

Analysis of Non-Tax Revenues from Driving License: Magnitude, Gaps, Determinants, and Implications for Police Transformation

Quantitative
Analysis of Non-
Tax Revenue

Shinta Novita Sari^{1*}, Harry Mustari²

^{1,2}Department of Police Science, Sekolah Tinggi Ilmu Kepolisian; Jakarta, Indonesia

*Corresponding Author E-Mail: shintanovita@stik-ptik.ac.id

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ABSTRACT

This study examines non-tax state revenue from driving license retribution in the Indonesian National Police, emphasizing transparency, accountability, and key influencing factors during 2009–2012, with an evaluation extended to 2023–2024. The research aims to measure gaps between potential and actual revenue, assess transparency mechanisms, analyze the effects of motor vehicle numbers, population aged 15 and above, and related expenditure, and evaluate implications for police transformation. A quantitative descriptive method calculated potential revenue from issued licenses and tariffs, compared to actual realizations. Panel data regression with generalized least squares tested the factors across 31 provinces. Results reveal an average gap of negative 14.86 percent in 2009–2012 due to reporting errors and blank distribution issues. All factors positively affect revenue, with expenditure showing the strongest impact at 0.42 percent per one percent increase. The gap improved to negative 4.71 percent in 2023–2024, indicating partial progress. Enhancing administrative accuracy, optimizing expenditure, and improving transparency are essential to maximize revenue and advance police governance and accountability.

Keywords: Accountability, Driving License Retribution, Indonesian National Police, Non-Tax Revenue, Transparency.

INTRODUCTION

The government finances its activities mainly through the State Budget (*Anggaran Pendapatan dan Belanja Negara*/APBN). To support this, it must increase domestic revenue or borrow from foreign and domestic sources. At the same time, the government works to use spending more efficiently. Domestic revenue comes from two main sources: tax revenue and non-tax state revenue (*Penerimaan Negara Bukan Pajak*/PNBP). PNBP includes profit-sharing from sectors like oil, gas, mining, forestry, and fisheries, as well as fees charged for public services provided by the government. One important part of PNBP is called “other non-tax revenue,” which covers various service fees collected by state institutions.

A major concern in managing PNBP is transparency and accountability. Many people suspect that reported PNBP figures are lower than the actual amounts collected. This has led to accusations of corruption or mismanagement in several cases. For instance, the Supreme Audit Agency (*Badan Pemeriksa Keuangan*/BPK) reported in 2011 that the Ministry of Energy and Mineral Resources misappropriated PNBP from mining deposits worth IDR 488.5 billion. In another example, Indonesian Corruption Watch (ICW) raised concerns about possible misuse of hajj funds by the Ministry of Religious Affairs in 2012, estimated at USD 437 million. The Chairman of BPK also noted that audits up to the second half of 2012 found state revenue losses of IDR 9.72 trillion due to underreporting (Cahyadi et al., 2023). Recent research continues to show similar problems, with weak oversight and inconsistent practices causing issues in collecting, recording, and reporting PNBP (Wibowo & Murwaningsari, 2024; Berliana et al., 2024).

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According to Wibowo et al. (2025), accountability acts as a key link in maintaining non-tax revenue, but poor transparency often creates ongoing inefficiencies.

Between 2007 and 2012, tax revenue remained the largest part of domestic income. Still, PNBP played an important role and could not be ignored. Within PNBP, “other non-tax revenue” ranked second and contributed an average of IDR 56.3 billion yearly, or about 21% of total PNBP. Strong economic growth and stable government rules on taxes and PNBP helped increase domestic revenue during this time (Direktorat Jenderal Anggaran, 2013; Direktorat Jenderal Anggaran, 2014). Several ministries and agencies were the main contributors to other non-tax revenue. These included the Ministry of Communication and Information Technology, the Ministry of National Education (now Ministry of Education and Culture), the Ministry of Health, the Indonesian National Police (*Kepolisian Negara Republik Indonesia*/Polri), the Ministry of Law and Human Rights, the National Land Agency, and the Ministry of Transportation (Direktorat Jenderal Anggaran, 2013). In 2012, Polri ranked second after the Ministry of Communication and Information Technology, contributing IDR 3.7 trillion or 12.8% of total other non-tax revenue.

Within Polri, PNBP consists of functional PNBP, BLU revenue, and other PNBP, with functional PNBP as the largest component, growing by 92% during 2009–2012 and accounting for 92% of total PNBP in 2012. Among its sources, driving license (*Surat Izin Mengemudi*/SIM) fees contributed the most, reaching IDR 913 billion or 26.14% of functional PNBP in 2012 (Isnayni et al., 2024). This is highlighting their importance for Polri’s non-tax revenue, although previous studies report weaknesses in transparency and administration (Atmaja & Akhmadi, 2017; Sandjoyo & Sunitiyoso, 2023). Despite this significance, challenges remain in planning, collecting, and reporting PNBP SIM, and comprehensive empirical studies within Polri on potential estimation, transparency, accountability, and regional determinants are still lacking. This gap is critical, as underreporting of non-tax revenue limits fiscal space, while public administration reforms in Indonesia continue to face political and economic constraints in achieving transparency (Korte, 2013; Hamilton-Hart & Schulze, 2016).

These problems point to a clear research gap. While general challenges in PNBP are discussed in some studies, such as Eddyono et al. (2022) and Iman et al. (2022), there is still no in-depth quantitative study using panel data that focuses specifically on SIM retribution in Polri. The goals are to measure the gap between potential and actual PNBP SIM in 2009–2012, review transparency and accountability in its management, analyze the influencing factors, and assess the implications for Polri’s transformation in 2023–2024. The findings should help Polri estimate future SIM revenue better and support policy improvements. Since no similar internal study exists, this work can also guide future research in this area.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Number of Motor Vehicles and PNBP SIM

The number of motor vehicles registered in a region plays an important role in determining the demand for driving licenses in Indonesia. As more vehicles are owned or used, more people need to obtain or renew their SIM to drive legally on the roads. This relationship is logical because traffic regulations require drivers to have a valid license for operating motor vehicles, whether private or commercial. Studies show that growth in vehicle numbers often leads to higher issuance of SIMs, which directly contributes to non-tax state revenue (PNBP) from retribution fees (Isnayni et al., 2024).

