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| RESEARCH ARTICLE

From Tax Gap Measurement to Targeted Compliance: Behavioural and Administrative Evidence for Fair Enforcement

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| ABSTRACT

The measurement of the tax-gap has gradually turned into a strategic tool for enhancing the administration of tax revenues; however, its usefulness lies in the extent to which estimated tax compliance losses can be transformed into targeted and proportionate enforcement efforts and be directed at particular behaviours. The present study aims to explore the possibilities of enhancing compliance management practices in the context of compliance challenges in the National Board of Revenue of Bangladesh by combining tax-gap analysis, behavioural evidence and administrative risk assessment. Using revenue statistics, NBR's institutional transformation between 2022 and July 2026 is analysed, along with developments in digital tax administration, automated audit initiatives and evidence from international benchmarks, including OECD, IMF, IRS, HM Revenue and Customs (HMRC). The results show that NBR has shifted from the traditional paper-based collection administration to digital and risk-based compliance management, which are enabled by expanding e-return, automating VAT audit selection, income tax risk assessment, and enhancing information integration. Yet, there are limitations in measuring tax gaps comprehensively, in managing compliance risk, in audit effectiveness and trust of taxpayers. International experience shows that tax gaps are not a result of intentional cheating but also due to mistakes, lack of information, administrative complexity and behavioural factors. The study suggests an NBR-centric Measure–Segment–Match–Safeguard–Evaluate–Re-estimate approach to build fair and efficient compliance management. The results indicate a need to go beyond revenue recovery to intelligence-based administration that fosters voluntary compliance and sustainable revenue mobilization for strengthening NBR.

| KEYWORDS

National Board of Revenue, Tax gap, Tax compliance, Risk-based audit, Behavioural taxation, Digital tax administration.

| ARTICLE INFORMATION

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1. Introduction

The role of revenue mobilisation is one of the most important functions of modern public administration as sustainable economic development requires the government to have a good capacity to mobilise the domestic resources (Besley & Persson, 2014). The role of strengthening tax administration in developing countries like Bangladesh has become more significant in the present context because of growing needs of public expenditure, infrastructure investment, expansion of social protection, and financial sustainability concerns. In this institutional structure, the responsibility for direct and indirect taxes collection, such as income tax, value added tax (VAT) and customs duties, are vested in the National Board of Revenue (NBR), which is the central body (Gaspar et al.,2016). To

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this end, bolstering NBR's capacity in the identification of compliance risks, strengthening voluntary compliance, and providing fair enforcement has been a priority policy objective.

Traditionally, tax administration has been very revenue raising based, involving assessment, audit and enforcement operations. International experience shows, however, that increased enforcement efforts are not necessarily correlated with lasting success in improving compliance (OECD, 2024; International monetary Fund, 2023). Today, tax administration systems are becoming more aware of the various ways in which tax revenues are lost, such as non-filing, errors in reporting, underpayment, mismatching, and voluntary under-reporting. The differences in these require different responses, not uniformity in approaches to enforcement.

The moral philosophy behind tax compliance was based on the assumption that they were rational in weighing risk of detection and expected penalties against cost of compliance, and that they would choose to avoid paying taxes if they found the prospect unappealing (Allingham & Sandmo, 1972). While deterrence has continued to be a key element of enforcement policy it was later found that psychological, institutional and behavioural factors also play a part in the decision to comply.

Tax-gap measurement is no longer just to estimate the amount of lost revenue; tax administrations increasingly employ it as a tool to gain insights into the root causes of non-compliance (Kirchler, 2007). For instance, non-filing, underreporting, and underpayment are all components of the tax gap in the United States Internal Revenue Service (IRS) and are used to focus areas of tax compliance intervention (IRS, 2024). In the same way, HM Revenue and Customs (HMRC) classifies the tax gap by behaviour whether by error, failure to exercise reasonable care, evasion, failure to pay or criminal activity (HM Revenue and Customs, 2026). The above approaches illustrate the importance of taking a taxpayer compliance approach that understands taxpayer behaviour before choosing taxpayer compliance tools.

The topic is very relevant for Bangladesh as NBR is in a major transition from traditional administrative approach to digital and evidence-based compliance management. As part of the reforms, NBR implemented a number of measures to enhance taxpayer services, information availability and the efficiency of the enforcement. As part of the reforms, NBR has several measures taken to improve taxpayer services, information availability and efficiency in the enforcement. These reforms involve a swift increase in the number of electronic submissions for tax returns, higher rates of online VAT systems and automated risk-based audit selection, and a greater level of administrative information integration. Automated VAT audit selection was also introduced by NBR in April 2026, with 600 entities being picked following a set of risk-based criteria (Andreoni et al., 1998). Likewise, thousands of income-tax returns were picked by automatic risk assessment processes. The initiatives are a good step towards modern compliance-risk-management.

However, the country still has huge revenue mobilisation problems. The nominal revenue collection of NBR has also improved significantly from Tk 294,825 crore in FY2021–22 to Tk 370,874 crore in FY2024–25. The ratio of taxes to GDP, however, is not very high. According to the IMF assessment, Bangladesh is still not meeting the level of tax revenue needed to foster long-term development goals (IMF, 2026). This means that more than just administrative activity is needed to improve collection efficiency more identification of compliance risks and more effective targeting of interventions.

One of the difficulties NBR face is the absence of an all-encompassing tax-gap measurement system like IRS or HMRC, which is readily available in Bangladesh. This means that decisions are frequently made on the basis of indicators that are available, including filing rates, audit results, sectoral data, VAT data and taxpayer registration data (Luttmer & Singhal, 2014). It could be helpful to strengthen the compliance-management capability of NBR to develop a systematic approach that will link these indicators to behavioural analysis.

Previous studies have isolated the estimation of tax-gap, behavioural compliance, and digital tax administration. Research in tax gaps tends to concentrate on determining the losses in revenue (Slemrod, 2007; IRS, 2024; HMRC,

2026), while behavioural research is directed to an understanding of the motivations and compliance choices made by taxpayers (Kirchler, 2007; Luttmer & Singhal, 2014; Alm, 2019).

