0.0376** (0.0183)	0.8731	–0.0442** (0.0175) ^{††}

Notes: Data from December 2019 (Main 1) and December 2020 (Main 2). Each row shows the results estimating Eq. 2 with the dependent variable indicated. Dependent variables are reported as *Incidence 0/1* where 1 refers to the LO agreeing or strongly agreeing, and 0 otherwise, or as *Normalized Score (0–1)* based on the 5-point Likert scale on agreement, normalized to a range from 0 to 1. *Dec19* shows the mean of the dependent variable in Main survey 1, *Dec20* shows the estimated coefficient. The number of LOs in these regressions ranges from 256 to 272, depending on the statement. OLS regressions with standard errors clustered at the loan officer level in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ indicate significance levels based on un-adjusted p-values; [†] $p < 0.1$, ^{††} $p < 0.05$, ^{†††} $p < 0.01$ indicate significance levels based on multiple-testing adjusted p-values as in Aker et al. (2012).

Table A.3

Work perceptions components.

Dependent variable	Incidence (0/1)		Normalized Score (0–1)	
	Earlier Months (1)	Later Months (2)	Earlier Months (3)	Later Months (4)
<i>Panel A: Work Ease</i>				
I have had a lot of new tasks	0.5622	0.2811*** (0.0418) ^{†††}	0.5716	0.1797*** (0.0310) ^{†††}
I have had less workload	0.5435	–0.1467*** (0.0521) ^{††}	0.5571	–0.0679** (0.0336)
My work has been easier	0.5249	–0.2044*** (0.0501) ^{†††}	0.5718	–0.1492*** (0.0322) ^{†††}
I have had a hard time concentrating on work	0.5866	–0.0838 (0.0531)	0.6075	–0.0601* (0.0334)
My work has been more stressful	0.6348	0.1292*** (0.0472) ^{††}	0.6236	0.0787** (0.0311) ^{††}
The interaction with clients has become easier	0.5519	–0.1421*** (0.0533) ^{††}	0.5765	–0.0792** (0.0330) [†]
I lack proper equipment to work	0.5444	0.0056 (0.0496)	0.6000	–0.0236 (0.0323)
<i>Panel B: Fairness & Support</i>				
New tools have been supportive	0.6716	0.0931** (0.0403) [†]	0.6556	0.0441* (0.0254)
My manager has been very supportive	0.6798	0.1232*** (0.0389) ^{†††}	0.6429	0.0813*** (0.0244) ^{†††}
Other LOs from my branch have been supportive	0.7094	0.0690* (0.0399)	0.6613	0.0480* (0.0257)
My performance assessment has been fair	0.7259	0.0406 (0.0419)	0.6802	0.0190 (0.0271)
It is fair to get full salary if work	0.6281	0.1910*** (0.0418) ^{†††}	0.6281	0.1043*** (0.0260) ^{†††}
It is fair to get lower salary if not work	0.6480	0.0255 (0.0461)	0.6403	0.0051 (0.0279)
It is fair to receive salary quicker if come to work	0.6256	0.1724*** (0.0399) ^{†††}	0.6342	0.0764*** (0.0257) ^{†††}
<i>Panel C: Job Anxiety</i>				
Borrowers lack proper equipment	0.6305	0.0640 (0.0437)	0.6367	0.0296 (0.0264)
I can help support borrowers	0.6782	0.1584*** (0.0381) ^{†††}	0.6510	0.0780*** (0.0256) ^{†††}
I feel demotivated during this period	0.6237	–0.0928* (0.0492)	0.6095	–0.0387 (0.0303)

Table A.3 (continued)

Dependent variable	Incidence (0/1)		Normalized Score (0–1)	
	Earlier Months (1)	Later Months (2)	Earlier Months (3)	Later Months (4)
I fear that the company might close its business	0.5099	–0.2772*** (0.0446) ^{†††}	0.5347	–0.1844*** (0.0304) ^{†††}
After the crisis, there will be more jobs	0.5928	–0.1186** (0.0523) [†]	0.5954	–0.0606* (0.0313)