In Indonesia, the rapid increase in motor vehicles, especially motorcycles and cars in urban areas, has been linked to greater pressure on traffic administration services. For example, provinces with high vehicle registration tend to report more SIM applications, as people must comply with laws like Law Number 22 of 2009 on Road Traffic and Transportation. According to Angkasa (2005), revenue from driver’s license issuance forms a significant part of PNBP for the Indonesian National Police, and vehicle numbers act as a key driver of this revenue stream. Similarly, research on vehicle ownership factors

highlights that economic development and population mobility push up vehicle counts, which in turn boosts related administrative fees (Gumelar et al., 2024).

Furthermore, the connection is strengthened by practical observations where regions with higher vehicle density, such as Jakarta or East Java, generate more PNBP from SIM retribution. This occurs because each new vehicle owner or driver must pass tests and pay fees, adding to the total collection. Mardiasmo (2006) explains that fees for public services like licenses are designed to cover operational costs while contributing to state income, making vehicle numbers a natural predictor of revenue potential. The positive link is also supported by broader fiscal studies in Indonesia, where demand-side factors like asset ownership influence non-tax collections (Maulid et al., 2022). The literature consistently points to a positive relationship between the number of motor vehicles and PNBP from SIM. Higher vehicle registration increases the pool of potential SIM applicants, leading to greater revenue realization.

H1: Number of motor vehicles has a positive and significant effect on PNBP SIM.

Population and PNBP SIM

Population size, particularly the group aged 15 years and above, is a fundamental factor in driving license issuance because this age range covers most eligible applicants for SIM in Indonesia. People in this demographic are legally able to apply for licenses once they meet the minimum age requirement of 17 for certain classes, and many pursue driving as part of daily mobility or work needs. As population grows in productive age groups, the demand for SIM naturally rises, especially in areas with improving access to vehicles (Rudin & Bakarbesy, 2025).

In Indonesia, demographic trends show that provinces with larger working-age populations experience higher rates of SIM applications. This is because individuals aged 15 and over are more likely to enter the workforce, travel for education, or own vehicles, all of which require a valid driving license. Rudin and Bakarbesy (2025) notes that SIM revenue contributes substantially to Polri's PNBP, and population factors drive the volume of issuances. Moreover, studies on revenue potential in transportation-related fees indicate that larger eligible populations lead to increased administrative collections (Purba, 2002; Nurjanah & Puspita, 2025).

The link is further explained by economic and social dynamics. Growing populations in urban centers create more job opportunities that involve driving, prompting more people to obtain licenses. According to Noviyani (2007), per capita income and population density correlate with higher local revenue from related sources, including fees tied to mobility. In the context of PNBP, a bigger pool of potential drivers means more tests, payments, and renewals, boosting total non-tax income for Polri. Mankiw (1999) discusses how population growth affects economic activities, including service demands like licensing, which supports revenue generation in public sectors. The evidence from various sources suggests that a larger population aged 15 and above positively influences PNBP from SIM by expanding the applicant base. This demographic pressure ensures steady or increasing revenue flows through higher issuance volumes.

H2: Population has a positive and significant effect on PNBP SIM.

Expenditure on PNBP Sources and PNBP SIM

Expenditure on PNBP sources refers to the funds allocated by Polri for activities related to SIM issuance, such as operational costs, procurement of blanks, testing facilities, and administrative support. Proper spending in these areas improves service quality, making the process faster and more accessible, which can attract more applicants and increase successful issuances. In public finance, well-managed expenditure often leads to better revenue performance by enhancing capacity and efficiency (Korte, 2013).

In Indonesia, Polri's budget for traffic units includes items that directly support SIM administration. Increased spending can mean more staff training, better equipment, or

wider outreach, all of which reduce barriers to obtaining licenses. Sakdiyah et al. (2022) find that accountability and expenditure management mediate the sustainability of non-tax revenue in government institutions, suggesting that higher relevant spending strengthens collection outcomes. Similarly, studies on fiscal management show that investments in service delivery positively affect fee-based revenues (Sinaga et al., 2020).

Moreover, the relationship appears in practical examples where regions with adequate funding for SIM processes report higher PNBP realization. According to Subroto (2020), effective implementation of PNBP regulations at Polri depends on resource allocation, and insufficient expenditure can lead to gaps in collection. Mardiasmo (2006) emphasizes that fees for government services should cover costs while generating surplus, implying that strategic spending boosts both efficiency and total revenue. In broader contexts, expenditure on public administration reforms supports better revenue streams (Korte, 2013). Thus, literature indicates that expenditure on PNBP sources has a positive impact on SIM retribution revenue by improving operational capabilities and applicant satisfaction.

H3: Expenditure on PNBP sources has a positive and significant effect on PNBP SIM.

The research framework integrates the three main variables, number of motor vehicles, population aged 15 years and above, and expenditure on PNBP source, as independent factors influencing the dependent variable, non-tax revenue from driving license retribution. These variables are selected based on their theoretical and empirical relevance to SIM issuance processes in Polri. The framework assumes that higher vehicle numbers increase demand for licenses, larger eligible populations expand the applicant pool, and adequate expenditure enhances service delivery, all leading to greater PNBP collection. This model uses a panel data approach to capture variations across provinces and over time (2009–2012), allowing for analysis of both cross-sectional and time-series effects. The relationships are tested through regression to examine significance and magnitude of impacts. Transparency and accountability mechanisms serve as contextual elements, influencing how these factors translate into actual revenue. The framework aims to address gaps in prior studies by providing a quantitative estimation of these influences within Polri's context.

