Employee performance and mental well-being: The mitigating effects of transformational leadership during crisis *

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The positive role of transformational leadership for productivity and mental well-being has long been established. Transformational leadership behavior may be particularly suited to navigate times of crisis which are characterized by high levels of complexity and uncertainty. We exploit quasi-random assignment of employees to managers and study the role of frontline managers' leadership styles on employees' performance, work style, and mental well-being in times of crisis. Using longitudinal administrative data and panel survey data from before and during the Covid-19 pandemic, we find that the benefits of different leadership styles depend on the environment: Employees of more transactional managers outperform those of more transformational leaders before the onset of the pandemic. During the pandemic, however, more transformational managers lead employees to better performance and mental well-being. We discuss potential explanations and implications.

Keywords: leadership, frontline managers, labor-management relations, organizational behavior, crisis

JEL Codes: M54, M12, J53

1. Introduction

Leadership is thought to play a critical role in the success of individuals, teams, organizations, and even societies. It is hence widely studied in various disciplines such as management, psychology, and recently also economics. Leadership style is one cornerstone of leadership research, and one of the most studied styles is transformational leadership (Siangchokyoo et al., 2020). Introduced by Burns (1978), the idea of transformational leadership is that leaders create a common vision among followers and unleash intrinsic motivation. This stands in contrast to transactional leadership, i.e., the focus on the proper exchange of resources and reliance on contract- and incentive-based leadership techniques. While meta-analyses point to mostly positive effects of transformational leadership on outcomes such as productivity or well-being (e.g., Montano et al., 2017), transactional leadership can also be beneficial (e.g., Bass et al., 2003; Jiang et al., 2019). Reconciling these discrepancies, Zehnder et al. (2017) propose that the optimal leadership style depends on the environment and its complexity. However, empirical evidence for this is scarce (Siangchokyoo et al., 2020).

We provide the first empirical evidence for Zehnder et al. (2017)'s proposition that the complexity of the environment determines the optimal leadership style: For simpler environments, transactional, incentive-based systems are arguably better suited to motivate employees extrinsically. Managers try to align the interests of the employees and the organization by making rewards such as pay or promotions contingent on performance (Burns, 1978). In complex environments that constantly change, it is difficult to contract tasks and define corresponding rewards and sanctions. In such cases, transformational leadership can be more promising (Zehnder et al., 2017). Transformational leaders aim at providing employees with a common mission and vision (Shamir et al., 1993), or even instilling an identity which guides behavior (Akerlof & Kranton, 2000). Deviating from such a vision or identity can be psychologically costly, due to, e.g., a sense of guilt or shame. Employees will hence be intrinsically motivated to contribute to the success of the organization even absent incentives.[1] Since transformational leadership requires substantial personal investments of the leader to influence their followers' preferences by creating a shared vision or identity, its benefits may only outweigh the cost in complex environments.[2]

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[1] While transformational and transactional leadership are conceptual substitutes, we note that in practice managers will rarely operate absent a basic level of incentives. Thus, transformational leadership can be thought of as an extension of a basic level of transactional leadership that augments rewards and sanctions with mission, vision, and identity (Zehnder et al., 2017). Beyond this basic level, more sophisticated transactional and transformational leadership can be substitutes.

[2] For example, leaders may create and implement regular identity-inducing rituals or seek to persuade employees of the benefits and importance of the mission in one-on-one discussions. Transformational leaders may also identify their employees' strengths and stimulate them to show personal initiative (Bakker et al., 2023). These actions require time and effort and might need a continuous investment to remain effective: Bakker et al.

Crises are increasingly recognized as important sources of complexity: They introduce the need to define and accomplish new tasks, and they generally increase uncertainty. We focus on the Covid-19 pandemic as a severe crisis and hence a surge in complexity. We empirically test the hypothesis that transformational leaders outperform transactional ones under high complexity by exploiting longitudinal panel data on employee performance and quasi-random assignment of employees to managers. The data come from a large Indian Not-for-profit Microfinance Institution, where managers can be thought of as frontline managers who are directly responsible for supervising the loan officers, i.e., the employees in their branch who establish and maintain links to the clients. We document better financial performance for employees under more transformational leadership during the crisis, i.e., times of high complexity. While this performance improvement mainly compensates the existing performance differential in normal times, it is accompanied by higher mental well-being in times of crisis.

We study a setting that has been particularly affected by the pandemic-induced crisis: The financial industry in low- and middle-income countries that caters to hard-to-reach segments of the market by offering microfinance services. Loan officers who usually travel to remote and rural areas to conduct transactions in person were severely restricted in their movement by lockdowns. In addition, debt moratoria allowed many borrowers to pause their repayments, which put additional pressure on the cash flow management of the institutions. Complexity and uncertainty of the work environment skyrocketed, and established incentive schemes became inapplicable due to exogenous restrictions and policy measures. This makes ours an ideal setting to test Zehnder et al. (2017)'s proposition empirically.

In addition to the complex operational challenges and exogenously imposed constraints, there are further reasons why this setting is interesting. First, the Covid-19 pandemic was completely unexpected and entailed unanticipated consequences. This implies that there were no mitigating strategies in place, so we can rule out that the effects of leadership styles are confounded by better preparedness of certain leaders. Second, we can measure individual performance and mental well-being and thus identify granular effects of leadership styles. This is important as the crisis affected employees' performance and mental well-being in this sector negatively (Malik et al., 2020; Czura et al., 2022). Third, our setting allows us to overcome several methodological challenges that the literature commonly faces (Collins et al., 2023): Our longitudinal panel data of monthly performance indicators from before and during the crisis allow us to identify changes in outcomes over time and at different levels of complexity. In addition, staffing is centrally planned and mandated in a quasi-random fashion, such that the matching process of employees

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(2023) only find effects for the days managers meet their employees to stimulate them; Castro et al. (2022) find that managers spend on average 2.5 hours peer week on individual meetings to induce psychological safety.

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to managers and hence leadership styles is exogenously determined. Similar to Hertzberg et al. (2010), Fisman et al. (2017), and Bhowal et al. (2021), we exploit this natural experiment to improve inference.

We study 146 branches of the Microfinance Institution with one manager and two to eight loan officers each. We define each branch manager's leadership style as more transactional or more transformational based on their subordinate employees' rating from the Global Transformational Leadership questionnaire (Carless et al., 2000). We focus on the pre-crisis leadership rating since leadership behavior is traditionally viewed as a stable, innate characteristic of the leader. This also addresses concerns that leadership perceptions are affected by the crisis, which in turn affects outcomes and thus jeopardizes causal identification of effects.[3]

We link the managers' leadership style to measures of performance, work style, and mental well-being of 585 employees. For this, we use monthly administrative data on multiple performance indicators of individual employees, such as the financial performance of the managed loan portfolio from October 2019 to January 2021. In addition, we use detailed survey data from before and during the pandemic to measure employees' work styles, and data collected during the pandemic on mental well-being. We observe how employees' outcomes change over the course of the crises. To understand the role of leadership, we differentiate these trajectories by leadership styles. We use a difference-in-differences estimation strategy for outcome variables that we observe before and during the crisis. Moreover, we split the crisis into a period of particularly high uncertainty in which the Covid-19 pandemic disrupted regular operations heavily due to the national debt moratorium (April – August 2020), and a period of lower uncertainty after the moratorium (September 2020 – January 2021). We apply a simple difference estimation strategy for outcomes that we only observe during the crisis.

We find differences in outcomes by leadership before the crisis: Employees whose frontline managers have a more transformational leadership style perform worse financially. With respect to work styles and effort, we find that transformational leaders induce more planning and effort, and shorter working times among their employees. After the onset of the Covid-19 pandemic, rather transformational leaders do better in leading their employees, in line with Zehnder et al. (2017)'s proposition. Their employees perform either equally well or better, especially on financial indicators. We observe no change in work style but an increase in the working time of these employees. Results are similar for both periods of crisis. The magnitude of effects implies that employees of rather transformational leaders catch up with their peers led by rather trans-

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[3]Birkeland et al. (2017) report changes in leadership perception following a terrorist attack at the workplace: Employees suffering from high post-traumatic stress viewed their immediate leader as less supportive, while unaffected employees did not change their perceptions.

actional leaders during the crisis. Just as important, the subjective well-being of employees of transformational leaders is higher in June and July 2020, and perceived stress lower. Our results show that the benefits of leadership styles for performance depend on the environment and its complexity: Transactional leadership appears to be beneficial during 'normal' times when high-powered incentives are in place. In contrast, transformational leaders appear to navigate the crisis better when complexity surges and standard incentive schemes become inapplicable.

Our research contributes to three strands of literature. First, we contribute to the literature documenting the relationship between transformational leadership and employees' outcomes (see for example Zehnder et al. (2017) for an overview). This literature has established positive links of transformational leadership to employee productivity (e.g., Bass et al., 2003; Ng, 2017) and to mental well-being (e.g., Braun et al., 2013; Sosik & Godshalk, 2000; Kloutsiniotis et al., 2022). While most studies focus either on the effects of leadership on performance or on employee well-being, we examine both outcomes in one setting. Further, we advance the empirical identification of effects by exploiting the quasi-random assignment of leaders to employees in our setting. Based on our findings, we provide a nuanced discussion on the suitability of transformational leadership for different environments and discuss implications for management policy.

Second, we contribute to the expanding literature on leadership and crisis management (see Wu et al. (2021) and Collins et al. (2023) for recent reviews). Existing work distinguishes two aspects: First, how leadership styles change in times of crises (e.g., Stoker et al., 2019; Garretsen et al., 2022; Dóci & Hofmans, 2015). Second, how different types of leadership may mitigate the effects of crises. While this second aspect is mostly neglected, Sommer et al. (2016) and Ma & Yang (2020) suggest that transformational leadership in times of crisis is positively related to worker resilience and crisis management, respectively. We focus on the second aspect and advance this literature, which often faces methodological limitations (Collins et al., 2023), in several ways. First, we use detailed employee panel data to analyze the effects of leadership styles on employees' performance in normal times and in times of crisis in an emerging market economy. In addition, we limit endogeneity concerns by the quasi-random assignment of leaders to employees and by linking pre-pandemic leadership style measures to employees' performance. Finally, we study employee's mental well-being, which has been severely affected by the Covid-19 pandemic (e.g., Banks & Xu, 2020; Adams-Prassl et al., 2022). Our findings suggest that more transformational leadership can make employees more resilient in times of crisis.

Third, we contribute to the growing literature on the role of frontline managers in shaping employee outcomes (e.g., Baek et al., 2022; den Nieuwenboer et al., 2017). Two studies examine transformational leadership of such managers. Hill et al. (2011) document how direct managers'

transformational leadership shapes employees' attitudes toward radical organizational change, whereas Farahnak et al. (2020) provide evidence for a positive relationship between transformational leadership of frontline managers and attitudes toward and success of the implementation of an innovative practice. We complement this survey-based work with a combination of administrative performance data and panel survey data, and study outcomes under varying levels of complexity. Further, we blend this literature with the literature on crisis leadership: While most studies on crisis leadership focus on strategic level leaders such as CEOs (Collins et al., 2023), surprisingly little is known about frontline managers who interact with employees frequently and more "hands on", and are arguably of substantial importance in crisis situations.

2. Background

Institutional setting

We partner with an Indian microfinance institution that focuses its operations on Northern India.[4] It provides financial services to poor women with the aim of supporting income-generating activities and eradicating poverty. In 2021, it served a total of nearly 750,000 active borrowers who held loans worth about 15 billion INR (about 172 million EUR at the time of writing). The financial institution operates via 450 branches that are located in eight different states.

As typical for the sector, the loan officers are the main field staff and responsible for all client-facing work. Clients are typically located in rural areas, so loan officers travel from the branch to the clients' villages where they provide services in face-to-face interactions. One main task is to ensure existing clients repay their loans, which happens during group meetings. In these, clients of a village come together, usually on a monthly basis. The loan officer chairs the meeting and supervises repayment. They also advertise new products and monitor how the loan is used. The most important metric for assessing performance in this set of tasks is financial performance, measured as the share of the outstanding loan repayments collected. An additional set of tasks relates to expanding the client portfolio, e.g., by selecting potential villages and establishing business relationships with poor women. Here, the performance is measured by the number of newly acquired clients. On average, one employee serves 547 clients. Clients can be of two main types: Standard clients only receive loans if a group provides social collateral, i.e., agrees to be liable for the loan and to repay in case of delinquency. These group clients form the vast

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[4]The collaboration started in 2018 to study the effects of incentive schemes on work organization and performance. We collected baseline data in December 2019, but due to the Covid-19 pandemic, could not implement the field experiment scheduled to start in April 2020. We decided to collect additional data that we use, together with the baseline data, in this paper as well as in Czura et al. (2022). In the latter, we descriptively document the time use and tasks of loan officers as well as their output and mental well-being. We use the leadership data and exploit the quasi-random assignment of employees to managers only in the present paper.

majority of clients an employee serves (91%) and they conduct all transactions in the group meetings. Existing clients assessed to be especially credit-worthy are offered a loan without social collateral. These clients are served individually and they do not need to attend any group meetings. In normal times, the organization monetarily incentivizes the acquisition of these individual borrowers because they have larger loan sizes and hence lower relative costs per loan, and it is more difficult to acquire suitable clients. However, their financial performance can be more volatile than group borrowers since they do not benefit from the group's mutual insurance for loan repayment. Further, monetary incentives are in place for targets that relate to financial performance, the number of newly acquired group clients, and the total number of clients served.

Branches are led by a branch manager who supervises the two to eight loan officers of the branch. Branch managers can best be thought of as frontline managers. The minimum qualification required is a university degree and three years of relevant work experience.[5] Managers do not handle clients themselves. Instead, they set goals for their branch with the area hubs of the organization, they plan how to achieve these goals, they coordinate the work of the employees assigned to the branch, and they monitor and supervise their employees. The importance of the managers for the work of employees is highlighted by one loan officer interviewed in August 2019: *"I think an [employee] does a good job only if the manager is good. [...In] some of the branches, the [employees] can't do the work properly. The fault lies with their respective managers."* The managers' payment is tied to the performance aggregated across all employees of their branch. This bonus payment takes into account the number of clients served, the number of newly acquired clients (in total and by client type), and the financial performance of the branch. We present descriptive statistics on both employees and frontline managers in Section 4.1.

Staff planning is centrally done at headquarters. This includes determining the number of loan officers per branch, allocating loan officers to branches, etc. The hiring process is highly standardized and overseen by the head of the human resource department at the headquarters. The selection criteria are defined ahead of the selection process, and their adherence is the responsibility of said head. Branch managers cannot hire anyone themselves but may request additional staff. Managers are nonetheless involved in the recruitment process because the related activities usually take place at branches.[6] Importantly, branches that handle applications

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[5]During the recruitment process, preference is given to higher-educated applicants. If possible, vacant manager positions are filled by internal promotions.

[6]Candidates for the job of the loan officer go through a written test, a group discussion led by a recruitment officer, and an interview with a panel consisting of the branch manager and two higher-level managers external to the branch. The panel makes the preliminary decision of whether to hire the candidate. Copies of all documents generated during the hiring process are sent, together with the applicants' documents, to headquarters. The minimum qualification requirement for loan officers is a university degree. New loan officers are usually between 18 and 30 years old when they join the organization.

by prospective loan officers (usually the closest one to the applicant's place of residence) are not the branches to which loan officers will be posted: To avoid clientelism, field staff is not allowed to be posted within 40km of their current place of residence, and there is regular staff rotation across branches. In Section 3, we use observable characteristics of employees, managers, and branches and document a quasi-random allocation process of employees resulting from the standardized hiring and rotation procedures.

The onset of the Covid-19 pandemic in India

The Covid-19 pandemic was a large exogenous shock that demanded many adjustments in the operation of financial institutions, especially those with face-to-face business routines. The microfinance industry experienced pressure from two fronts during the onset of the pandemic. First, a nationwide Indian lockdown severely restricted movement for the entire month of April 2020. Many limitations remained in place until the end of May and impeded much of the fieldwork required for normal business routines, especially for collecting loan repayments.

Second, the industry suffered from another substantial external constraint: To cushion the effect of the lockdown restrictions for borrowers, the Reserve Bank of India (RBI) implemented a debt moratorium. This moratorium was in place from March 27 to the end of August 2020 and allowed financial institutions to grant their clients repayment pauses for the duration of the moratorium. The corresponding changes in cash flows created further uncertainty for microfinance institutions as their own refinancing loans were not covered by the moratorium. The time of the debt moratorium was hence characterized by increased pressure on the financial stability of the sector and disruptions to the normal modus operandi. This posed new challenges to the management of microfinance organizations, increasing work complexity and uncertainty.

