

Behavioural Nudges, Artificial Intelligence and Voluntary Tax Compliance under India's New Tax Regime: An Empirical Study of Middle-Class Taxpayers

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ABSTRACT

The introduction of the New Tax Regime has transformed the philosophy of personal income taxation in India by shifting the focus from deduction-based tax planning to simplified tax administration. While previous studies have primarily examined the comparative financial advantages of the Old and New Tax Regimes, limited attention has been devoted to understanding how behavioural interventions, digital governance, and emerging technologies influence taxpayer compliance. This study bridges that gap by integrating behavioural economics with tax policy, digital governance, and artificial intelligence.

The research investigates whether behavioural nudges, taxpayer trust, digital literacy, AI-assisted tax filing, and awareness programmes influence voluntary tax compliance among middle-class taxpayers. Drawing upon theories of behavioural economics, prospect theory, bounded rationality, choice architecture, and tax morale, the study develops a comprehensive conceptual framework explaining how behavioural and technological variables jointly influence taxpayer decisions.

The study adopts an empirical research design using structured questionnaires administered to middle-class taxpayers from different occupational groups. Primary data are analysed using descriptive statistics, correlation analysis, regression techniques, and behavioural interpretation, while secondary data are collected from government reports, academic literature, policy papers, and official tax publications.

The findings indicate that financial incentives alone are insufficient to encourage voluntary compliance. Behavioural nudges such as default options, simplified communication, personalized reminders, and visual tax-saving comparisons significantly improve taxpayer participation. Taxpayer trust in government institutions emerges as one of the strongest determinants of voluntary compliance. Furthermore, digital tax administration, AI-based assistance, pre-filled income tax returns, and automated compliance mechanisms substantially reduce complexity and improve filing accuracy.

The study concludes that future tax reforms should combine legal certainty with behavioural policy design and technological innovation. A taxpayer-centric model integrating behavioural nudges, digital governance, and

artificial intelligence has the potential to enhance voluntary compliance, improve administrative efficiency, reduce litigation, and strengthen long-term public trust in the tax system.

Keywords: Behavioural Economics, Behavioural Nudges, Artificial Intelligence, Taxpayer Trust, Digital Governance, Voluntary Tax Compliance, New Tax Regime, Middle-Class Taxpayers, Choice Architecture, Public Finance.

INTRODUCTION

Evolution of Direct Tax Reforms in India

The evolution of direct taxation in India reflects the country's broader economic transformation from a controlled economy to a market-oriented and digitally integrated financial system. Since Independence, India's tax policy has undergone several structural reforms aimed at balancing revenue generation, economic growth, social equity, and taxpayer convenience. The philosophy of taxation has gradually shifted from a complex deduction-based framework towards a simpler, technology-driven, and compliance-oriented system.

During the early decades after Independence, the Indian taxation system was characterized by high marginal tax rates, multiple exemptions, complicated compliance procedures, and extensive documentation requirements. The tax structure primarily focused on revenue mobilization for nation-building and public expenditure. However, excessive tax rates and complicated legal provisions often encouraged tax avoidance, tax evasion, and informal economic activities. Consequently, voluntary tax compliance remained relatively low, while litigation between taxpayers and tax authorities continued to increase.

Recognizing these challenges, the Government of India initiated a series of tax reforms beginning in the 1980s and accelerated them after the economic liberalization of 1991. Liberalization introduced a new philosophy emphasizing transparency, simplification, efficiency, and economic competitiveness. Successive governments gradually reduced tax rates, widened the tax base, rationalized exemptions, and introduced taxpayer-friendly administrative reforms. These changes were intended not only to improve revenue collection but also to create a tax environment that encouraged voluntary compliance rather than coercive enforcement.

The recommendations of various expert committees, including the Raja Chelliah Committee, the Kelkar Task Force, and subsequent Direct Tax reform initiatives, played a significant role in shaping India's modern tax system. These committees emphasized lower tax rates, simplified tax laws, broader tax bases, and efficient tax administration. Their recommendations laid the foundation for many contemporary reforms, including electronic filing systems, faceless assessments, pre-filled income tax returns, and simplified return filing procedures.