Notes: Data for earlier months from Covid 2 (October 2020) and for later months from Main 2 (December 2020). Each row shows the results estimating Eq. 2 with the dependent variable indicated. Dependent variables are reported as *Incidence 0/1* where 1 refers to the LO agreeing or strongly agreeing, and 0 otherwise, or as *Normalized Score (0–1)* based on the 5-point Likert scale on agreement, normalized to a range from 0 to 1. *Earlier Months* shows the mean of the dependent variable in Main survey 1, *Later Months* shows the estimated coefficient. For Panel A: *Work Ease* the Covid 2 survey recalls the period during the lockdown (from March to May 2020) and the Main 2 survey recalls the period after the lockdown (from June to December 2020). For Panel B: *Fairness & Support* the Covid 2 survey recalls the period since the lockdown (from March to October 2020) and the Main 2 survey recalls the period from November to December 2020. For Panel C: *Job Anxiety & Demotivation* the Covid 2 survey recalls the period since the lockdown (from March to October 2020) and the Main 2 survey recalls the period from November to December 2020. The number of distinct LOs in these regressions ranges from 178 to 204, depending on the statement. OLS regressions with standard errors clustered at the loan officer level in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ indicate significance levels based on un-adjusted p-values; [†] $p < 0.1$, ^{††} $p < 0.05$, ^{†††} $p < 0.01$ indicate significance levels based on multiple-testing adjusted p-values as in Aker et al. (2012).

Table A.4

Robustness check: work tasks and time use unrestricted sample.

Dependent variable	Incidence (0/1)		Time Spent (share of total 0–1)	
	Dec19 (1)	Dec20 (2)	Dec19 (3)	Dec20 (4)
<i>Panel A: Disbursement</i>				
Verify loan applications	0.9845	–0.0440*** (0.0125) ^{†††}	0.1366	–0.0024 (0.0035)
Collect borrowers' information	0.9544	–0.0291* (0.0156)	0.1335	–0.0026 (0.0039)
Inform borrowers about other loans	0.9615	–0.0174 (0.0129)	0.1405	0.0002 (0.0048)
<i>Panel B: Repayment</i>				
Prepare group meetings	0.9725	–0.0513*** (0.0148) ^{†††}	0.1590	0.0041 (0.0055)
Remind defaulting borrowers	0.9672	–0.0180 (0.0127)	0.1449	–0.0016 (0.0040)
Support borrowers	0.9412	–0.0268* (0.0162)	0.1374	0.0031 (0.0040)
<i>Panel C: Acquisition</i>				
Identify potential new borrowers	0.9689	0.0057 (0.0105)	0.1582	0.0070 (0.0052)

Notes: Data from December 2019 (Main 1) and December 2020 (Main 2). Robustness check of Table 3 with the unrestricted sample. Each row shows the results estimating Eq. 2 with the dependent variable indicated. Dependent variables are reported as *Incidence 0/1* where 1 refers to the LO performing the task, and 0 otherwise, or as *Time spent (share of total 0–1)* which captures the share of the total working time spent on performing the task. *Dec19* shows the mean of the dependent variable in Main survey 1, *Dec20* shows the estimated coefficient. The number of LOs in these regressions ranges from 727 to 743, depending on the task. OLS regressions with standard errors clustered at the loan officer level in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ indicate significance levels based on un-adjusted p-values; [†] $p < 0.1$, ^{††} $p < 0.05$, ^{†††} $p < 0.01$ indicate significance levels based on multiple-testing adjusted p-values as in Aker et al. (2012).

Table A.5

Robustness check: working styles unrestricted sample.

	Plannin (1)	Effort (2)	Objective Work Time (in minutes) (3)	Subjective Work Time (4)
Dec20	–0.0122 (0.0096)	–0.0241** (0.0094)	–10.0323 (11.9318)	–0.0066 (0.0119)
Dec19 (mean)	0.6578	0.7420	650.9147	0.7707
Observations	1016	1008	1028	1051
N (LOs)	582	583	586	586
R ²	0.0014	0.0060	0.0007	0.0003

Notes: Data from December 2019 (Main 1) and December 2020 (Main 2). Robustness check of Table 4 with the unrestricted sample. Dependent variable: *Planning* is a normalized index capturing how well LOs plan their work (e.g., using reminders and checklists, and following through with their plans). *Effort* is a normalized index capturing how much effort LO exerts on main work dimensions (enforcing repayments, marketing, and assessing borrowers). *Objective Work Time* captures the self-reported working time in minutes during a normal day. *Subjective Work Time* is a normalized index capturing the subjectively perceived working time of LOs (e.g., often working overtime or skipping lunches). OLS regressions with standard errors clustered at the loan officer level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.6

Robustness check: mental health unrestricted sample.