This study aims to fill this gap by examining the linkages between measurement of tax gaps and NBR's shift to targeted compliance management. Instead, the study considers tax gaps as administrative intelligence that should be harnessed to help segment taxpayers, prioritize audits, and determine fair enforcement.

1.1 Research Objectives

The study has the following objectives:

1. To examine the conventional revenue collection administration to digital and risk-based compliance management of Bangladesh National Board of Revenue (NBR) between 2022 and July 2026.
2. To discuss the various types of taxpayer non-compliance, their behavioural characteristics, the types of tax gaps that they cause, and the type of administrative intervention needed to address them.
3. To discuss the new compliance-risk-management method at NBR and how they are different to the international approach developed by OECD, IRS and HMRC.
4. To build an integrated approach linking tax-gap measurement, behavioural segmentation, risk-based enforcement and procedural fairness to enhance the effectiveness of NBR's compliance efforts.

1.2 Research Questions

This study aims to answer the following research questions, depending on the goals:

1. How will NBR's tax administration change from the conventional enforcement model to digital and targeted compliance management from 2022 to July 2026?
2. What are the behavioural factors that account for the various types of non-compliance by taxpayers, such as errors in reporting, underreporting, information gaps, and intentional evasion?
3. What are the benefits of tax-gap evidence for NBR's audit selection, segmentation of taxpayers and taxpayer intervention strategies?
4. What is the role of NBR in mobilising resources and maintaining fairness and voluntary compliance with the tax?

2. Literature Review

2.1 Tax Gap Measurement and the Evolution of Modern Revenue Administration

Tax gap has emerged as a crucial analytical tool to grasp the extent of revenue leakage and help tax administration better function. Previous studies on tax compliance have tended to be directed at estimating how much tax people actually pay compared to how much they are required to pay. Allingham and Sandmo (1972) developed a basic economic model that provided an explanation for tax evasion as a rational decision: taxpayers consider the potential gain from underreporting their income against the likelihood of being caught and the penalties for evasion. The deterrence aspect had a major impact on tax enforcement policies around the world.

Later studies, however, showed that economic incentives are not the only factors that explain tax compliance. Andreoni et al. (1998) reasoned that decisions about compliance depend on other factors, such as psychology, social and institutional influences, in addition to the probability of audit and penalties. Likewise, Slemrod (2007) noted that tax gaps are influenced by taxpayer behavior, administrative shortcomings, reporting issues, and tax system complexity. So, knowing the size of a tax gap without any comprehension of the causes is a poor basis on which to plan tax enforcement.

Today, tax-gap measurement is growing in importance as a diagnostic tool, not just a measure of lost revenues. The Organisation for Economic Co-operation and Development (OECD) has highlighted that advanced tax administrations adopt tax-gap analysis as a way to identify tax compliance risks, prioritise administrative resources, and craft interventions with a specific focus (OECD, 2024). This is a change from a collection-based administration

to one based on compliance-risk management, and an attempt to work out why taxpayers do not comply, and what intervention is most appropriate.

This is an example of international tax administrations. Tax gaps in the United States are broken down into three general categories: non-filing, underreporting, and underpayment, by the Internal Revenue Service (IRS). IRS estimated the gross tax gap at about US$696 billion for tax year 2022, with underreporting being the largest component of the tax gap (IRS, 2024). In the United Kingdom, tax gaps are estimated by behavioural typologies of tax gap, which are defined as (1) error, (2) failure to take reasonable care, (3) evasion, (4) non-payment, (5) hidden economy, and (6) criminal attacks (HM Revenue and Customs [HMRC], 2026). Such methods show that tax gaps are not a uniform enforcement issue, but can be a variety of non-compliant issues.

Measurement of tax-gap in developing economies involves further institutional issues. Incomplete taxpayer registration, limited third-party information, informal economic activity and less developed administrative capacity are many of the challenges confronting the many developing countries. However, higher penalties or more frequent audits should not be the sole solution to improving compliance in developing countries, as Mascagni (2018) points out, one should instead focus on bolstering administrative systems and information infrastructure. Therefore, tax administrations need to create methods that integrate administrative data with knowledge of the behaviour.

Bangladesh is a case in point of these challenges. While the National Board of Revenue (NBR) has now greatly enhanced the process of revenue collection and administrative digitalisation, Bangladesh does not have a comprehensive tax-gap estimation framework available in public domain like IRS or HMRC models. For this reason, NBR is currently using administrative criteria related to filing records, taxpayer registration, audit results, VAT records and information matching to detect the potential compliance issues (Luttmer & Singhal, 2014). A robust tax-gap measurement framework might improve NBR's capacity to leverage administrative data and make better decisions for tax compliance.

2.2 Behavioural economics and taxpayer compliance behaviour

The behavioural tax-compliance literature has come from the understanding that the incentives provided by the tax system do not always lead people to behave in purely economic ways. Deterrents continue to be a key factor in compliance decisions, but empirical evidence suggests that trust, fairness, social norms, administrative experience and government legitimacy are also key.

One of the most important behavioural tax theories is the Slippery Slope Framework by Kirchler (2007). The framework is based on the idea that compliance relies on two key components, which are mutually reinforcing tax authorities' power and taxpayers' trust. Compliance can be encouraged by good enforcement, but good enforcement is not enough: sustainable voluntary compliance depends on allowing taxpayers to see tax authorities as legitimate, transparent and fair.

Another key behavioural aspect is tax morale. Torgler (2007) showed that citizens' willingness to pay taxes is partly influenced by their perception of the responsibility to be citizens in the country, the effectiveness of the government and the trust in institutions. Luttmer and Singhal (2014) also demonstrated that social identity, cultural norms and beliefs of fairness affected tax morale. The results indicate that the revenue authority should not just consider the taxpayer a suspect for violation, but also a collaborator whose cooperation will affect the outcome of long-term compliance.