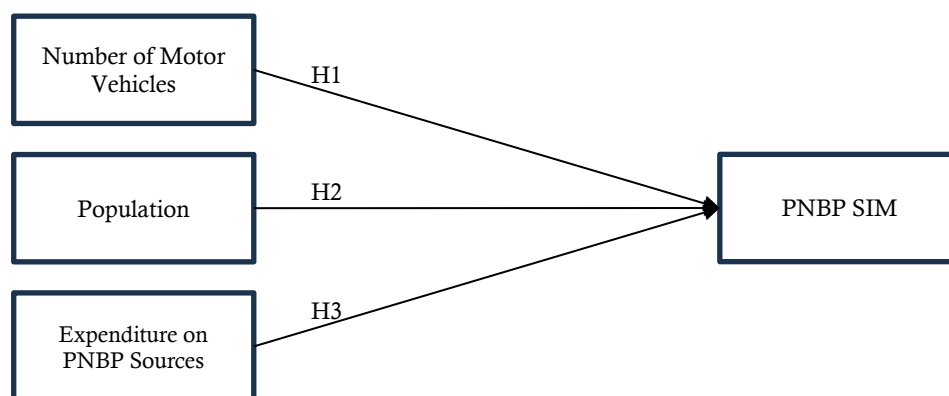


Figure 1. Research Framework

Figure 1 illustrates the proposed relationships: the three independent variables point toward PNBP SIM, with arrows indicating positive expected effects. This visual representation guides the empirical testing and helps clarify the study's focus on key drivers of SIM retribution revenue.

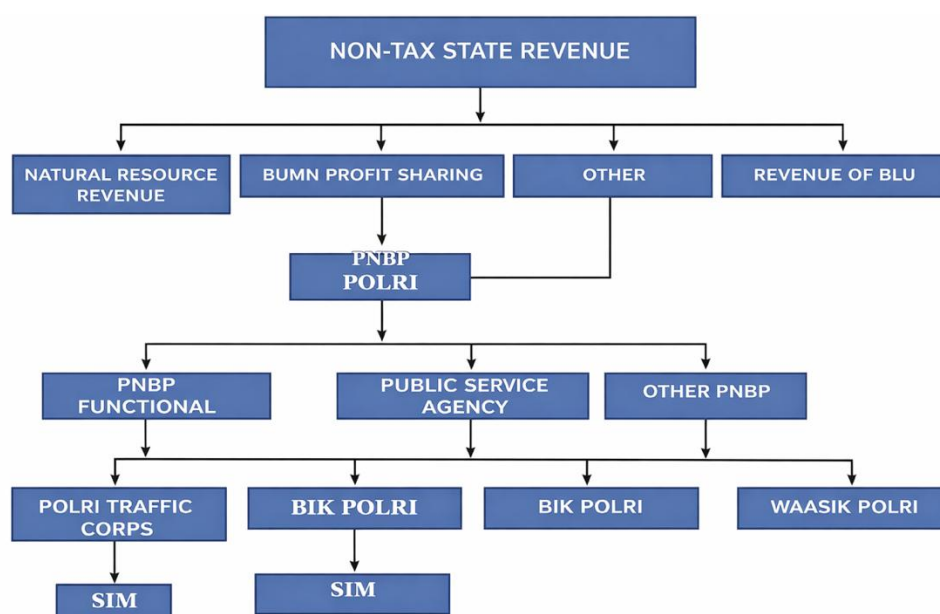
RESEARCH METHODS

This research uses a quantitative approach to analyze non-tax revenue from driving license retribution in the Indonesian National Police, focusing on the Traffic Units at the

regional police level. The study covers the period 2009–2012 for the main analysis, with an additional evaluation of findings applied to the 2023–2024 period. Data are secondary and in panel form, combining cross-sectional information from 31 provinces with time-series data over four years. Sources include official records from Polri (such as the number of SIMs issued by type and province), the Central Statistics Agency (*Badan Pusat Statistik*/BPS) for population aged 15 and above, the Ministry of Finance for expenditure data related to PNBP sources, and the Polri Financial Center (*Pusat Keuangan*/Puskeu) for actual PNBP realizations deposited to the state treasury.

The study first calculates potential PNBP revenue from SIM retribution by multiplying the number of issued SIMs, by type (A, B1, B2, C, D) and category (new or renewal), with the official provincial tariff rates for 2009–2012. This potential figure is then compared to actual deposited amounts using a simple difference formula to identify gaps, which are further analyzed in terms of transparency and accountability in SIM blank production, distribution, fee collection, and hierarchical reporting, as regulated by Chief of Police Circular Letter Number SE/11/VII/2010. The analysis then examines factors influencing PNBP SIM at the Satlantas Polda level, with independent variables being registered motor vehicles (JMLKEND), expenditure on PNBP sources (BELANJA), and population aged 15+ (JMLPEN), while the dependent variable is actual realized PNBP from SIM over the period.

To test the relationships, the study employs panel data regression with a natural logarithm transformation for easier interpretation of elasticities. The model is formulated as: $\ln.Y_{it} = \beta_0 + \beta_1 \ln JMLKEND_{it} + \beta_2 \ln BELANJA_{it} + \beta_3 \ln JMLPEN_{it} + e_{it}$, where Y_{it} represents PNBP SIM in region i at time t . Three estimation approaches are considered: pooled least squares, fixed effects, and random effects. Model selection is based on tests such as the Chow test, Hausman test, and examination of ρ and F-statistics. Classical assumption tests, including multicollinearity (via VIF), heteroskedasticity (Wald test), and autocorrelation (Wooldridge test), are conducted to ensure validity. Where violations occur, the Generalized Least Squares (GLS) method is applied to produce robust results.



Source: Ministry of Finance, Republic of Indonesia National Police (processed data)

Figure 2. Flowchart of PNBP Derived from SIM Polri

The process follows a descriptive quantitative method for calculating potential revenue, identifying gaps, and describing transparency mechanisms, while regression

analysis addresses the factors and their impacts. Figure 2 illustrates the flow from SIM issuance to revenue deposit, highlighting key stages in collection and reporting. This combined approach allows for a comprehensive evaluation of PNBП management in Polri and its implications for institutional transformation.

