

Evaluating the Effectiveness of PBB-P2 Administrative Modernization on Taxpayer Compliance Levels in Bantul Regency

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Article history:

Received: 2026-05-05

Revised: 2026-05-30

Accepted: 2026-06-06

Published: 2026-06-23

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Abstract

This study aims to examine the impact of digital transformation in the management of Rural and Urban Land and Building Tax (PBB-P2) on taxpayer compliance in Bantul Regency. The modernization studied includes the digitization of payment channels, database system updates, and innovation in tax services. A quantitative approach was applied, involving 100 taxpayer respondents spread across five sub-districts. Data analysis used multiple regression tests with mediation and moderation approaches. The research findings indicate that administrative modernization has a significant positive influence on taxpayer compliance, both directly and indirectly through increased perceptions of service ease. In addition, taxpayer income levels have been shown to moderate the relationship between modernization and compliance. The implications of these results emphasize that the acceleration of service digitalization needs to be accompanied by strengthening supporting infrastructure and ongoing outreach.

Keywords: *Digitalization Of Taxation, Taxpayer Compliance, PBB-P2, Administrative Modernization, Bantul*

1. Introduction

Regional taxes play a strategic role in supporting a region's fiscal independence. One of the main contributors to Regional Original Revenue (PAD) in Bantul Regency is the Rural and Urban Land and Building Tax (PBB-P2). Data collected from the Bantul Regional Finance, Revenue, and Asset Management Agency (BPKPAD) shows that the PBB-P2 target for 2025 reached Rp79,204,898,609.00 with a total of 636,410 Tax Payable Notification Letters (SPPT). Throughout the period from 2020 to 2024, the average PBB-P2 contribution to Bantul Regency's total PAD was recorded at 11.46%. This figure is still categorized as less than optimal, although the level of revenue effectiveness is considered very high, with an average exceeding the target of 104.20%.

The high level of revenue realization compared to the target indicates that the tax potential is actually quite substantial. However, several classic obstacles remain, such as low awareness of paying among some members of the public, limited access to information, and previously conventional payment procedures. To address these challenges, the Bantul Regency Government launched various tax administration modernization initiatives covering three main areas. First, payment system modernization through the implementation of digital channels such as the QR Code Indonesian Standard (QRIS) in 2024, virtual accounts in 2025, and expanded access through internet banking and various e-commerce platforms. Second, database modernization by launching a PBB-P2 data maintenance application in 2026, which aims to digitally update information on taxable objects and subjects, thereby increasing data accuracy. Third, policy modernization through tariff adjustments to a single scheme, with the general tariff set at 0.2 percent, while land used for food production and livestock is subject to a lower tariff of 0.15 percent.

Although digitalization is theoretically believed to be able to encourage compliance, a fundamental unanswered question is the extent to which this modernization is truly effective in changing taxpayer compliance behavior on the ground. Therefore, this study was designed to empirically evaluate the effect of

PBB-P2 administrative modernization on taxpayer compliance levels by considering the mediating role of perceived ease of service and the moderating role of taxpayer income level..

2. Research methods

Research Design

This study employs a quantitative approach with a survey design. The unit of analysis is PBB-P2 taxpayers registered in the 2025 SPPT in Bantul Regency.

Population and Sample

The study population included all PBB-P2 taxpayers in Bantul Regency, totaling 636,410 SPPTs. The sample size was determined using the Slovin formula using a 10 percent error margin, resulting in a minimum of 100 respondents. The sample inclusion criteria were: (1) taxpayers who had used the PBB-P2 digital service, (2) had a 2025 SPPT, and (3) were spread across 75 villages in Bantul Regency. Sampling was conducted purposively in five selected sub-districts, namely Dlingo, Kretek, Imogiri, Jetis, and Guwosari.

Operational Definition of Variables

The operationalization of each variable is presented in Table 1.

Table 1. Operational Definition of Variables

Variables	Dimensions	Indicator
Administrative Modernization (X)	Digitalization of payments	Use of QRIS, virtual accounts, mobile banking
	Data digitalization	Online data updating, SPPT accuracy
	Digitalization of services	Online services, the existence of tax cars
Perceived Ease of Service (M)	Ease of access	Service available 24 hours, no need to come to the office
	Transaction speed	Fast process, real-time notification
	Ease of use	User-friendly application display
Income Level (Z)	Amount of income per month	Low (< Rp. 2 million), Medium (Rp. 2-5 million), High (> Rp. 5 million)
Taxpayer Compliance (Y)	Punctuality	Pay before the due date
	Completeness of data	Reporting changes to tax object/subject data
	Willingness to pay	Internal awareness to pay taxes

Technique Data collection

Data collection was conducted using a questionnaire with a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire was distributed offline (face-to-face) and online via a link shared with taxpayer groups.

Technique Data analysis

Data analysis was conducted in two stages. The first stage was a regression analysis with mediating variables (Model 1) to test H1 and H2. The second stage was a regression analysis with moderating variables (Model 2) to test H3.

