



# **INTERNATIONAL COLLEGE, KRIRK UNIVERSITY**

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## Editor's Introduction

Welcome to the Volume 3, Number 2 (July-December, 2025) issue of the *ASEAN Journal of Research* (AJR). This issue represents the culmination of three years of successful publishing of this academic journal, which publishes academic journals on the double-blind review basis.

In this issue, I am pleased to be able to publish papers from Vietnam, Bangladesh and Nigeria on a wide variety of subjects. Among the issues covered are market-based climate instruments for sustainable development in Vietnam, adaptability and resilience in the face of floods in Bangladesh and corruption among serving and retired police officers in Nigeria. Other papers are drawn from the fields of education, semiotics, supply chain management and the social science involved in understanding the anti-social behaviour of inmates of correctional centres. This diversity is characteristic of the AJR and is a strength. The journal was launched with the understanding that it would accept papers in all the academic disciplines that are taught at the International College of Kirk University. This will continue. However, there will be something of a change starting from the next issue. Now that the British International College (BIC) has been opened at Kirk University and I was asked to become its Dean, as editor of the AJR I will be publishing the journal in future from the BIC. This will not have any impact on authors or readers. The same academic standards will be applied that have been in use since the first issue. I will also continue to attempt to publish papers in any academic discipline subject to being able to find suitable peer reviewers.

\*

The world outside the ARJ has endured a fairly miserable year. Genocide in Gaza and Sudan, the re-entry of openly racist and fascist into mainstream politics and widening inequality have brought misery to many millions. In Thailand, we are now facing open warfare with our neighbours in Cambodia – the first war between two members of ASEAN. It is a result, at least in part, of colonization. As colonial rulers of Vietnam, Laos and Cambodia, the French drew up borders on a unilateral basis that have been subject to informal change over the years, as one side or another has made a fuss about cultural artifacts and geographical realities.

Where I write this in Roi Et in northeast Thailand, less than half a mile way is the remains of the Prang Ku temple (Ku Ban Khao), which once represented an official outpost of the Khmer Empire and functioned, it is thought, as a place of government and health management, as well as being a place of worship. It was dedicated both to Shiva and to Lokeshvera, a Bodhisattva from Mahayana Buddhism. It is part of a River Mekong region that saw state formation based on individual kingship being expressed by creating a new polity remote from its parent, as the fiefdom of an individual who had outgrown being a prince-in-waiting. The land was heavily forested and difficult to traverse. Influence could be exerted by family loyalties and trade, as well as military power. Polities were small and unable to support more than small forces of soldiers. The purpose of warfare was often to raid other states for skilled workers destined to become slaves. Borders did not exist in any meaningful way. We would be better off without them.

*John Walsh, Editor*

## **Peer-Reviewed Research Papers**

# Innovative Climate Debt Instruments for Sustainable Management: Vietnam's Path to Climate Resilience

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## Abstract

*Vietnam ranks among the world's most climate-vulnerable economies and faces recurrent disaster-related losses to welfare and public finances. This study traces Vietnam's green finance evolution (2015-2025) across regulation, market development, investor behaviour, and the feasibility of catastrophe (CAT) bonds for climate resilience. Using policy analysis, trend data, two enterprise case studies, and international benchmarking, we find that green credit represents approximately 4-5% of lending and that labeled green bonds represent approximately 1.5% of the domestic bond market in 2023. Barriers include the absence of a binding green taxonomy, limited fiscal incentives, and low investor trust and awareness of the sector. We propose a sequenced reform agenda - taxonomy, CAT bond legal framework, targeted incentives, mandatory ESG disclosure, and literacy programs - and map each to observed constraints. The paper contributes an integrated, behaviour-aware framework for scaling climate debt in emerging markets and a practical design pathway for resilience finance.*

**Keywords:** *behavioural finance, catastrophe bonds, climate risk, ESG, financial innovation, green bonds, green finance, policy evaluation, Vietnam*

## 1. Introduction

Vietnam ranks among the world's most climate-vulnerable economies, with natural disasters such as typhoons, floods, and droughts causing estimated annual losses to the national GDP (Dinh & Nguyen, 2020; World Bank, 2021). These impacts not only disrupt livelihoods and infrastructure but also threaten the country's long-term economic resilience and sustainability. In recognition of these challenges, Vietnam has committed to achieving net-zero carbon emissions by 2050, as articulated in the National Climate Change Strategy (The Prime Minister, 2021).

