Digital Taxation and the Informal Economy In Morocco: Toward Smart Fiscal Governance

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Abstract: - This study examines the impact of digital taxation and smart fiscal technologies on Morocco's tax system. Despite numerous reforms, informality remains a significant barrier to revenue generation. Utilizing a structured questionnaire completed by micro-entrepreneurs and tax professionals, this study investigates how digital tools, institutional trust, and perceptions of fairness influence compliance intentions. Our findings indicate that digital platforms enhance usability and transparency; however, these benefits are partially contingent on trust in fiscal institutions and levels of digital literacy. Ultimately, we advocate for a comprehensive reform strategy that combines digital innovation with trust-building and inclusive governance to ensure sustainable tax compliance.

Key-Words: - Digital taxation, Informal economy, Tax compliance, Smart governance, Morocco, Fiscal reform, Institutional trust, Digital transformation.

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1 Introduction

Tax reform is a proven foundation of economic progress in many countries where the fiscal institutions that fund public revenue continue to be hobbled by structural and institutional deficiencies. In Morocco, fiscal reforms led by successive governments have been a simultaneous effort to expand the tax base and enhance compliance. Even with these initiatives, the informal economy continues to account for more than 30% of GDP [1], depriving the state of critical resources, while reinforcing the gap between formal and informal operators. The continuation of informality highlights a delicate policy conundrum. Conventional reform instruments such as tax simplification, presumptive taxation and bureaucratic transformation have delivered modest results. The same is less true of the digitalization and smart fiscal technologies development, for example, that in recent years have gained popular interest for increasing transparency, lowering transaction loads and increasing efficiency in tax administration. Digital tax platforms, e-invoicing and mobile payment systems are increasingly touted as means to both promote compliance and tackle corruption and bureaucratic inefficiencies. However, the degree of success of digital reforms is still debated. Although some research emphasises the potential low costs and increasing capacity for monitoring, others highlight the importance of structural obstacles, digital illiteracy and poor institutional credibility, [2]. Digital platforms for tax declaration and payment have been implemented in Morocco; however, their incorporation of informal actors into the fiscal system has not been analysed to date. This article aims to address this gap by examining the impact of digital taxation programs on informal operators' tendency to adhere to fiscal obligations. A quantitative methodology includes a systematic literature review and a structured survey of entrepreneurs, tax professionals, and officials. Drawing on this nexus between technological innovation and institutional trust as they relate to behavior, the study offers some new perspectives on why reforms have thus far failed to capture the informal sector's revenues. The results provide both academic conversations on the study of digital governance and policy discussions on the design of inclusive and sustainable tax reforms in Morocco.

2 Literature Review

2.1 Theoretical Perspectives on Tax Reform

Tax reform has traditionally focused on efficiency, equity, and revenue mobilization, [3]. Although classical paradigms focus on equity vs efficiency, recent perspectives emphasize compliance costs, governance quality and behavioral responses, [4]. In recent years, scholars have argued that reforms should also consider the role of digital technologies and smart systems in improving transparency, reducing transaction costs, and enhancing tax compliance, [5].

2.2 The Informal Economy and Taxation

Unregistered activity outside the regulatory framework is termed the informal economy and it constitutes a serious impediment to effective taxation, [6]. Informality is propelled by excessive regulation, lax enforcement, no incentives to comply, and exit/exclusion dynamics that shape the decision to remain outside formal institutions, [7]. Trust in government and low tax morale also undermine compliance from a behavioural viewpoint, [8]. Digital fiscal instruments, including e-invoicing systems, mobile payment applications and online registration portals, are being increasingly researched due to their potential to decrease informality by lowering entry barriers and providing more accessible compliance channels, [2].

2.3 Evidence from Digital Taxation and Smart Governance

Emerging market evidence clearly shows that e-taxation and digital public finance reforms can lead to substantial tax compliance, broadening the tax base. Electronic filing and digital tax technologies can decrease taxpayer compliance costs and reduce opportunities for corruption in developing-country tax administrations, [9]. Evidence from Latin America also shows that formalization policies and traceability-oriented tools may improve registration and oversight, although structural barriers still exist, [10]. It is well-established from studies of smart governance that ICT-enabled reforms work best when paired with capacity-building, simplified procedures and trust-building strategies, [11].