RESULTS

This section presents the main findings from the analysis of non-tax revenue (PNBP) from driving license retribution in the Indonesian National Police (Polri) during 2009–2012, followed by an evaluation for 2023–2024. The results include calculations of potential and actual revenue, identification of gaps, descriptive statistics, and regression outcomes using panel data. All interpretations are based on the data processed from official sources.

Table 1. Realization of PNBП SIM Retribution by Type (A, B1, B2, C, and D) 2009 – 2012

Province	2009	2010	2011	2012	Average
Aceh	12,788,998,079	14,343,905,000	15,088,609,533	15,202,110,000	14,355,905,653
Sumut	29,911,601,795	35,069,100,000	43,192,345,000	43,294,675,000	37,866,930,449
Sumbar	16,824,402,402	19,147,350,000	23,521,195,000	21,005,765,000	20,124,678,100
Riau	15,502,876,520	17,722,725,000	21,068,520,000	23,058,660,000	19,337,195,380
Jambi	7,848,573,290	8,770,565,000	9,565,500,000	9,897,645,000	9,020,570,822
Sumsel	14,718,809,957	17,019,475,000	23,163,170,000	24,721,175,000	19,905,457,489
Bengkulu	4,898,484,099	5,473,340,000	6,619,270,000	6,267,950,000	5,814,761,025
Lampung	19,059,054,706	22,132,155,000	30,728,208,000	29,328,580,000	25,311,954,427
Babel	3,519,139,533	3,959,145,000	5,224,070,000	5,192,240,000	4,473,648,633
Kepri	5,218,592,699	5,941,545,000	6,833,135,000	8,569,645,000	7,090,729,425
DKI	79,520,951,691	103,089,350,00	129,544,435,00	113,126,620,00	106,320,339,173
Jabar	69,013,934,264	88,415,148,000	118,129,310,00	104,112,045,00	94,917,109,377
Jateng	77,773,131,680	101,807,565,00	131,636,519,00	122,383,200,00	108,400,103,920
DIY	15,236,839,406	17,422,775,000	21,851,680,000	21,880,245,000	19,097,884,852
Jatim	99,421,626,266	134,605,800,00	157,974,225,00	145,910,375,00	134,478,006,657
Banten	7,351,838,406	8,218,680,000	9,355,770,000	9,169,290,000	8,523,744,601
Bali	22,566,095,923	26,344,445,000	33,952,690,000	36,269,615,000	29,780,711,481
Kalsel	13,050,061,493	14,707,985,000	16,268,580,000	16,535,285,000	15,140,477,873
Kalteng	7,689,259,517	8,642,840,000	11,236,990,000	9,499,995,000	9,267,271,129
Kalsel	15,992,255,450	18,208,910,000	21,643,035,555	21,510,175,000	19,338,594,001
Kaltim	21,011,259,194	23,940,560,000	25,291,445,000	26,971,060,000	24,303,581,048
Sulut	5,473,418,373	6,470,652,854	9,087,448,738	16,370,593,000	9,350,528,241
Sulteng	7,001,357,573	7,836,090,000	8,720,075,000	9,320,290,000	8,219,453,143
Sulsel	26,360,295,425	30,428,654,000	33,626,775,000	35,587,605,000	31,500,832,356
Sultra	3,815,332,048	4,276,650,000	4,810,045,000	5,874,290,000	4,694,079,262
Gorontalo	2,188,314,956	2,439,845,000	2,827,560,000	3,073,215,000	2,632,233,739
NTB	8,327,306,048	9,463,920,000	12,250,050,000	13,072,575,000	10,778,462,762
NTT	5,307,526,019	5,939,410,000	6,674,835,000	7,440,784,000	6,340,638,755
Maluku	2,293,205,531	2,556,680,000	2,849,700,000	3,312,989,337	2,752,898,842
Malut	1,592,097,792	1,787,105,000	2,656,612,356	2,116,133,000	2,037,987,037
Papua	6,683,150,522	7,502,975,000	9,417,531,000	8,667,875,000	8,067,882,881

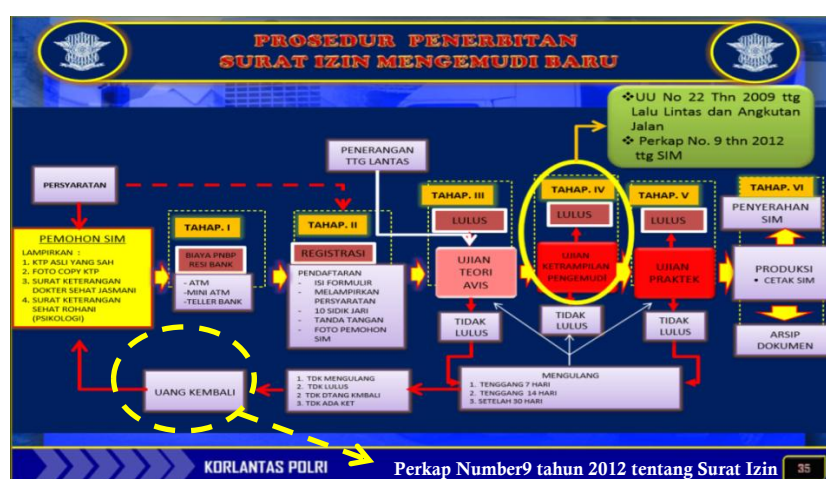
Source: Republic of Indonesia National Police (processed data)

The potential PNBП from SIM retribution was calculated by multiplying the number of SIMs issued by type and category (new or renewal) with the applicable tariff rates for each province and year. Table 1 shows the detailed breakdown of realized revenue contributions across SIM types. The highest average contribution came from East Java Polda at IDR 134.5 billion or 16.41% of the total average revenue, followed by Central Java (108.4 billion, 13.23%), Metro Jaya (106.3 billion, 12.98%), West Java (94.9 billion, 11.59%), and North Sumatra (37.8 billion, 4.62%). These top regions accounted for a large share due to their high volume of SIM issuances, which is closely tied to population size and vehicle ownership levels. Provinces with larger populations and more vehicles naturally produced more SIM applications and revenue.