Institutional implications

Two main challenges emerged for the management of the institution we study. First, the lockdown meant that it became more difficult to coordinate, support, and monitor the work of employees, especially during the period of work from home. Despite the advanced technical equipment of the organization, working from home was challenging due to the nature of loan officers' tasks.[7] The organization implemented new measures to support and monitor employees' effort while they were working from home. For example, a new app was rolled out with which loan officers were asked to remotely contact their clients using their work smartphone, such that these efforts could be documented and distinguished from shirking. App data were also used

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[7]In our sample, around 90% of employees self-reported that they continued working during movement restrictions in April and May, but only 24% stayed close to the branch office and worked on-site.

to determine salary payments: To receive a full salary while not working at the branch, the app had to be used on work days.[8] The frontline managers were mainly responsible for the implementation of the additional measures to deal with the crisis: On top of their usual tasks, they had to supervise and motivate their employees to cope with the increase in complexity and to reorganize their work. Further, the managers had to oversee the implementation of the new systems for monitoring that would determine salary payments.

Second, the uncertainty around clients' livelihoods created by movement restrictions was exacerbated by a dry-up of other income sources, such as remittances, reducing borrowers repayment capacity even further. While the debt moratorium eased these pressures on the client side, the institution still had to find restructuring agreements for its own loans as these were not covered by the moratorium. The CEO summarizes the situation in an interview mid-May 2020 as follows: *"There is a fear amongst everybody. Even lenders like banks [...] are concerned about their asset quality, they are functioning at their one-third capacity, thereby making them a bit risk-averse during such times."* Importantly, the debt moratorium severely affected the collected loan repayments. Borrowers making use of the moratorium and the remote working conditions implied that targets based on pre-pandemic standards became unattainable and the existing incentive structure was quickly put on hold in April 2020.

Conceptual Framework

With the onset of the Covid-19 pandemic, the managers faced a situation that classifies as more complex than before the crisis. Following Zehnder et al. (2017), we describe below how leadership style can play an important role in navigating environments of different complexity.

Broadly speaking, managers have two main approaches at their disposal to foster cooperation and coordination. In the first approach, managers try to align the interests of the employees and the organization by making rewards such as pay or promotions contingent on performance (Burns, 1978). In the second one, leaders aim at providing employees with a common mission and vision (Shamir et al., 1993), or even instilling an identity (Akerlof & Kranton, 2000, 2005). Such a vision provides guidance on how a 'good employee' ought to behave, such that deviating from prescribed behavior can be psychologically costly. Employees will hence be intrinsically motivated to contribute to the organization's success, even absent incentives. Following Bono & Judge (2004) and Zehnder et al. (2017), we classify leaders who predominantly use incentives in

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[8]The lower bound of the salary was 80% of the pre-pandemic base salary that every employee would receive in April and May.

either formal or relational contracts to exhibit a rather transactional leadership style.[9] Leaders who predominantly use the second approach can be classified as having a rather transformational leadership style (Zehnder et al., 2017; Siangchokyoo et al., 2020).

In such a framework, Zehnder et al. (2017) identify the complexity of the environment as the main determinant of the suitability of leadership styles. They distinguish two relevant dimensions of complexity: the dimensionality of the task and the stability of the environment. With low task dimensionality, all tasks can be incentivized, and multi-tasking problems avoided. Monitoring mechanisms or performance pay will work well, and transactional leaders can be successful. Even without legally enforceable contracts, rather transactional leaders can use relational contracts as long as the environment is sufficiently stable. This stability is important for relational contracts to work as they rely on repeated interactions and hence a foreseeable future. In contrast, if complexity increases, either due to high-dimensional tasks or instability, transformational leaders may have an advantage over transactional ones. If tasks become too high-dimensional, they cannot be contracted anymore; the resulting incentive scheme would become too complex. Identity may now motivate employees to complete all tasks and can hence substitute the lack of extrinsic rewards. If the environment is unstable, relational contracts are difficult to maintain as external events continuously pose the risk of creating misunderstandings, which in turn can damage the relationship. Providing clarity, e.g., through a shared vision, is hence more promising than relationship-based transactional leadership.

Applying this framework to our setting, we note that complexity before the pandemic was relatively low. While the tasks of the loan officers were multi-dimensional, output was measurable in several dimensions (e.g., loan repayment rates, number of clients served, number of new clients acquired), and a corresponding incentive scheme was in place. The environment that the organization was operating in was comparatively stable, but the power of relational contracts between branch managers and loan officers was limited due to the rotational staffing policy. As a whole, the organization relied on transactional leadership tools, but this might not have precluded individual frontline managers from adding transformative elements to their leadership.[10] We hence view transformational leadership in our setting as an extension of a basic level of transactional leadership that augments rewards and sanctions with mission, vision, or identity.

Both dimensions of complexity increased during the crisis. New tasks were introduced, which increased the dimensionality of the work to be performed. At the same time, the performance-

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[9]In relational contracts, trust and a common understanding of implicit terms govern behavior. Importantly, these implicit contracts are grounded in the provision of future incentives without which the contract would break down.

[10]While the organization had (and still has) a vision and a mission statement on its website, the upper management was mainly interested in further optimizing the incentive structure rather than working on mission-related topics when we discussed potential interventions.

related pay scheme was paused. Figure A.1 in the online appendix illustrates that incentives were only paid before the onset of the pandemic and were already lower than usual in March 2020. In addition, as described above, the lockdown and the moratorium substantially increased uncertainty, leading to a less stable environment.[11]

Based on the above-presented framework, we hypothesize that the optimal leadership style depends on the environment and its complexity. In particular, since the pandemic clearly increased complexity, we formulate the following hypothesis:

Hypothesis 1. A rather transformational leadership style of frontline managers is related to *better performance* with increased complexity during the Covid-19 pandemic.

Additionally, transformational leadership may mitigate the adverse impacts of the Covid-19 pandemic on mental health (see, e.g., Banks & Xu, 2020; Adams-Prassl et al., 2022). Based on the literature documenting positive effects on transformational leadership on mental well-being (see Braun et al., 2013; Sosik & Godshalk, 2000; Kloutsiniotis et al., 2022), we formulate the following hypothesis:

Hypothesis 2. A rather transformational leadership style of frontline managers is related to *better mental well-being* during the Covid-19 pandemic.

Predictions regarding the pre-crisis period are ambiguous: If the work environment was already sufficiently complex before the crisis, we would expect transformational managers to induce better performance in their employees. At lower levels of complexity, the different leadership styles might yield similar results, or transactional managers may outperform transformational managers.

3. Data and Empirical Strategy

Data

Our data come from two main sources: administrative data from the organization about its employees' performance and self-reported data from surveying employees via online questionnaires. We restrict our sample population to branches in the two main states of operations, Uttar Pradesh and Madhya Pradesh, and exclude small branches with fewer than three loan officers and branches that do not offer the standard (group) loan product and hence operate

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[11]From an economic perspective, this uncertainty should be interpreted as ambiguity (unknown probabilities of the different potential states of the world) rather than risk (known probabilities). In this sense, Zehnder et al. (2017)'s main proposition, that transformational leadership is better suited to navigate complex environments, is in line with the finding that ambiguity in organizations can help mobilize for a common goal (Sillince et al., 2012).

differently.[12] From this set of branches, we randomly select 150. Branches are located in or close to the following agglomerations: Allahabad, Gwalior, Jabalpur, Jaipur, Lucknow, Moradabad, Saharanpur, and Varanasi. The monthly administrative data we obtained range from October 2019 to January 2021 and contain information on the number of clients handled, new clients acquired, as well as the financial performance of the loan portfolio, i.e., complete repayments as a fraction of outstanding repayments.

We complement these admin data with self-collected survey data. The baseline survey covers an assessment of the branch manager's leadership style and detailed information about employees' work style, and subjective measures of their effort. We also elicited basic demographic characteristics. The baseline survey was administered in December 2019 and January 2020, and, with slight alterations, repeated a year later as endline survey. In addition, we use data on mental well-being and perceived stress from our "Covid" survey, which we administered each week from June 15 to July 26, 2020. The online appendix provides a detailed description of all variables (Section C), as well as results of further analyses (Sections A and B).[13]

We distributed online questionnaires by posting links in chat groups that employees can access via their work smartphones. A video recorded by two local research assistants introduced the study and explained procedures prior to the start of the baseline survey. Before accessing the survey, all employees provided written consent for study participation. This consent was renewed for each subsequent survey. To protect employees' privacy, it was made clear that neither individual-level nor branch-level responses would be shared with managers, and that only aggregate results would be communicated to headquarters. Employees took the survey in Hindi or English and could switch languages at any time. Due to concerns of our partner organization, we could not monetarily incentivize responses. Instead, employees received a certificate for their participation if they completed at least 80% of the surveys, and employees were allowed to fill in the survey during their regular work hours. To increase response rates, the local research assistants followed up with employees. Frontline managers were briefed about the study and also encouraged participation.[14] We split up surveys into several questionnaires to circumvent fatigue and increase response rates by making surveys very quick to fill in (less than five minutes on average). This came at the cost of varying sample sizes across variables, as not all respondents filled in all the links.

To build a coherent data set, we focus our main analyses on 585 employees who i) appear in the administrative data, ii) complete our baseline survey and hence consented to participating

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[12]We made this decision when designing the experiment, i.e., prior to this study. By the time the study was implemented, three branches employed only two loan officers.

[13]Tables and figures with alpha-numerical numbering are in the corresponding sections in the online appendix.

[14]Response rates and attrition do not differ by leadership style (see Table B.9).

in the study, and iii) for whom we can construct a branch-level leadership score, as explained below.[15] These restrictions imply that we analyze data from 146 branches. Figure A.2 provides an overview of the sample, response rates, and the number of excluded employees for each survey.

The measure of transformational leadership

We measure each manager's leadership style using the Global Transformational Leadership questionnaire by Carless et al. (2000).[16] Each employee rates their manager on eight dimensions of transformational leadership. We aggregate these eight ratings to an equally-weighted transformational leadership score and normalize it to a range between zero and one. For each employee, we hence elicit their assessment of their leader, where leadership style ranges from purely transactional (the lowest possible transformational leadership score, zero) to transformational (the highest possible score, one). The higher the leadership rating, the more frequent employees experience their manager showing leadership behavior along the dimensions of transformational leadership.

We then define a manager's leadership style based on their pre-crisis leadership rating from all their subordinate employees. For this, we assign the average transformational leadership rating of all employees in the branch b to the manager, i.e., $Leader\ Style_b$.[17] We then create a binary leadership style variable distinguishing more transformational and more transactional leadership styles: The variable $Transformational\ Leader_b$ is equal to one if the branch manager's score is above the sample mean, and hence their leadership style can be classified as more transformational relative to other managers in our sample, and equal to zero otherwise.

We rely on the pre-crisis transformational leadership rating in line with the traditional view that leadership style is a rather stable, innate characteristic (e.g., Bono & Judge, 2004; Resick et al., 2009).[18] This circumvents two problems: First, leadership perceptions during the crisis are likely correlated with our outcome measures of interest (Birkeland et al., 2017), which, in turn,

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[15]Restriction iii) implies that at least one employee of the branch has to have answered the leadership questionnaire. Participants that are excluded for not meeting all three criteria are similar to our sample in terms of observable characteristics (see Table A.1).

[16]While we focus on transformational leadership style, we acknowledge that various other conceptualizations of leadership styles exist as laid out in Schermuly et al. (2022), for example. Even though the concept and measurement of transformational leadership has been criticized (see, e.g., van Knippenberg & Sitkin, 2013), it is still a cornerstone of leadership research (Siangchokyoo et al., 2020). We address some measurement-related criticism in the online appendix (Section B.1) and discuss further challenges in the conclusion.

[17]Note that the manager's leadership rating is assigned to each employee in their branch, independent of whether the employee assessed the leadership style themselves. This allows us to maximize the number of observations. The distribution of the normalized leadership score $Leader\ Style_b$ is shown in Figure A.3.

[18]This conceptualization is supported by several documented linkages between a leader's personality and their transformational leadership behavior (see Bono & Judge (2004) and Dóci & Hofmans (2015)). For instance, emotional intelligence (Barling et al., 2000), core self-evaluations (Resick et al., 2009), positive psychological traits such as hope, optimism, or resilience (Peterson et al., 2009), internal locus of control, and extraversion (Judge & Bono, 2000) have all been shown to relate positively to transformational leadership ratings.

are influenced by the Covid-19 pandemic and the debt moratorium in particular (Czura et al., 2022). Second, recent literature suggests that leadership may change during crisis (Stoker et al., 2019; Garretsen et al., 2022) or with changing complexity of the environment (Dóci & Hofmans, 2015). However, the effect of the increased complexity on a leader's behavior cannot possibly be disentangled from the effect on employees' perceptions because complexity changes for both leaders and employees at the same time. In the online appendix (Section B.2), we discuss how leadership ratings have changed with the pandemic and how this affects our leadership operationalization. While we find some changes in leadership ratings, we show that results are largely robust to restricting the analysis to the 61% of managers whose leadership classification did not change.

The binary leadership classification is our preferred measure for several reasons. First, it is easy to interpret. Second, the binary classification is less prone to measurement error that may be induced by the Likert scales of the Global Transformational Leadership measure.[19] Third, the binary classification does not require a functional form assumption regarding the relation between the leadership measure and the outcome variable, while a continuous measure assumes a linear relationship. Current leadership theory is not (yet) informative regarding such a functional form. Last, the measure is relatively stable over time. Nonetheless, we test for the robustness of our results to alternative operationalizations of our leadership measure: a normalized, continuous measure of transformational leadership, *Leader Style$_b$*, a normalized and continuous leadership measure that excludes the employee's own rating and is equal to the average rating of the other $n-1$ employees in their branch b, *Leader Style exclusive$_b$*, and an alternative binary classification based on a median sample split. The online appendix (Section B.1) shows that our main results are fairly robust to different leadership measures, and we point out the consistency of results when presenting them in the corresponding parts of Section 4.

Quasi-random assignment of employees to branches

One concern in identifying a causal relationship between frontline managers' leadership style and the performance of their employees is the matching of managers and employees based on variables and characteristics unobservable to the econometrician. Employees may be systematically allocated to specific branches or managers, and different leadership styles may be better suited to retain employees or they may attract different types of employees. As described above, the selection of employees follows a standardized procedure controlled by the HR Department and

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[19]Likert scales provide ordinary data, so we cannot interpret the distance between two points on the scale; the mean of Likert scale is impossible to interpret; and answers on Likert scales can be subject to distortions, such as the avoidance of extreme responses, subjective answer patterns that reduce inter-personal comparability, or social desirability bias (Hodge & Gillespie, 2005; Kreitchmann et al., 2019).

the placement of successful candidates is centrally decided. Additionally, regular staff rotation is in place to curb potential clientelism. These procedures suggest that the allocation of employees to branches and hence managers is as good as random.

We empirically investigate this quasi-random allocation with three tests. First, we test whether employee characteristics differ by their manager's leadership style. Table 1 shows that there are no significant differences in employee characteristics of transformational and transactional managers (Panel C). This suggests that there is no selection on observables, neither due to a systematic assignment nor due to differential retention.

Second, we investigate the correlation between employee characteristics on the one hand, and branch and manager characteristics on the other hand. Out of the 72 correlation coefficients, four are statistically significant at the five percent level, and an additional four at the 10 percent level (Table A.2). The number of significant correlations is similar to what would be expected for random assignment of employees to managers (3.6 at the five percent level and 7.2 at the ten percent level).

Lastly, we investigate whether managers' leadership style is correlated with employee turnover. If transformational leaders differed systematically in the retention of employees, this could result in selective matching between managers and employees. As set out in Table 1, Panel A, we do not observe any significant difference in the share of employee turnover before and during the pandemic.[20] Additionally, we note that – with the exception of the number of employees (p=0.073) – other observable branch characteristics are balanced for transformational and transactional leadership (Table 1, Panel A). This is reassuring as such characteristics may influence performance or retention, or even leadership styles.

Based on these tests and the standardized hiring process, we conclude that employees are very likely quasi-randomly allocated to managers.

Empirical strategy

To assess the role of transformational leadership during crises, we observe how employees' individual performance, their work style, and their mental well-being change in response to the crisis. We differentiate these trajectories by the leadership styles of employees' managers. For outcomes that we observe before and during the crisis, we use a difference-in-differences estimation, whereas outcomes observed during the crisis are assessed as simple differences. We lay out our empirical strategy for the following three outcome categories based on our available

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[20]Note, however, that similar turnover rates across leadership styles do not rule out differential retention based on employee traits. While Panel C of Table 1 reassuringly shows no differences in observables of employees with transactional and transformational leaders, we cannot test for selection based on unobservables that may work through this potentially differential turnover.