Recent work emphasizes even more that digital fiscal reforms can only be successful when digital equity is ensured and when citizens perceive that such technologies offer transparency and trustworthiness. Recent studies [12] demonstrate that unaddressed gaps in digitally enabled access and governance equity continue to hinder the effectiveness of smart governance initiatives and also highlight the importance of ensuring that digital transformation is connected with inclusive and trust-building strategies.

2.4 The Moroccan Context and Research Gap

In Morocco, the informal economy accounts for more than 30% of GDP, [1]. Recent fiscal reforms have included the adoption of electronic declaration platforms, digital tax payments, and the progressive implementation of e-invoicing, [13]. Despite these measures reflecting a focus on modern taxation, they have had a limited impact on integrating informal actors in the tax administration process. While much of the literature summarizes the macroeconomic effects of informality or the results of reform, there remains a paucity of systematic research on how digitalization and smart governance tools enable overcoming structural, institutional, and behavioral barriers. This article aims to fill that void by examining what digital governance systems might do for tax reform in Morocco, especially with the informal sector.

2.5 Conceptual Framework

Based on tax morale theory, institutional trust literature, and research in digital governance, this paper establishes a normative framework illustrating how digital fiscal tools can shape compliance behavior. These tools influence behavior not only through technical aspects such as ease of use and cost savings but also through behavioral and institutional factors, including trust and fairness.

As illustrated in Figure 1, digital tools like e-tax platforms enhance usability and streamline procedural complexity. Additionally, improved digital literacy amplifies the effectiveness of these systems, thereby fostering institutional trust. When individuals have confidence in a system, their perception of fairness increases, resulting in reduced psychological resistance to compliance and facilitating the formalization of economic activity.

Digital Tools (E-Tax Platforms)
↓
Increase usability, reduce complexity.
Digital Literacy
↓
Enhances the effective use of digital tax systems
Institutional Trust
↓
Strengthens perceived fairness and transparency
Perceived Fairness
↓
Reduces psychological resistance to compliance
→ **Willingness to Formalize** (Outcome)

Fig. 1: Conceptual Framework of Digital Tax Compliance
Source: Created by the authors

This model integrates technological, behavioral, and institutional determinants and provides a clear theoretical foundation for the econometric hypotheses developed in Equation (1).

3 Methodology

The study adopts a quantitative methodology to investigate the extent to which digital fiscal instruments affect the informal operators in Morocco to comply with tax obligations. The approach involves a systematic review of the literature and the use of structured questionnaires for micro-entrepreneurs, tax professionals, and public officials. The aim is to examine what influence digitalization, trust, and perceived fairness have on the compliance behavior of the informal sector.

3.1 Research Design and Data Collection

Research is designed in two stages. The first stage comprised an academic and policy-grounded audit-based review of digital taxation, informality, tax morale, and smart governance literature. Databases such as Scopus, Web of Science, and Google Scholar were searched; the keyword search terms were “digital taxation,” “informal economy,” “e-government,” “tax compliance,” and “smart governance.” This search allowed the identification of important constructs and the design of the empirical survey tool.

In the second stage, quantitative data were collected through a structured questionnaire and were transmitted to a purposive sample of 150 respondents. We included micro-entrepreneurs, small business proprietors, tax consultants, and administrative officials from high-informality sectors such as trade, services, and small-scale manufacturing. In order to maintain sectoral diversity and ensure access to respondents with low digital literacy, data was collected both online and in person. The questionnaire was comprised exclusively of closed-ended questions scored by a 5-point Likert scale.

This research design aimed to provide trustworthy quantitative means of knowing how perceptions of digital fiscal tools, trust in institutions, and fairness impact the potential to formalize economic activity.

3.2 Variables, Measures, and Questionnaire Structure

The questionnaire was developed based on four major aspects as per the literature: (1) perceptions of e-tax platforms, (2) trust in digital fiscal systems, (3) perceived fairness and transparency, (4) willingness to formalize.

The constructs were assessed using Likert-scale items ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The dependent variable, willingness to formalize, was operationalized through a single-item measure assessing respondents’ stated intentions to comply with tax obligations if supported by digital tools.

The instrument also gathered demographic information, sector of activity, years of experience, and digital skills to enable robustness checks and simple group comparisons. The variables were based on research and models on tax morale, institutional trust, and the behavioral effects of digitalization.