There has been growing interest in the link between fairness and compliance. Feld and Frey (2007) suggested that taxes are a product of a psychological contract between citizens and governments. The greater the taxpayers' confidence that the tax authorities are treating them well and exercising enforcement powers properly, the more willing they will be to comply with the tax rules.The more confidence taxpayers have that tax authorities are treating them well and using enforcement powers appropriately, the more likely they are to comply with the tax rules. On

the other hand, over-implementing or enforcing unfairly may lead to a loss of trust and unwanted behavioural reactions.

Gangl et al (2015) furthered this argument by showing that enforcement power and trust do not compete but complement each other. Strong enforcement capacity and weak legitimacy can lead to short-term compliance and difficulties in establishing long-term sustainable voluntary compliance. This is especially important for tax administrations in developing countries where taxpayer confidence and administrative legitimacy is a key issue.

There is also recent experimental evidence of the relevance of procedural fairness. Kasper and Alm (2022) concluded that audits can lead to better compliance in the future if taxpayers feel they are effective and legitimate. If, however, the audit experience is poorly designed, it can have a negative impact on subsequent compliance behaviour. Likewise, Lancee et al. (2023) showed that taxpayers' willingness to comply with the tax authority decreased as a result of unfair audit experiences, pointing to the importance of the quality of enforcement as well as the intensity.

The relevance of behavioural interventions for modern tax administration has also grown in importance. Hallsworth et al. (2017) demonstrated that personalised communication strategies have the potential to have a significant impact on tax-payment behaviour. Perez-Truglia and Troiano (2018) found that social comparison messages increased the compliance of taxpayers by raising awareness about how other taxpayers would act when paying taxes. Bott et al. (2020) found that deliberate communication can decrease compliance problems that result from a lack of understanding or administrative difficulties.

A recent meta-analysis by Antinyan and Asatryan (2025) found that tax compliance benefits from behaviourally based interventions. But the impact of these actions is dependent upon institutional credibility, characteristics of taxpayers and the type of compliance issue. Thus, risk-based enforcement should be married up with the behavioral approaches rather than using behavioral approaches as an alternative to traditional administrative controls.

These findings have important consequences for NBR. There are different groups of taxpayers in Bangladesh with varying taxpayer compliance capacities and motivations. Additionally, some taxpayers may not adhere because they lack awareness, administrative complexity, or may be unable to file, or may intentionally hide taxable activities. Thus, a uniform approach to enforcement may be ineffective. Taxpayer segmentation by behavior might allow NBR to respond appropriately by means of taxpayer education, reminders, and targeted audits and investigations.

2.3 Digital Transformation and NBR's Transition towards Risk Based Compliance Management

Tax administrations around the world are undergoing digital transformation, which has revolutionized their operational processes. Traditional tax administration was dependent on periodic audits, taxpayer declaration, manual assessments, etc. Recently, however, modern administrations have adopted electronic records, automated risk analysis and third-party information systems to more efficiently identify compliance risks.

Compliance-risk management is recognized as a key competence of today's tax administrations, according to the OECD. The OECD (2024) believes that there are four interdependent processes of compliance management: risk identification, risk prioritization, risk treatment selection, and risk outcome assessment. This offers administrations a proactive compliance management method that can shift from reactive enforcement to proactive compliance.

One of the most important aspects of this change is risk-based auditing. Rather than auditing taxpayers at random or administrative discretion, risk-based systems rely on taxpayer characteristics, transaction data, filing patterns and taxpayer compliance history to target those with greater risk. It enables tax administrations to make the best use of their resources.

Third party information is a key aspect of enhancing compliance. Kleven et al. (2011) showed that there is a significant underreporting effect, as information reporting systems make it clear to taxpayers that information is

verifiable from other sources. The more digital records that are created with income sources, transactions or business activities, the fewer opportunities there are for concealment.

A system of VAT can provide evidence like that of Pomeranz (2015) to support the use of information-chain mechanisms to enhance compliance, as they enable the authorities to compare transaction records between businesses. Carrillo et al. (2017) also showed that information reporting can boost tax compliance, as it helps alleviate information asymmetry between taxpayers and tax authorities. Consumer-level incentives for receipt acquisition have been demonstrated to boost reporting systems across supply chain (Naritomi, 2019).

The results have special significance for Bangladesh. NBR has been progressively strengthening its digital tax administration efforts via e-TIN, e-return and e-VAT, to online tax administration services and information integration projects. Digital systems can be leveraged to better identify taxpayers, identify discrepancies and cut down on manual reliance on administration.

Digitalisation, however, poses governance challenges as well. Data quality, model design and institutional supervision are key elements of the automated risk systems. OECD (2024) highlights the necessity for algorithm-based compliance systems to be transparent, subject to evaluation and review by humans, and free from unfair outcomes. An inadequate risk model can disproportionately target specific groups of taxpayers or reflect past administrative errors.

The goal of digital transformation for NBR should thus go beyond the automation. The strategic objective is to build an integrated compliance intelligence system in which compliance is used for fair outcomes, enhanced services for taxpayers, and voluntary compliance.

2.4 Risk-Based Audit, Information Matching, and Targeted Enforcement

The adoption of risk-based audit has become an integral part of the tax administration system as it allows tax authorities to concentrate resources on taxpayers who are more likely to be tax compliant. At the same time, the traditional audit systems were hampered by having few resources and being subjective in their selection procedures. Risk-based approaches are designed to make the process more efficient, with measurable indicators prioritizing cases.

The evidence from international sources supports the idea that effective risk-based auditing needs to be a synthesis of various information sources. These can range from taxpayer statements, third-party statements, transaction records, sectoral information and past compliance. Systems like this would enhance the effectiveness of audits and increase the likelihood of uncovering important non-conformance.