Reaching this target will require a fundamental reconfiguration of the country's financial system to integrate sustainability principles into public and private investment decision-making. Globally, the use of green financial instruments has grown significantly, with green bond issuances expanding from USD 37 billion in 2014 to over USD 600 billion by 2021 (Climate Bonds Initiative, 2024). Climate debt instruments, including green bonds, sustainability-linked bonds, and catastrophe (CAT) bonds, have played a key role in mobilizing private capital for environmental objectives and financing disaster resilience, particularly in climate-vulnerable economies such as Jamaica, Mexico, and the Philippines (Ando et al., 2022; OECD, 2024). These instruments offer not only access to capital but also risk-transfer mechanisms that are critical for climate adaptation.

However, Vietnam's green finance ecosystem is underdeveloped. By 2023, green credit represented only 4-5% of total bank lending, while labeled green bonds accounted for only 1.5% of the domestic bond market (Tuoi Tre News, 2024; VietnamPlus, 2023). Institutional barriers, including the absence of a standardized green taxonomy, limited fiscal incentives, and fragmented ESG regulations, constrain market development. Equally important are behavioural factors, such as investor distrust and low awareness of green financial products, which further suppress adoption (Diep & Yen, 2024; IFC, 2023).

While previous research has discussed the emergence of green finance in Vietnam (Nguyen et al., 2024) and ESG policy diffusion in ASEAN (World Bank, 2022), three important gaps remain to be addressed.

First, few studies have evaluated the actual impact of Vietnam's green finance policies on credit and bond markets. Second, the behavioural barriers to market participation remain underexplored. Third, there is a lack of analysis of the potential integration of CAT bonds into Vietnam's financial system, despite their growing relevance in other climate-exposed economies.

This study addresses these gaps by examining Vietnam's green finance evolution from 2015 to 2025, focusing on innovative climate debt instruments, specifically green and CAT bonds, as tools for embedding sustainability in financial management. Using a mixed-methods approach that combines policy analysis, market data, enterprise case studies, and global benchmarking, this study provides evidence-based recommendations to strengthen Vietnam's green finance architecture and inform its replication in other emerging economies. This study aims to investigate three key aspects of Vietnam's green finance landscape: (1) How effective have Vietnam's green finance policies been in mobilizing sustainable lending and bond issuances? (2) Which behavioural barriers constrain adoption among retail investors and SMEs the most? (3) What institutional and legal conditions are required to integrate CAT bonds into Vietnam's financial architecture?

In addition, while disasters can temporarily increase the measured GDP through reconstruction outlays, they impose net welfare and fiscal losses via asset destruction, consumption volatility, and contingent liabilities. Therefore, we interpret 'losses' in welfare/fiscal terms rather than mechanical GDP effects.

## **2. Literature Review**

This literature review synthesizes theoretical and empirical insights to contextualize Vietnam's green finance landscape, focusing on green finance, ESG investing, financial behaviour, and catastrophe bonds (CAT bonds), while pinpointing critical gaps that this study aims to address.

### **2.1. Theoretical Foundations of Green Finance and ESG Investing**

Environmental finance theory posits that externalities, such as environmental degradation, can be internalized through market-based financial instruments. Green bonds and Environmental, Social, and Governance (ESG) strategies serve as key tools in this regard, enabling financial institutions to reallocate capital towards sustainable projects and practices. This theoretical foundation is central to Vietnam's policy efforts, as exemplified by Directive No. 03/CT-NHNN, which promotes green credit growth and environmental-social risk management in credit extension (State Bank of Vietnam, 2015; Weber, 2010; Barberis & Shleifer, 2003).

Complementing this, ESG investment frameworks have demonstrated a positive link to financial performance in over 60% of more than 2,000 empirical studies, underscoring the tangible benefits of integrating sustainability considerations into investment decisions (Friede *et al.*, 2015). Sustainability transition theory, particularly Geels' multi-level perspective (MLP), positions green finance as a critical catalyst for low-carbon transitions. This framework is directly applicable to Vietnam's emerging green bond initiatives, which represent niche-level experimentation within a broader socio-technical regime (Geels, 2002). However, the path to systemic change is complex and constrained by several factors. Behavioural finance theory highlights barriers such as cognitive biases and information asymmetries, which inhibit the broader uptake of green investments (Lo, 2005; OECD, 2020). These behavioural frictions are particularly evident in Vietnam's fragmented market environment.