Table 1: Summary Statistics for Branches, Managers, and Employees

	Mean SD (1)	Transformational Leadership (2)	Transactional Leadership (3)	Test (1)=(2) p-value (4)
Panel A: Branch Characteristics				
City Size (in mil)	1.54	1.56	1.51	0.7817
	(0.94)	(0.95)	(0.94)	
Distance to Large City (in km)	165.17	161.12	172.07	0.6810
	(154.69)	(150.62)	(162.60)	
Distance to Closest Branch (in km)	32.55	32.99	31.80	0.8766
	(44.77)	(53.55)	(23.62)	
Number of Employees	4.01	3.86	4.26	0.0733
	(1.31)	(1.14)	(1.52)	
Turnover Share (Oct19-Mar20)	0.09	0.10	0.08	0.4268
	(0.16)	(0.16)	(0.15)	
Turnover Share (Apr20-Jan21)	0.17	0.16	0.21	0.1803
	(0.21)	(0.20)	(0.22)	
Number of Group Clients	1904.85			
	(860.90)			
Number of Individual Clients	184.17			
	(120.95)			
Panel B: Manager Characteristics				
Age	30.43	30.64	30.08	0.4220
	(4.00)	(3.69)	(4.49)	
Male %	98.26	97.78	99.07	0.4925
	(10.92)	(12.79)	(6.80)	
College %	98.26	97.78	99.07	0.5462
	(12.42)	(14.82)	(6.80)	
Seniority at Company (in months)	75.53	75.78	75.11	0.8922
	(28.66)	(28.91)	(28.51)	
Panel C: Employee Characteristics				
Age	26.19	26.11	26.17	0.8307
	(3.38)	(3.64)	(3.38)	
Married %	53.39	52.11	53.48	0.7471
	(49.89)	(50.03)	(49.99)	
Male %	91.09	91.27	90.87	0.8690
	(28.49)	(28.27)	(28.87)	
College %	84.89	83.66	84.78	0.7179
	(35.82)	(37.02)	(36.00)	
Seniority at Company (in months)	32.41	30.33	36.21	0.1192
	(39.98)	(39.74)	(50.35)	
Seniority at Branch (in months)	21.91	21.64	21.98	0.9026
	(31.30)	(35.80)	(29.10)	
Number of Group Clients	499.97			
	(243.32)			
Number of Individual Clients	47.37			
	(55.24)			
N Employees	585	355	230	
N Managers	144	92	54	
N Branches	146	92	54	

Notes: Data for the branch characteristics are from October 2019 to January 2021. Data for the manager and employee characteristics are from December 2019. The table reports the mean and standard deviation (in brackets) of the branch characteristics (Panel A), manager characteristics (Panel B), and employee characteristics (Panel C). Column (1) reports the summary statistics for employees who answered our baseline survey. Column (2) reports the statistics for employees who have a more transformational leader, and Column (3) reports the statistics for employees who have a more transactional leader. Column (4) reports the *p*-value of the t-test that both means are the same. *Transformational Leadership* is an indicator if the manager's average leadership rating from all employees within the branch is above the sample mean. *Transactional Leadership* indicates a rating below the sample mean. *Turnover Share* represents the fraction of the number of employees leaving the organization during the period of interest to the total number of employees at the branch during the whole sample period from October 2019 to January 2021.

data: monthly performance of employees as documented by the administrative data, work styles captured in the baseline and endline survey data, and mental well-being measured throughout June and July.

Our first estimation model differentiates transactional vs. transformational leaders before and during the crisis. For the monthly performance data as well as the baseline and endline survey data, we estimate differential changes in response to the crisis by the leadership style of the responsible manager as follows:

$$y_{ibt} = \alpha + \beta_1\, Transformational_b + \beta_2\, Crisis_t + \beta_3\, Transformational_b \times Crisis_t + \chi + \epsilon_{ibt} \quad (1)$$

where y_{ibt} is the outcome variable for employee i in branch b and at time t; $Transformational_b$ is the manager's leadership style measure in branch b; $Crisis_t$ is an indicator for the observation being from during the pandemic; χ is a vector of control variables and ϵ_{ibt} is the error term. Control variables include employee and branch characteristics (see Table 1). The time dimension t is defined as month $t = m$ for the monthly performance data and as a binary variable distinguishing survey data from the baseline ($t = 0$) or the endline ($t = 1$). Consequently, $Crisis_t$ indicates any month after March 2020 for monthly performance data and any observation from the endline survey for the survey data.

The monthly performance data further allow us to examine different levels of crisis intensity. In particular, we take into account the especially strenuous time of the debt moratorium and distinguish three time periods: First, normal times, i.e., October 2019 to March 2020, crisis with higher uncertainty from April 2020 to August 2020 (during the moratorium), and crisis with lower uncertainty from September 2020 to January 2021 (after the moratorium). We estimate the following regression equation:

$$\begin{aligned} y_{ibm} = {} & \alpha + \beta_1\, Transformational_b + \beta_2\, CrisisHigh_m + \beta_3\, CrisisLow_m \\ & + \beta_4\, Transformational_b \times CrisisHigh_m + \beta_5\, Transformational_b \times CrisisLow_m \\ & + \chi + \epsilon_{ibm} \end{aligned}$$

$$(2)$$

where y_{ibm} is the outcome variable for employee i in branch b and month m; $CrisisHigh_m$ is an indicator for observations from the period April to August 2020; $CrisisLow_m$ is an indicator for observations from the period September 2020 to January 2021; $Transformational_b$ is the manager's leadership style measure in branch b; χ is the same vector of control variables as explained above, and ϵ_{ibm} is the error term.

To assess the relationship of transformational leadership and the psychological state of employees during the heyday of the crisis, we use data from the Covid survey administered throughout June and July 2020. We estimate:

$$y_{ibt} = \alpha + \beta_1 \, Transformational_b + \delta_t + \chi + \epsilon_{ibt} \tag{3}$$

where δ_t are week fixed effects; week t of the survey runs from one to six. The remaining parameters follow the above definitions.

4. Results

4.1. Decriptive statistics

Our sample consists of 146 branches, and we have detailed information on 585 employees and 144 managers. We present summary statistics in Column 1 of Table 1. The branches have on average four employees and they serve 1905 clients with group loans and 184 clients with individual loans. The frontline managers are on average 30 years old, nearly all of them are male and have a college degree (98% each). As of December 2019, they have worked for over six years at the organization. Employees are on average 26 years old, also overwhelmingly male (91%), and most have a college degree (85%). Around half of them are married, and they have worked around 2.7 years at the organization and 1.8 years at the current branch, as of December 2019. During the period of our study, from October 2019 to January 2021, employees serve on average 500 clients with group loans and 47 with individual loans.

Sixty-four percent of the managers are classified as rather transformational leaders. The average transformational leadership score shows that employees rate their frontline managers' leadership style as quite transformational (0.7 on a scale from zero to one), with little differences across the eight individual components.[21]

Figure 1 plots the observed means for the monthly performance indicators (number of group and individual clients, client acquisition, and financial performance) over time and separately for employees with more transformational and more transactional managers. Important for our identification strategy, we observe parallel trends before the onset of the crisis, indicated by the red dashed line, for all performance indicators.[22]

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[21]The components are all strongly correlated with each other (see Table A.3) and skip patterns in the questionnaire are not systematically related to individual components or employee characteristics (see Table A.4).

[22]Any difference in levels is absorbed by a linear-trends model (see Figure A.4). A Wald test for parallel linear trends also fails to detect any significant difference between both types of employees before the crisis.
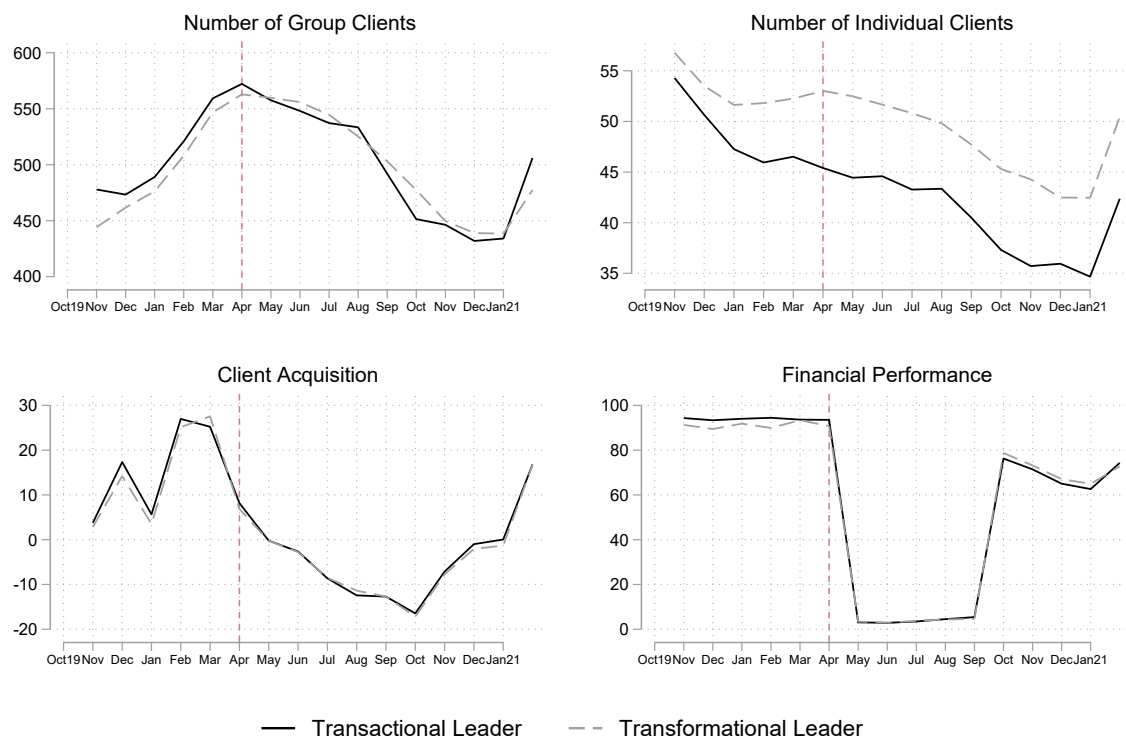
Figure 1: Performance Trends: Observed Means (October 2019 - January 2021)

Notes: The figure shows the observed means of performance indicators (number of group clients, number of individual clients, client acquisition, and financial performance) per month from October 2019 to January 2021, separately for employees of transactional leaders and of transformational leaders. *Client Acquisition* refers to the number of clients acquired each month, net of settled clients. *Financial Performance* is the percentage of complete repayments as a fraction of outstanding repayment. N Employees: 585, N Branches: 146.

4.2. Analysis

In the following, we present our main results. In the online appendix (Section B), we show that our main results are robust to different measures of transformational leadership[23] and alternative econometric approaches and also discuss that attrition and item non-response are unlikely to be a concern.

Performance

In our analysis, we compare the performance of employees with more transformational managers to the performance of those with more transactional managers. Table 2 presents results for the whole crisis period in Panel A (based on Equation 1) and for low and high crisis periods separately in Panel B (based on Equation 2). We structure our presentation of results by differences across leadership styles in the pre-crisis period indicated by the estimated coefficients of *Trans-*

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[23]For transparency, we discuss results for alternative measures of leadership throughout. These results are also presented and summarized in online appendix Section B.1.

formational$_b$; differences during the crisis for employees of rather transactional managers by the estimated coefficients of *Crisis*$_t$ and differential effects of rather transformational managers by the estimated coefficients of *Transformational*Crisis*$_{bt}$.

Table 2: Individual Performance and Transformational Leadership
+ Controls

	Number of Clients			Client Acquisition	Financial Performance
	Total	Group	Individual		
	(1)	(2)	(3)	(4)	(5)
Panel A. Crisis = Apr20-Jan21					
Transformational	-0.0419	-5.9736	5.9317***	-1.5394*	-2.6737***
	(8.2482)	(7.8287)	(1.9875)	(0.8268)	(0.7587)
Transformational*Crisis	22.8893**	21.8004**	1.0889	1.1801	4.0044***
	(11.0879)	(10.5685)	(2.3751)	(0.9034)	(1.3856)
Crisis	-29.6383***	-22.8063***	-6.8320***	-19.4433***	-58.2823***
	(8.3577)	(8.0305)	(1.7503)	(0.7037)	(1.0467)
Constant	440.9254***	390.5584***	50.3670***	22.5719***	83.3258***
	(25.3297)	(23.8247)	(5.6904)	(1.8696)	(3.6280)
R^2	0.0536	0.0514	0.0500	0.2160	0.3948
Panel B. Crisis High=Apr20-Aug20, Crisis Low=Sep20-Jan21					
Transformational	-0.0603	-5.9908	5.9306***	-1.5385*	-2.6597***
	(8.2471)	(7.8277)	(1.9877)	(0.8268)	(0.7444)
Transformational*Crisis High	23.0243*	21.2785*	1.7458	1.5029*	2.7256***
	(12.5999)	(12.0632)	(2.7283)	(0.8863)	(0.7802)
Transformational*Crisis Low	24.1928*	23.7082*	0.4846	0.7635	4.2478***
	(13.9162)	(13.2396)	(2.7274)	(1.0657)	(1.5164)
Crisis High	12.8376	17.3716*	-4.5340**	-21.8348***	-90.2060***
	(9.4383)	(9.1173)	(1.9750)	(0.6923)	(0.5576)
Crisis Low	-75.2000***	-65.9031***	-9.2969***	-16.8780***	-24.0395***
	(10.7204)	(10.2614)	(2.0563)	(0.8290)	(1.1802)
Constant	440.2302***	389.9075***	50.3227***	22.6076***	83.8604***
	(25.2035)	(23.7141)	(5.6868)	(1.8636)	(2.4654)
R^2	0.0711	0.0684	0.0516	0.2236	0.7462
p-value Crisis High=Crisis Low	0.9368	0.8632	0.6387	0.3302	0.2578
Mean of Dep. Var. (Control)	563.0940	514.7390	48.3550	14.5660	93.8821
Observations	8255	8255	8255	8255	8255
N Employees	585	585	585	585	585
N Branches	146	146	146	146	146

Notes: Data from October 2019 to January 2021. Dependent variables: *Total* refers to the total number of clients that employees handle, *Group* and *Individual* to the total number of group and individual clients, respectively. *Client Acquisition* shows the number of clients acquired each month, net of settled clients. *Financial Performance* is the percentage of complete repayments as a fraction of outstanding repayment. Independent variables: *Transformational* is the binary variable *Transformational Leader*$_b$ which indicates whether the manager's average leadership rating from all employees within the branch is above the sample mean. *Crisis* in Panel A refers to the period during the pandemic, April 2020 to January 2021. In Panel B, *Crisis High* refers to the period during the moratorium, April to August 2020, and *Crisis Low* to the period after the moratorium, September 2020 to January 2021. Mean of Dep. Var. (Control) reports the mean of the outcome variable for the reference group, i.e., for transactional leaders before the crisis. *Controls* for employee characteristics (age, marital status, college degree, seniority at the company, and seniority at the branch) and branch characteristics (number of employees, city size, distance to large city, and distance to closest branch) are included in all regressions. Robust standard errors are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Before the pandemic, from October 2019 to March 2020, each employee served on average 563 clients in total, 515 group and 48 individual clients. Employees acquired 15 new clients per month and collected 93.8% of the outstanding repayments of all their clients. In this period, leadership styles do not appear to significantly affect the overall number of clients handled (Table 2, Panel A, Column 1) or the number of group clients served (Column 2). The employees of more transformational leaders serve 5.9 (i.e., 12.3%) more individual clients (Column 3), but they acquire 1.5 fewer new clients (-10.6%; Column 4). Importantly, employees of more transformational managers also perform worse financially, by 2.7 percentage points or 2.8% (Column 5).[24]

The latter two performance results may be related to the shifted focus on individual clients, as these clients are more difficult to acquire and their repayment performance is more volatile.