Table 2. Average Gap of PNPB SIM Retribution between Calculated and Actual from 2009 to 2012

No	Polda	2009	2010	2011	2012	Average Gap
1	Metro Jaya	-56.94%	-56.60%	-41.15%	-60.80%	-53.87%
2	Maluku	-77.61%	-77.08%	-25.83%	-1.30%	-45.46%
3	Gorontalo	-56.42%	-55.70%	-53.10%	-0.85%	-41.52%
4	NTT	-61.23%	-61.11%	-8.68%	-25.46%	-39.12%
5	Papua	-24.56%	-22.77%	-25.82%	-66.08%	-34.81%
6	Banten	-6.25%	-2.43%	8.38%	0.00%	-0.07%
7	Jateng	-10.83%	-6.35%	-5.69%	39.02%	4.04%
8	Bengkulu	-29.07%	-27.55%	92.51%	-19.12%	4.19%
9	Maluku Utara	19.38%	20.89%	-13.16%	-8.63%	4.62%
10	Kalsel	-45.04%	-43.09%	-42.56%	223.85%	23.29%

To assess discrepancies, the calculated potential revenue was compared with actual deposits reported through the Polri Financial Center. Table 2 reveals an average national gap of -14.86%. This negative value indicates that actual deposited amounts were higher than the calculated potential in many cases. Some Polda showed positive gaps (potential higher than deposited), such as South Kalimantan (23.29%), North Maluku (4.62%), Bengkulu (4.19%), and Central Java (4.04%), possibly due to recording errors or unadjusted additions of SIM blanks from other sources. The majority of regions displayed negative gaps, suggesting underreporting in potential estimates or over-deposits, which may relate to asymmetric information and lack of full transparency in the issuance process.



Source: Korlantas Polri

Figure 3. Flowchart of the SIM Issuance Mechanism

Transparency and accountability issues were further examined through the SIM issuance and reporting mechanisms. Figure 3 outlines the process from application to issuance, including tests, blank distribution, and fee collection. Discrepancies in blank distribution were noted in some regions between 2010 and 2012, where distributed blanks from Korlantas Polri did not always match reported receipts or issuances at Satpas level. These mismatches often stemmed from incomplete reporting of remaining stocks or redistributed blanks without full administrative updates.

Table 3. Descriptive Statistic Variable PNPB SIM

No.	Polda	Mean	Min	Max	Std. Dev
1	Aceh	14,355,905,653	12,788,998,079	15,202,110,000	1,111,794,365
2	Sumut	37,866,930,449	29,911,601,795	43,294,675,000	6,555,800,492
3	Sumbar	20,124,678,100	16,824,402,402	23,521,195,000	2,837,817,887
4	Riau	19,338,195,380	15,502,876,520	23,058,660,000	3,374,181,164
5	Jambi	9,020,570,822	7,848,573,290	9,897,645,000	913,288,572
6	Sumsel	19,905,657,489	14,718,809,957	24,721,175,000	4,797,014,118
7	Bengkulu	5,814,761,025	4,898,484,099	6,619,270,000	776,476,370

No.	Polda	Mean	Min	Max	Std. Dev
8	Lampung	25,311,954,427	19,059,054,706	30,728,028,000	5,617,740,152
9	Babel	4,473,648,633	3,519,139,533	5,224,070,000	867,046,210
10	Kepri	7,090,729,425	5,218,592,699	8,633,135,000	1,769,343,287
11	DKI	106,320,339,173	79,520,951,691	129,544,435,000	20,931,081,722
12	Jabar	94,917,409,311	69,013,034,246	118,129,410,000	21,108,089,690
13	Jateng	108,400,103,920	77,773,131,680	131,636,519,000	23,923,008,170
14	DIY	19,097,884,852	15,236,839,406	21,880,245,000	3,318,562,975
15	Jatim	134,478,006,657	99,421,626,626	157,974,225,000	25,243,728,161
16	Banten	8,523,744,601	7,351,838,406	9,355,170,000	926,359,469
17	Bali	29,780,711,481	22,566,095,923	36,269,615,000	6,414,533,081
18	Kalbar	15,140,477,873	13,050,061,493	16,535,285,000	1,609,864,597
19	Kalteng	9,267,271,129	7,689,259,517	11,236,990,000	1,507,092,976
20	Kalsel	19,338,594,001	15,992,255,450	21,643,035,555	2,738,636,069
21	Kaltim	24,303,581,048	21,011,259,194	26,971,060,000	2,520,746,359
22	Sulut	9,350,528,241	5,473,418,373	16,370,593,000	4,921,929,947
23	Sulteng	8,219,453,143	7,001,357,573	9,320,290,000	1,015,412,584
24	Sulsel	31,500,832,356	26,360,295,425	35,587,605,000	4,033,031,496
25	Sultra	4,694,079,262	3,815,332,048	5,874,290,000	885,586,302
26	Gorontalo	2,632,233,739	2,188,314,956	3,073,215,000	394,416,926
27	NTB	10,778,462,762	8,327,306,048	13,072,575,000	2,248,311,356
28	NTT	6,340,638,755	5,307,526,019	7,440,784,000	922,011,050
29	Maluku	2,752,988,842	2,293,205,531	3,312,899,837	436,916,846
30	Malut	2,037,987,037	1,592,097,792	2,656,612,356	465,676,244
31	Papua	8,067,882,881	6,683,150,522	9,417,531,000	1,213,554,724

Descriptive statistics provide an overview of the dependent variable, PNBP SIM. Table 3 indicates that East Java had the highest average PNBP SIM ratio at 16.41%, with the largest standard deviation (16.24%), reflecting high variability but strong performance in collection. Central Java ranked second in issuance volume but lower in PNBP ratio due to fewer new issuances compared to East Java. North Maluku showed the lowest ratio at 0.25%, linked to lower passing rates and fewer issuances. Figure 4 visually compares the top five (led by East Java) and bottom five regions, highlighting regional disparities in revenue achievement.