The combined application of MLP and behavioural finance suggests that while pioneering Vietnamese institutions are engaging in promising "niche-level" innovations, broader regime-level shifts remain elusive and require more time. This gap is perpetuated by limited policy enforcement, underdeveloped financial infrastructure and societal risk aversion. Cognitive biases and low awareness among investors, especially SMEs, compound these issues, creating a feedback loop in which behavioural distrust undermines regulatory implementation. Addressing these systemic challenges requires simultaneous action at all three MLP levels: fostering grassroots innovations, institutionalizing top-down reforms

such as green taxonomies and fiscal incentives and shifting behavioural norms through education and trust-building.

## **2.2. Green Bonds: Evolution, Global Landscape, and Market Dynamics**

Green bonds are a leading financial instrument for channeling private capital toward sustainable development. Globally, the green bond market has expanded rapidly, from USD 37 billion in 2014 to over USD 600 billion in 2021, reflecting its increasing importance as a mechanism for achieving global climate goals (Climate Bonds Initiative, 2024). The rise in sovereign and corporate green bond issuances indicates not only investor appetite but also the growing policy role of capital markets in climate finance. Strong regulatory frameworks, such as those in the European Union and China, have driven success through taxonomic systems and transparency mandates.

In Southeast Asia, countries such as Indonesia and Thailand have made notable progress through sovereign green bonds and the development of ASEAN-aligned green taxonomies (World Bank, 2022). These initiatives illustrate the importance of clear regulatory guidance, fiscal incentives, and strategies for mobilizing domestic capital.

Aligning with this global shift is critical for mobilizing Vietnam's finances toward its 2050 net-zero targets and attracting foreign investments (Figure 1). However, as of 2023, green bond issuance stood at just USD 1 billion, accounting for only 1.5% of the domestic bond market (VietnamPlus, 2023; Tuoi Tre News, 2024). The contributing factors include the lack of a national green taxonomy, limited market incentives, and weak consumer engagement (Nguyen et al., 2018). Nevertheless, institutions such as the Bank for Investment and Development of Vietnam (BIDV) and EVN Finance have made significant progress by issuing verified green bonds and adopting international ESG standards (World Bank, 2024). These early efforts serve as foundational "niches" that may catalyze a broader market transformation.

Debt instruments relevant to Vietnam include: (i) green bonds (use-of-proceeds), (ii) Social and Sustainability bonds, (iii) Sustainability-Linked Bonds (SLBs) with KPI-based coupons, (iv) transition bonds targeting high-emitting sectors, (v) green sukuk (notably Indonesia's retail issuance), and (vi) CAT/ILS instruments with parametric triggers. Global bond market depth and sovereign benchmarks are central because they anchor the risk-free curve, enable the pricing of labeled issuances, and broaden the investor base to long-duration mandates. The literature notes benefits (signaling, dedicated ESG demand, and potential pricing effects) and risks (label dilution and verification/basis risk for parametric products).

## **2.3. Catastrophe Bonds (CAT Bonds): Mechanism and Global Adoption**

Catastrophe bonds (CAT bonds) serve as innovative alternative tools to conventional funding mechanisms, specifically designed to mitigate climate risks and enhance climate adaptation and fiscal resilience. These instruments provide parametric payouts following extreme weather events, meaning a predetermined payout is triggered if specific, measurable parameters (e.g., wind speed, earthquake magnitude, rainfall levels) are met, rather than based on actual losses. This mechanism offers a vital tool for climate adaptation and disaster risk financing, providing rapid liquidity when needed most. Figure 2, illustrating the structure of a typical catastrophe bond, visually reinforces its role in transferring disaster risks from vulnerable entities to capital markets.

The effectiveness of CAT bonds has been demonstrated in various climate-vulnerable economies. Southeast Asia Disaster Risk Insurance Facility (SEADRIF) fully issued a USD 185 million CAT bond in 2021, with significant participation from European Insurance-Linked Securities (ILS) funds. Mexico has also pioneered their use, issuing a USD 485 million FONDEN-backed bond in 2020 to cover earthquake and storm risks. The Philippines' issuance of a USD 225 million CAT bond in 2019, guaranteed by the World Bank and facilitated through the Southeast Asia Disaster Risk Insurance Facility (SEADRIF), further exemplifies their utility in providing prompt post-disaster liquidity and bolstering fiscal resilience.

## 2.4. Vietnam's Specific Barriers and Pioneering Efforts

In contrast to these global successes, Vietnam faces persistent and multifaceted barriers to fully realizing its green finance potential. These include limited policy coherence, a narrow range of green financial products, and weak institutional capacity. Green loans disproportionately favor large enterprises, leaving small and medium-sized enterprises (SMEs) struggling with access due to significant information gaps. This challenge is exacerbated by the absence of a standardized green taxonomy, which heightens the risk of greenwashing and undermines investor confidence.