During the crisis, when the Covid-19 pandemic imposed restrictions on employees' work environment, performance significantly decreased across all dimensions for employees of more transactional managers. In contrast, more transformational managers induced a 4.0 percentage points (4.3%; Column 5) better financial performance as compared to more transactional managers during the same period.[25] Employees of more transformational managers fully catch up on the pre-crisis performance differential and even appear to outperform those of transactional managers.[26]

Examining periods of higher vs. lower uncertainty, client acquisition and financial performance declined more strongly during the period of higher uncertainty for employees with more transactional managers (with declines of 150% and 96%, respectively; Table 2; Panel B). In contrast, the other performance indicators, all related to the number of existing clients, declined (more) during the period of lower uncertainty. The moratorium may partially explain this pattern. It allowed pauses in repayment that can be directly linked to the drop in financial performance. Only after the moratorium, existing clients had an incentive to leave the organization, as they were then forced to continue repaying. Loan restructuring and write-offs after the moratorium ended can explain the continued worse than pre-crisis financial performance (-24.0 percentage points, or 25.6%). For employees of more transformational managers, the performance differential to their peers is apparent and of similar size in both the period of high uncertainty and the one of

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[24]Using alternative measures of transformational leadership leads to the same qualitative findings. Statistical significance varies across measures, from more pronounced (continuous measures) to not significant (alternative binary measure). Results regarding financial performance are consistently statistically significant at least at the 5% level across all leadership measures.

[25]Using alternative measures of transformational leadership leads to the same qualitative findings, but less statistically pronounced for the two continuous measures and more pronounced for the alternative binary measure. Results regarding financial performance are consistently statistically significant at the 5% level across all four measures.

[26]This outperformance is even more pronounced and significant in alternative leadership measures.

low uncertainty, with no statistically significant differences (see the p-values for comparing the coefficients of *Crisis High* and *Crisis Low*). These results suggest that – while clearly important for the industry – the uncertainty created by the moratorium was not the only determinant of complexity in this crisis. While the absolute performance differentials for financial performance are not statistically significantly different from each other, the relative performance differential is substantially higher in the low crisis period (17.7% compared to 3.0%).

The most reliable effects of leadership style are on the financial performance of the loan portfolio: The estimated coefficients are consistent with respect to the order of magnitude and statistical significance across all alternative leadership measures and econometric specifications (see online appendix Section B). Our findings of better-performing employees of more transactional leaders in pre-crisis times and a reversal in times of crisis are in line with Zehnder et al. (2017) who argue that the optimal leadership style depends on the environment, and in particular, its complexity. Before the crisis, an established routine, clear goals, and a corresponding incentive structure to reward individual performance were in place. In this clearly defined setting, more transactional leaders were better able to stimulate performance. In contrast, during the crisis, complexity of the work increased, the incentive structure in place was suspended, and more transformational managers led employees to better performance.

Work styles

Before the pandemic, a more transformational leadership style is positively associated with work styles, as shown in Table 3: Employees with more transformational managers better plan their workday, and they exhibit more effort. When asked about their hours worked, the calculated working time suggests they work significantly less (76 minutes per day, or -10.9%, see Column 3).[27] However, when asked about subjective assessments of working time, such as often working overtime, the leadership style of the manager does not appear to matter. This divergence may occur due to two factors. First, despite working fewer hours, employees with more transformational leaders may feel they spend a lot of time at work, for example, because they exert more effort or work more efficiently and get more work done. Second, we note that the two measures differ in their sensitivity, which reduces their comparability: While objective working time varies by minute, subjective working time combines four statements that are rated on a five-point scale each.

Independent of the managers' leadership style, the crisis did not significantly impact employees' planning or effort. However, employees with more transactional managers report a

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[27]These patterns are qualitative the same for all leadership measures. Statistical significance is consistent; only the effect of the continuous leadership score that excludes the own rating on planning is insignificant (Table B.3).

(Dec19 vs. Dec20)
+ Controls

	Planning (1)	Effort (2)	Objective Work Time (3)	Subjective Work Time (4)
Transformational	0.0479**	0.0430***	-76.2214***	0.0249
	(0.0192)	(0.0163)	(21.9269)	(0.0236)
Transformational*Crisis	-0.0166	-0.0351	97.7936***	-0.0422
	(0.0274)	(0.0265)	(32.0202)	(0.0347)
Crisis	-0.0137	-0.0045	-79.6998***	0.0204
	(0.0215)	(0.0214)	(26.3421)	(0.0280)
Constant	0.6203***	0.6305***	701.5955***	0.7803***
	(0.0599)	(0.0574)	(74.5558)	(0.0795)
Mean of Dep. Var. (Control)	0.6371	0.7219	699.3846	0.7521
Observations	574	566	585	583
N Employees	301	301	301	301
N Branches	125	125	125	125
R^2	0.0386	0.0584	0.0499	0.0302

Notes: Data from December 2019 and December 2020. Dependent variables: *Planning* is a normalized index capturing how well employees plan their work (e.g., using reminders and checklists, and following through with their plans). *Effort* is a normalized index capturing how much effort employees exert on main work dimensions (disbursement, repayment, and acquisition). *Objective (Working) Time* captures the self-reported working time in minutes during a normal day. *Subjective (Working) Time* is a normalized index capturing the subjectively perceived working time of employees (e.g., often working overtime or skipping lunches). Independent variables: *Transformational* is the binary variable $Transformational\ Leader_b$ which indicates whether the manager's average leadership rating from all employees within the branch is above the sample mean. *Crisis* is an indicator variable for the period during the pandemic, December 2020. Mean of Dep. Var. (Control) reports the mean of the outcome variable for the reference group, i.e., for transactional leaders in December 2019. *Controls* for employee characteristics (age, marital status, college degree, seniority at the company, and seniority at the branch) and branch characteristics (number of employees, city size, distance to large city, and distance to closest branch) are included in all regressions. Robust standard errors are reported in parentheses. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

substantial reduction in working time of 98 minutes per day (-14.0%). This may be linked to restrictions complicating or preventing regular work tasks. While new approaches to keeping client contact were introduced that would have increased the workload if actually implemented, monitoring employees was more difficult, and the incentive scheme was paused, such that more transactional leaders might have had a harder time enforcing pre-crisis working hours. In contrast, employees of rather transformational managers exhibit a stable provision of work time.[28] Together with the higher performance regarding the number of clients served, we interpret these

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[28]The two continuous leadership measures yield similar results, while estimates for the binary measure based on the sample median are noisy and not statistically significant at the 5%-level.

findings as employees of more transformational managers displaying higher effort and motivation to keep client contact during the crisis despite the disruptions to their operations.

Mental well-being

We measure mental well-being through subjective well-being and perceived stress in six consecutive weeks in June and July 2020. Figure 2 shows how subjective well-being (Panel A) and perceived stress (Panel B) developed over this time period for employees of more transactional vs. more transformational managers. The patterns appear to suggest better mental well-being for employees of more transformational managers, but we lack the statistical power to distinguish the subjective well-being and perceived stress scores of these two types of employees within a given survey week.
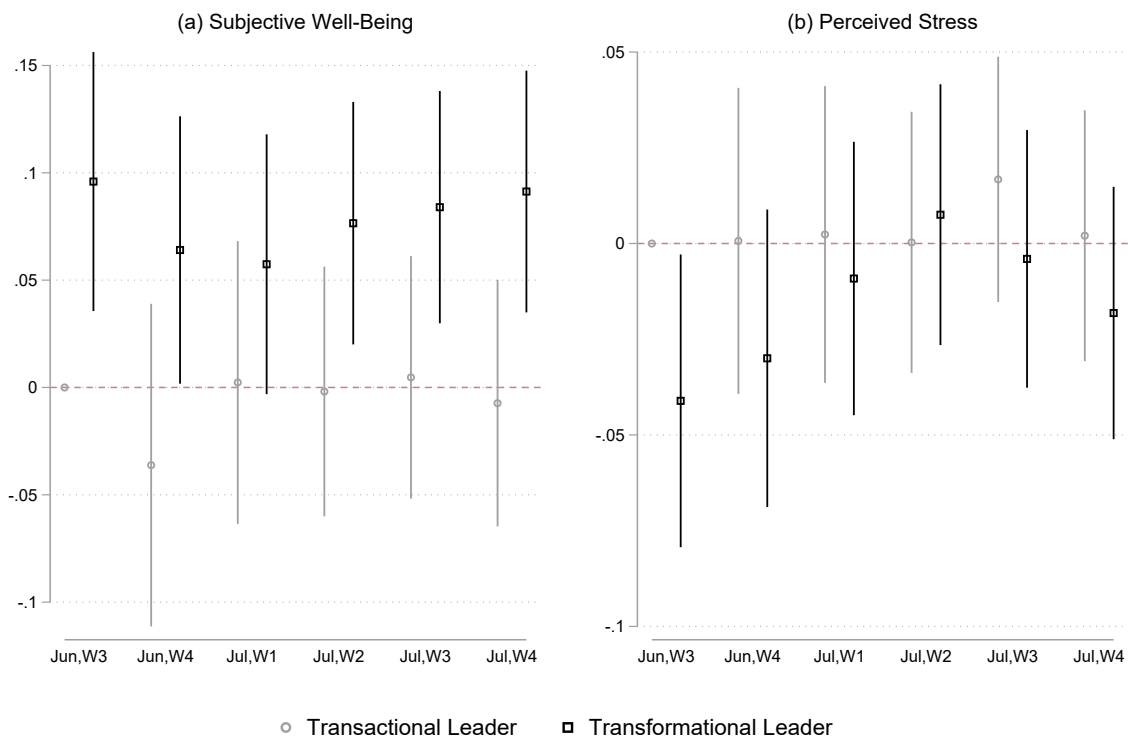
Figure 2: Mental Well-Being in June and July 2020 by Transformational Leadership

Notes: Data from June-July 2020. Mental well-being measured in the Covid survey in six consecutive weeks from the third week of June to the fourth week of July 2020 as (a) *Subjective Well-Being* elicited through the self-reported questionnaire *WHO-5 Well-Being Index* and normalized to a range from 0 to 1; and (b) *Perceived Stress* elicited through the 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 $y_{it} = \alpha + \beta\,i.Survey\,round_t * Transformational\,Leader_b + \epsilon_{it}$, with robust standard errors. The vertical lines show 95% confidence intervals. $Transformational\,Leader_b$ indicates whether the manager's average leadership rating from all employees within the branch is above the sample mean.

When pooling the data across the six weeks to estimate Equation 3, we find that subjective well-being is 0.39 standard deviations higher and perceived stress is 0.12 standard deviations lower if employees work with a more transformational manager (Table 4, Columns 1 and 4). These results are in line with our Hypothesis 2. In addition, we exploit the panel structure of this data to examine whether mental well-being changes differentially by leadership style during the six weeks under consideration.[29] We do not see differential changes in the mental well-being measures for different leadership styles, neither for subjective well-being (Columns 2 and 3), nor for perceived stress (Columns 5 and 6).[30]

Table 4: Mental Well-Being and Transformational Leadership
(Jun/Jul20)
+ Controls

	Subjective Well-Being			Perceived Stress		
	z-Score (1)	Increase (2)	Decrease (3)	z-Score (4)	Increase (5)	Decrease (6)
Transformational	0.3877***	0.0425	-0.0372	-0.1242**	0.0360	0.0238
	(0.0505)	(0.0285)	(0.0294)	(0.0497)	(0.0280)	(0.0281)
Mean of Dep. Var (Control)	-0.1755	0.4086	0.4381	0.0652	0.3671	0.3736
Observations	1726	406	406	1726	406	406
N Employees	453	412	412	453	412	412
N Branches	143	140	140	143	140	140
R^2	0.0557	0.0418	0.0265	0.0183	0.0146	0.0238
Survey Wave FE	✓			✓		

Notes: Data from June-July 2020. Dependent variables: *Subjective well-being* is elicited through the self-reported questionnaire *WHO-5 Well-Being Index*. *Perceived stress* is elicited through the self-reported questionnaire *Perceived Stress Scale 4 (PSS-4)*. The variable *z-Score* is a standardized score, which is calculated by subtracting the sample mean and dividing by the sample standard deviation. The variable *Increase* captures the fraction of increases among all possible fluctuations during the survey period. The variable *Decrease* captures the fraction of decreases among all possible fluctuations during the survey period. Independent variable: *Transformational* is the binary variable $Transformational\ Leader_b$ which indicates whether the manager's average leadership rating from all employees within the branch is above the sample mean. Mean of Dep. Var. (Control) reports the mean of the outcome variable for the reference group, i.e., for transactional leaders before the crisis. *Controls* for employee characteristics (age, marital status, college degree, seniority at the company, and seniority at the branch) and branch characteristics (number of employees, city size, distance to large city, and distance to closest branch) are included in all regressions. Robust standard errors are reported in parentheses. $^*p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$.

5. Discussion

Several points merit discussion. We start with an exploration of potential mechanisms, followed by the question of whether leadership styles can be trained. Finally, we discuss the advantages and disadvantages of transactional vs. transformational leadership in our setting.

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[29]412 employees answered at least two of these surveys and are included in this analysis.

[30]We find statistically significant increases in z-scores indicating higher well-being for all measures of leadership. We also find a higher share of increases in well-being. For perceived stress, the results for alternative leadership measures are qualitatively the same but mostly lack statistical significance.

Potential mechanisms underlying performance differences before the crisis

For the period before the crisis, the most robust finding of our performance analysis is that employees with transactional managers perform better with respect to financial metrics. This is consistent with the organization's focus on the incentive structure, an important tool for transactional leaders. The finding further suggests that, in this comparatively stable setting, additional investments of transformational leaders to instill a vision might not be necessary and may even be distracting, at least in terms of financial performance. To better understand how the prominent incentive structure affects employees with different types of managers during normal times, we explore our baseline survey data. Employees answer several questions regarding the bonus and the importance they attach to it, how well they feel informed about it, how they acquire information about it, and to what extent the bonus guides their work. We combine these statements into four indices and test whether they differ by leadership styles (see Table A.5).

Employees of more transformational managers are less likely to indicate that incentives guide their work efforts. This is consistent with the idea that they are also guided by the vision their manager fosters. Surprisingly, employees with a rather transformational manager attach higher importance to the bonus and feel slightly better informed subjectively. While counterintuitive, this could also reflect a stronger feeling of ownership and sense of duty that a vision or identity may instill. To the contrary, employees with a rather transactional manager put more emphasis on acquiring information about the bonus. Specifically, they appear to interact more with persons *other* than their manager (i.e., colleagues or the HR department). While employees are equally likely to receive information about incentives and discuss those with their manager, the higher rate of contacting HR under a transactional manager could indicate lower trust.

Focusing less on incentives under transformational management may be related to shorter objective work time and lower performance.[31] The mission of the organization is to help develop the necessary socio-economic conditions for a life in dignity for their clients. Thus, a higher motivation due to a vision is well in line well with the finding that employees with transformational managers are more likely to consider other factors than their own bonus, such as client welfare, in their decisions.

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[31]In the short-run, the mission and the financial performance of the organization may sometimes be at odds: If a client faces financial and, hence, repayment difficulties, the question arises to what extent the employee should pressure them to ensure repayment. In the long run, however, the vision can only be achieved if the organization is financially stable. Relatedly, Giné et al. (2022) show that mission-related rewards help nurturing the social mission of a microfinance institution while not harming financial performance.

Can leadership be trained?

Our main analysis follows the traditional view that leadership style is rather stable, as it correlates with a leader's innate personality and their traits (e.g., Bono & Judge, 2004; Resick et al., 2009). More recently, however, field experiments that vary leadership training exogenously, and hence independently of the context that employees face, provide clearer evidence that leadership can be influenced. In particular, leaders have been trained in their supportiveness (Haeckl & Rege, 2024), charismatic speech (Antonakis et al., 2022), and the provision of psychological safety in teams (Castro et al., 2022). While these trainings were successful in changing average leaders' short-run behaviors (measured up to two months after the intervention), the training of specific leadership styles, i.e., a larger set of behaviors, appears to be more complex (Jacobsen et al., 2022). More research is needed to better understand the potential of leadership training, its medium and long-run impacts, the need for continuous re-training, and the role of the institutional environment, including its stability and complexity, as an important mediator of training effectiveness. Additionally, to reconcile the view that leadership style is rather stable and the evidence that *some* behaviors can be trained, a more nuanced understanding and modeling of managers' utility would be helpful. It is conceivable that managers differ in the intrinsic benefit they derive from following a certain leadership style. This could explain ex-ante differences in behaviors and may result in heterogeneous responses to training.

In addition to effectiveness, implementation and opportunity costs of training need to be considered. Especially the latter can be substantial. For example, Jacobsen et al. (2022) trained leaders for four full days, and the training implemented by Castro et al. (2022) increased the time that managers spend with their employees by 2.5 hours per week. During a crisis, leadership training can be infeasible because other aspects, such as crisis management, the use of new tools, or the implementation of new procedures require time and attention – resources that are particularly scarce in such times. The decision to conduct leadership training should hence be preceded by a careful weighting of the expected costs and benefits, taking into account that those will likely be different during a crisis. Below, we outline some considerations on the value of transformational leadership (as compared to transactional leadership) in our setting, focusing mostly on effects we can observe and measure.