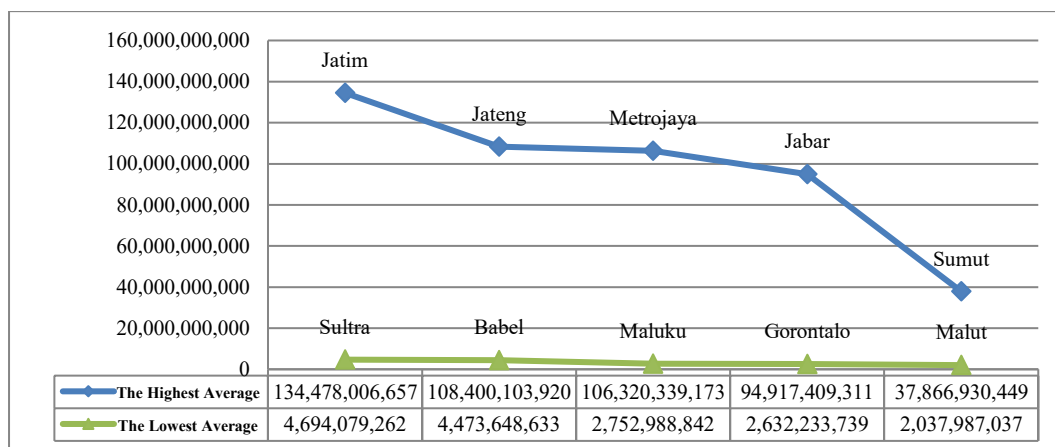


Figure 4. Polda with the Highest and Lowest Average PNBP SIM 2009-2012

For the independent variables, Table 4 summarizes key measures such as mean, minimum, maximum, and standard deviation across provinces. These statistics confirm substantial variation in vehicle numbers, population aged 15+, and PNBP expenditure, which supports the use of panel data to capture both time and cross-sectional differences.

Table 4. Descriptive Statistics for Independent Variables in Selected Regions

Variable	Polda	Mean	Min	Max	Std. Dev	Rank
Number of Vehicles	DKI	12,271,337	9,912,658	14,563,459	2,174,105	1
	Jatim	10,835,169	9,463,648	12,052,159	1,507,764	2

Variable	Polda	Mean	Min	Max	Std. Dev	Rank
	Jateng	10,126,804	9,068,565	11,412,249	1,385,613	3
	Jabar	5,590,979	4,010,162	6,993,755	1,276,642	4
	Sumsel	4,789,069	3,504,747	6,441,070	1,037,452	5
	Sultra	550,704	293,388	895,571	170,360	27
	NTT	354,629	173,523	859,303	161,193	28
	Maluku	313,706	123,322	480,790	119,638	29
	Gorontalo	172,543	82,952	464,926	105,413	30
	Malut	156,980	39,685	276,019	97,290	31
Expenditure on PNBP Sources	Jatim	40,939,280,839	80,752,220	81,506,914,000	33,267,426,002	1
	Jateng	36,503,857,305	80,670,357	76,207,338,000	31,447,689,927	2
	DKI	33,885,898,455	76,916,819	72,288,435,000	29,762,291,945	3
	Jabar	28,014,767,685	66,651,739	62,187,114,000	25,727,270,100	4
	Sumut	16,383,299,050	38,810,256	39,994,842,000	17,323,683,071	5
	Bengkulu	3,690,524,239	8,694,059	9,423,270,000	4,114,634,200	27
	Maluku	3,503,043,690	8,476,957	8,817,537,000	3,772,833,145	28
	Malut	3,450,247,015	8,317,759	7,743,213,000	3,204,975,348	29
	Kepri	3,423,714,282	7,457,128	7,640,954,000	3,172,635,529	30
	Gorontalo	2,549,292,613	6,735,452	5,353,029,000	2,221,446,520	31
Population	Jabar	30,874,550	30,112,600	31,665,700	671,186	1
	Jatim	29,698,675	29,347,100	30,021,000	296,123	2
	Jateng	24,996,275	24,640,700	25,331,100	288,589	3
	Sumut	9,375,000	9,084,700	9,668,100	251,494	4
	DKI	7,148,950	7,030,700	7,345,500	229,019	5
	Kepri	1,123,675	1,048,100	1,200,900	29,805	27
	Maluku	936,575	908,500	962,300	23,038	28
	Babel	846,850	826,800	867,700	20,185	29
	Gorontalo	720,225	700,100	738,700	17,589	30
	Malut	680,075	656,200	703,400	16,695	31

Before regression, classical assumption tests were performed. Multicollinearity was absent, with average VIF below 10. However, heteroskedasticity (Wald test $p=0.0000$) and autocorrelation (Wooldridge test $p=0.0153$) were detected in the fixed effects model. Therefore, the Generalized Least Squares (GLS) method was applied to address these issues and produce reliable estimates.

Table 5. Results of Fixed Effect (FE) Model Estimation Testing

Variable	Coefficient	Std. Error	z	P > z	95% CI (Lower)	95% CI (Upper)
Number of Vehicles (JMLKEND)	0.3310405	0.0392062	8.44	0.000	0.2541979	0.4078832
Population (JMLPEN)	0.3866557	0.0564967	6.84	0.000	0.2759243	0.4973872
Expenditure on PNBP Sources (BELANJA)	0.4198342	0.0574060	7.31	0.000	0.3073205	0.5323479
Constant	1.4054960	0.3873511	3.63	0.000	0.6463016	2.1646900

Table 5 presents the GLS results for the model $\ln(\text{PNBP SIM}) = 1.405 + 0.331 \ln(\text{JMLKEND}) + 0.420 \ln(\text{BELANJA}) + 0.387 \ln(\text{JMLPEN}) + e$. All coefficients are positive and highly significant ($p=0.000$). The coefficient for the number of vehicles is 0.331, meaning a 1% increase in motor vehicles leads to a 0.331% increase in PNBP SIM. For the population, the coefficient is 0.387, indicating a 0.387% rise in PNBP SIM per 1% population growth in the 15+ age group. The strongest effect comes from expenditure on PNBP sources at 0.420, where a 1% increase in expenditure results in a 0.420% increase in revenue. The constant is 1.405, representing baseline growth when other variables are held constant. These results confirm that all three factors positively and significantly influence PNBP SIM, with expenditure showing the most dominant impact.