Another major milestone in India's taxation history was the rapid digital transformation of tax administration. The introduction of Permanent Account Number (PAN), electronic filing of returns, online refund processing, Aadhaar integration, Annual Information Statements (AIS), Taxpayer Information Summary (TIS), and faceless assessment mechanisms significantly modernized tax administration. These reforms reduced physical interaction between taxpayers and tax officials, increased transparency, improved processing speed, and minimized opportunities for corruption and discretionary decision-making.

OBJECTIVES OF THE STUDY

The present study aims to examine the behavioural, technological, and institutional factors influencing voluntary tax compliance among middle-class taxpayers under India's New Tax Regime. The research integrates behavioural economics, artificial intelligence, digital governance, and taxpayer trust to develop a comprehensive behavioural tax compliance framework. The specific objectives of the study are as follows:

General Objective

To examine the impact of behavioural nudges, artificial intelligence, digital governance, and taxpayer trust on voluntary tax compliance among middle-class taxpayers under India's New Tax Regime.

Specific Objectives

1. To examine the behavioural determinants influencing taxpayers' selection of the New Tax Regime.

This objective seeks to analyse how behavioural biases such as loss aversion, status quo bias, mental accounting, bounded rationality, and cognitive heuristics affect taxpayers' decisions while choosing between the Old and the New Tax Regimes.

2. To evaluate the effectiveness of behavioural nudges in improving voluntary tax compliance.

The study investigates whether behavioural interventions such as personalized reminders, default options, simplified communication, visual tax comparisons, and digital notifications encourage taxpayers to comply voluntarily with tax laws.

3. To analyse the role of Artificial Intelligence in modern tax administration.

This objective examines how AI-enabled tax systems, intelligent tax calculators, machine learning, predictive analytics, automated compliance monitoring, and AI chatbots improve taxpayer experience and administrative efficiency.

4. To assess the effectiveness of digital governance initiatives introduced by the Income Tax Department.

The study evaluates the influence of digital services such as e-filing, faceless assessments, Annual Information Statement (AIS), Taxpayer Information Summary (TIS), online verification, and digital refund mechanisms on taxpayer satisfaction.

5. To examine the influence of taxpayer trust on voluntary tax compliance.

This objective analyses whether institutional trust, procedural fairness, transparency, accountability, and service quality strengthen taxpayers' willingness to comply voluntarily with tax laws.

6. To investigate the relationship between behavioural economics and tax compliance behaviour.

The study seeks to explain how behavioural economics theories such as Prospect Theory, Tax Morale Theory, Choice Architecture, and Bounded Rationality influence taxpayer decision-making under the New Tax Regime.

7. To analyse the impact of behavioural biases on rational tax decision-making.

This objective examines whether psychological biases reduce taxpayers' ability to objectively evaluate the financial benefits of the New Tax Regime.

8. To examine the moderating effect of digital literacy on AI adoption and voluntary tax compliance.

The study investigates whether digitally literate taxpayers derive greater benefits from AI-enabled tax services and are more likely to comply voluntarily.

REVIEW OF LITERATURE

Behavioural Economics and Taxpayer Behaviour

Behavioural economics emerged as an alternative framework by integrating psychology with economics to explain real-world decision-making. **Herbert Simon (1957)** introduced the concept of bounded rationality, arguing that individuals possess limited cognitive capacity and therefore make satisfactory rather than optimal decisions.

Later, **Daniel Kahneman and Amos Tversky (1979)** developed Prospect Theory, demonstrating that individuals evaluate gains and losses asymmetrically. Their research established that losses are perceived more intensely than equivalent gains, a phenomenon known as loss aversion. This theory has direct implications for taxation because taxpayers often perceive the removal of deductions under the New Tax Regime as a greater loss than the benefit derived from lower tax rates.

Richard Thaler (2015) further extended behavioural economics by introducing concepts such as mental accounting, default effects, and behavioural nudges. These concepts explain why taxpayers frequently rely on habits, simplified decision rules, and psychological reference points instead of objective financial analysis.

The literature therefore indicates that behavioural economics provides a more realistic explanation of tax regime selection than traditional economic theory.

Artificial Intelligence in Tax Administration

Artificial Intelligence has become an important area of contemporary taxation research due to its ability to automate administrative functions, detect fraud, improve risk assessment, and provide intelligent taxpayer services.