But risk-based enforcement must appear balanced between the efficiency of administration and tax fairness. A revenue recovery-only approach can place undue restrictions on compliant taxpayers. Thus, it is necessary to strike a balance between the risk level and the administrative response when it comes to compliance management in the modern sense.

According to OECD (2024), many of the advanced tax administrations are now using graduated interventions, starting with reminders and education, and moving on to audits and investigations. This is because it acknowledges that there are not only intentional breaches of compliance, but also inadvertent errors.

This is particularly applicable to Bangladesh, as NBR has a wide range of taxpayers from individual taxpayers, small business entities, large business entities and multinational enterprise. Taxpayer groups have distinct compliance problems. Thus, the need exists to treat the devices differently, or segment them for effective enforcement.

2.5 Research Gap

The literature already has significant knowledge on tax-gap measurement, taxpayer behaviour and digital compliance management. But these zones have been without much interaction.

Research on tax-gaps tends to be devoted to estimating the losses of revenue, as well as to identifying the sources of non-compliance (Slemrod, 2007; IRS, 2024; HMRC, 2026). Behavioural studies attempt to explain why taxpayers obey or defy, by examining how trust, fairness, and incentives affect their behaviour (Kirchler, 2007; Luttmer & Singhal, 2014). Administrative studies focus on digitalisation, information systems and risk-based enforcement (OECD, 2024; Okunogbe & Pouliquen, 2022).

There is, however, a lack of research in the literature that reviews how these dimensions can be put into practice at the level of a practical framework for revenue authorities in developing countries. Specifically, there is a lack of research that provides an explanation of how institutions like the NBR can convert tax-gap data into operational choices of segmentation of taxpayers, selection of audits, assistance with compliance, and enforcement proportionality.

3. Methodology

3.1 Research Design

The study takes the comparative institutional and evidence-based policy analysis approach to explore the possibilities of converting tax-gap evidence to specific compliance management by the National Board of Revenue (NBR) of Bangladesh. Instead of the traditional empirical approach that relies on taxpayer-level administrative data to estimate a numerical tax gap, this paper investigates the connection between tax-gap measurement, taxpayer behaviour, administrative capacity and tax design.

The methodological approach draws on three analytical dimensions that are complementary:

- **Administrative evidence analysis**

To explore NBR's digital and risk-based compliance management transformation.

- **Comparative institutional analysis**

To benchmark the developing compliance regime in Bangladesh with those of OECD and IRS, and the HM Revenue and Customs (HMRC).

- **Behavioural compliance synthesis**

To understand the nature of taxpayer behaviour and how it is different in various forms, and how different types of administrative intervention are needed for the different types of behaviour.

This method is considered suitable as there is currently no official comprehensive estimation of tax-gap in Bangladesh similar to IRS or HMRC methods. The study thus does not attempt to build an unreliable estimate of the tax gap on the basis of numbers, but rather, takes the approach of studying observable administrative indicators that shed light on compliance problems and institutional change.

The work builds upon the thesis that tax-gap measurement is a mechanism of administrative intelligence not only as a measure of lost tax revenue. Understanding how NBR can leverage the information available to enhance taxpayer segmentation, audit selection, compliance assistance and the fairness of enforcement, is the goal.

3.2 Institutional Context: National Board of Revenue (NBR), Bangladesh

The study is based on National Board of Revenue (NBR), the main tax administration body of the government of Bangladesh. NBR falls under Internal Resources Division of the Ministry of Finance and has a mandate to manage three main revenue areas:

- Income Tax
- Value Added Tax (VAT)
- Customs duties

NBR is the key revenue collection agency of the government of the people's republic of Bangladesh, which is a very important agency in the area of domestic resource mobilisation and fiscal sustainability. NBR has made several reforms over the past few years to enhance taxpayer services, minimize administrative complexity, increase transparency, and better ensure compliance monitoring.

2022 to July 2026 is a significant transition period as NBR launched several digital and risk-based initiatives such as:

- Increased ability to submit tax returns electronically; and
- online taxpayer services;
- VAT digitalisation;
- automated audit selection;
- Improved compliance analysis using information; and
- integration of customs and tax-related information systems.

These developments set the stage for the appropriate institutional framework to analyse how the traditional enforcement approach is shifted to a targeted compliance management approach.

3.3 Study Period and Scope

The observation period for the empirical observation is:

January 2022 – July 2026
The period was chosen because it was regarded as a crucial period for administrative change in NBR such as:

- Recovery from the pandemic in revenue administration;
- Growth of digital tax services; and
- The use of automatic compliance systems;
- increased emphasis on risk-based enforcement.

Information that has been published after July 2026 is not included in the study in order to ensure consistency with the timeframe of the research.

3.4 Data Sources

The study employs secondary data sources derived from official institutional sources, peer reviewed academic literature.

3.4.1 Bangladesh Administrative Sources

National Board of Revenue (NBR)
The following are sources of NBR:

- Graphs of the yearly trends in revenue collection;
- tax administration reforms;
- electronic filing expansion;
- VAT automation initiatives;
- audit-selection mechanisms;
- taxpayer service development.

The following administrative dimensions are analysed:

Dimension	**NBR Evidence Used**
Revenue performance	Annual revenue collection statistics
Digital transformation	e-return, e-TIN, online services
VAT compliance	e-VAT and automated audit initiatives
Audit reform	Risk-based audit selection
Information management	Data integration initiatives
Compliance improvement	Administrative notices and reforms

3.4.2 International Benchmark Sources

To situate Bangladesh in the context of international experiences, evidence is gathered from:

Internal Revenue Service (IRS), United States
Used for:

- tax-gap estimation methodology;
- behavioural decomposition;
- underreporting analysis.

United Kingdom's HM Revenue and Customs (HMRC)
Used for:

- behavioural tax-gap classification;
- error analysis and evasion analysis; and
- uncertainty management.