3. Results and Discussion

Respondent Characteristics

This study involved 100 PBB-P2 taxpayers registered in the 2025 SPPT in Bantul Regency, spread across five sub-districts: Dlingo, Kretek, Imogiri, Jetis, and Guwosari. In terms of income level, 38 respondents (38%) were classified as low-income (under Rp2 million per month), 45 respondents (45%) were classified as middle-income (Rp2–5 million per month), and 17 respondents (17%) were classified as high-income (above Rp5 million per month). This profile reflects the demographic composition of PBB-P2

taxpayers in the region, which is dominated by the lower-middle class, consistent with the characteristics of the peri-urban area of Bantul as reported by Aprilia and Agustiani (2021).

Regarding the use of digital channels, 72% of respondents stated they had used at least one digital channel (QRIS, virtual account, or mobile banking) for PBB-P2 payments. This figure indicates a relatively high level of technology adoption, although some taxpayers still prefer conventional channels. This initial finding aligns with research by Rahmawati and Putra (2024), which shows that information technology-based tax services have increasing acceptance among regional taxpayers.

Test the Validity and Reliability of the Instrument

Before the regression analysis was conducted, all instrument items were tested for validity and reliability. The validity test results showed that all statement items for the variables of administrative modernization (X), perceived ease of service (M), income level (Z), and taxpayer compliance (Y) had calculated r-values above the r-table (0.195; $df = 98$; $\alpha = 5\%$), thus declared valid. The reliability test using the Cronbach's Alpha method produced coefficients of 0.857 for variable X, 0.831 for variable M, and 0.879 for variable Y, all of which exceeded the minimum limit of 0.70. Thus, this research instrument was declared reliable and suitable for further testing.

Testing H1: The Effect of Administrative Modernization on Taxpayer Compliance

The results of the simple regression analysis (Model 1a: $Y = a + bX$) produced a regression coefficient of $\beta = 0.512$ with a t value of 6.234 and a significance of $p < 0.001$. The coefficient of determination (R^2) value of 0.284 indicates that administrative modernization is able to explain 28.4% of the variation in taxpayer compliance. Thus, H1 is accepted: modernization of PBB-P2 administration has a positive and significant effect on taxpayer compliance in Bantul Regency.

This finding aligns with the research of Selafristy and Rahman (2022), which demonstrated that technological innovation in land and building tax payment services significantly improves taxpayer compliance. Furthermore, Mandiri et al. (2024) emphasized that the digitalization of regional tax administration, particularly in the management of Land and Building Tax (PBB), has a positive impact on compliance through simplified procedures and increased accessibility. In the Bantul context, the implementation of QRIS since 2024 and virtual accounts since May 2025 has been shown to expand the payment reach, eliminating the need for taxpayers to rely on physical counters with limited operating hours. This finding aligns with the findings of Ahmadi and Puterisari (2025), which show that service quality and accessibility significantly influence PBB payment compliance in urban and peri-urban areas of Yogyakarta.

A closer examination based on the modernization dimension reveals that payment digitization contributes the most to compliance ($\beta = 0.421$; $p < 0.01$), followed by service digitization ($\beta = 0.318$; $p < 0.05$), and data digitization ($\beta = 0.267$; $p < 0.05$). This indicates that ease of direct transactions is the primary driver of compliant behavior, while database modernization has a more indirect impact through increased accuracy and taxpayer trust. This finding is consistent with research by Azmar et al. (2025), which emphasizes the importance of an up-to-date tax object information system in supporting the effectiveness of PBB-P2 services.

Testing H2: The Mediating Role of Perceived Ease of Service

Testing for mediation effects was conducted using the Baron and Kenny (1986) procedure, reinforced by the Sobel test. The results of the stepwise test showed: (a) administrative modernization had a significant effect on perceived ease of service ($\beta = 0.489$; $p < 0.001$); (b) perceived ease of service had a significant effect on compliance ($\beta = 0.374$; $p < 0.01$); and (c) when perceived ease of service was included in the regression model along with modernization, the direct effect of modernization on compliance decreased to $\beta = 0.331$ ($p < 0.01$) but remained significant. The Sobel test yielded a z-value of 3.87 ($p < 0.001$), confirming the presence of a partial mediation effect. Thus, H2 was accepted.

This partial mediation means that modernization does not solely operate through perceived convenience but also has its own direct influence. This finding strengthens Mariano et al.'s (2025) argument that digitizing PBB through e-PBB not only simplifies transactions but also inherently increases taxpayer trust in the modernized administrative system. In the context of Bantul Regency, the real-time payment notification feature and user-friendly application interface are the main factors shaping perceived convenience, with 68% of respondents stating that 24-hour access without the need for physical presence is the most influential factor in encouraging their compliance. This finding is also in line with research by Nisa

and Tamrin (2025) which revealed that digital transformation supported by cross-institutional collaboration strengthens positive perceptions of regional tax services.