Table 6. Differences in SIM Non-Tax State Revenue (PNBP) Intercepts Across Regions, 2009–2012

Polda	Coefficient	Intercept	Final Intercept	Prob.
Babel	0.8952367	1.405496	2.3007327	0.0350
Gorontalo	0.8410909	1.405496	2.2465869	0.0760

Polda	Coefficient	Intercept	Final Intercept	Prob.
Kepri	0.7987659	1.405496	2.2042619	0.0160
Maluku Utara	0.7568523	1.405496	2.1623483	0.1260
Bengkulu	0.6336482	1.405496	2.0391442	0.0370
Kalteng	0.5899214	1.405496	1.9954174	0.0140
Maluku	0.5754992	1.405496	1.9809952	0.1390
Kaltim	0.5319505	1.405496	1.9374465	0.0000
Papua	0.5110977	1.405496	1.9165937	0.0370
Bali	0.4263221	1.405496	1.8318181	0.0000
Sulut	0.4026411	1.405496	1.8081371	0.0390
Sulteng	0.357154	1.405496	1.7626500	0.0460
Kalsel	0.3415042	1.405496	1.7470002	0.0000
Sultra	0.3258446	1.405496	1.7313406	0.1870
Jambi	0.2471647	1.405496	1.6526607	0.0720
DIY	0.2028576	1.405496	1.6083536	0.0000
Kalbar	0.0689155	1.405496	1.4744115	0.0260
Sumbar	0.0470568	1.405496	1.4525528	0.3240
Riau	-0.048133	1.405496	1.3573630	0.4990
DKI Jakarta	-0.0604806	1.405496	1.3450154	0.8180
NTB	-0.0886061	1.405496	1.3168899	0.0060
Lampung	-0.3034261	1.405496	1.1020699	0.1240
Sulsel	-0.3044605	1.405496	1.1010355	0.1380
NTT	-0.3639796	1.405496	1.0415164	0.0000
Sumsel	-0.3715385	1.405496	1.0339575	0.0330
Sumut	-0.7161037	1.405496	0.6893923	0.0520
Banten	-1.012433	1.405496	0.3930630	0.0000
Jateng	-1.321035	1.405496	0.0844610	0.0520
Jatim	-1.403819	1.405496	0.0016770	0.0570
Jabar	-1.57146	1.405496	-0.1659640	0.0380

Regional differences were captured through fixed effects. Table 6 displays individual intercepts, revealing variations in baseline PNPB SIM levels across Polda after controlling for the main variables. Bangka Belitung had the highest final intercept (2.30073), while West Java showed the lowest (-0.1659640). These differences indicate that, even with similar levels of vehicles, population, and expenditure, some regions achieve higher or lower PNPB SIM due to local factors such as administrative efficiency or applicant passing rates.

Table 7. Gap Between Calculated and Actual SIM PNPB Revenue 2023 – 2024

No	Polda	Receipt		Gap
		PNBP SIM Actual	Potential PNPB from SIM Calculation	
1	Polda Aceh	21%	-12.84%	-34.13%
2	Polda Kepri	14%	-19.55%	-33.15%
3	Polda Banten	13%	-15.66%	-29.02%
4	Polda Sultra	8%	-14.43%	-22.71%
5	Polda Bengkulu	14%	-3.21%	-17.36%
6	Polda Jabar	9%	-7.92%	-17.13%
7	Polda Kalsel	8%	-9.46%	-17.13%
8	Polda Jatim	9%	-7.38%	-16.71%
9	Polda Sulteng	16%	0.33%	-15.45%
10	Polda Ntt	7%	-7.94%	-15.22%
11	Polda Kalteng	1%	-13.37%	-14.84%
12	Polda Ntb	12%	-2.74%	-14.30%
13	Polda Sumut	13%	-1.41%	-14.26%
14	Polda Kaltim	11%	-1.24%	-12.31%
15	Polda Sulut	12%	0.08%	-12.04%
16	Polda Malut	8%	-3.83%	-11.88%
17	Polda Diy	10%	-0.93%	-10.77%
18	Polda Sumsel	6%	-1.72%	-7.49%
19	Polda Kalbar	4%	-0.03%	-3.87%
20	Polda Sulsel	13%	9.58%	-3.79%
21	Polda Kaltara	6%	2.51%	-3.57%

No	Polda	Receipt		Gap
		PNBP SIM Actual	Potential PNBP from SIM Calculation	
22	Polda Papua	-9%	-8.99%	0.30%
23	Polda Maluku	-2%	-1.84%	0.64%
24	Polda Gorontalo	22%	23.26%	0.94%
25	Polda Jateng	3%	5.28%	2.18%
26	Polda Sumbar	5%	6.99%	2.37%
27	Polda Pabar	-11%	-4.34%	6.36%
28	Polda Lampung	8%	16.14%	7.87%
29	Polda Riau	3%	14.89%	11.72%
30	Polda Metro Jaya	4%	16.86%	13.24%
31	Polda Babel	-3%	13.69%	17.02%
32	Polda Jambi	3%	23.15%	20.54%
33	Polda Bali	1%	31.96%	30.97%
34	Polda Sulbar	26%	78.76%	52.74%
Gap Means 34 Polda				-4.71%

For the evaluation period 2023–2024, the gap analysis was repeated using PNBP expenditure as a proxy for potential revenue. Table 7 shows an average gap of -4.71%, smaller than the -14.86% in 2009–2012. Thirteen Polda exhibited significant negative gaps (actual higher than calculated), with top examples including South Sulawesi (52.74%), Bali (30.97%), and Jambi (20.54%). Twenty-one regions showed positive gaps. The reduced average gap suggests some improvement in reporting or collection processes over time, though discrepancies persist, possibly from ongoing administrative issues or changes in SIM issuance volumes not fully captured in expenditure proxies.