Transformational vs. transactional leadership in our setting

From the organization's perspective, the value of transformational leadership during normal times depends on the assessment of the costs and benefits: a worse financial performance of three percentage points and lower overall client acquisition of about one client (per month

and loan officer) relative to the acquisition of four new individual clients and potentially more vision-orientation of the employees. The incentive structure clearly reflects the priority of financial performance over client acquisition, such that financial stability and, hence, transactional leadership appear to be preferred during normal times.

From the managers' perspective, the performance of their employees affects own bonus payments: The financial performance of the branch determines whether and which fraction of the potential bonus will actually be paid, whereas the potential bonus amount is predominantly a function of client acquisition. To the extent that managers care about financial incentives, they need to ensure sufficient average financial performance of their employees. This is fairly straightforward as the bonus system aligns incentives of managers and employees in this regard. Likewise, the costs of providing information and answering questions about the incentives appear to be borne equally by transactional and transformational managers. Unfortunately, we cannot observe the strategies that managers employ in addition. However, based on Alan et al. (2023) and Castro et al. (2022), we assume that transformational strategies are costly in terms of time, e.g., due to more frequent or longer meetings with employees. Some managers may derive utility from such investments or the resulting behavior, such that time or monetary costs in terms of a reduced bonus do not deter them from being a transformational leader, even during normal times. Other managers may give more weight to the monetary benefits and hence opt for mostly transactional leadership during normal times.

During the crisis, financial performance plummets. Employees with more transactional leaders face a reduction of 58 percentage points to a collection percentage of 35.6%, whereas employees with more transformational leaders face a smaller reduction of 54 percentage points. However, since the latter perform worse before the crisis, they end up with only a slightly higher collection percentage of 36.6% during the crisis. These employees hence catch up in their financial performance during the crisis, their relative performance differential even increases in later periods of the crisis, but they do not outperform their peers consistently. Assuming these patterns hold in the longer run and the organization mostly operates in 'normal times', the financial performance advantage of more transformational leadership during crisis might not be substantial enough to justify institutional investments into transformational leadership. This argument, however, ignores the robust mental well-being differential that we document. Two aspects are worth noting regarding mental well-being. First, it can help employees to perform better (e.g., Obrenovic et al., 2020; Putra et al., 2024), even if they work long hours, as in our case. Second, mental well-being can affect employee retention (Wright, 2010; Amin & Akbar, 2013). In an industry

with relatively high fluctuation and non-negligible onboarding costs[32], investments in well-being can be beneficial from the organization's perspective.

6. Conclusion

We exploit quasi-random assignment of employees to frontline managers to study the effect of transformational leadership on employees' outcomes. Outcomes are measured with longitudinal administrative and panel survey data. We find that employees with more transactional leaders perform better pre-crisis in outcomes that the organization cares about and incentivizes: They have a higher financial performance and acquire more clients. In contrast, employees with more transformational leaders engage more in planning activities and exert higher effort. During the crisis, in a period of high uncertainty, in which the previous incentive scheme was paused, employees under more transformational leaders have better financial performance and spend more time working. Nonetheless, these employees appear to have better mental well-being. Once some of the uncertainty resolves, employees with more transformational leaders outperform their peers with rather transactional leaders.

The main take-away from our study is that transformational managers better lead employees in times of crisis with respect to financial performance and mental well-being, in line with the complexity argument presented by Zehnder et al. (2017). Absent the crisis, transactional leadership appears to work well in achieving the main goals of the organization. Overall, our findings for financial performance are not only in line with the literature on transformational leadership, but also with studies from the broader leadership literature. For example, in their relational incentives theory, Gallus et al. (2022) propose that the effect of incentives depends on the relationship between the manager and the employee. Specifically, high-powered monetary incentives might work well in transactional relationships, whereas transformational leaders effectively employ non-monetary incentives such as recognition.

While advancing the existing literature, we see two limitations of our study that offer scope for future research. First, our study uses a leadership measure based on employees' perceptions. While this is common in the literature, perceptions might be biased by factors beyond the leadership of the manager, such as external events that influence the emotional stability of employees. We try to address this by showing that our results are robust to excluding own perceptions from the leadership measure and to restricting our sample to managers whose leadership did not change with the Covid-19 pandemic. Yet, for the latter, we cannot disentangle

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[32]For many loan officers, this is their first job and a stepping stone if they can manage to find a different employment. For the first one to three months, a new employee follows an experienced one and does not handle clients by themselves.

a change in perceptions from a change in leadership behavior. This highlights the need for complementary future studies that explicitly investigate leadership behaviors, as also argued by Stock et al. (2022) and implemented by e.g., Bandiera et al. (2020). More work is needed to advance the understanding of which behaviors result into which assessment by employees, and how these ultimately relate to employees' outcomes. For example, interventions that are targeted at improving productivity may backfire if they change perceptions of leadership (Reiff et al., 2022). It would also be helpful to advance the conceptualization of leadership styles and how they relate to behavior and preferences of managers.

Second, we take the leadership style as given and analyze its effects on employees' outcomes under different externally influenced situations. Our findings suggest that the benefits of leadership styles depend on the (work) environment. While this is in line with the idea that the complexity of the environment matters (Dóci & Hofmans, 2015; Zehnder et al., 2017), we cannot disentangle which dimension of complexity may be driving our results. Too many factors have changed with the Covid-19 pandemic: uncertainty skyrocketed, established monetary incentives for employees became inapplicable, and the way and location of work changed in response to mobility restrictions and the debt moratorium. In addition to these institutional changes to the job, employees (and managers) were likely also affected in other dimensions, as the Covid-19 pandemic took its toll on health, social, and economic conditions. We assume that these other effects are uncorrelated with leadership styles, but we cannot empirically assess this. More generally, Covid-19 was an exceptional and unexpected crisis. While 'smaller' crisis might see less pronounced effects, arguably an increase in complexity is inherent in all types of crises. In this regard, we believe that our results are informative for other contexts as well.

While our field study advances the existing literature on transformational leadership in normal times and in times of crisis, it should be complemented with controlled studies that vary, for example, leadership behaviors, complexity, uncertainty (in terms of ambiguity or risk), and incentives systematically and independently of each other to disentangle effects and learn more about how each component relates to the performance and resilience of employees.

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Online Appendix

A. Additional Tables and Figures

Table A.1: Balance Check – Analysis Sample

	Employees included in Analysis Sample (1)	Employees excluded from Analysis Sample (2)	Test (1)=(2) p-value (3)
Employee Characteristics			
Age	26.14	26.14	0.9954
	[3.54]	[3.80]	
Married %	0.53	0.29	0.2055
	[0.50]	[0.49]	
College %	0.84	0.86	0.9079
	[0.37]	[0.38]	
Seniority at company (in months)	32.66	24.29	0.6176
	[44.30]	[15.00]	
Seniority at branch (in months)	21.77	21.00	0.9512
	[33.28]	[17.65]	
Individual Performance			
Total Number of Clients	547.35	565.58	0.1542
	[256.03]	[212.14]	
Number of Group Clients	499.97	517.46	0.1514
	[243.32]	[215.20]	
Number of Invidual Clients	47.37	48.12	0.7900
	[55.24]	[66.16]	
Client Acquisition	2.62	2.53	0.9285
	[20.04]	[18.26]	
Financial Performance	58.86	61.06	0.3178
	[43.75]	[43.38]	
N Employees	585	28	

Notes: Data on employee characteristics from December 2019. Data on individual performance from October 2019 to January 2021. The table reports the mean and standard deviation (in square brackets) of the characteristics of employees and their performance. Column (1) reports the statistics for our analysis sample, and Column (2) reports the statistics for employees who are excluded from our analysis sample. Column (3) reports the p-value of the t-test that both means are the same.

Table A.2: Correlation between Employees, Branches, and Managers

	Employee Characteristics					
	Age (1)	Male % (2)	College % (3)	Married % (4)	Seniority at Branch (5)	Seniority at Company (6)
Panel A: Branch Characteristics						
City Size	-0.0652	0.1981**	0.1715**	0.0728	-0.0502	-0.0651
Distance to Large City	-0.0941	-0.0126	0.0453	-0.0566	-0.0978	-0.1482*
Distance to Closest Branch	0.1324	0.0408	0.1419*	0.0353	-0.0169	-0.0495
Number of Employees	0.0313	-0.1292	0.1512*	0.0441	-0.0715	-0.0483
Number of Group Clients	-0.0389	-0.0275	0.0076	0.0788	-0.0426	-0.0901
Number of Individual Clients	-0.1669**	0.0509	-0.0555	0.0073	0.0210	0.0912
Panel B: Manager Characteristics						
Age	0.1255	-0.1637**	-0.0584	0.1027	0.0189	-0.0306
Male %	-0.1503*	0.0821	-0.0008	-0.0716	0.0046	0.0057
College %	0.0768	-0.0479	0.0657	-0.0415	-0.0000	-0.0032
Seniority at Company	0.0770	-0.0609	-0.0421	0.1234	-0.0171	0.0236
Transformational Leadership Score (0-1)	-0.1093	0.0553	-0.0689	0.0211	0.0546	-0.0402
Transformational Leadership Score (exclude)	-0.1086	0.0547	-0.0675	0.0214	0.0547	-0.0398

Notes: The table shows pairwise correlations between employee characteristics and characteristics of the branch and the manager in Panel A and B, respectively. N Employees: 585; N Branches: 146; N Managers: 144. Data for the branch characteristics are from October 2019 to January 2021. Data for the manager and employee characteristics are from December 2019. *Transformational Leadership Score (0-1)* captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. *Transformational Leadership Score (exclude)* captures the manager's average leadership rating from all other employees (excluding own rating of the employee) within the branch, normalized to a range from 0 to 1. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

Table A.3: Correlation among Leadership Components

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8
Item 1	1.000							
Item 2	0.581***	1.000						
Item 3	0.619***	0.671***	1.000					
Item 4	0.572***	0.703***	0.719***	1.000				
Item 5	0.549***	0.648***	0.670***	0.812***	1.000			
Item 6	0.635***	0.615***	0.687***	0.757***	0.695***	1.000		
Item 7	0.588***	0.640***	0.668***	0.709***	0.684***	0.691***	1.000	
Item 8	0.550***	0.597***	0.628***	0.718***	0.706***	0.707***	0.742***	1.000

Notes: Data from December 2019. Item 1= Clear and positive vision; Item 2=Support personal developments; Item 3= Encouragement and recognition; Item 4=Foster trust and cooperation; Item 5 = Encourage innovative thinking; Item 6= Clear values and practices; Item 7 = Instill pride and respect; Item 8 = Inspire by being competent. *t* statistics in parentheses. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

Table A.4: Balance Check – Leadership Components

	All Employees (1)	Employees with complete components (2)	Employees with missing components (3)	Test (2)=(3) p-value (4)
Transformational Leadership Score (0-1)	0.70	0.70	0.71	0.6457
	[0.14]	[0.14]	[0.14]	
Clear and positive vision	0.71	0.71	0.65	0.1442
	[0.28]	[0.27]	[0.31]	
Support personal developments	0.68	0.68	0.69	0.8329
	[0.27]	[0.27]	[0.28]	
Encouragement and recognition	0.69	0.70	0.64	0.1086
	[0.27]	[0.27]	[0.25]	
Foster trust and cooperation	0.71	0.71	0.70	0.8463
	[0.25]	[0.25]	[0.25]	
Encourage innovative thinking	0.70	0.70	0.67	0.3162
	[0.26]	[0.25]	[0.30]	
Clear values and practices	0.70	0.70	0.65	0.1739
	[0.25]	[0.25]	[0.24]	
Instill pride and respect	0.70	0.69	0.70	0.7925
	[0.26]	[0.26]	[0.25]	
Inspire by being competent	0.68	0.69	0.62	0.0403
	[0.26]	[0.26]	[0.28]	
Age	26.14	26.22	25.69	0.1841
	[3.54]	[3.65]	[2.80]	
Married %	0.53	0.52	0.54	0.8149
	[0.50]	[0.50]	[0.50]	
College %	0.84	0.84	0.84	0.9470
	[0.37]	[0.37]	[0.37]	
Seniority at company (in months)	32.66	32.58	33.10	0.9193
	[44.30]	[42.95]	[51.38]	
Seniority at branch (in months)	21.77	21.18	25.08	0.3117
	[33.28]	[29.32]	[49.97]	
N Employees	585	492	93	

Notes: Data from December 2019. The table reports the mean and standard deviation (in square brackets) of the normalized leadership score, its components, and the characteristics of employees. Column (1) reports the statistics for our full sample, Column (2) reports the statistics for employees who answered all leadership components, and Column (3) reports statistics for employees who have at least one missing leadership component. Column (4) reports the p-value of the t-test that the means are the same in Column (2) and Column (3). *Transformational Leadership Score (0-1)* captures the manager's average leadership rating from all employees within the branch, normalized to a range of 0 to 1.
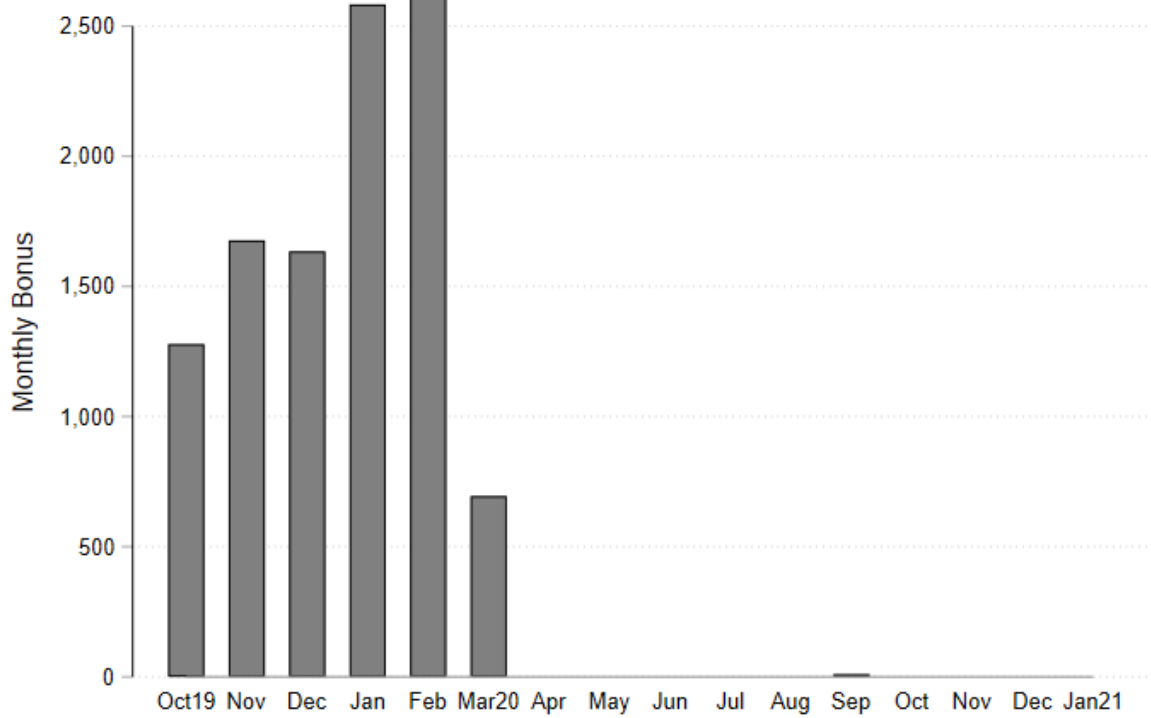
Figure A.1: Monthly Bonus from October 2019 to January 2021

Notes: Data from October 2019 to January 2021. The figure shows the average monthly bonus (in Indian Rupees) from October 2019 to January 2021 for our sample employees. N Employees: 585. N Branches: 146

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┌─────────────────────────────┐
│ Original Sample: 655 (150)  │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│         Baseline            │
│  Contacted: 655 (150)       │
│  Responses: 596 (150)       │────────→ Left MFI, non-responded: 37
│   non-responses: 59         │
│  Analysis Sample: 585 (146) │
│   excluded responses: 11    │
└─────────────────────────────┘
              │
              │───────────────────────→ Left MFI, responded: 77
              ▼
┌─────────────────────────────┐
│           Covid             │
│  Contacted: 541 (149)       │
│  Responses: 476 (146)       │
│   non-responses: 65         │────────→ Left MFI, non-responded: 22
│  Analysis Sample: 453 (143) │
│   excluded responses: 23    │
└─────────────────────────────┘
              │
              │───────────────────────→ Left MFI, responded: 101
              ▼
┌─────────────────────────────┐
│          Endline            │
│  Contacted: 418 (142)       │
│  Responses: 308 (129)       │
│   non-responses: 110        │────────→ Left MFI, non-responded: 5
│  Analysis Sample: 301 (125) │
│   excluded responses: 7     │
└─────────────────────────────┘
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Figure A.2: Attrition and Response Rates