Jun/Jul20 based on:	Subjective Well-Being			Perceived Stress		
	Average (1)	First Obs. (2)	Last Obs. (3)	Average (4)	First Obs. (5)	Last Obs. (6)
Dec20	0.0197 (0.0156)	0.0118 (0.0169)	0.0195 (0.0163)	−0.0718*** (0.0097)	−0.0696*** (0.0113)	−0.0654*** (0.0104)
Jun/Jul20 (mean)	0.5040	0.5119	0.5042	0.4280	0.4258	0.4216
Observations	1043	1043	1043	1043	1043	1043
N (LOs)	723	723	723	723	723	723
R ²	0.0014	0.0004	0.0012	0.0489	0.0364	0.0350
p-value (First = Last)		0.4655			0.5764	

Notes: Data from June–July 2020 (Covid 1) and December 2020 (Main 2). Robustness check of Table 5 with the unrestricted sample. Dependent variables: Subjective well-being is elicited through a self-reported questionnaire WHO-5 Well-Being Index normalized to a range from 0 to 1. Perceived stress is elicited through a self-reported questionnaire Perceived Stress Scale 4 (PSS-4) normalized to a range from 0 to 1. Average refers to the average across all observations per loan officer in our Covid 1 survey. First Observation refers to the first, Last Observation to the last observation for each loan officer, which are the same in case of only one observation. p-value (First = Last) from a test of difference between the estimated coefficients. OLS regressions with standard errors clustered at the loan officer level in parentheses. *p < 0.1, **p < 0.05, ***p < 0.01.

Table A.7

Robustness check: work perceptions unrestricted sample.

	Work Ease (1)	Fairness & Support (2)	Job Anxiety & Demotivation (3)
Later months	−0.0491*** (0.0086)	0.0971*** (0.0151)	−0.0474*** (0.0082)
Earlier months (mean)	0.4702	0.6275	0.5107
Observations	706	744	745
N (LOs)	347	362	361
R ²	0.0395	0.0466	0.0404

Notes: Data for earlier months from Covid 2 (October 2020) and for later months from Main 2 (December 2020). Robustness check of Table 6 with the unrestricted sample. Dependent variables: Work Ease is a normalized index (range 0 to 1) where the Covid 2 survey recalls the period during the lockdown (from March to May 2020) and the Main 2 survey recalls the period after the lockdown (from June to December 2020). Fairness & Support is a normalized index (range 0 to 1), where the Covid 2 survey recalls the period since the lockdown (from March to October 2020) and the Main 2 survey recalls the period from November to December 2020. Job Anxiety & Demotivation is a normalized index (range 0 to 1), where the Covid 2 survey recalls the period since the lockdown (from March to October 2020) and the Main 2 survey recalls the period from November to December 2020. All indices are positively coded, i.e., a higher score indicates a higher perception. OLS regressions with standard errors clustered at the loan officer level in parentheses. *p < 0.1, **p < 0.05, ***p < 0.01.

Table A.8

Attrition and non-response.

	Left Sample (1)	Non Response (2)	Left Sample (3)	Non Response (4)	Left Sample (5)	Non Response (6)
Age	−0.0010 (0.0049)	0.0016 (0.0039)				
Married	−0.0069 (0.0408)	0.0141 (0.0340)				
College Degree	−0.1004* (0.0581)	0.0189 (0.0432)				
Seniority at company	0.0016*** (0.0006)	0.0001 (0.0005)				
Seniority at branch	−0.0017* (0.0009)	−0.0004 (0.0008)				
Planning			−0.0587* (0.0302)	0.0177 (0.0258)		
Effort			0.0151 (0.0457)	−0.0546 (0.0402)		
Objective Work Time			0.0000 (0.0001)	−0.0000 (0.0001)		
Subjective Work Time			−0.0277 (0.0336)	0.0436 (0.0283)		
Number of Borrowers					−0.0000 (0.0003)	0.0005* (0.0002)
Loan Amount Outstanding					−0.0118 (0.0138)	−0.0114 (0.0110)