These findings collectively demonstrate persistent gaps in PNBP SIM management, strong positive influences from the selected variables, and regional heterogeneity. The results provide a basis for understanding factors driving revenue and highlight areas for improved transparency and accountability in Polri’s transformation efforts.

DISCUSSION

The results from the panel data regression indicate that all three independent variables, expenditure on PNBP sources, population aged 15 and above, and number of motor vehicles, have a positive and significant effect on PNBP from SIM retribution. The coefficients show that expenditure has the strongest influence at 0.42%, followed by population at 0.39%, and vehicles at 0.33%. This inelastic relationship suggests that while these factors drive revenue growth, PNBP SIM increases at a slower rate than changes in the variables, meaning not every additional vehicle or person directly translates to a new SIM due to factors like passing rates or license requirements. According to Wibowo et al. (2025), effective management of non-tax revenue receivables in Indonesian institutions relies on strong leadership in public finance, which aligns with our finding that expenditure, as a controllable factor within Polri, dominates the model and could be leveraged for better outcomes.

These findings support the hypotheses and explain the observed gaps in PNBP SIM. The average gap of -14.86% during 2009–2012 points to administrative issues, such as errors in recording SIM blanks or unadjusted stock additions from other sources, leading to discrepancies between calculated potential and actual deposits. In regions like South Kalimantan and Central Java, positive gaps may stem from over-issuance without proper reporting, while negative gaps in most Polda suggest over-deposits or underestimation in potential calculations. Mardiasmo (2006) emphasizes that transparency in public service fees is crucial for accountability, and our results echo this by highlighting how asymmetric information in the SIM process exacerbates gaps, consistent with studies on Indonesian fiscal challenges (Hamilton-Hart & Schulze, 2016). The fixed effects model further reveals regional variations, where intercepts differ due to local efficiencies; for instance, Bangka Belitung’s high intercept indicates stable performance despite lower absolute revenue, while West Java’s low intercept reflects greater variability from its mean.

The evaluation for 2023–2024 shows progress, with the average gap shrinking to -4.71%, but persistent discrepancies in 34 Polda underscore ongoing problems. Negative gaps in areas like South Sulawesi (52.74%) and Bali (30.97%) likely result from unreported increases in issuances or blank additions, while positive gaps in others point to potential underreporting. This improvement could be linked to regulatory changes, such as amendments in National Police Regulation Number 5 of 2021 on SIM issuance, which introduced working groups for refunds but lack detailed administrative procedures for failures or withdrawals. According to Isnayni et al. (2024), contributions from driver's license revenue to PNBP are influenced by operational factors, supporting our observation that expenditure proxies help estimate gaps but reveal inelastic ties between spending and revenue growth. These patterns confirm that administrative errors and information asymmetry continue to affect PNBP management, even as gaps narrow over time.

The implications of these findings extend to accelerating Polri's transformation across structural, instrumental, and cultural aspects. Structurally, no major changes have occurred in nomenclature or units involved in SIM issuance, as per National Police Regulation Number 2 of 2021, suggesting a need for reorganization to enhance oversight. Instrumentally, while Law Number 20 of 1997 on Non-Tax State Revenue and Government Regulation Number 50 of 2010 on PNBP tariffs provide a framework, the lack of clear refund mechanisms in recent amendments hinders transparency and could reduce applicant trust. Culturally, promoting accountability through e-government tools or public outreach, as recommended by Kannapadang et al. (2025), could address asymmetric information and improve reporting accuracy. For policymakers, these results imply that targeting expenditure increases, combined with population and vehicle trend monitoring, could optimize PNBP SIM by 0.42% per 1% spending boost, fostering sustainable revenue and supporting national fiscal goals (Priyono et al., 2024). Implementing these implications would not only close gaps but also align Polri with broader democratic reforms in Indonesia's public administration.

CONCLUSION

The analysis of PNBP from SIM retribution during 2009–2012 reveals a persistent average gap of -14.86% between calculated potential revenue and actual deposits, primarily due to administrative errors in reporting, incomplete recording of SIM blanks, and asymmetric information in the issuance process. The panel data regression confirms that the number of motor vehicles, population aged 15 and above, and expenditure on PNBP sources all exert positive and significant influences on PNBP SIM, with expenditure showing the strongest effect at 0.42%. Regional variations are evident, with provinces like East Java and Metro Jaya contributing the most but also displaying high variability, while the evaluation for 2023–2024 indicates some improvement with a reduced average gap of -4.71%, though discrepancies remain in many Polda. These findings highlight ongoing challenges in transparency, accountability, and accurate reporting within Polri's SIM administration, despite gradual progress over time.

The implications suggest that Polri should prioritize structural adjustments to enhance oversight in SIM units, strengthen instrumental mechanisms through clearer administrative procedures for refunds and blank management, and foster cultural changes by promoting greater openness and public education on the process. Limitations include the reliance on secondary aggregate data, which may overlook micro-level operational details, the limited number of independent variables excluding factors like infrastructure or personnel capacity, and the use of expenditure as a proxy in the 2023–2024 evaluation, which may not fully capture actual issuance dynamics. For future research, it is recommended to incorporate additional internal variables such as infrastructure quality and staff numbers, apply time-series forecasting methods like ARIMA for predicting future PNBP trends, and conduct efficiency analyses of individual Satpas units using approaches such as Data Envelopment Analysis to provide deeper insights into operational performance and resource optimization.

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