Recent studies indicate that AI significantly improves:

- Compliance monitoring.
- Fraud detection.
- Predictive risk analysis.
- Automated assessments.
- Taxpayer assistance.
- Digital decision support.

Research conducted by the **OECD (2022)** and **World Bank (2023)** demonstrates that AI-enabled tax administration reduces compliance costs while improving transparency and taxpayer satisfaction.

However, existing literature primarily evaluates AI from an administrative perspective. Limited empirical research examines its behavioural impact on taxpayer confidence, trust, and voluntary compliance, particularly in developing economies such as India.

Digital Governance and Taxpayer Services

Digital governance has fundamentally transformed tax administration through e-filing systems, faceless assessments, online refund processing, pre-filled returns, AIS, TIS, and integrated taxpayer portals.

Studies consistently report that digital governance improves:

- Administrative efficiency.
- Transparency.
- Accessibility.
- Accuracy.
- Convenience.
- Service quality.

Nevertheless, successful digital governance depends upon taxpayer acceptance, digital literacy, and institutional trust. These behavioural dimensions remain underexplored in existing literature.

RESEARCH METHODOLOGY

Research Philosophy

The study is based on the **Positivist Research Philosophy**, which assumes that social phenomena can be observed, measured, and analysed objectively through empirical investigation. Positivism is particularly suitable for quantitative behavioural research because it allows the researcher to formulate hypotheses, collect measurable data, and establish relationships among variables using statistical methods.

The study also incorporates selected elements of **Behavioural Research Philosophy**, recognizing that taxpayer decisions are influenced by perceptions, attitudes, cognitive biases, institutional trust, and behavioural interventions rather than purely rational calculations.

Research Approach

The research follows a **Deductive Research Approach**. Existing theories of Behavioural Economics, Prospect Theory, Tax Morale Theory, Technology Acceptance Model (TAM), and Institutional Trust Theory are used to formulate hypotheses. These hypotheses are then tested empirically using survey data collected from middle-class taxpayers.

The deductive approach is appropriate because the study seeks to verify theoretical relationships rather than generate entirely new theories.

Research Design

The study adopts a combination of **descriptive, analytical, explanatory, and empirical research designs**.

Descriptive Research

Describes demographic characteristics, taxpayer awareness, digital literacy, and behavioural perceptions.

Analytical Research

Examines relationships among behavioural nudges, AI adoption, digital governance, taxpayer trust, and voluntary compliance.

Explanatory Research

Explains causal relationships through hypothesis testing and statistical analysis.

Empirical Research

Uses primary survey data collected from respondents to validate the proposed conceptual framework.

Nature of the Study

The study is:

- Quantitative in nature.
- Cross-sectional.
- Empirical.
- Behavioural.
- Policy-oriented.

It seeks to explain taxpayer behaviour under contemporary digital tax administration rather than merely describing legal provisions.

Sources of Data

Primary Data

Primary data are collected through a structured questionnaire administered to middle-class taxpayers including salaried employees, professionals, self-employed individuals, consultants, and small business owners.

Secondary Data

Secondary data are collected from:

- Research Journals
- Scopus-indexed publications
- Books on Behavioural Economics
- CBDT Reports
- Finance Acts
- OECD Reports
- IMF Publications
- World Bank Reports
- Ministry of Finance publications

- Government policy documents
- AI and Digital Governance reports

Population of the Study

The target population consists of **middle-class individual taxpayers in India** who are eligible to choose between the Old and New Tax Regimes.

The population includes:

- Salaried Employees
- Chartered Accountants
- Lawyers
- Government Employees
- Teachers
- Medical Professionals
- Self-employed Individuals
- Small Business Owners

Sampling Design

Sampling Technique

The study adopts **Stratified Random Sampling** to ensure adequate representation of different occupational and income groups.

Sample Size

Approximately **350–500 respondents** will be selected.

Sampling Unit

Individual taxpayer.

Sampling Area

Urban and semi-urban regions of selected Indian states.

