

A trial in Indonesia shows the potential for behaviorally informed communications to impact compliance rates and payment amounts in the medium term for Small and Medium Enterprises.

Behaviorally informed messages have had demonstrated success in increasing tax compliance in multiple regional settings. In Indonesia, which has the largest economy in Southeast Asia, a trial from The Directorate General of Taxes (DGT) and World Bank teams looked at whether behaviorally informed messages and materials could impact tax compliance and payment rates among Small and Medium Enterprises (SMEs).

In Indonesia, the 59.3 million registered SMEs are predominantly informal, making up 89% of all employment and contributing to 14% of total exports and 58% of domestic investment¹. For SMEs, the tax regime is revenue-based, requiring them to declare and pay 0.5% of their monthly revenue up to Rp. 4.8 billion (or approximately USD 336,000) to tax authorities². Difficult business development and revenue generation accompanied by the tax authority's limited collection capacity imply low SME tax compliance, currently at 15%.



The Project

To test whether behaviorally informed messages could impact tax compliance among Indonesian SMEs, the World Bank team adapted the language in a calendar distributed, along with an official letter, to SMEs across the island of Java, hosting 61% of Indonesian SMEs³. The randomized control trial included three treatment arms and a control group across 40 tax districts, including 24,000 SMEs –approximately 6,000 per treatment arm – in all. The delivery rate of calendars and letters was 85.9%, significantly higher than those observed in other Bank-run trials: only 30% of messages were successfully delivered in Guatemala⁴ and 52% in Kosovo⁵. To determine impact, the team examined monthly payment data beginning in January 2016. The intervention kicked off with the calendar shipment in September 2018 and ran for 15 months.

The treatment arms consisted of different messages across each calendar. They were designed to address the main behavioral barriers revealed in previous diagnostics of reasons for low compliance⁶: low awareness of tax obligations and understanding of the process; negative perception of the use of fiscal expenditure for public benefit; and fear of falling into the auditing of the tax authority after paying.

Thus, the first treatment arm, which provided only simplified information on the declaration and payment process, included basic details on how to pay monthly revenue, when, and where. The second treatment arm had the simple information on payment and also added language on the public goods aspect of taxes, emphasizing messages like: “34% of tax revenue contributes to a better income distribution”; that taxes “help 19.7 million poor children go to school”; and that taxes provide “Rp. 420 trillion to build roads, bridges, and infrastructure.”

The third treatment arm featured a message of deterrence on top of the simplified payment information. It emphasized that timely payment helps businesses avoid fines, and generally used a hard tone to stress the negative consequences of late or non-payment, mainly in terms of fines and the lack of peace of mind from being a delinquent business.



The Results



Overall, the intervention significantly increased the payment rate by 4% and the amount paid by 7%, 15 months after the calendar delivery. The calendars effectively created compliant taxpayers out of non-compliant taxpayers -the “extensive margin”- and increased the amount of taxes paid overall -the “intensive margin.” Compliance of participating taxpayers increased by 4% to 25% during the intervention period compared to the group that didn’t receive the calendars, while the monthly dollar amount of taxes paid improved in USD 0.54⁷, a 7% increase.



To get delinquent firms to pay their taxes, information is not enough – you need an element of deterrence. For taxpayers that received the “deterrence” message, those who were most responsive were those on the “extensive margin”, that is, those who didn’t pay before receiving the calendar. The hard tone messages increased payment rates by 5%, in contrast to the group that didn’t receive the calendars. It’s clear that in this context, just telling people how to pay isn’t an effective method of increasing payment compliance – you have to threaten them.



To motivate current taxpayers to comply more accurately, providing simple information about the payment process is enough. For taxpayers who already fulfill their obligation, the amount paid can be increased if they are targeted with the framing describing the payment process – the information arm – or the one showing the benefits from taxes to society - the public goods message. Those receiving any of these two calendars increased the amount paid in USD 0.91 per month, a 12% increase compared to the group that didn’t receive calendars.



Applied to the whole country, the treatment is a cost-benefit winner. With scaling in mind, the impacts of this intervention are meaningful and promising. The costs of the intervention, including shipping and printing, were recovered within six months of the trial. Overall, if all taxpayers received the best-performing treatment, the increase in recovered taxes would top USD 2.85 million in 15 months.



Compared with other trials, the results show particular promise for scale and impact for a distinctive taxpayer type: SMEs. The benefit of having a rich field of behavioral science for tax compliance means that we can compare the effect in Indonesia against similar trials. For reference, similar hard-tone messages in Poland⁸, where non-compliance was higher, increased compliance 17% for personal income tax; in work led by the Behavioural Insights Team in Indonesia, a similar trial increased early filing for personal income tax by 3.7%; here, the Bank increased overall compliance of SMEs by 4%.



Policy Implications

While behavioral science has long had a foothold in improving tax compliance, the context of targeting SMEs is relatively new for the field. In this trial particularly, the meaningful and interesting impact is not only in the increase in compliance, but in the increase in the amount paid – further evidence of even more significant impact of behavioral science on improving the effectiveness of government programs, and domestic revenue mobilization.

As in other Bank-led trials, the effective messages are also a meaningful piece of the puzzle. Here, knowing that deterrent, hard tone messages increase overall payment among non-payers, but that informational messages can significantly impact payment amounts sustainably over time, can help inform the messages that tax officials build into communications moving forward. As ever, testing for context enables us to

tailor scaled interventions for maximum impact. This is particularly relevant for the context of Indonesia, where the tax authority has multiple engagement channels with taxpayers but has not fully integrated behavioral messages in its communications.

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Finally, as in so many eMBeD projects, collaboration with the relevant Government partner was vital to ensuring an effective intervention roll-out and accurate analysis of results. In this case, both the central tax authority and local offices co-lead and supported all the project stages. As a result of this close interaction, the intervention benefited from context-relevant insights of government staff while providing them with tools for behaviorally informed policy design and impact evaluation. Furthermore, given the experiment's success, the DGT plans to send the behaviorally informed calendars to all SME taxpayers across Indonesia.

About eMBeD

The Mind, Behavior, and Development Unit (eMBeD), the World Bank's behavioral science team in the Poverty and Equity Global Practice, works closely with project teams, governments, and other partners to diagnose, design, and evaluate behaviorally informed interventions. By collaborating with a worldwide network of scientists and practitioners, the eMBeD team provides answers to important economic and social questions, and contributes to the global effort to eliminate poverty and enhance equity.



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5. Hernandez, M., Karver, J., Negre, M., Perng, J. (2019). Promoting Tax Compliance in Kosovo with Behavioral Insights. World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/31357>.

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7. The average exchange rate during the period of intervention was Rp. 14,158 per USD.

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