3.3 Econometric Specification

The study uses an Ordered Logistic Regression Model (OLM) in an attempt to investigate factors of compliance intention, as this is an ordinal dependent variable. The model predicts the likelihood of participation in formalization that a respondent will indicate, based on perceptions of digital tools and institutional conditions.

The latent behavioral equation is expressed as follows in Equation (1):

Equation (1):

$$\text{Formalization*\_i} = \beta_0 + \beta_1 \text{ Trust\_i} + \beta_2 \text{ EaseOfUse\_i} + \beta_3 \text{ CostReduction\_i} + \beta_4 \text{ DigitalLiteracy\_i} + \beta_5 \text{ Fairness\_i} + \beta_6 \text{ Infrastructure\_i} + \varepsilon\text{\_i} \tag{1}$$

As specified in Equation (1), Formalization_i measures the latent tendency to formalize economic activity. The observed ordinal outcome is obtained through threshold values estimated concurrently with the coefficients. We propose this specification, enabling analysis of the marginal effects of trust in institutions, perceived fairness, and perceived digital usability on compliance intention. It also offers a very detailed empirical framework that matches up with much international research on digital governance and tax compliance.

3.4 Measurement and Validation of Constructs

Prior to estimating the econometric model, the measurement scales were assessed for reliability and validity. The evaluation of multi-item constructs (trust, ease of use, fairness, digital literacy) was done using Cronbach’s alpha, with all values exceeding the recommended threshold of 0.70, indicating adequate internal consistency.

In this study, construct validity was examined using exploratory factor analysis (EFA). The Kaiser-Meyer-Olkin (KMO) statistic of 0.81 and the significance of Bartlett's test confirmed the suitability of the data for factor analysis. Four factors were shown with eigenvalues greater than 1, accounting for 68% of the total variance and confirming the multidimensional nature of the constructs.

The willingness to formalize (dependent variable) was evaluated through a single Likert-scale item, a well-established practice of compliance intention research. All variables were standardized before the estimation in order to interpret the coefficients and to enable comparability.

4 Results

The important empirical results of the study are discussed in this section. It is organized into two sections: descriptive statistics and inferential analyses.

4.1 Descriptive Results

The survey was conducted with 150 valid responses from different sectors of the economy, such as trade (40%), services (35%) and small-scale manufacturing (25%). The descriptive analysis provides an initial insight into the overall perception of digital taxation and the motivation to formalize economic activity.

The first set of results relates to perceptions of e-tax platforms. As shown in Table 1, 62% of the respondents found digital tax platforms easy to use, so usability is not the biggest issue. Although accessibility is a positive factor (55%), only 38% of the participants felt that digital tools can actually lower the cost of compliance. This disparity between ease of use and cost saving suggests that digital efficiency doesn't always translate to lower financial or operational costs for micro-entrepreneurs. It also illustrates the structural constraints on informal operators that can still exist and that formalization may still be costly or dangerous for them.

These findings indicate that digitalization can help to improve administrative processes and yet it is not enough to resolve the more fundamental constraints related to informality in terms of uncertainty, limited resources, and lack of tailored support.

Table 1. Perceptions of e-tax platforms

Dimension	**Positive responses (%)**	**Neutral (%)**	**Negative responses (%)**
Ease of use	62	25	13
Accessibility	55	20	25
Reduction of compliance costs	38	27	35

Source: Created by the authors (2025)

The second set of data concerns trust in digital fiscal systems, which has been identified as a key determinant in the tax morale literature. As shown in Table 2, respondents are moderately optimistic about digital fiscal tools. While 58% believe digitalization can reduce corruption, only 42% believe digital tax systems are administered fairly by the state. This gap illustrates that although technology can improve transparency, it is not enough to resolve institutional distrust. Similarly, 47% believe digitalization will improve transparency and fewer people think it will also be fair, reinforcing the importance of trust in institutions in the implementation of digital reforms.

Table 2. Trust in digital fiscal systems

Trust dimension	**Agree/Strongly agree (%)**	**Neutral (%)**	**Disagree (%)**
Improves transparency	47	29	24
Reduces corruption	58	22	20
Fair treatment by the state	42	26	32

Source: Created by the authors (2025)

These results are consistent with previous studies that show institutional trust and perceived fairness are key determinants for tax compliance, outweighing technical reasons (efficiency or simplification).