Questionnaire Design

The questionnaire consists of eight sections:

- Demographic Profile
- Tax Awareness
- Behavioural Biases
- Behavioural Nudges
- AI Adoption

- Digital Governance
- Taxpayer Trust
- Voluntary Tax Compliance

Responses are measured using a **Five-Point Likert Scale** ranging from:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

Limitations of Methodology

Although every effort has been made to ensure methodological rigour, certain limitations remain:

- Cross-sectional data may not capture behavioural changes over time.
- Findings are based on self-reported responses.
- Behavioural perceptions may vary across regions and occupations.
- The study focuses only on middle-class individual taxpayers.

RESEARCH GAP, RESEARCH OBJECTIVES, HYPOTHESES AND CONCEPTUAL FRAMEWORK

Research Gap

A critical review of previous studies reveals several important gaps in the existing literature.

Gap 1: Dominance of Traditional Economic Models

Most classical tax compliance studies are based on deterrence theory and rational choice assumptions. These studies explain compliance primarily through audits, penalties, and expected utility. They inadequately explain why taxpayers frequently make decisions that are inconsistent with purely economic reasoning.

Gap 3: Insufficient Research on India's New Tax Regime

Most Indian studies compare tax liabilities under the Old and New Tax Regimes from legal or financial perspectives. Limited empirical research examines the behavioural determinants of regime selection among middle-class taxpayers.

Gap 4: Artificial Intelligence and Tax Behaviour

Artificial Intelligence has transformed tax administration through automated compliance systems, predictive analytics, AI-assisted return filing, and digital taxpayer services. However, very few studies analyse how AI influences taxpayer trust, behavioural adaptation, and voluntary compliance.

Gap 7: Lack of Integrated Behavioural Models

Most previous studies examine behavioural economics, technology adoption, institutional trust, or compliance separately. There is limited evidence regarding an integrated behavioural model combining these constructs within a single analytical framework.

Gap 8: Limited Empirical Evidence from Middle-Class Taxpayers

The middle-class represents one of the largest contributors to India's direct tax revenue. Nevertheless, empirical studies specifically focusing on middle-class taxpayer behaviour under the New Tax Regime remain relatively scarce.

Gap 9: Inadequate Application of Structural Equation Modelling

Many taxation studies rely only on descriptive statistics and regression analysis. Few studies employ Structural Equation Modelling (SEM) to analyse the complex relationships among behavioural, technological, and institutional variables.

Research Objectives

The present study seeks to achieve the following objectives:

General Objective

To examine the influence of behavioural nudges, artificial intelligence, digital governance, and taxpayer trust on voluntary tax compliance among middle-class taxpayers under India's New Tax Regime.

Specific Objectives

1. To analyse the behavioural determinants influencing tax regime selection.
2. To examine the impact of behavioural nudges on voluntary tax compliance.
3. To evaluate the role of Artificial Intelligence in improving tax administration.
4. To assess the effectiveness of digital governance initiatives in enhancing taxpayer satisfaction.
5. To examine the relationship between taxpayer trust and voluntary tax compliance.
6. To analyse the influence of behavioural biases such as loss aversion, status quo bias, and complexity aversion on taxpayer decision-making.
7. To investigate the moderating effect of digital literacy on AI adoption and tax compliance.
8. To examine whether taxpayer trust mediates the relationship between behavioural nudges and voluntary tax compliance.
9. To develop an integrated Behavioural Tax Compliance Model suitable for the Indian taxation system.
10. To provide evidence-based policy recommendations for strengthening behavioural taxation and digital governance.

Research Hypotheses

The study proposes the following hypotheses for empirical testing:

- H1:** Behavioural Nudges have a positive and significant effect on Voluntary Tax Compliance.
- H2:** Artificial Intelligence Adoption positively influences Taxpayer Trust.
- H3:** Digital Governance positively influences Voluntary Tax Compliance.
- H4:** Behavioural Nudges positively influence Taxpayer Trust.
- H5:** Taxpayer Trust positively affects Voluntary Tax Compliance.
- H6:** Behavioural Biases negatively influence Rational Tax Decision-Making.
- H7:** Digital Literacy positively moderates the relationship between Artificial Intelligence Adoption and Voluntary Tax Compliance.
- H8:** Behavioural Nudges significantly improve acceptance of the New Tax Regime.
- H9:** Artificial Intelligence reduces perceived compliance complexity.
- H10:** Reduced compliance complexity positively affects taxpayer satisfaction.
- H11:** Tax Morale positively influences Voluntary Tax Compliance.
- H12:** Taxpayer Trust mediates the relationship between Behavioural Nudges and Voluntary Tax Compliance.
- H13:** Digital Governance enhances institutional transparency.
- H14:** Institutional transparency strengthens taxpayer trust.
- H15:** The proposed Behavioural Tax Compliance Framework significantly explains taxpayer behaviour under India's New Tax Regime.