Notes: The figure shows the sample dynamics and reports the number of employees and the number of branches (in parentheses) that participate in our surveys.
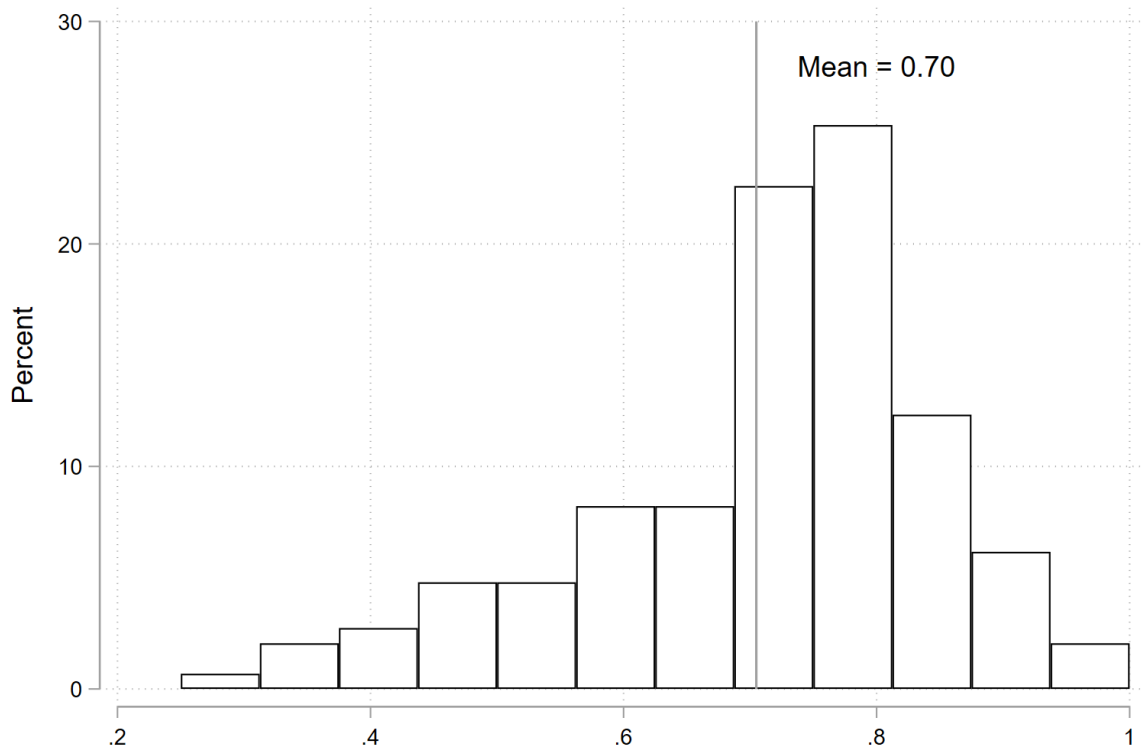
Figure A.3: Distribution of Transformational Leadership Scores

Notes: Data from December 2019. The figures show the distribution of leadership scores. Leadership is elicited through the self-reported questionnaire *Global Transformational Leadership (GTL)*, which consists of 8 items. Each item has a 5-point Likert scale from 1 to 5. Leadership score is calculated by adding up 8 items and thus has a range 8 to 40. *Transformational Leadership Score (0-1)* captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. The vertical line shows the sample mean of the leadership scores. Median of the leadership scores is 0.74.
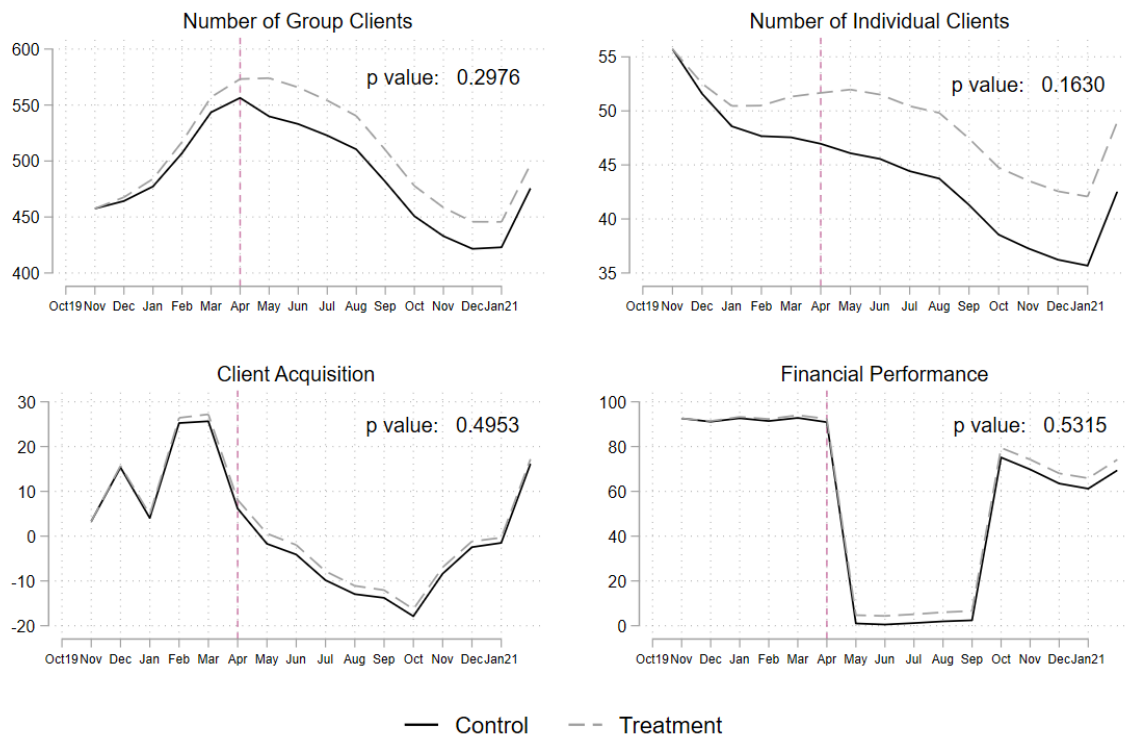
Figure A.4: Linear-trends Model: Performance Indicators (October 2019 - January 2021)

Notes: The figure shows the linear trend models of performance indicators (number of group clients, number of individual clients, client acquisition, and financial performance) from October 2019 to January 2021, separately for employees of transactional leaders and of transformational leaders, corresponding to Figure 1. Each sub-figure shows the p-value of the Wald test to assess whether the linear trends are parallel prior to the crisis.

Table A.5: Suggestive Mechanisms

	N (1)	Transformational Leadership (2)	Transactional Leadership (3)	t-test (2)=(3) *p*-value (4)
Index: Bonus Efforts	572	2.77 (0.59)	2.90 (0.66)	0.0133
I consider how my efforts will translate to bonus payments	563	4.07 (1.01)	3.92 (1.30)	0.1067
I follow best strategy to achieve bonus	562	2.44 (1.37)	2.79 (1.53)	0.0050
I prioritize bonus over client interest	567	1.80 (0.96)	2.00 (1.27)	0.0306
Index: Bonus Importance	573	4.40 (0.57)	4.10 (0.91)	0.0000
Bonus is important to me	567	4.35 (0.83)	4.07 (1.15)	0.0006
Get more information on what my bonus is composed of is important	563	4.40 (0.74)	4.12 (1.00)	0.0002
Get more information on different categories for a higher bonus is important	559	4.45 (0.63)	4.15 (1.03)	0.0000
Index: Subjective Bonus Knowledge	570	3.59 (0.54)	3.49 (0.65)	0.0607
I am familiar with the bonus calculation	563	4.34 (0.77)	4.01 (1.13)	0.0000
I know all relevant performance measures that are important for my bonus	557	4.31 (0.78)	4.24 (0.97)	0.3415
I know where to find all necessary information on my performance to calculate my	553	4.33 (0.74)	4.14 (1.01)	0.0112
I know how exactly my bonus is calculated	558	2.58 (1.35)	2.65 (1.36)	0.5509
I know what the best thing to do is to avail a higher bonus	555	2.36 (1.30)	2.52 (1.39)	0.1773
Index: Bonus Information Acquistion	574	0.64 (0.26)	0.71 (0.27)	0.0015
Receive info on bonus categories (0/1)	569	0.94 (0.23)	0.95 (0.23)	0.9387
Talk to other BROs about own bonus (0/1)	570	0.78 (0.41)	0.80 (0.40)	0.6464
Know about other BROs bonus (0/1)	451	0.56 (0.50)	0.73 (0.45)	0.0002
Contact BM about bonus (0/1)	559	0.64 (0.48)	0.69 (0.46)	0.2436
Contact HR about bonus (0/1)	533	0.30 (0.46)	0.48 (0.50)	0.0000

Notes: The table reports means and standard deviations (in brackets) of bonus efforts and knowledge. Column (2) reports the statistics for employees who have a rather transformational leader, and Column (3) reports the statistics for employees who have a rather transactional leader. Column (4) reports the p-value of a t-test that means are the same for Column (2) and Column (3). *Transformational Leadership* is an indicator if the manager's average leadership rating from all employees within the branch is above the sample mean. *Transactional Leadership* indicates a rating below the sample mean.

B. Robustness

B.1. Alternative specifications of the leadership measure

Our results are based on the binary leadership measure that classifies all managers with a leadership score above the sample mean as more transformational and the others as more transformational. We assess whether our results are robust to alternative specifications of transformational leadership style. We use the continuous transformational leadership score measure and assign a) each manager the average normalized leadership rating of all employees in their branch b, i.e. *Leader Style$_b$*, and b) each employee i the average normalized leadership rating of their manager of all other $n-1$ employees in their branch b, i.e. *Leader Style exclusive$_{ib}$*. In addition, we use the median as an alternative cutoff to distinguish between rather transformational and rather transactional leaders. For performance outcomes, Table B.1 and Table B.2 replicate Table 2, where in each table, Panel A displays results for the normalized leadership score, Panel B presents results for the score that excludes the employee's own rating, and Panel C shows results for a split based on the median. In all specifications, we replicate the pre-crisis difference between more transformational and more transactional leaders. Results for the overall crisis period (Table B.1) and the two crisis periods distinguished by their level of intensity (Table B.2) are qualitatively similar, but some differ in their significance level. Similarly, Table B.3 replicates Table 3 for the work styles with comparable results. Lastly, Table B.4 presents replication results of mental well-being effects (cf. Table 4) that confirm the positive effect of transformational leadership on subjective well-being of employees during times of crisis. Overall, results are robust to different operationalizations of transformational leadership.

Table B.1: Individual Performance and Transformational Leadership

(Crisis =Apr20-Jan21)

+ Controls

	Number of Clients				
	Total	Group	Individual	Client Acquisition	Financial Performance
	(1)	(2)	(3)	(4)	(5)
Panel A. Transformational leadership score (0-1)					
Transformational	-14.7197	-39.0828	24.3631***	-6.8835**	-7.5052***
	(31.6817)	(30.1009)	(7.2313)	(2.9903)	(2.8709)
Transformational*Crisis	59.9261	61.3851	-1.4589	5.6350*	14.1568***
	(42.1106)	(40.2355)	(8.9283)	(3.2416)	(4.9458)
Crisis	-57.8524*	-52.6603*	-5.1921	-22.6720***	-65.7848***
	(29.6429)	(28.4858)	(6.2224)	(2.2982)	(3.4946)
Constant	452.8461***	417.2734***	35.5726***	26.7173***	86.7318***
	(35.1903)	(33.0328)	(7.7179)	(2.8155)	(4.2697)
R^2	0.0529	0.0511	0.0500	0.2163	0.3948
Panel B. Transformational leadership score (exclude own rating)					
Transformational	-24.5286	-46.6901*	22.1614***	-8.3518***	-6.5077**
	(28.0197)	(26.5105)	(6.9109)	(2.7635)	(2.7051)
Transformational*Crisis	58.0808	52.2412	5.8396	7.0246**	11.2642**
	(37.5624)	(35.8665)	(8.4415)	(3.0015)	(4.7125)
Crisis	-56.1153**	-45.7562*	-10.3591*	-23.5832***	-63.6817***
	(26.4551)	(25.4117)	(5.9037)	(2.1490)	(3.3502)
Constant	454.3658***	421.2398***	33.1259***	27.5276***	86.7723***
	(33.6023)	(31.4493)	(7.6956)	(2.7752)	(4.2819)
R^2	0.0528	0.0520	0.0522	0.2170	0.3931
Panel C. Transformational leadership 0/1 (above the sample median)					
Transformational	-2.0060	-6.5159	4.5100**	-1.1042	-1.4877*
	(8.2694)	(7.8280)	(1.9835)	(0.8071)	(0.7710)
Transformational*Crisis	13.5513	13.1801	0.3711	0.8624	3.0653**
	(11.0054)	(10.4547)	(2.3776)	(0.8835)	(1.3738)
Crisis	-22.9038***	-16.5229**	-6.3809***	-19.1786***	-57.4616***
	(7.8554)	(7.5174)	(1.6138)	(0.6373)	(0.9681)
Constant	445.0554***	392.4394***	52.6159***	22.0827***	82.2789***
	(25.1281)	(23.6592)	(5.7141)	(1.8387)	(3.6080)
R^2	0.0528	0.0509	0.0484	0.2157	0.3946
Mean of Dep. Var.	556.3707	505.1247	51.2459	13.8187	92.1903
Observations	8255	8255	8255	8255	8255
N Employees	585	585	585	585	585
N Branches	146	146	146	146	146

Notes: This table replicates Panel A of Table 2 for alternative measures of leadership. Dependent variables and control variables: See table notes of Table 2. *Panel A* shows *Transformational Leadership Score (0-1)* that captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. *Panel B* shows *Transformational Leadership Score (exclude own rating)* that captures the manager's average leadership rating from all other employees (excluding own rating of the employee) within the branch, normalized to a range from 0 to 1. *Panel C* shows *Transformational Leadership 0/1 (above the sample median)* that indicates whether the manager's average leadership rating from all employees within the branch is above the sample median. Mean of Dep. Var. reports the mean of the outcome variable only for the period before the crisis. Robust standard errors are reported in parentheses. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

Table B.2: Individual Performance and Transformational Leadership

(Crisis High=Apr20-Aug20, Crisis Low=Sep20-Jan21)

+Controls

	Number of Clients			Client Acquisition	Financial Performance
	Total (1)	Group (2)	Individual (3)	(4)	(5)

Panel A. Transformational leadership score (0-1)

Transformational	-14.7253	-39.0851	24.3597***	-6.8827**	-7.4860***
	(31.6814)	(30.1009)	(7.2321)	(2.9905)	(2.8255)
Transformational*High Crisis	37.4563	35.8638	1.5925	6.0257*	9.2023***
	(47.0562)	(45.0959)	(10.2778)	(3.2165)	(2.9070)
Transformational*Low Crisis	87.7186*	92.2078*	-4.4893	5.0233	16.5839***
	(53.1383)	(50.8000)	(10.5226)	(3.7584)	(5.7396)
Crisis High	0.3764	5.0216	-4.6452	-25.1442***	-95.0051***
	(33.0103)	(31.8468)	(7.1363)	(2.2824)	(2.0163)
Crisis Low	-122.0645***	-116.1757***	-5.8888	-19.9298***	-33.0966***
	(37.7184)	(36.2041)	(7.4166)	(2.6657)	(4.0956)
Constant	452.1107***	416.5798***	35.5309***	26.7545***	87.2741***
	(35.0869)	(32.9409)	(7.7156)	(2.8111)	(3.1997)
R^2	0.0704	0.0681	0.0517	0.2239	0.7462

Panel B. Transformational leadership score (exclude own rating)

Transformational	-24.5146	-46.6746*	22.1600***	-8.3521***	-6.5058**
	(28.0176)	(26.5089)	(6.9116)	(2.7636)	(2.6641)
Transformational*High Crisis	32.3600	23.9846	8.3754	7.6254**	8.5726***
	(41.9132)	(40.2045)	(9.7963)	(2.9774)	(2.7262)
Transformational*Low Crisis	88.7402*	85.3749*	3.3652	6.2110*	11.4784**
	(47.2298)	(45.1916)	(9.7475)	(3.4861)	(5.2525)
Crisis High	4.0207	13.4993	-9.4786	-26.1976***	-94.5750***
	(29.4223)	(28.4077)	(6.8262)	(2.1330)	(1.9002)
Crisis Low	-121.9734***	-110.5553***	-11.4181*	-20.7032***	-29.3320***
	(33.5674)	(32.2648)	(6.8737)	(2.4949)	(3.7654)
Constant	453.6083***	420.5251***	33.0832***	27.5661***	87.3341***
	(33.5130)	(31.3707)	(7.6936)	(2.7704)	(3.1393)
R^2	0.0700	0.0689	0.0539	0.2246	0.7465