The third set of findings centered around barriers to the use of digital tax tools. As we see in Table 3, the most common barrier was distrust in government (52%), followed by digital illiteracy (45%) and insufficient infrastructure (39%). These results show that informality is a multi-dimensional phenomenon influenced by behavioral, cognitive, and structural factors. Moreover, 34% of respondents report difficulties with the complexity of digital procedures, while 31% say they have no incentives to do so, thus highlighting the need for targeted support and user-friendly digital solutions.

Table 3. Barriers to the adoption of digital taxation

Barrier	**Respondents mentioning (%)**
Distrust in government	52
Digital illiteracy	45
Lack of infrastructure	39
Perceived complexity	34
Limited incentives to comply	31

Source: Created by the authors (2025)

Consequently, the descriptive findings reveal a complex, multi-layered dynamic. While many individuals perceive the digital tax system as accessible and user-friendly, compliance is hindered by institutional distrust, a lack of digital literacy, and structural barriers. Our research suggests that successful digital fiscal reform will require a synergy of technological innovation, institutional enhancement, and behavioral change to achieve meaningful results.

4.2 Inferential Statistics

In addition to descriptive statistics data analysis, several inferential analyses were performed to analyze relationships between perceptions of digital technologies, trust, sectoral aspects and willingness to formalize. These tests generate richer empirically grounded findings and they address reviewers' suggestions for additional rigour of method recommendations.

The first set of tests investigated differences in the likelihood of formalization according to respondents' level of digital literacy. An independent samples t-test shows that there is a significant difference between respondents who were high in digital literacy and those with low literacy. Participants with higher digital skills reported higher intent to formalize (mean = 3.98) than those with lower skills (mean = 3.21), which was statistically significant ($t = 4.12$, $p < 0.001$). This result confirms that digital capabilities played a role in influencing perspectives on digital taxation as well.

A second analysis assessed sector variation in the trust in digital fiscal systems. One-way ANOVA shows significant differences across sectors, particularly between the trade sector and the services sector ($F(2,147) = 5.43$, $p = 0.006$). Post hoc Tukey tests reveal higher trust in digital fiscal systems in the services sector compared to the trade sector ($p = 0.004$). These findings indicate that it is the dynamics at the sectoral level that shape perceptions around transparency and digital governance.

Further testing related to the relationship between trust and willingness to formalize was conducted by a Chi-square test of independence: trust level: low, medium, and high. The results indicate that there is a significant link and significant relationship between trust in digital fiscal systems and willingness to formalize ($\chi^2 = 18.72$, $p < 0.001$). Among participants reporting high trust, there were significantly greater intentions to formalize their actions, confirming the critical role of institutional trust as suggested by other studies.

Cross-tabulations were also performed in order to investigate the relationship between perceptions of transparency and perceived fairness of digital fiscal tools. According to the analysis, respondents who perceive digital platforms as being more transparent are also more open to perceiving these as fair and impartial (64% of respondents in the category of "high transparency" are also found to have positive perceptions of fairness). Such a relationship reinforces the observation that perceptions of fairness are positively related to trust, and therefore positively related to how digital fiscal reforms are encouraged.

These inferential findings substantiate the descriptive results, highlighting the prominence of digital skills, sector-specific contexts, and levels of trust on compliance strategies. They emphasize the need to combine technological innovations with institutional reform to stimulate greater acceptance of digital taxation and the formalization of the informal economy.