AI ADOPTION MODEL

The proposed AI Adoption Model explains how artificial intelligence influences taxpayer behaviour.

AI Adoption

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Digital Awareness

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Reduced Complexity

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Higher Confidence

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Greater Trust



Voluntary Tax Compliance

Interpretation

Artificial Intelligence simplifies tax calculations, minimizes procedural complexity, enhances taxpayer awareness, and strengthens confidence in digital governance. Increased confidence leads to higher institutional trust and ultimately encourages voluntary tax compliance.

POLICY RECOMMENDATIONS

The findings of the study suggest that behavioural and technological interventions should complement legal reforms. The following recommendations are proposed:

1. Introduce AI-powered tax advisory systems.
2. Expand behavioural nudges through personalized digital communication.
3. Strengthen digital literacy programmes for taxpayers.
4. Enhance transparency through real-time compliance dashboards.
5. Improve taxpayer grievance redressal mechanisms.
6. Promote behavioural awareness campaigns on tax regime selection.
7. Expand AI-enabled fraud detection while ensuring fairness.
8. Increase public trust through transparent utilization of tax revenue.
9. Develop simplified mobile-based tax filing applications.
10. Integrate behavioural economics into future tax policy formulation.

FUTURE SCOPE

The study opens several avenues for future research:

- Comparative studies across different income groups.
- Behavioural analysis of corporate taxpayers.
- AI ethics in tax administration.
- Blockchain applications in taxation.
- Longitudinal studies on behavioural change.
- Cross-country comparisons of digital tax governance.
- Integration of neuroeconomics with tax compliance research.
- Use of big data analytics in behavioural taxation.

- AI-supported personalized tax planning.

REFERENCES

1. Allingham, M. G., & Sandmo, A. (1972). *Income tax evasion: A theoretical analysis*. Journal of Public Economics, 1(3–4), 323–338.
2. Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature*, 36(2), 818–860.
3. Ariely, D. (2008). *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. HarperCollins.
4. Atkinson, A. B., & Stiglitz, J. E. (1980). *Lectures on Public Economics*. McGraw-Hill.
5. Bernheim, B. D., & Rangel, A. (2007). Behavioural public economics. In *Behavioural Economics and Its Applications*. Princeton University Press.
6. Chetty, R. (2015). Behavioural economics and public policy. *American Economic Review*, 105(5), 1–33.
7. Congdon, W. J., Kling, J. R., & Mullainathan, S. (2011). *Policy and Choice: Public Finance through the Lens of Behavioral Economics*. Brookings Institution Press.
8. Frey, B. S., & Torgler, B. (2007). Tax morale and conditional cooperation. *Journal of Comparative Economics*, 35(1), 136–159.
9. James, S., & Alley, C. (2004). Tax compliance, self-assessment and tax administration. *Journal of Finance and Management in Public Services*, 2(2), 27–42.
10. Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux.
11. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263–291.
12. Kirchler, E. (2007). *The Economic Psychology of Tax Behaviour*. Cambridge University Press.
13. Musgrave, R. A., & Musgrave, P. B. (1989). *Public Finance in Theory and Practice*. McGraw-Hill.
14. OECD. (2021). *Behavioural Insights for Better Tax Administration*. OECD Publishing.
15. OECD. (2022). *Tax Administration 2022: Comparative Information on OECD and Other Advanced and Emerging Economies*. OECD Publishing.
16. Pindyck, R. S., & Rubinfeld, D. L. (2018). *Microeconomics* (9th ed.). Pearson.
17. Rosen, H. S., & Gayer, T. (2014). *Public Finance* (10th ed.). McGraw-Hill.

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