Surveys conducted in Vietnam have revealed significant hurdles in investor and consumer engagement in Vietnam. Only 30% of SMEs are aware of green credit products, and a mere 15% of retail investors express trust in green bonds, primarily driven by regulatory uncertainty and inherent risk aversion. Despite these widespread challenges, leading financial institutions such as BIDV and EVN Finance have emerged as pioneers in the field. BIDV's green loan portfolio has reached VND 71,000 billion (approximately USD 3 billion), with 97% of the loans disbursed to renewable energy projects. Similarly, EVN Finance issued a USD 75 million verified green bond, adopting international ESG standards to build credibility and attract international backing. However, broader market participation remains limited, indicating that these pioneering efforts, while commendable, are not yet sufficient to drive systemic change.

A notable shortcoming in Vietnam's green finance system is the complete absence of catastrophe (CAT) bonds, despite the country's severe exposure to climate risk. Unlike countries such as Jamaica and the Philippines, which have utilized CAT bonds to reduce fiscal burdens from natural disasters, Vietnam has not yet leveraged this climate-focused debt management tool. The primary challenges preventing the introduction of CAT bonds in Vietnam include incomplete legal frameworks for instruments like special purpose vehicles (SPVs) or parametric triggers, a lack of adequate information infrastructure for disaster modeling, and insufficient investor backing. This shortfall is particularly concerning given Vietnam's vulnerability to climate-related disasters, such as floods, typhoons, and droughts, which collectively caused USD 2.5 billion in damages in 2017 alone. Vietnam remains institutionally ill-prepared to implement equivalent financial instruments, thereby limiting its climate adaptability and highlighting a general underuse of innovative financial instruments in its green finance initiatives.

## 2.5. Identified Research Gaps

This review identifies three primary research gaps that are crucial for advancing Vietnam's green finance ecosystem. First, there is a notable lack of empirical studies evaluating the effectiveness of existing green finance policies, such as Directive No. 03/CT-NHNN. Existing research is largely descriptive or anecdotal, offering limited evidence on the direct impact of these policies on investment growth or quantifiable emissions reduction. This impedes a comprehensive understanding of policy outcomes, which is critical for Vietnam's sustainability ambitions.

Second, investor psychology and behavior have been minimally explored, particularly among retail investors and SMEs, despite survey data indicating low awareness of and trust in green finance products. The influence of cognitive biases, risk perceptions, and behavioural barriers remains understudied, yet these factors are pivotal for scaling market participation.

Finally, despite Vietnam's pronounced vulnerability to climate-induced disasters, there are no studies on the feasibility or design of CAT bonds within the Vietnamese context. This contrasts sharply with countries such as Jamaica and the Philippines, where such instruments are actively utilized. Legal, institutional, and market readiness deficits further exacerbate this gap, limiting Vietnam's potential to leverage innovative financing for climate adaptation.

These three research gaps are not isolated but are deeply interconnected, forming a reinforcing cycle that impedes Vietnam's green finance development. For instance, the lack of clear empirical evidence regarding policy effectiveness contributes directly to regulatory uncertainty. This uncertainty, in turn,

fuels low investor trust and awareness, further hindering broad market participation and the adoption of innovative instruments, such as CAT bonds. If the impact of existing policies is unclear and investors lack trust in the market, the introduction of new, complex financial products faces even greater resistance. Furthermore, the lack of innovative instruments, such as CAT bonds, means that Vietnam is deprived of crucial tools for climate adaptation, which could ultimately undermine the overarching sustainability goals that green finance policies are designed to achieve. This chain of interconnected challenges demonstrates that weaknesses in one area exacerbate difficulties in others, underscoring the necessity of a holistic approach that simultaneously addresses all three gaps for systemic changes.

### **3. Methodology**

This study employs a mixed-methods policy research design that integrates qualitative policy analysis, quantitative trend review, comparative benchmarking, and scenario modeling. This comprehensive approach is designed to evaluate Vietnam's green finance landscape and propose strategic pathways for scaling up investments through climate debt instruments, including green and catastrophe bonds. The chosen methodology is particularly well-suited to address the inherent complexity of Vietnam's green finance ecosystem, which encompasses regulatory frameworks, market behavior, and the potential for climate risk innovation. By combining diverse methods, the study enhances both the internal validity of its findings and the practical applicability of its policy recommendations (Creswell & Plano Clark, 2017; Brewer & Hunter, 2006; Greene, Caracelli, & Graham, 1989).