Table A.8 (continued)

	Left Sample Left Sample (1)	Non Response Non Response (2)	Left Sample Left Sample (3)	Non Response Non Response (4)	Left Sample Left Sample (5)	Non Response Non Response (6)
Collection Percentage					–0.0011 (0.0011)	–0.0016* (0.0008)
PAR					–0.0030* (0.0018)	–0.0013 (0.0012)
Constant	0.4087*** (0.1258)	0.1120 (0.1019)	0.5691*** (0.1748)	0.1746 (0.1245)	0.5771*** (0.0790)	0.2084*** (0.0645)
N(LOs)	596	596	583	583	590	590

Notes: Dependent variables: *Left Sample* equals 1 if a LO responded in our Main 1 survey (December 2019), but left before our Main 2 survey (December 2020). *Non-Response* equals 1 if a LO did not respond to our Main 2 survey despite receiving the Main 2 survey. Column (1) and (2) look at whether LO characteristics (at Main 1 survey) such as age, marital status, education, seniority at the company and seniority at the branch predict LO's attrition at Main 2 survey. Column (3) and (4) look at whether LO working styles (at Main 1 survey) such as planning, effort, objective work time, and subjective work time predict LO's attrition at Main 2 survey. Column (5) and (6) look at whether LO performance (average performance October–November 2019) predicts LO's attrition at Main 2 survey. OLS regression with robust standard errors
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.9

Overview of response rates per questionnaire.

	Main 1 (Dec 2019)	Covid 1 (Jun-Jul 2020)	Covid 2 (Oct 2020)	Main 2 (Dec 2020)	Panel
Task and Time Use Questionnaire	583	.	.	302	276
Planning Questionnaire	583	.	.	303	277
Effort Questionnaire	583	.	.	304	270
Subjective Work Time Questionnaire	592	.	.	306	287
Objective Work Time Questionnaire	591	.	.	308	302
Subjective Well-Being Questionnaire	.	534	.	320	320
Perceived Stress Questionnaire	.	534	.	320	320
Work Ease Questionnaire	.	.	289	211	187
Fair & Support Questionnaire	.	.	327	235	207
Job Anxiety Questionnaire	.	.	327	235	207

Notes: The table shows an overview of participation in each questionnaire in our surveys. Column *Panel* shows the number of subjects participating in both two surveys.