Testing H3: The Moderating Role of Income Level

Moderation effect testing was conducted by entering the interaction variable ($X \times Z$) into the regression model (Model 2: $Y = a + b_1X + b_2Z + b_3X \times Z$). The analysis results showed that the interaction coefficient $b_3 = 0.198$ with a t value = 2.641 and a significance of $p = 0.010$ ($p < 0.05$). This value indicates that income level significantly moderates the relationship between administrative modernization and taxpayer compliance, so H3 is accepted.

The moderation trend is positive, indicating that higher-income taxpayers responded to administrative modernization with greater compliance increases than lower-income groups. Further analysis by income group shows that the high-income group had an average compliance score of 4.21 (out of a scale of 5), the middle group 3.78, and the low group 3.31. This pattern suggests a digital divide that policymakers need to address. Low-income taxpayers tend to have limited device ownership, internet connections, and digital literacy skills, preventing them from fully benefiting from modernization.

This finding is relevant to the research of Prabowo and Tambunan (2024), which identified that socioeconomic factors, including income level, are significant determinants in explaining differences in PBB-P2 taxpayer compliance across regions in Indonesia. Furthermore, Werdoningsih et al. (2026) in their literature review confirmed that economic stratification consistently moderates the effectiveness of regional tax policies. Therefore, administrative modernization should not stop at providing digital infrastructure alone but must be accompanied by tax literacy programs targeting low-income groups to ensure they are not left behind in the digital transformation of public services.

Discussion

Implications for PBB-P2 Management in Bantul Regency

Overall, all three hypotheses in this study were accepted, confirming that the modernization of PBB-P2 administration in Bantul Regency is moving in the right direction. The realization of PBB-P2 revenues by April 2025, which reached approximately IDR 20 billion (Setyawan, 2025), indicates positive momentum that must be maintained. However, several important caveats are worth noting.

First, although the average effectiveness of PBB-P2 revenue in Bantul during 2020–2024 exceeded 100%, its contribution to PAD remained at around 11.46%. Research by Hukom et al. (2024) in a similar context in Central Maluku showed that the high realization compared to the target was not solely a reflection of compliance but could also indicate conservative target setting. Therefore, the Bantul BPKPAD needs to revise its target to a more ambitious one based on actual potential data updated through the 2026 data maintenance application.

Second, the findings regarding income moderation have critical policy implications. Low-income groups, which constitute the majority of taxpayers (38%), are actually the group least likely to experience the benefits of modernization. This situation is reminiscent of the findings of Allyreza et al. (2023), who stated that internal taxpayer factors—including economic capacity—are no less important determinants of compliance than external factors such as system innovation. The Bantul Regency Government needs to develop more inclusive strategies, for example, by expanding conventional payment points at the hamlet level for taxpayers who have not yet been reached by digital services, as exemplified by the village collector program in Subang Regency (Roheman & Anita, 2022).

Third, the success of modernization also depends heavily on synergy between agencies. Fragmented PBB-P2 data management between the BPKPAD (Regional Revenue and Asset Management Agency), village offices, and the National Land Agency (BPN) has the potential to reduce database accuracy and ultimately undermine taxpayer confidence. Nisa and Tamrin (2025) demonstrated that multi-level collaboration between local governments in tax data management significantly improves data collection accuracy and compliance. Similar synergy needs to be strengthened in Bantul Regency, particularly in data synchronization between the PBB-P2 data maintenance application launched in 2026 and the existing land information system.

Fourth, aspects of trust and tax literacy require special attention. Tumimomor et al. (2026) found that trust in the government and tax literacy were significant predictors of PBB-P2 taxpayer compliance, mediated by perceptions of tax fairness. In the Bantul context, outreach programs, which have been primarily informative, need to be developed into educational and participatory programs, encompassing an

understanding of the use of regional tax funds for the benefit of the local community. This step is expected to foster awareness of voluntary tax payment without relying solely on the threat of sanctions, in accordance with the compliance indicators used in this study.

4. Conclusion

This study empirically demonstrates that modernization of PBB-P2 administration in Bantul Regency has a positive and significant impact on taxpayer compliance (H1 is accepted). This relationship is partially mediated by perceived ease of service (H2 is accepted), indicating that the quality of user experience in accessing digital services is an important bridge between system innovation and changes in taxpayer behavior. Furthermore, taxpayer income levels are shown to positively moderate this relationship (H3 is accepted), indicating that higher-income groups tend to be more responsive to modernization than lower-income groups.

The practical implications of this research include three main recommendations. First, accelerating the expansion of digital channels must be accompanied by an intensive outreach program that reaches taxpayers in remote villages, given the persistent gap in technology adoption among low-income groups. Second, database updates through the 2026 PBB-P2 application need to be supported by a field verification system that actively involves village officials. Third, cross-institutional collaboration between the BPKPAD (Regional Revenue and Expenditure Management Agency), villages, and related agencies needs to be strengthened to ensure accurate and sustainable data synchronization. This research is limited by its limited geographic coverage of five sub-districts and its categorical measurement of income levels. Further research is recommended to expand the study area and use more granular income measurements, as well as consider other moderating variables such as digital literacy and institutional trust.

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