

Technology and Tax: Adoption and Impacts of E-services in Rwanda

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Summary of Working Paper 153

The potential benefits of digitalisation

Many low-income countries are increasingly digitising their tax services, which can bring a range of benefits, from reducing compliance costs and improving record-keeping, to limiting opportunities for corruption and increasing fairness in the tax system. However, the success of these benefits depends on adequate levels of awareness and adoption of e-services among taxpayers; where these levels are suboptimal, tax e-services may produce only partial benefits.

This paper examines the extent of awareness and uptake of tax e-services in Rwanda from a pre-pandemic situation up to two years into the COVID-19 crisis. The country has increasingly digitalised its tax administration, even more so during the pandemic. Electronic filing and payment of taxes have been mandatory since 2015, and two different e-services are available: E-tax, a free web-based platform designed to be used on computers and smartphones, and M-declaration, a feature phone-based application which enables mobile money payments and a simpler process for filing a return. This allows us to run a comparative analysis of the two solutions. We apply a mixed methods approach, using a nationally representative panel survey of 2,000 corporate (CIT) and personal (PIT) income taxpayers, with baseline information collected pre-COVID-19 and four follow-up rounds carried out after the pandemic hit, and focus group discussions (FGDs) with 24 e-services users.

What drives awareness and adoption of e-services?

At baseline, in 2020, awareness and adoption of e-services was limited. As many as 19 per cent and 40 per cent of CIT and PIT payers, respectively, were not familiar with either E-tax or M-declaration. Individual characteristics, such as gender and education, played a significant role in explaining awareness, as did business characteristics such as tax knowledge, business email address, and monthly sales. An important divide in awareness emerged as less

equipped and educated taxpayers, mostly female, with less sophisticated businesses, were significantly less likely to know about e-services. In the same vein, female taxpayers, and less knowledgeable and sophisticated taxpayers, had lower rates of adoption in 2020. The FGDs hinted at suboptimal solutions by which less equipped taxpayers would recur to intermediaries – tax accountants and Rwanda Revenue Authority (RRA) staff – to file and pay taxes on their behalf. Importantly, though, our analysis indicates that having more interactions with the RRA increases levels of adoption.

The pandemic normalised digital transactions and moved people away from in-person interactions. and in Rwanda there was a rapid shift to digital solutions. Two years into the pandemic, the take-up of e-services has risen substantially to 90 per cent, and the widespread usage of mobile money during the pandemic strikingly correlates with the probability of starting using e-services. The gender gap in adoption also seems to have closed. FGD evidence suggests that the COVID-19 crisis forced some taxpayers to adapt to e-services, but that those who were less equipped for this change failed to keep up.

E-services, perceived fairness, and willingness to pay tax

We also examine the relationship between taxpayers' adoption of e-services and their perceptions of the tax system, focusing on perceived fairness and taxpayers' intrinsic willingness to comply, two key outcomes expected to be shaped by the IT solutions. We find no significant difference in perceptions of fairness between users and non-users of e-services. Likewise, the adoption of e-services does not have a positive correlation with the intrinsic motivation to comply, and further research is needed to examine its effect on tax filing behaviour. The FGDs highlighted that technical issues related to software are a recurrent problem experienced by taxpayers. Users of E-tax and M-declaration also face challenges related to a slow system, not-validated annexures, rejected

declarations and connectivity problems. This qualitative evidence suggests that negative repercussions from practical experience affect the broader perception of fairness and intrinsic motivation to comply, causing frustration and irritation among taxpayers.

Conclusions and policy recommendations

Our paper has significant policy relevance. The RRA and other public institutions in Rwanda are increasingly digitising their functions, often outperforming their peers in other African countries. Yet our findings suggest that discrepancies between government mandates and actual practices still persist, and that more can be done to increase awareness and adoption of tax e-services. Without resolving these discrepancies, digital government projects, such as e-services, risk failing to provide their full intended benefits.

While the adoption of e-services has dramatically increased in Rwanda, some specific categories of taxpayers, such as females and less educated individuals, are less likely to be aware of and therefore use e-services. Further, negative user experiences, such as congestion during peak times, limited internet coverage, and the automatic triggering of penalties after deadlines, seem to outweigh the perceived benefits the technology is

expected to bring. Lack of awareness and practical challenges have dampened the potential of e-services to streamline taxpayer experience and thus improve taxpayer sentiment, broader state-citizen relations and perceptions of fairness, which are in turn strong predictors of tax compliance.

To improve awareness and adoption of e-services among taxpayers, the RRA and other relevant actors should invest more in advertising and marketing e-tools and provide better support and training to taxpayers. Such initiatives could be better targeted at specific taxpayer categories, who may return to suboptimal, semi-manual, practices. There is also scope to expand the number of functions and overall reliability of the RRA's IT systems, to reduce downtime and system failures. In parallel, RRA human resources and staff training could be increased, to improve service delivery and the level of assistance available for taxpayers.

“Without resolving discrepancies between government mandates and actual practices, digital government projects, such as e-services, risk failing to provide their full intended benefits.”

Further reading

Santoro, F., Amine, R. and Magongo, T. (2022) *Mandating E-filing and E-payment and Tax Compliance: Evidence from Eswatini*, ICTD Working Paper 140, Brighton: Institute of Development Studies

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