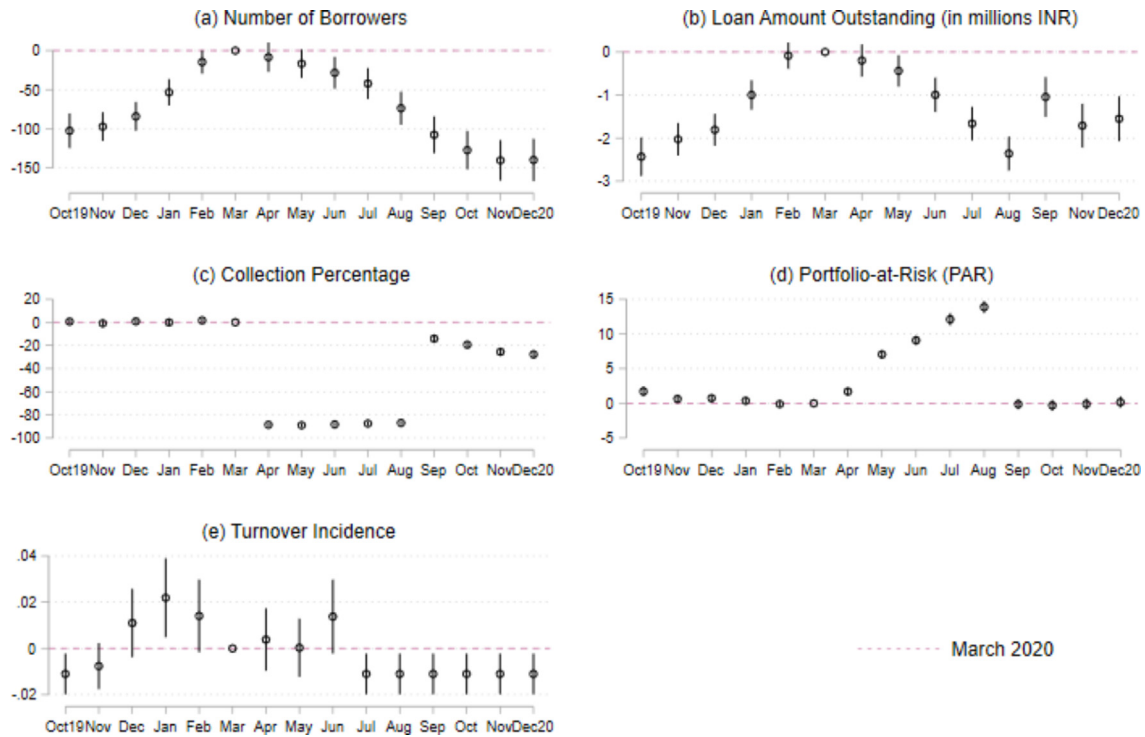


Fig. A.1. Administrative Indicators: Estimated Changes to March 2020 (October 2019 - December 2020) Notes: Figures (a)–(e) show the monthly difference in the performance indicators (number of borrowers, loan amount outstanding, collection percentage, PAR, and turnover incidence) from October 2019 to December 2020, estimated by $y_{im} = \alpha + \sum_{t=-5}^{t=9} \beta_t 1\{month_{m+t}\} + \epsilon_{im}$ where y_{im} is the outcome for respondent i in month m ; β_t measures the difference of the monthly outcome measure in month $m + t$, which includes the months from October 2019 to December 2020, relative to the event month $m = 0$ of March 2020 when the nationwide lockdown started; and ϵ_{im} refers to standard errors clustered at the loan officer level. The indicator *Number of Borrowers* represents the total number of borrowers that LOs handle. The variable *Loan Amount Outstanding* is the accumulated outstanding loan (in millions, Indian Rupees) that has yet to be repaid. The variable *Collection Percentage* is the percentage of the outstanding loan amount that a LO is able to collect within a given month. The variable *PAR* is the percentage of gross loan portfolio that is overdue by more than 30 days. The variable *Turnover Incidence* takes a value of 1 if it is LO's last working month and 0 for all other months that LO works at the company. The circle shows the estimation coefficient from the OLS regressions, and the bar shows the 95% confidence interval. The sample covers LOs who participated in our baseline survey, with the number of distinct LOs being 592.

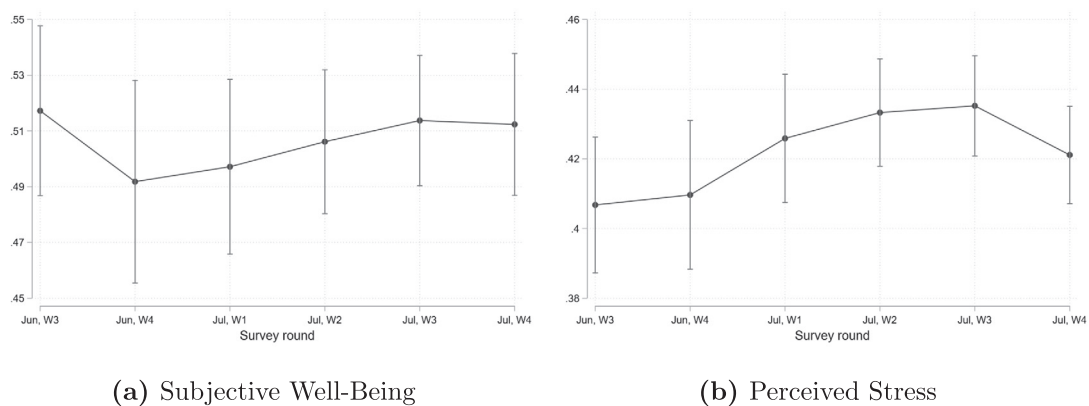


Fig. A.2. Development of Mental Health in June and July 2020. Notes: Data from June–July 2020 (Covid 1). Mental health measured in the Covid survey 1 in six consecutive weeks from the third week of June to the fourth week of July 2020 as (a) *Subjective Well-Being* elicited through a self-reported questionnaire WHO-5 Well-Being Index and normalized to a range from 0 to 1; and (b) *Perceived Stress* elicited through a self-reported questionnaire Perceived Stress Scale 4 (PSS-4) and normalized to a range from 0 to 1. Graphs show the weighted normalized measures where the sample weights reflect the ratio of total response rates over the weekly survey participation. Vertical lines show the 95% confidence interval for each survey round. The number of loan officers is 459.