Panel C. Transformational leadership 0/1 (above the sample median)

Transformational	-2.0225	-6.5316	4.5091**	-1.1032	-1.4755*
	(8.2689)	(7.8276)	(1.9837)	(0.8071)	(0.7626)
Transformational*High Crisis	13.6827	12.8198	0.8630	1.0808	1.7585**
	(12.5382)	(11.9602)	(2.7475)	(0.8654)	(0.7909)
Transformational*Low Crisis	14.1912	14.2889	-0.0977	0.5923	3.8423***
	(13.6925)	(12.9906)	(2.7077)	(1.0432)	(1.4842)
Crisis High	19.5276**	23.4865***	-3.9590**	-21.4895***	-89.4771***
	(8.9187)	(8.5766)	(1.8367)	(0.6250)	(0.5376)
Crisis Low	-67.9499***	-58.9979***	-8.9521***	-16.7254***	-23.4731***
	(9.9381)	(9.4874)	(1.8776)	(0.7529)	(1.0814)
Constant	444.4427***	391.8678***	52.5749***	22.1132***	82.7562***
	(25.0062)	(23.5530)	(5.7105)	(1.8326)	(2.4487)
R^2	0.0702	0.0679	0.0500	0.2233	0.7461

Mean of Dep. Var.	556.3707	505.1247	51.2459	13.8187	92.1903
Observations	8255	8255	8255	8255	8255
N Employees	585	585	585	585	585
N Branches	146	146	146	146	146

Notes: This table replicates Panel B of Table 2 for alternative measures of leadership. Dependent variables and control variables: See table notes of Table 2. *Panel A* shows *Transformational Leadership Score (0-1)* that captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. *Panel B* shows *Transformational Leadership Score (exclude own rating)* that captures the manager's average leadership rating from all other employees (excluding own rating of the employee) within the branch, normalized to a range from 0 to 1. *Panel C* shows *Transformational Leadership 0/1 (above the sample median)* that indicates whether the manager's average leadership rating from all employees within the branch is above the sample median. Mean of Dep. Var. reports the mean of the outcome variable only for the period before the crisis. Robust standard errors are reported in parentheses. $^*p < 0.1,^{**} p < 0.05,^{***} p < 0.01$.

Table B.3: Work Styles and Transformational Leadership

(Dec19 vs. Dec20)

+ Controls

	Planning (1)	Effort (2)	Objective Work Time (3)	Subjective Work Time (4)
Panel A. Transformational leadership score (0-1)				
Transformational	0.1501*	0.2378***	-318.9280***	0.2033*
	(0.0765)	(0.0745)	(94.6666)	(0.1040)
Transformational*Crisis	-0.0784	-0.2117*	307.0898**	-0.1947
	(0.1084)	(0.1115)	(134.1536)	(0.1503)
Crisis	0.0314	0.1229	-235.5177**	0.1317
	(0.0776)	(0.0804)	(96.8243)	(0.1091)
Constant	0.5394***	0.4756***	899.0329***	0.6345***
	(0.0864)	(0.0845)	(108.2299)	(0.1137)
R^2	0.0318	0.0670	0.0498	0.0350
Panel B. Transformational leadership score (exclude own rating)				
Transformational	0.0772	0.1021*	-245.8475***	0.0697
	(0.0627)	(0.0611)	(88.5087)	(0.0843)
Transformational*Crisis	-0.0462	-0.1119	246.3469**	-0.1155
	(0.0924)	(0.0882)	(122.4508)	(0.1179)
Crisis	0.0093	0.0525	-190.3965**	0.0743
	(0.0653)	(0.0629)	(88.8221)	(0.0854)
Constant	0.5921***	0.6012***	851.4117***	0.7715***
	(0.0775)	(0.0761)	(103.7542)	(0.1015)
R^2	0.0255	0.0472	0.0444	0.0273
Panel C. Transformational leadership 0/1 (above the sample median)				
Transformational	0.0389**	0.0467***	-43.3767**	0.0075
	(0.0187)	(0.0149)	(20.4167)	(0.0221)
Transformational*Crisis	-0.0043	-0.0433*	44.4463	-0.0186
	(0.0266)	(0.0253)	(30.4427)	(0.0332)
Crisis	-0.0217	-0.0039	-42.2540*	0.0042
	(0.0192)	(0.0185)	(22.4550)	(0.0241)
Constant	0.6367***	0.6375***	671.2641***	0.7937***
	(0.0600)	(0.0565)	(73.3919)	(0.0790)
R^2	0.0369	0.0607	0.0350	0.0280
Mean of Dep. Var.	0.6684	0.7463	657.3223	0.7703
Observations	574	566	585	583
N Employees	301	301	301	301
N Branches	125	125	125	125

Notes: This table replicates Table 3 for alternative measures of leadership. Dependent variables and control variables: See table notes of Table 3. *Panel A* shows *Transformational Leadership Score (0-1)* that captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. *Panel B* shows *Transformational Leadership Score (exclude own rating)* that captures the manager's average leadership rating from all other employees (excluding own rating of the employee) within the branch, normalized to a range from 0 to 1. *Panel C* shows *Transformational Leadership 0/1 (above the sample median)* that indicates whether the manager's average leadership rating from all employees within the branch is above the sample median. Mean of Dep. Var. reports the mean of the outcome variable only for the period before the crisis. Robust standard errors are reported in parentheses. $^*p < 0.1,^{**} p < 0.05,^{***} p < 0.01$.

Table B.4: Mental Well-Being and Transformational Leadership
(Jun/Jul20)
+ Controls

	Subjective Well-Being			Perceived Stress		
	z-Score (1)	Increase (0-1) (2)	Decrease (0-1) (3)	z-Score (4)	Increase (0-1) (5)	Decrease (0-1) (6)
Panel A. Transformational leadership score (0-1)						
Transformational	1.0583***	0.2051*	-0.1676	-0.1687	0.1404	0.1466
	(0.1840)	(0.1097)	(0.1142)	(0.1867)	(0.1049)	(0.1048)
R^2	0.0404	0.0454	0.0283	0.0151	0.0150	0.0268
Panel B. Transformational leadership score (exclude own rating)						
Transformational	0.6594***	0.2520***	-0.2434**	-0.1274	0.0648	0.2186**
	(0.1777)	(0.0959)	(0.1053)	(0.1733)	(0.0950)	(0.0917)
R^2	0.0297	0.0518	0.0363	0.0162	0.0120	0.0359
Panel C. Transformational leadership 0/1 (above the sample median)						
Transformational	0.2234***	0.0500*	-0.0597**	-0.0644	0.0106	0.0277
	(0.0503)	(0.0278)	(0.0287)	(0.0495)	(0.0276)	(0.0273)
R^2	0.0332	0.0442	0.0331	0.0157	0.0110	0.0246
Mean of Dep. Var	0.0220	0.4254	0.4234	-0.0021	0.3864	0.3866
Observations	1726	406	406	1726	406	406
N Employees	453	412	412	453	412	412
N Branches	143	140	140	143	140	140
Survey Wave FE	✓			✓		

Notes: This table replicates Table 4 for alternative measures of leadership. Dependent variables and control variables: See table notes of Table 4. *Panel A* shows *Transformational Leadership Score (0-1)* that captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. *Panel B* shows *Transformational Leadership Score (exclude own rating)* that captures the manager's average leadership rating from all other employees (excluding own rating of the employee) within the branch, normalized to a range from 0 to 1. *Panel C* shows *Transformational Leadership 0/1 (above the sample median)* that indicates whether the manager's average leadership rating from all employees within the branch is above the sample median. Mean of Dep. Var. reports the mean of the outcome variable only for the period before the crisis. Robust standard errors are reported in parentheses. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

B.2. Change in (perceived) leadership style

A nascent literature suggests that leadership styles may change in crisis and observed leader behavior tends to become more directive (Stoker et al., 2019; Garretsen et al., 2022). Both these studies rely on repeated cross-sectional samples of managers, i.e., they describe how different leaders behave in different situations. In contrast, Dóci & Hofmans (2015) assesses within-person changes in transformational leadership in a lab experiment with 37 student groups composed of one randomly assigned leader and two workers. Each group has to solve different tasks together. The student in the role of the leader is asked to direct the meeting and receives a bonus payment if the group finds the best solution. The tasks differ in their levels of complexity, and for each task, the workers rate their leader. The authors find that more complex tasks lead to a reduction in transformational leadership ratings. This stands in contrast to a large strand of literature which suggests that transformational leadership style may be relatively stable over time as it correlates with a leader's personality (e.g., Bono & Judge, 2004) and their traits (e.g., Barling et al., 2000; Resick et al., 2009; Peterson et al., 2009).

These findings can be reconciled by considering not only the leader's behavior but also the employees' *perception* of their leader, as both may shape the leadership assessment. The importance of perceptions is highlighted by studies suggesting that leadership ratings are influenced by employees' mental conditions. For example, Birkeland et al. (2017) study how employees rate their leaders in the aftermath of a terrorist attack at the workplace. They find that employees with high levels of post-traumatic stress perceive their leaders as less supportive, while the overall perceptions of leadership were remarkably stable. The influence of employees' perceptions is likely to play a larger role in leadership measures that request ratings on less tangible dimensions rather than specific behaviors. Both Dóci & Hofmans (2015)'s and our leadership measure are based on Carless et al. (2000). The different dimensions in which employees rate their leaders leave ample room for subjective interpretations, e.g., to what extent leaders instill pride and respect, inspire own competence, or foster trust. Hence, changes in leadership measures can be driven both by an actual change in leader behavior and a change in the employees' perception of leadership depending on their own mental constitution.

In our main analyses, we circumvent this issue by relying on pre-pandemic ratings of transformational leadership to allow for as much exogeneity as possible among our dependent and independent variables. In the following, we explicitly analyze how leadership ratings have changed during the pandemic, with the above caveats in mind. Table B.5 sets out how the transformational leadership measure did change over the course of the pandemic. Column 1 shows that the crisis did not affect the binary leadership rating (Column 1). However, the continuous leader-

ship score decreased from 70% to 61% (Column 2).[33] Interestingly, the decline in the leadership score appears to be driven by frontline managers who were classified as more transformational pre-crisis (compare Columns 3 and 4 that display changes for rather transactional and rather transformational leaders, respectively). Under the assumption that better mental well-being is positively related to more transformational ratings, the results, in combination with our finding that employees of more transformational leaders have better subjective well-being would suggest that changes in leadership ratings are driven by managers' behavior rather than employees' perceptions. However, given that our mental health data are from June and July and the second leadership rating from December 2020, this remains speculation and an open question for future research.

Table B.5: Leadership Ratings before and during the Covid-19 pandemic

	Transformational Leadership (0/1) (1)	Transformational Leadership Score (0-1) (2)	Transformational Leadership Score (0-1) (3)	Transformational Leadership Score (0-1) (4)
Crisis	-0.0105	-0.0950***	0.0305	-0.1775***
	(0.0590)	(0.0173)	(0.0283)	(0.0152)
Constant	0.6031***	0.6974***	0.5645***	0.7849***
	(0.0429)	(0.0119)	(0.0155)	(0.0066)
Observations	262	262	104	158
N Branches	131	131	52	79
R^2	0.0001	0.1041	0.0112	0.4655
Transformational=1			No	Yes

Notes: Data from December 2019 and December 2020. Independent variable: *Crisis* is an indicator variable the period during the pandemic, December 2020. Dependent variables: *Transformational Leadership (0/1)* indicates whether the manager's average leadership rating from all employees within the branch is above the sample mean. *Transformational Leadership Score (0-1)* that captures the manager's average leadership rating from all employees within the branch, normalized to a range from 0 to 1. Column (3) and (4) show the estimated coefficients for the sample of managers whose average leadership rating from all employees within the branch is below and above the sample mean in December 2019, respectively. Robust standard errors are in parentheses. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

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[33]The difference between Columns 1 and 2 can be explained by the fact that the binary classification relies on the respective sample mean. This implies that if scores dropped uniformly across all managers, their relative ranking would remain the same.

Table B.6: Individual Performance and Transformational Leadership
No change in leadership classification
+ Controls

	Number of Clients			Client Acquisition	Financial Performance
	Total (1)	Group (2)	Individual (3)	(4)	(5)
Panel A. Crisis = Apr20-Jan21					
Transformational	15.2191	14.4250	0.7941	1.0338	-1.6656**
	(12.4450)	(12.5327)	(3.2608)	(1.4246)	(0.7748)
Transformational*Crisis	2.2324	-0.0764	2.3088	-1.1497	2.9324
	(15.7782)	(15.7881)	(4.1346)	(1.5714)	(2.1587)
Crisis	-0.0257	5.0632	-5.0889	-18.0982***	-56.0210***
	(12.5482)	(12.8591)	(3.3927)	(1.2897)	(1.7415)
Constant	596.0049***	510.8593***	85.1457***	17.1862***	93.0396***
	(33.8858)	(32.2937)	(8.4968)	(3.0376)	(5.7012)
R^2	0.1146	0.0948	0.1234	0.2282	0.3894
Panel B. Crisis High=Apr20-Aug20, Crisis Low=Sep20-Jan21					
Transformational	15.2191	14.4250	0.7941	1.0338	-1.6656**
	(12.4473)	(12.5359)	(3.2616)	(1.4248)	(0.6556)
Transformational*Crisis High	-7.1962	-5.4443	-1.7519	-0.5792	1.8166***
	(18.0375)	(17.9857)	(4.8710)	(1.5219)	(0.6795)
Transformational*Crisis Low	11.6611	5.2915	6.3696	-1.7202	4.0482**
	(19.0027)	(18.9587)	(4.8111)	(1.8842)	(1.6082)
Crisis High	29.5357**	30.0193**	-0.4836	-21.1351***	-93.4245***
	(14.0907)	(14.3457)	(4.0514)	(1.2515)	(0.4439)
Crisis Low	-29.5871*	-19.8930	-9.6942**	-15.0614***	-18.6175***
	(15.5135)	(15.7983)	(3.9386)	(1.5471)	(1.3515)
Constant	596.0049***	510.8593***	85.1457***	17.1862***	93.0396***
	(33.8341)	(32.2467)	(8.4978)	(3.0140)	(2.1755)
R^2	0.1227	0.1020	0.1250	0.2401	0.9052
p-value Crisis High=Crisis Low	0.3359	0.5787	0.1077	0.4120	0.1438
Mean of Dep. Var. (Control)	581.9064	535.1667	46.7398	13.2368	97.2303
Observations	2814	2814	2814	2814	2814
N Employees	176	176	176	176	176
N Branches	80	80	80	80	80

Notes: This table replicates Table 2, restricting the analysis to managers whose leadership classification did not change. Dependent variables and control variables: See table notes of Table 2. Robust standard errors are reported in parentheses. *$p < 0.1$,** $p < 0.05$,*** $p < 0.01$.

Table B.7: Work Styles and Transformational Leadership
(Dec19 vs. Dec20)
No change in leadership classification
+ Controls

	Planning (1)	Effort (2)	Objective Work Time (3)	Subjective Work Time (4)
Transformational	0.0748***	0.0600***	-73.0006**	0.0844**
	(0.0277)	(0.0231)	(31.9945)	(0.0340)
Transformational*Crisis	-0.0398	-0.0094	74.5142*	-0.0308
	(0.0379)	(0.0362)	(43.6154)	(0.0487)
Crisis	0.0083	-0.0206	-65.1228*	0.0152
	(0.0323)	(0.0308)	(37.8421)	(0.0419)
Constant	0.6041***	0.6488***	678.7786***	0.7292***
	(0.0800)	(0.0698)	(87.3433)	(0.1004)
Mean of Dep. Var. (Control)	0.6119	0.7123	683.5088	0.7007
Observations	338	337	349	344
N Employees	176	176	176	176
N Branches	80	80	80	80
R^2	0.080	0.067	0.082	0.064

Notes: This table replicates Table 3, restricting the analysis to managers whose leadership classification did not change. Dependent variables and control variables: See table notes of Table 3. Standard errors are clustered at the branch level and in parentheses. $^*p < 0.1,^{**} p < 0.05,^{***} p < 0.01$.