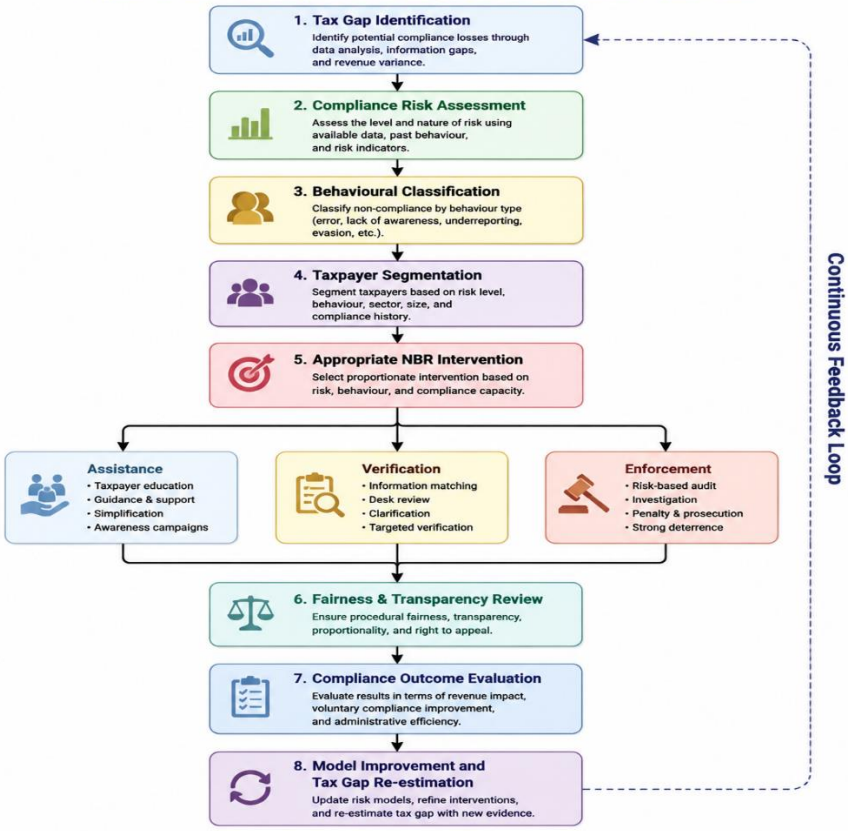
Organisation for Economic Co-operation and Development (OECD)
Used for:

- Performance indicators in tax administration; and
- compliance-risk-management practices;
- digital transformation frameworks.

International Monetary Fund (IMF)
Used for:

- Bangladesh fiscal performance;
- tax administration assessment;
- institutional capacity evaluation.

Figure 1. NBR Tax Gap–Based Targeted Compliance Framework



4. Results and Findings

4.1 Transformation of NBR Revenue Administration: Growth in Collection and Persistent Compliance Challenges

In this study, the researcher aimed to investigate the change of the Bangladesh National Board of Revenue (NBR) from the traditional revenue collection to the compliance-management approach from 2022 to July 2026. The analysis shows that NBR has managed to generate significant nominal revenue and to implement digital and risk-based administrative reforms. But the growth of revenue does not always mean that the compliance efficiency is improving, as the mobilisation of tax revenue is dependent on the linkage among economic activity, registration of taxpayers, reporting and administration capacity.

There was an upward trend in NBR revenue collection over the study period. Official revenue figures show that the total revenue collection rose from Tk 294,825.34 crore in FY2021–22 to Tk 325,986 crore in FY2022–23 and Tk 361,829 crore in FY2023–24. The collection of FY2024-25 was about Tk 370,874 crore. This is a sign of ongoing growth of revenue mobilization capacity.

The growth pattern also indicates that the structural compliance limitations do not necessarily get solved by a growing collection volume. According to the assessments of IMF, the tax-to-GDP rate in Bangladesh is relatively low, which signifies the need for further enhancement in the efficiency of tax collection and compliance management. Thus, the problem for NBR isn't just a one of revenue collection, but also a problem of minimizing root causes of tax gaps.

Table 1. NBR Revenue Collection Trend, FY2021–22 to FY2024–25

The annual change is calculated as follows: The annual change is calculated as follows:

Fiscal Year	NBR Revenue Collection (Crore BDT)	Annual Change
FY2021–22	294,825.34	Baseline
FY2022–23	325,986	+10.57%
FY2023–24	361,829	+11.00%
FY2024–25	370,874.03	+2.23%

Source: National Board of Revenue (NBR) revenue statistics.

The figures are from revenue statistics of the National Board of Revenue (NBR).

The results suggest that NBR has transitioned from an approach where data collection was the major focus to a more comprehensive compliance-management approach. The recent administrative change can be explained by three main changes:

- Increasing digital provision of taxpayer services;
- Automated risk identification mechanisms;
- The growing use of information-driven compliance monitoring.

These changes significantly move the enforcement paradigm away from the reactive mode and towards a proactive compliance management approach.

4.2 Revenue Growth versus Structural Tax Capacity

In this section, revenue growth is compared to structural tax capacity. This section compares revenue growth to structural tax capacity. In absolute terms revenue has grown, however when viewed in relation to economic size, the fiscal challenge is clearly shown. The measure of tax-to-GDP ratio offers a more meaningful measure as it shows whether tax collection is at least keeping pace with economic activity.

Bangladesh's tax revenues during the study period were also low as compared to many emerging economies. According to IMF estimates, tax revenue of NBR has been around 6.7–7.2% of GDP in the last three years (FY2022–23 to FY2025–26).

This discovery indicates that revenue administration reform must not only enhance revenue collection efforts but also should enhance:

- taxpayer registration coverage;
- reporting accuracy;
- information matching;
- voluntary compliance;
- audit effectiveness.

The figure below shows how NBR revenue performance is related to structural tax capacity.