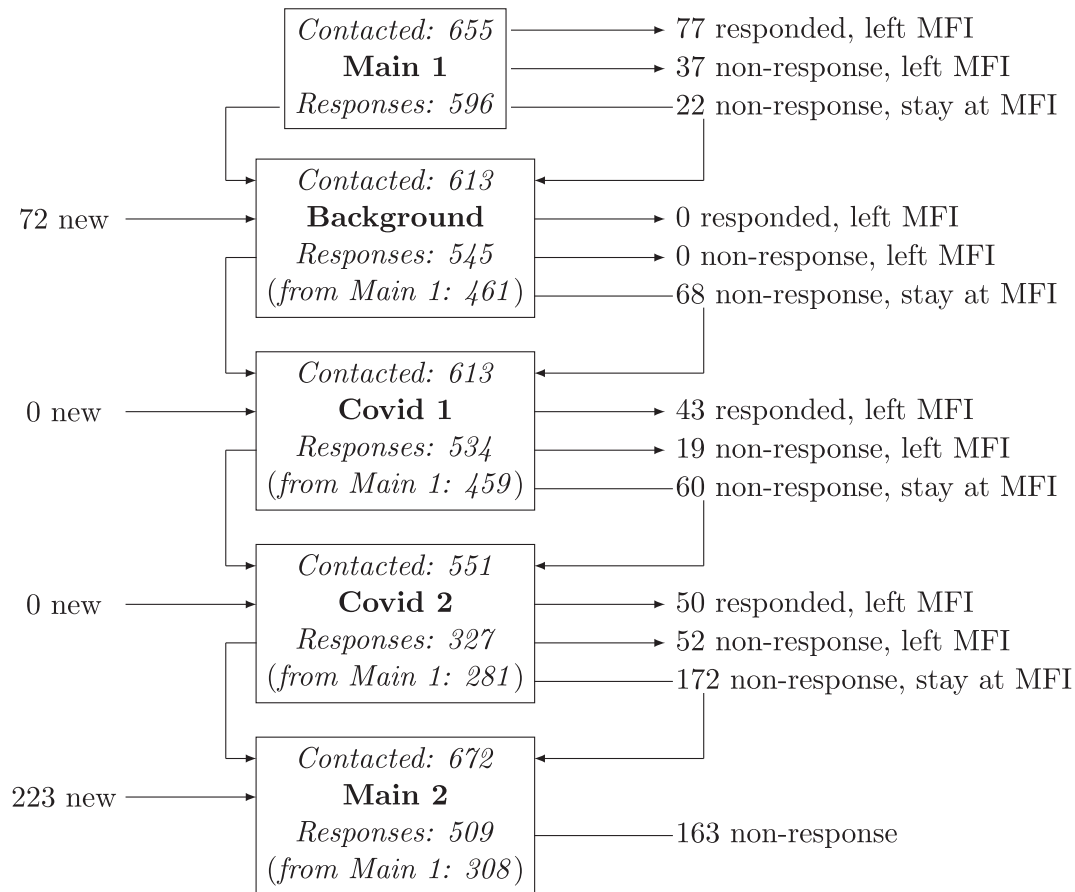


Fig. A.3. Sample dynamics and response rates.

Appendix B. Description of variables and their sources

Planning Measured at the Main 1 survey in December 2019 and at the Main 2 survey in December 2020. The planning index captures the extent LOs plan their work and consists of 5 items.

The wording is as follows:

Would you agree or disagree to the following statements?