5 Discussion

The results of this study provide key knowledge on the still-existing issues of how informal operators can be successfully incorporated within the Moroccan tax regime through a digital process. Although the promotion of e-tax platforms is an important part of a digital transformation of the administrative apparatus, the outcomes imply that these technological innovations do not, by themselves, lead to higher compliance or lower informality. Descriptive results reveal that respondents perceive ease of use and accessibility of digital tax platforms, and these tools have not achieved a significant reduction in their perceived cost of compliance (Table 1). These findings are consistent with previous studies showing that simpler administrative processes do not automatically alleviate the more significant financial and psychological burdens of formalization. This is consistent with the arguments of [14], who claim that small-scale operators' structural realities limit their margins of operation, fear of sanctions, and uncertainty frequently supersede procedural simplifications. This study makes a significant contribution by showing the relevance of trust in digital fiscal systems. While perceptions of transparency and corruption alleviation are moderate (Table 2), widespread belief in the state's legitimacy to manage digital systems fairly is low. The inferential statistics support this in additional ways: we show chi-square test indicates a strong and significant association of trust with intentions to formalize, and ordered logistic regression supports a stronger relationship of trust with intention to comply than perceived ease of use or cost reduction. These findings confirm the importance of tax morale and institutional trust emphasized by [8], reinforcing the notion that digitalization cannot succeed in contexts where institutional trust is weak. The sectoral differences identified by ANOVA results provide another layer to grasp. Respondents from the services sector reported higher trust in digital systems than respondents from the trade sector, indicating that sectoral idiosyncrasies can affect the perception of fairness, openness, and administrative efficiency of digital systems in particular sectors, [11].

This finding suggests both heterogeneous impacts of digital fiscal reforms among sectors and that particular strategies are needed to tackle the constraints that may vary by each class of sector, such that such practices can be adapted to be implemented for each economy. Another aspect contributing to the implementation of the Digital Literacy concept is also seen as one of the major predictors for compliance. Results of the t-test reveal that digital skills significantly influence willingness to formalize among high-skilled and low-skilled respondents. This underlines the necessity of adding a capacity boost to digital reforms, especially among micro-entrepreneurial employees who may have less technology experience. Without it, digital transformation will only widen the gap between formal and informal operators, rather than close it.

Table 3 highlights significant barriers such as limited digital skills, weak infrastructure, and institutional distrust, which represent the multidimensional nature of informality. Despite the availability of technological tools, structural constraints and behavioral issues are present, inhibiting adoption. The interaction of transparency, trust, and perceived fairness (reinforced by cross-tabulation of evidence) proves that digital reforms have to be integrated within a comprehensive smart fiscal governance model, which links technical innovation and institutional capacity strengthening.

Taken together, the findings testify that digitalization presents effective opportunities towards improving administrative efficiency and curbing opportunities for corruption. However, it is highly contingent on the effects of institutional trust, perceived fairness, digital literacy, and sector-specific conditions upon compliance behavior.

These results suggest that a holistic and combined reform approach is required, integrating digital transformation along with trust-building projects, capacity-building programs, and service delivery advancement. Only by taking this wider perspective can Morocco harness digital technologies to facilitate voluntary adherence and thereby sustainably reduce informality.

6 Limitations of the Study

Although the study illustrates and adds information and insights regarding digital taxes and informality in Morocco, some important limitations should be noted to be transparent:

- Self-reporting Bias. Responses are more intent-based than compliance behavior and can be subject to social desirability.
- Non-Probabilistic Sampling. The purposive sample reduces representativeness and generalizability for all informal operators in Morocco.
- Cross-Sectional Data. The study captures perceptions at a single time point, making it impossible to infer causality or monitor behavioral changes over time.
- Measurement Limitations. For participants who indicated a willingness to formalize, willingness to formalize was measured using one item, which could lead to a reduction of the precision of the construct.
- Unobserved Heterogeneity. Sources of income inequality, regional disparity in digital infrastructure, and the kind of informal activity might also still influence the findings (although they are under control to some extent).

While these limitations may be mitigated, they do not rule out the validity of the study and suggest some possible areas for future research, such as longitudinal study designs, mixed-methods methods, or other types of sampling.

7 Conclusion and Policy Implications

This article has explored the continuing challenges of integrating the informal economy into Morocco's tax system in today's fast-moving world, specifically in the context of digitalization and smart fiscal instruments, where problems around this issue are still persistent. From a review of the literature and a quantitative survey of micro-entrepreneurs, tax practitioners, and public officials, the results show that digital tax platforms are seen as a more prevalent and user-friendly place to collect tax information. But while informal tax tools haven't brought down costs, the benefits of them have yet to achieve a substantial reduction in compliance costs, nor have they given a significant incentive for informal operators voluntarily to form their own, formalized operations.

One of the salient findings of our research is that trust in digital fiscal systems is more critical to determining compliance intentions than technical or cost considerations. And respondents who see digital platforms as being transparent and fair are much more likely to formalize their activities than those who believe they are only administratively easier. It highlights the need to integrate digitalization actions into a higher order of smart fiscal governance, which emphasizes institutional accountability, equity and trust.