Figure 2. Bangladesh NBR Tax Revenue Relative to GDP, FY2022–23 to FY2025–26

Fiscal Year	NBR Tax Revenue (% of GDP)
FY2022–23	7.1
FY2023–24	7.2
FY2024–25	6.7
FY2025–26 (Projection)	7.1

Source: IMF Article IV Consultation and fiscal assessment

The nominal increase in taxes with the ratio declining in FY2024–25 has made it clear that revenue growth by itself is not enough. NBR needs more robust compliance intelligence that would help to identify where the possible revenue losses are occurring and what sort of intervention is needed.

4.3 Digital Transformation of NBR compliance management

The second key finding is that NBR is moving from manual administrative processes to digital and risk-based compliance management. NBR implemented a number of reforms in 2022 to July 2026 that will benefit taxpayers and enhance administrative efficiency. These changes paved the way for evidence-based compliance management.

Major developments include:

- upgrades to the tax administration system; and
- online taxpayer services;
- VAT digitalisation;
- automated audit selection;
- More use of an information-based risk analysis.

Digitalisation has impacted the nature of tax administration by making taxpayer information available. In the past, tax authorities relied much on voluntary tax submissions and manual checks. With digital systems, NBR can now compare information, check for inconsistencies and prioritise cases based on compliance risk.

Major developments in NBRs in the area of digital compliance are summarised in Table 2.

Table 2: Digital Transformation Indicators of NBR, 2022–July 2026

Reform Area	Administrative Development	Compliance Importance
Electronic filing	Expansion of e-return system	Improves filing accessibility and data availability
VAT digitalisation	Increased online VAT services	Enhances transaction visibility
Automated audit selection	Risk-based entity selection	Reduces discretionary selection
Information integration	Greater use of administrative data	Improves risk identification
Online taxpayer services	Digital communication channels	Supports voluntary compliance

The findings suggest that NBR has been able to acquire a suitable infrastructure to enable "targeted compliance" through the use of digitalization. But this does not necessarily mean technology will lead to better compliance results. Digital transformation is effective when driven by good risk models, taxpayer communication and proper institutional governance.

4.4 Automated risk-based audit: Automated risk-based audit: transition from broad enforcement to targeted compliance

One of the significant developments at NBR was the shift towards automated risk-based audit selection.

Conventional audit systems have the limitation that the selection can be based on administrative discretion, insufficient information or random inspection. To address these shortcomings, risk-based audit seeks to focus on taxpayers who are more likely to have substantial non-compliance.

NBR automatically identified and selected 600 VAT entities based on a set of predefined risk criteria in April 2026. This was a significant change as initial selection was done based on analytical indicators and not manual judgement.

Automated selection can offer a number of benefits:

- improved audit targeting;
- reduced administrative discretion;
- better resource allocation;
- More uniformity in enforcement actions.

But fairness issues are an issue in risk-based systems as well. Persons identified as high-risk taxpayers do not necessarily mean that they are deliberately not complying with the tax laws. Risk indicators can potentially include reporting errors, industry conditions, short term financial stressors, or incomplete data.

So, automating the selection should not be used as a punishment, but should be followed by verification and a human review.

4.5 Behavioural Composition of Tax Gaps and Implications for NBR Enforcement

The findings are consistent with the idea that NBR's future compliance approach needs to be a mix of predictive risk analysis and procedural safeguards. The only way to measure the magnitude of tax gaps is to examine them by behaviour, as they vary by person and by tax type. The size of tax gaps can only be measured if they are broken down by behaviour by taxpayer and by tax type.

There is international evidence that deliberate tax evasion is not the only source of tax gaps. Many are due to reporting errors, misinterpretation, administrative hassles and payment issues.

HMRC's behavioural decomposition has valuable takeaways for NBR. Compliance losses are significant and compliance failures due to failure to take reasonable care and due to error or mistake are significant components, whereas deliberate evasion is one component of the tax gap analysis.

Figure 4 shows the behavioural categories of tax-gap formation

Behaviour	Share (%)
Failure to take reasonable care	35
Error	16
Evasion	12
Legal interpretation	12
Non-payment	10
Criminal attacks	8
Hidden economy	6
Avoidance	1

Source: HMRC Tax Gap 2026

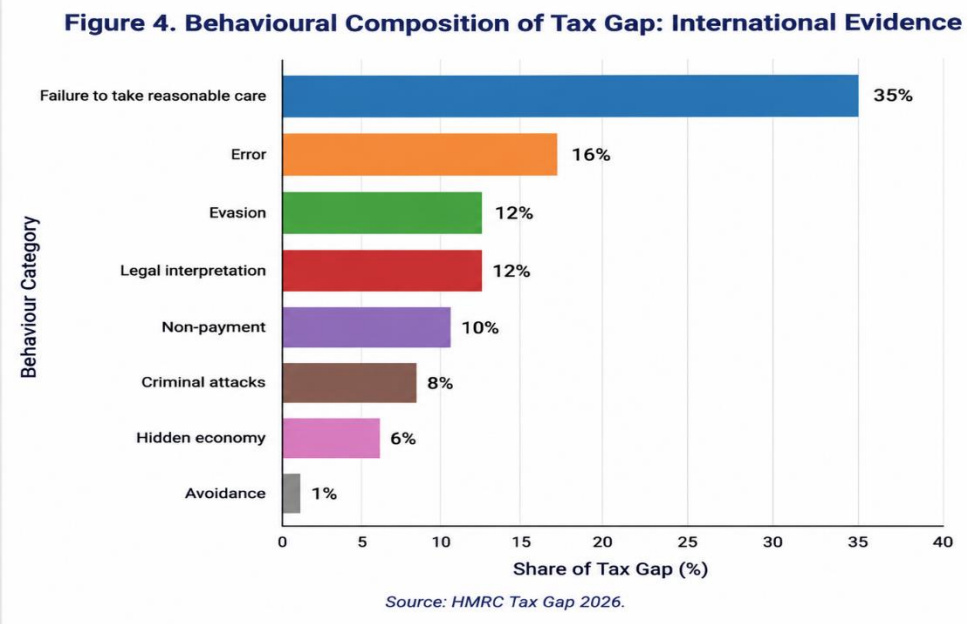


Figure 4: Behavioural Composition of Tax Gap: International Evidence

The results show that compliance is not necessarily accompanied by weaker enforcement. Instead, it is about the implementation of enforcement intensity in line with the identified risk and behaviour. In this section, the major findings are summarized. This section provides a summary of the major findings.