1. I plan my everyday work life
2. I use checklists to organize my everyday work load
3. I use reminders to manage my everyday work load
4. It is difficult to stick to my work plan
5. It is difficult for me to follow-through to reach the specific performance level I aimed at

Responses are measured on a five-point scale (Strongly agree [1], Agree [2], Neutral [3], Disagree [4], Strongly disagree [5]). Item 4 and 5 are recoded in inverse order before adding up.

Effort Measured at the Main 1 survey in December 2019 and at the Main 2 survey in December 2020. The effort index captures the extent LOs exert effort in three main work dimensions (disbursement, repayment, and acquisition) and consists in total of 23 items.

The wording is as follows:

Would you agree or disagree to the following statements?

Disbursement

1. I inquire about borrower's housing situation to see whether they may be interested in a home improvement or sanitation loan

2. I only assess borrower eligibility and do all necessary background checks, once a borrower requests to switch from JL to IL
3. I only assess borrower eligibility and do all necessary background checks, once a borrower requests an additional loan product
4. I go through the list of joint liability borrowers and mark who would be a good candidate for an upgrade to an individual loan
5. I actively approach eligible JL borrowers to switch to IL loans
- Repayment**
6. I actively try to gain information about members' business activities
7. I actively try to gain information about members' loan usage/ on how a borrower has used the loan amount
8. I encourage loan repayments by closely following over-due borrowers in their everyday life to build up pressure
9. I encourage loan repayments loan repayments by cautioning that no further loans will be available for borrower if repayment is not made
10. I ask group leaders for help in reminding defaulting members about repayment
11. I ask other members for help in reminding defaulting members about repayment
12. When a reason for non-repayment is genuine, I allow other group members to contribute and submit a repayment for a defaulting borrower
13. I allow defaulters to repay their installment from the meeting directly at the branch in the evening
- Acquisition**

14. I regularly provide your borrowers information about loan products available
15. I think about different ways how to best provide information on different loan products to all borrowers
16. I advertise utilities that MFI sells
17. I advertise other loan products, like home improvement loans or sanitation loans to all borrowers
18. I advertise other loan products, like home improvement loans or sanitation loans to all borrowers
19. I identify borrowers who may be good candidates for other loan products available aside from the standard loan, like home improvement loans, sanitation loans, or utility products
20. I only advertise other loan products, like home improvement loans or sanitation loans to borrowers who may be good candidates for these
21. I identify potential villages to expand services to
22. I market MFI in new and existing areas
23. I ask borrowers to encourage others to join MFI

Responses are measured on a five-point scale (Strongly agree [1], Agree [2], Neutral [3], Disagree [4], Strongly disagree [5]). Item 20 and 21 are recoded in inverse order before adding up.

Objective Work Time Measured at the Main 1 survey in December 2019 and at the Main 2 survey in December 2020. The objective work time captures LO's working duration without a lunch break (in minutes) during a normal day. We elicit when LO starts and finishes their normal work day, and how much time LO has for a lunch break.

Subjective Work Time Measured at the Main 1 survey in December 2019 and at the Main 2 survey in December 2020. The subjective work time index captures how LOs perceive their working time and consists of 4 items.

The wording is as follows:

Would you agree or disagree to the following statements?

1. To improve my performance, I often work-after hours
2. I often skip lunch breaks to get my work load done
3. I try to work while I am traveling back and forth from borrowers
4. I often work after regular working hours for LOs to get my workload done

Responses are measured on a five-point scale (Strongly agree [1], Agree [2], Neutral [3], Disagree [4], Strongly disagree [5]).

Subjective Well-Being Measured weekly for six weeks in June and July 2020 and once in December 2020. The WHO-5 index is a self-reported measure of current subjective well-being, first introduced in 1998 as part of the DEPCARE project on well-being measures in primary health care. It has been found to have adequate validity in screening for depression and in measuring well-being (Topp, Østergaard, Søndergaard, & Bech, 2015). The index consists of five statements, which respondents rate according to the 0–5 scale. The total score thus ranges from 0 to 25, with 0 representing the worst possible well-being and 25 representing the best possible well-being. The normalized score is obtained by dividing the total score by 25. The wording is as follows:

Over the last two weeks,

- a. I have felt cheerful and in good spirits
- b. I have felt calm and relaxed
- c. I have felt active and vigorous
- d. I woke up feeling fresh and rested
- e. My daily life has been filled with things that interest me

Responses are measured on a five-point scale (at no time [0], some of the time [1], less than half of the time [2], more than half of the time [3], most of the time [4], all of the time [5]).