Table B.8: Mental Well-Being and Transformational Leadership
(Jun/Jul20)
No change in leadership types
+ Controls

	Subjective Well-Being			Perceived Stress		
	z-Score (1)	Increase (0-1) (2)	Decrease (0-1) (3)	z-Score (4)	Increase (0-1) (5)	Decrease (0-1) (6)
Transformational	0.2964***	0.0934**	-0.0535	-0.1752**	0.0389	-0.0006
	(0.0885)	(0.0461)	(0.0462)	(0.0865)	(0.0460)	(0.0465)
Mean of Dep. Var (Control)	-0.0946	0.3887	0.4349	0.0129	0.3661	0.3920
Observations	694	158	158	694	158	158
N Employees	166	158	158	166	158	158
N Branches	77	73	73	77	73	73
R^2	0.0534	0.1001	0.0337	0.0364	0.0566	0.0267
Survey Wave FE	✓			✓		

Notes: This table replicates Table 4, restricting the analysis to managers whose leadership classification did not change. Dependent variables and control variables: See table notes of Table 4. Standard errors are clustered at the branch level and in parentheses. $^*p < 0.1,^{**} p < 0.05,^{***} p < 0.01$.

B.3. Attrition and non-response

While the administrative data are complete for the employees who work at the organization throughout the period of our study, the survey data may suffer from attrition or non-response. We hence briefly address these concerns below.

As we survey employees between December 2019 and December 2020, one might be concerned about attrition, in particular its relationship with leadership. Figure A.2 shows the flow of respondents in and out of our sample. More importantly, results in Table 1 confirm that turnover in the sample period does not differ by leadership style. Similarly, Table B.9 shows that survey attrition and the absolute turnover number in the study period do not differ for transformational vs. transactional leaders ($p = 0.36$ for attrition and $p = 0.34$ for turnover). We conclude that differential attrition is unlikely to be an issue.

We did not force responses to our survey questions. Employees could hence skip questions that they would not like to answer. This might be problematic if employees skipped specific leadership questions rather than, e.g., answering them negatively. Of the 596 employees who answered the leadership questionnaire in December 2019, 101 individuals (16.9%) skipped at least one out of the eight questions. In Table A.4, we first test whether those who skipped at least one item rate their leaders differently. While we find a difference for one item, overall leadership ratings are not affected.[34] Second, we test whether observable employee characteristics are different for those who skip at least one item. Results show that skipping is not systematically related to observables. We conclude that the impact of item non-response on the leadership measure is likely negligible.

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[34]Those who skip at least one item of the eight leadership dimensions, rate their managers lower on being 'inspiring by being competent'. The differences are statistically significant at the 5% level.

Table B.9: Survey Attrition and Turnover by Transformational Leadership

	Transformational Leadership (1)	Transactional Leadership (2)	Test (1)=(2) *p*-value (3)
Survey Non-Response	0.09	0.04	0.3383
	[0.35]	[0.19]	
Survey Attrition	1.88	2.09	0.3624
	[1.36]	[1.35]	
Turnover	1.03	1.20	0.3418
	[1.05]	[1.03]	
N Branches	92	54	

Notes: Dependent variable: *Survey Non-Response* refers to the number of employees at a branch who did not answer the baseline survey. *Survey Attrition* captures the number of employees at a branch who answered the baseline survey but did not respond to the endline survey. *Turnover* captures the number of employees at a branch who answered the baseline survey and left the company during the period from October 2019 to January 2021. The table reports the mean and standard deviation (in square brackets) of the survey non-response, survey attrition, and turnover by leadership style. Column (3) reports the p-value of the t-test that both means are the same. *Transformational Leadership* is an indicator if the manager's average leadership rating from all employees within the branch is above the sample mean. *Transactional Leadership* is an indicator if the manager's average leadership rating from all employees within the branch is below the sample mean.

B.4. Alternative econometric specifications

Since we have individual level panel data, we follow a sampling perspective in dealing with correlations in the error term and use robust standard errors. This relies on the assumption that individual loan officers are quasi-randomly assigned to each branch which we discuss and show in Section 3.

An alternative perspective is to treat the branch managers and their leadership styles as randomly allocated to each branch, which would require clustering of standard errors at the branch level. Since we do not have information about the branch managers themselves, we prefer not to make any assumptions on assignment of leadership (our treatment) to branches and hence keep the sampling perspective. We replicate our main result tables here using clustered standard errors at the branch level.

Our results are mostly robust to this different econometric specification. However, we note a few differences. The pre-crisis performance differentials between employees with rather transformational vs. rather transactional managers are no longer statistically significant with the exception of financial performance (Table B.10). The same holds true for the overall crisis period (Panel A) and the crisis period with lower uncertainty (Panel B), again with the exception of the financial performance indicator. When presenting our main results, we therefore highlight the consistency of results for financial performance. For planning and work effort and mental well-being, our results are robust to this different econometric specification (Table B.11 and B.12).

As an additional econometric specification, we include month fixed effects to capture unobserved heterogeneity over time. The month fixed effects absorb the binary indicator *Crisis*. Our performance results are robust to this alternative econometric specification (Table B.13).

Table B.10: Individual Performance and Transformational Leadership
+ Controls & Clustered SE

| | Number of Clients | | | | |
| | Total | Group | Individual | Client Acquisition | Financial Performance |
	(1)	(2)	(3)	(4)	(5)
Panel A. Crisis = Apr20-Jan21					
Transformational	-0.0419	-5.9736	5.9317	-1.5394	-2.6737**
	(18.2132)	(18.1809)	(5.2446)	(1.8305)	(1.1575)
Transformational*Crisis	22.8893	21.8004	1.0889	1.1801	4.0044**
	(14.4520)	(13.3082)	(2.9291)	(1.9872)	(1.8212)
Crisis	-29.6383**	-22.8063**	-6.8320***	-19.4433***	-58.2823***
	(11.6431)	(10.6662)	(2.5789)	(1.6245)	(1.5951)
Constant	440.9254***	390.5584***	50.3670**	22.5719***	83.3258***
	(72.6583)	(70.2109)	(19.9668)	(3.0608)	(4.9777)
R^2	0.0536	0.0514	0.0500	0.2160	0.3948
Panel B. Crisis High=Apr20-Aug20, Crisis Low=Sep20-Jan21					
Transformational	-0.0603	-5.9908	5.9306	-1.5385	-2.6597**
	(18.2159)	(18.1829)	(5.2454)	(1.8306)	(1.1507)
Transformational*Crisis High	23.0243*	21.2785*	1.7458	1.5029	2.7256**
	(12.3952)	(11.4846)	(2.2682)	(1.8531)	(1.1684)
Transformational*Crisis Low	24.1928	23.7082	0.4846	0.7635	4.2478
	(20.4837)	(18.8745)	(4.0385)	(2.2228)	(3.1595)
Crisis High	12.8376	17.3716*	-4.5340**	-21.8348***	-90.2060***
	(9.6675)	(8.8746)	(1.9710)	(1.5077)	(0.8424)
Crisis Low	-75.2000***	-65.9031***	-9.2969***	-16.8780***	-24.0395***
	(17.1171)	(15.7451)	(3.5196)	(1.8156)	(2.7690)
Constant	440.2302***	389.9075***	50.3227**	22.6076***	83.8604***
	(72.7609)	(70.2809)	(19.9751)	(3.0694)	(4.7675)
R^2	0.0711	0.0684	0.0516	0.2236	0.7462
p-value Crisis High=Crisis Low	0.9453	0.8780	0.6526	0.4334	0.6351
Mean of Dep. Var. (Control)	563.0940	514.7390	48.3550	14.5660	93.8821
Observations	8255	8255	8255	8255	8255
N Employees	585	585	585	585	585
N Branches	146	146	146	146	146

Notes: This table replicates Table 2 with clustered standard errors. Dependent variables and control variables: See table notes of Table 2. Standard errors are clustered at the branch level and in parentheses. $^*p < 0.1,^{**} p < 0.05,^{***} p < 0.01$.

Table B.11: Work Styles and Transformational Leadership
(Dec19 vs. Dec20)
+ Controls & Clustered SE

	Planning (1)	Effort (2)	Objective Work Time (3)	Subjective Work Time (4)
Transformational	0.0479**	0.0430**	-76.2214***	0.0249
	(0.0191)	(0.0183)	(22.8573)	(0.0270)
Transformational*Crisis	-0.0166	-0.0351	97.7936***	-0.0422
	(0.0243)	(0.0252)	(34.4118)	(0.0301)
Crisis	-0.0137	-0.0045	-79.6998***	0.0204
	(0.0189)	(0.0201)	(28.9525)	(0.0220)
Constant	0.6203***	0.6305***	701.5955***	0.7803***
	(0.0641)	(0.0650)	(77.1027)	(0.0906)
Mean of Dep. Var. (Control)	0.6371	0.7219	699.3846	0.7521
Observations	574	566	585	583
N Employees	301	301	301	301
N Branches	125	125	125	125
R^2	0.0386	0.0584	0.0499	0.0302

Notes: This table replicates Table 3 with clustered standard errors. Dependent variables and control variables: See table notes of Table 3. Standard errors are clustered at the branch level and in parentheses. $*p < 0.1,** p < 0.05,*** p < 0.01$.

Table B.12: Mental Well-Being and Transformational Leadership
(Jun/Jul20)
+ Controls & Clustered SE

	Subjective Well-Being			Perceived Stress		
	z-Score (1)	Increase (0-1) (2)	Decrease (0-1) (3)	z-Score (4)	Increase (0-1) (5)	Decrease (0-1) (6)
Transformational	0.3877***	0.0425*	-0.0372	-0.1242**	0.0360	0.0238
	(0.0895)	(0.0253)	(0.0273)	(0.0625)	(0.0276)	(0.0291)
Mean of Dep. Var (Control)	-0.1755	0.4086	0.4381	0.0652	0.3671	0.3736
Observations	1726	406	406	1726	406	406
N Employees	453	412	412	453	412	412
N Branches	143	140	140	143	140	140
R^2	0.0557	0.0418	0.0265	0.0183	0.0146	0.0238
Survey Wave FE	✓			✓		

Notes: This table replicates Table 4 with clustered standard errors. Dependent variables and control variables: See table notes of Table 4. Standard errors are clustered at the branch level and in parentheses. $*p < 0.1,** p < 0.05,*** p < 0.01$.

Table B.13: Individual Performance and Transformational Leadership
+ Controls & Month FE

| | Number of Clients | | | | |
| | Total | Group | Individual | Client Acquisition | Financial Performance |
	(1)	(2)	(3)	(4)	(5)
Panel A. Crisis = Apr20-Jan21					
Transformational	0.3243	-5.6003	5.9246***	-1.5055**	-2.6562***
	(8.1359)	(7.6951)	(1.9869)	(0.7542)	(0.7443)
Transformational*Crisis	23.2739**	22.1329**	1.1410	1.1044	3.4475***
	(10.9202)	(10.3944)	(2.3745)	(0.8010)	(0.9839)
Constant	394.1964***	339.3613***	54.8351***	11.6963***	84.0780***
	(26.4498)	(24.8226)	(6.2594)	(1.7373)	(2.6491)
R^2	0.0854	0.0843	0.0533	0.4185	0.7501
Panel B. Crisis High=Apr20-Aug20, Crisis Low=Sep20-Jan21					
Transformational	0.3243	-5.6003	5.9246***	-1.5055**	-2.6563***
	(8.1364)	(7.6956)	(1.9871)	(0.7543)	(0.7443)
Transformational*Crisis High	23.0226*	21.2444*	1.7782	1.5574*	2.7065***
	(12.5026)	(11.9557)	(2.7299)	(0.7948)	(0.7799)
Transformational*Crisis Low	23.5401*	23.0738*	0.4663	0.6246	4.2323***
	(13.8254)	(13.1436)	(2.7259)	(0.9091)	(1.5025)
Constant	394.1965***	339.3618***	54.8347***	11.6960***	84.0784***
	(26.4512)	(24.8235)	(6.2597)	(1.7374)	(2.6497)
R^2	0.0854	0.0843	0.0533	0.4185	0.7501
p-value Crisis High=Crisis Low	0.9719	0.8965	0.6253	0.1093	0.2510
Mean of Dep. Var. (Control)	563.0940	514.7390	48.3550	14.5660	93.8821
Observations	8255	8255	8255	8255	8255
N Employees	585	585	585	585	585
N Branches	146	146	146	146	146

Notes: This table replicates Table 2 for alternative measures of leadership. Dependent variables and control variables: See table notes of Table 2. The table includes month fixed effects and controls in all regressions. Robust standard errors are reported in parentheses. $^*p < 0.1,^{**} p < 0.05,^{***} p < 0.01$.

C. Description of Variables and their Sources

We substitute names and titles in brackets with institution-specific terms.

Transformational Leadership Measured in the baseline survey in December 2019 and in the endline survey in December 2020. The Global Transformational Leadership scale (GTL) is a short and practical self-reported instrument to measure the eight behaviours of transformational leadership. It has been developed as a single construct of transformation leadership and is validated to have satisfactory reliability by Carless et al. (2000). The index consists of eight statements (one item for each behaviour), which respondents evaluate the frequency of transformational leadership behaviours exhibited by their leader, according to a 1-5 scale. The total score thus ranges from 8 to 40, with a higher score indicating more engagement of leaders in transformational behaviours. The wording is as follows:
"How often/frequently does your Manager engage in the following activities?

  i. communicates a clear and positive vision of the future

  ii. treats [employees] as individuals, supports and encourages their development

  iii. gives encouragement and recognition to [employees]

  iv. fosters trust, involvement and cooperation among [employees] in the branch

  v. encourages thinking about problems in new ways and questions assumptions

  vi. is clear about his/her values and practices which he/she preaches

  vii. instills pride and respect in others

  viii. inspires me by being highly competent"

Responses are measured on a five-point scale (rarely or never [1], once in a while [2], sometimes [3], fairly often [4], very frequently, if not always [5]). We normalize the leadership score to a range between zero and one.

Planning Measured in the baseline survey in December 2019 and in the endline survey in December 2020. The planning index captures the extent employees 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 disagree [1], Disagree [2], Neutral [3], Agree [4], Strongly agree [5]). Item 4 and 5 are recoded in inverse order before adding up.

Effort   Measured in the baseline survey in December 2019 and in the endline survey in December 2020. The effort index captures the extent employees 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 [group] to [invidual loans]

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 [group] borrowers and mark who would be a good candidate for an upgrade to an individual loan

5. I actively approach eligible [group] borrowers to switch to [invidual] 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 borrrower 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 disagree [1], Disagree [2], Neutral [3], Agree [4], Strongly agree [5]). Item 20 and 21 are recoded in inverse order before adding up.

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

Subjective Working Time   Measured in the baseline survey in December 2019 and in the endline survey in December 2020. The subjective working time index captures how employees 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 [employees] to get my workload done

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

Bonus Importance Measured in the baseline survey in December 2019. The bonus importance index captures the extent employees attach importance to their bonus and consists of 3 items.

The wording is as follows:

Would you agree or disagree to the following statements?

1. The monthly bonus payment offered by [company] is important to me

2. I think that getting more information on what my bonus payments are composed of is important.

3. I think that getting more information on the different categories in which I can improve my performance to achieve a higher bonus is important.

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

Subjective Bonus Knowledge Measured in the baseline survey in December 2019. The subjective bonus knowledge index captures the extent employees feel informed about the bonus and consists of 5 items.

The wording is as follows:

Would you agree or disagree to the following statements?

1. I am familiar with the bonus calculation

2. I know all relevant performance measures that are important for my bonus payments

3. I know where to find all necessary information on my performance to calculate my bonus payment

4. I sometimes do not know how exactly my bonus is calculated

5. I sometimes do not know what the best thing to do is to avail a higher bonus

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

Bonus Information Acquisition Measured in the baseline survey in December 2019. The bonus information acquisition index captures the extent employees acquire information about the bonus and consists of 5 items.

The wording is as follows:

1. If we would offer to provide information on the categories in which you can improve your bonus payments, would you like to receive this?

2. Last month, did you talk with the other [employees] of your branch about your bonus payments?

3. Do you know how much the bonuses of at least one other [employee] at your branch was last month?

4. Last month, did you contact your [manager] for information or clarification about your bonus payments?

5. Last month, did you contact HR for information or clarification about your bonus payments?

Responses are measured as a binary indicator yes or no.

Bonus Efforts Measured in the baseline survey in December 2019. The bonus efforts index captures the extent bonus payments guide employee work and consists of 3 items.

The wording is as follows:

Would you agree or disagree to the following statements?

1. In my everyday work organization, I consider how my efforts will translate to bonus payments

2. I am not sure if I follow the best strategy to achieve the highest bonus

3. I prioritize client interest over bonus

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

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