The findings of the results are five major findings.

- First, NBR has made some achievements in revenue growth in 2022-July 2026, but there are still structural tax mobilisation problems.
- Secondly, digital transformation has paved the way for digital compliance management, thanks to the availability of information.
- Third, automated risk-based audit heralds a significant institutional shift from discretionary enforcement to evidence-based case-selection.
- Fourth, international evidence on tax gaps shows that non-compliance is not uniform and needs to be treated differently.
- Fifth, NBR's future compliance approach should include measurement of tax-gaps, behavioural categorisation, taxpayer segmentation, and mechanisms for the fair enforcement of the tax.

Overall, the evidence is consistent with the proposed argument that a change should be made from a revenue collection to an intelligence-based compliance governance approach to NBR.

5. Discussion

5.1 The Code of Conduct for Revenue Collection Administration and the Compliance Intelligence

The results show that Bangladesh's National Board of Revenue (NBR) is in a state of dramatic institutional transformation. Tax administration in developing countries has been traditionally focused on revenue collection targets, taxpayer assessments and enforcement. The evidence from 2022-July 2026, however, shows that compliance management is slowly getting more modernised with the use of information technology, risk identification and intervention.

Two major aspects of this shift are that augmenting audit frequency or tightening penalties are no longer enough to enhance revenue mobilisation. Across the globe, there is evidence that tax noncompliance issues are not of a uniform nature. Of the tax payers, some do not comply due to lack of understanding, administrative complexity and

limited awareness, while others intentionally cover up taxable activity. Use of the same enforcement action with all taxpayers may, therefore, decrease the efficiency of the administration and affect taxpayer relationships.

The strategic goal for NBR should then be to move away from the question:

"How many taxpayers are to be audited?"
toward:

"Which taxpayers require which type of intervention based on their compliance behaviour and risk profile?"

This method is in line with the principles of modern tax administration as suggested by OECD (2024) which have suggested that compliance-risk management is a continuous process of risk identification, selection of the appropriate risk treatment, evaluation, and improvement.

The idea of tax-gap measurement put forward in this study does not view the measurement as a tool to judge the success or failure of the tax system, but rather as a first step in an institutional learning process. NBR can focus resources more effectively on areas of non-compliance, and create an intervention that will increase voluntary compliance by identifying the location and the reason for the compliance loss.

5.2 Consequences of Tax Gap Measurement to NBR

One of the most significant outcomes of this study is that Bangladesh needs a structured framework for measuring the tax-gap in the context of NBR's environment.

In current times, sophisticated tax administrations like IRS or HMRC publish estimates of tax-gap in a regular basis, employing detailed statistical methodologies. These estimates give information about:

- Size of compliance losses;
- taxpayer groups affected;
- behavioural causes;
- uncertainty levels.

But Bangladesh still doesn't have a system similar to this to estimate the tax gap. Consequently, compliance is often dependent on partial administrative measures. A national tax-gap measurement programme would offer NBR several benefits:

5.2.1 First, improved policy targeting

A framework of the tax-gaps would help the NBR to determine whether the losses in revenue are primarily due to:

- registration gaps;
- filing failures;
- reporting errors;
- VAT invoice weaknesses;
- underreporting;
- deliberate evasion.

This would aid in the design of more targeted interventions.

5.2.2 Secondly, improved allocation of audit resources

There is a limited amount of audit resources. If the administrations do not have reliable compliance-risk information, they can invest a lot of resources into investigating cases that may not generate much revenue.

NBR would have a structured tax-gap approach that would enable prioritisation based on:

- probability of non-compliance;
- fiscal importance;
- taxpayer behaviour;
- historical compliance patterns.
- Third, increasing institutional accountability

A published tax-gap framework would also boost transparency by making clear to policy makers and taxpayers:

- where there are compliance issues;
- Whether reforms are effective; and
- How administrative performance is improving.

Hence, it is important that tax-gap measurement becomes an institutional asset of NBR and not a one-off research project.

5.3 Strengthening NBR Risk-Based Audit through Behavioural Segmentation

The results show that the transition of NBR towards automated risk-based audit is an important administrative improvement. But it is not enough to identify the risk. The next step would be to then bring behavioural segmentation into compliance decision making.

The tendency today is for many tax administrations to focus on risk factors as the primary means of defining the taxpayer. But risk is not always an intent.

For example:
A filer could very well have:

- Difficulty in reporting due to accounting problems;
- Postponement due to administrative problems;
- Gave some of the money he owed in taxes to the state as unpaid tax due to financial difficulty;
- Income that is not reported due to intentional misuse.

While these cases have some similarities in relation to the data, they require different actions.

Thus, it is desirable that NBR should establish a model for classification of the behaviourally compliant.

It is possible to come up with the following classification system:

Behaviour Category	**Typical Characteristics**	**NBR Response**
Compliant taxpayers	Accurate filing, timely payment	Facilitation and service improvement
Unintentional error	Student's misunderstanding	Correcting errors and misconceptions
Administrative difficulty	Late filing, incomplete documentation	Support and reminders
Medium-risk inconsistency	Data mismatch	Verification
High-risk underreporting	High-risk underreporting	High-risk underreporting
Low risk underreporting	Minimal discrepancy	Targeted audit

This segmentation would be a fairer segmentation given that enforcement intensity would be based on taxpayer behaviour, and not just on statistical risk.

5.4 Digitalisation, Artificial Intelligence and Governance Challenges

There are considerable opportunities to enhance compliance management with the digital transformation happening at NBR. Digitalisation of VAT, automated audit selection, and electronic filing are key enablers for building an efficient and effective data-led tax administration.