Perceived Stress. Measured weekly for six weeks in June and July 2020 and once in December 2020. The Perceived Stress Scale (PSS), developed by Cohen, Kamarck, and Mermelstein (1983), is a self-reported measure. The short version, PSS-4, is a simple psychological instrument to measure the degree to which one perceives current events in the last week as stressful. Four items are designed to detect how unpredictable, uncontrollable, and overloaded respondents find the situations in their lives. The total score ranges from 0 to 16, with the higher score indicating the more perceived stress. The normalized score is obtained by dividing the total score by 16. The wording is as follows:

In the last week, how often have you felt

- ... that you were unable to control the important things in your life?
- ... confident about your ability to handle your personal problems?
- ... that things were going your way?
- ... difficulties were piling up so high that you could not overcome them?

Responses are measured on a five-point scale (never [0], almost never [1], sometimes [2], fairly often [3], very often [4]).

Work Ease. Measured once in October 2020 and once at the endline survey in December 2020. The work ease index captures how easy LOs work during Covid. The work ease index in our October 2020 survey asks how easy LOs work *during the lockdown*, i.e., between March and May. The work ease index in our December 2020 surveys asks how easy LOs work *after the lockdown* is lifted, i.e., between June and December 2020.

The wording is as follows:

On a scale of 1–5, with 1 being completely disagree and 5 being completely agree, please state your level of agreement with the following statements.

1. I had a lot of new tasks for my work
2. As compared to before, I had less workload
3. As compared to before, my work was easier
4. I had a hard time concentrating on work
5. As compared to before, my work was more stressful
6. The interaction with borrowers has become easier
7. I faced technological difficulties completing my work as I lacked prop-er equipment (like smartphones/laptops/printers etc)

Responses are measured on a five-point scale (Strongly agree [1], Agree [2], Neutral [3], Disagree [4], Strongly disagree [5]). Item 1, 4, 5, and 7 are recoded in inverse order before adding up.

Fairness & Support Measured once in October 2020 and once at the endline survey in December 2020. The fairness & support index captures the extent LOs perceive they are treated fairly and receive support. The fairness & support index in our October 2020 survey asks for LOs' perception *since the lockdown*, i.e., between March and October 2020. The fair & support index in our December 2020 surveys asks for LOs' perception *in the last two months*, i.e., between November and December 2020.

The wording is as follows:

On a scale of 1–5, with 1 being completely disagree and 5 being completely agree, please state your level of agreement with the following statements.

1. In these difficult times, the new tools/processes that MFI implemented are very supportive.
2. My manager is very supportive
3. Other LOs from my branch are very supportive
4. My performance assessment is fair during this period
5. It is fair that BROs will get paid 100% of their salary if they work
6. It is fair that BROs will get paid lower salaries if they do not work
7. It is fair that BROs might receive their salary payments quicker if they come to the branch

Responses are measured on a five-point scale (Strongly agree [1], Agree [2], Neutral [3], Disagree [4], Strongly disagree [5]).

Job Anxiety Measured once in October 2020 and once at the endline survey in December 2020. The job anxiety index captures the extent LOs feel anxious about the job prospect. The job anxiety index in our October 2020 survey asks for LOs' perception *since the lockdown*, i.e., between March and October 2020. The job anxiety index in our December 2020 surveys asks for LOs' perception *in the last two months*, i.e., between November and December 2020.

The wording is as follows:

On a scale of 1–5, with 1 being completely disagree and 5 being completely agree, please state your level of agreement with the following statements.

1. I face technological difficulties completing my work, because borrowers lack proper equipment (like mobile phones)
2. I can help support borrowers in these difficult times
3. I feel demotivated during this period
4. I fear that [partner organization] might close its business
5. After the crisis, there will be more jobs than before for BROs

Responses are measured on a five-point scale (Strongly agree [1], Agree [2], Neutral [3], Disagree [4], Strongly disagree [5]). Item 2 and 5 are recoded in inverse order before adding up.

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