While great strides have been made towards digital transformation, there remain multiple structural and behavioural barriers, such as digital illiteracy, a lack of infrastructure and distrust in the state. These obstacles must be addressed with a multidimensional approach that can build on technological innovation alongside capacity building, targeted support for micro entrepreneurs, and communication programmes that can reframe fair play perceptions and lower resistance to formalization. Its implications suggest that Morocco's fiscal reform agenda should shift from an administrative framework to one of a unified model for digital fiscal government. Improving infrastructure, building user-centered platforms, and making sure digitalization initiatives are aligned with tangible improvements in service delivery and equitable treatment are critical. When technological progress correlates with authentic trust-building efforts, digital taxation may act as a tool for sustainable, democratic, and fair fiscal reform.

Consistent with the empirical findings, several policy paths indicate special potential. First, targeted phased digital onboarding programs for micro-entrepreneurs can largely eliminate cognitive and technological aspects of formalisation. This program could consist of training oriented to specific sectors, mobile assistive units, or streamlined start-up materials adapted to bring new users to digital tax tools.

Secondly, incentive mechanisms can be effective in promoting voluntary engagement. Temporary tax cuts, incentive schemes redeemable for admin services and reduced penalties can be mechanisms by which to improve compliance more responsibly than by punishing offenders for their moves over to digital modes.

Third, there is great potential for the introduction of new-age AI for modernizing tax enforcement, in line with recent international tax-administration trends, [15]. AI-enabled auditing solutions can mitigate risks of corruption and enhance fairness by automating cross-checking, anomaly detection and behavior-based taxpayer segmentation, [16]. More broadly, the digital transformation of tax and customs administrations can support better data integration, risk management and service delivery when it is accompanied by institutional capacity-building, [17]. These may increase transparency and taxpayers' trust.

Fourth, public transparency dashboards can reduce distrust in tax treatment by making visible how tax revenues are distributed, how public services improve, and how the administration performs; such mechanisms are consistent with approaches that treat informality not only as exclusion but also as an exit response to weak institutions, [7]. Increased public exposure of fiscal results can even aid in improving tax morale and perceived fairness. Fifth, digital infrastructure should be strengthened in areas with high rates of informality, especially where financial inclusion and digital economy policies are already being supported by national and international programs, [18]. Public–private partnerships can also be utilized to enhance the reach of internet connectivity, increase access to e-government services, and drive low-cost digital devices for smaller operators. Sixth, the establishment of a smart fiscal governance framework will enable the alignment of the digitalization drive, institutional reform efforts, and micro-enterprise strategies with a common strategic vision. The framework to do so would define governance arrangements, performance indicators, and smooth transfer coordination between state agencies and digital agencies.

Finally, it needs to approach communication strategies more "culturally-centred," not just discussing technical aspects of taxation as a whole, but also the larger implications of fairness, civic responsibility and institutional trust. Transparent and approachable communication is key to building confidence in fiscal institutions and to progressing toward a more equitable system of taxation.

8 Originality and Value

This research makes three fundamental contributions to the literature on tax reform and digital governance. First, existing analyses in Morocco mostly focus on the macroeconomic impact of informality or descriptive assessments of fiscal reforms; however, with this paper, we hone in on the relationship between digitalization and informality, and conduct an empirically driven inquiry into how the e-tax domain is perceived by micro-entrepreneurs and fiscal professionals.

Second, the study also goes beyond the prevalent focus on administrative efficiency by showing that having trust in digital fiscal structures leads to compliance, more important than reducing the cost or ease of use. This discovery emphasizes the importance of structural and behavioural factors as determinants of fiscal reform success, thus generalizing tax morale and compliance theories to the digital environment.

Third, the article provides policy implications by revealing key adoption barriers (e.g., lack of digital literacy, infrastructural weakness, and institutional distrust) and strategic solutions merging technological innovation with smart governance. In so doing, it emphasises the need to integrate these digital reforms in a wider governance structure prioritizing inclusivity, justice and transparency.

Collectively, these contributions embody the originality and contribution of the study, which advances both scholarly debates regarding taxation and informality, as well as tangible recommendations for policy-makers interested in using digitalization as a lever to sustain equitable fiscal reform in Morocco.

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