Digitalisation should not replace institutional governance, however.

Automated compliance systems pose a number of problems:

- **Data Quality Risk**

Risk models require information to be accurate. Inaccurate taxpayer information can lead to inappropriate selection for audit.

- **Algorithmic Bias**

Automated systems can reproduce past enforcement trends if they are biased in those trends.

- **Transparency Issues**

When the basis of selection is not known, taxpayers are likely to question automated decisions.

Thus, NBR should put in place governance (mechanisms) such as:

- periodic model validation;
- Manual validation of automated selections;
- audit outcome evaluation;
- taxpayer appeal mechanisms;
- Testing of false positives.

The goal shouldn't be to use technology to replace human judgment but use technology to enhance administrative decision quality.

5.5 Fair Enforcement and Taxpayer Trust

This research is significant because it brings to light taxpayer perceptions of fairness as a necessity for enforcement effectiveness.

Traditional enforcement models tend to be based on the premise that increased punishment equates to increased compliance. Rather, studies in behavioural sciences reveal that over- or mis-applied or unequal application may decrease trust and compliance to rules by choice (Kirchler, 2007; Lancee et al., 2023).

NBR's view of fair enforcement is comprised of:

Transparency

The public should be made aware of the reasons for taking compliance action.

Proportionality

The administrative response must be commensurate with the seriousness of the compliance issue.

Consistency

Equal treatment should be given to equal taxpayers.

Opportunity for Correction
Inaccuracies on the part of taxpayers should be corrected. These principles don't diminish enforcement muscle. Rather, they bolster the legitimacy of enforcement. A credible tax authority is a tax authority that is seen by taxpayers as competent and just.

5.6 Policy implications for National Board of Revenue (NBR)
A number of policy recommendations arise from the findings.

5.6.1 Set up an NBR Tax Gap Measurement Unit
NBR should have a specially designated analytical unit to:

- Estimating tax gaps by tax type;
- analysing behavioural causes;
- monitoring compliance trends;
- evaluating reform outcomes.

The unit could be initially VAT and then broaden to include income tax and customs.

5.6.2 Develop an Integrated Compliance Risk Management System
NBR should integrate:

- taxpayer registration data;
- e-return information;
- VAT records;
- customs information;
- withholding data;
- audit history.

It would enable a full-risk profile for the taxpayer.

5.6.3 Combine Random and Risk-Based Audits
Random audits are essential to measuring real compliance behaviour, while risk-based audits help to boost efficiency. A balanced system should consist of:

- Weaknesses in the risk-based audit process for enforcement; and
- Random audits for measurement improvement and model.

This is in line with the international practice.

5.6.4 Introduce Behaviour-Based Taxpayer Segmentation
NBR should categorise taxpayers on the basis of:

- compliance history;
- reporting behaviour;
- risk level;
- sector characteristics.

Variations in interventions need to be considered by different segments.

5.6.5 Develop Fairness Monitoring Processes
These are some of the indicators used to evaluate automated systems:

- audit confirmation rate;
- appeal success rate;
- taxpayer complaints;
- Performance improvement following intervention.

This would make sure that technology enhances fairness and does not just increase enforcement volume.

5.6.6 Strengthen Taxpayer Education and Voluntary Compliance

Not all tax gaps require enforcement.

NBR should expand:

- taxpayer awareness programmes;
- digital guidance systems;
- pre-filing assistance;
- online clarification services.

There are substantial revenue benefits of getting non-compliance rates down with relatively low administrative expense, when unintentional non-compliance is the issue.

5.7 Limitations of the Study

There are a number of limitations to this study.

- For one, there is no official estimate of the tax gap in Bangladesh that is available to the public, similar to what the IRS or HMRC do. The study therefore does not attempt to measure a numerical tax gap for Bangladesh, but rather uses administrative evidence and international methodological lessons.
- Second, the research uses mostly statistical data at the level of the aggregate of administrative data, not confidential taxpayer information. Hence, it is not possible to model individual taxpayer behaviour directly.
- Third, the international experiences gained from OECD countries and the United States and the United Kingdom are not directly applicable to the situation in Bangladesh due to variations in economic structures, institutional capacities, taxpayer attitudes and legal systems.
- Fourth, the study examines administrative change in 2022-July 2026, but does not calculate causal effects of specific NBR changes on revenue results. Additional studies need to rely on longitudinal and taxpayer level data, and quasi-experimental techniques to assess reform effects.

6. Conclusion

The measurement of tax-gap has been seen as a way to estimate the losses of the government. But this study shows that its greater value is in converting the revenue administration from a reactive enforcement system to one based on intelligence to manage compliance.

An institutional transition has been observed in the evidence collected between 2022 and July 2026 by the National Board of Revenue in Bangladesh. NBR has stepped up the use of digital services to taxpayers, created automated risk-based audit systems, and broadened the implementation of information-based compliance management. These changes form the basis of a modern tax administration system.

However, technology and enforcement will not solve compliance issues. Tax gaps can arise for several reasons such as error, administrative complexity, information gaps, and intentional evasion. Thus, it is necessary to develop a more nuanced strategy for NBR that would take into account the tax compliance profile, risk exposure and taxpayer behaviour of the particular taxpayer concerned.

The study suggests a practical approach to bolster NBR's compliance management by introducing a Measure – segment – Match – Safeguard – Evaluate – Re-estimate framework. Based on this method, tax-gap analysis evolves

into an institutional learning process which provides a basis for taxpayer segmentation, audit prioritization, proportionality of enforcement, and continuous improvement.

The future of tax administration in Bangladesh should not be measured by just the amount of revenue collected, but also by how wisely, just and sustainable the revenue is collected. To create a modern revenue authority that can work for Bangladesh's long-term development goals, NBR's analytical capacity, digital governance, and behavioural compliance strategies need to be strengthened.

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