#### **3.1 Data Sources and Collection Strategy**

Given the limitations of primary data availability within Vietnam's emerging market context, this study primarily relies on secondary data. This includes information from authoritative sources such as the State Bank of Vietnam (SBV), Ministry of Finance (MOF), Office of the Prime Minister, and World Bank. Additionally, the study incorporates public disclosures from pioneering institutions such as BIDV and EVN Finance, alongside peer-reviewed academic articles and various industry reports published between 2015 and 2024. This strategic choice of data source ensured transparency and replicability. The rigor of the analysis is further maintained through cross-validation, for example, by comparing SBV data with the corresponding World Bank data, thereby building a robust evidence base despite the absence of direct data collection (Johnston, 2014; Bryman, 2016).

#### **3.2 Analytical Framework and Justification**

We employed six mutually reinforcing components to evaluate Vietnam's green finance ecosystem, with an emphasis on replicability and policy relevance (Creswell & Plano Clark, 2017; Yin, 2018):

(1) Policy effectiveness rubric. We rate core instruments (e.g., SBV Directive 03/CT-NHNN; MOF Circulars 155/2015, 96/2020, 101/2021) on four dimensions - clarity, coherence, transparency, and scalability - each scored 0-2 using an operational codebook adapted from public-sector green-bond guidance (Climate Bonds Initiative & UNEP Inquiry, 2015; World Bank, 2021; OECD, 2023). A composite Policy Effectiveness Index (PEI) is computed as the means of the four-dimension scores per instrument, then averaged across the instruments. Disagreements in scoring were reconciled by a second coder and reported (see Replicability section).

(2) Market trend analysis. Using secondary data (SBV, MOF, World Bank, issuer disclosures) for 2015-2024, we compute (i) the annual growth of green credit and labeled green bonds, (ii) the share of green credit in total lending, (iii) green bonds as a percentage of domestic bonds, and (iv) issuance concentration by issuer type. Descriptive statistics are appropriate in the case of data scarcity (Aerts & Cormier, 2009; McKenzie, 2012).

(3) Case studies (BIDV, EVN Finance). Cases were chosen to demonstrate issuance and international verification. Evidence sources include prospectuses, SPOs/assessments, and multilateral case notes

(World Bank, 2024), which are coded for instrument structure, verification, proceeds allocation, reporting, and constraints. Cross-case synthesis identifies replicable design features (Yin, 2018).

(4) Comparative benchmarking. We benchmark Vietnam against China, France, Indonesia, Thailand, and CAT-bond adopters (Mexico, Jamaica, and the Philippines) using a scorecard: taxonomy (Y/N), disclosure mandates (Y/N), fiscal incentives (0-2), GSS market depth (proxied by GSS share), and CAT-bond readiness (0-2). The inputs are drawn from OECD and World Bank materials and EU SFDR/Taxonomy documentation (OECD, 2024; World Bank, 2022; European Commission, 2022).

(5) Behavioural segmentation. We map investor segments along knowledge  $\tilde{A}$ — trust (low/high) using published surveys (IFC, 2023; Edwards *et al.*, 2023; Diep & Yen, 2024). For each segment, we specify barriers (e.g., ambiguity aversion, greenwashing concerns) and policy levers (product labeling, dashboards, guarantees) consistent with behavioural finance (Lo, 2005; OECD, 2020).

(6) CAT bond scenario design. We developed sovereign, corporate, and regional pool scenarios, specifying peril coverage, parametric triggers, payout layers, and governance pathways (Ando *et al.*, 2022; OECD, 2024). Triggers are defined using observable metrics (e.g., maximum sustained wind speed, 24-hour rainfall, flood stage exceedance) and data sources available via the World Bank/SEADRIF platforms. The scenarios emphasize legal feasibility (SPV arrangements), data requirements, and investor fit.

Together, these components allow an integrated assessment linking regulation, markets, behaviour, and disaster risk transfer to actionable reforms.

### **3.3. Limitations and Mitigation Strategies**

This study acknowledges three key limitations, each of which addresses targeted mitigation strategies to maintain analytical rigor and policy relevance (Johnston, 2014; Bryman, 2016; Maxwell, 2012). First, the absence of primary interviews due to resource constraints and Vietnam's limited data access is mitigated by triangulating multiple credible secondary datasets, such as policy documents, financial reports, and peer-reviewed articles, while leveraging BIDV and EVN Finance case studies for depth, which ensures a robust evidence base despite the lack of direct data collection (Johnston, 2014). Second, incomplete firm-level transaction data, which is a common challenge in Vietnam's emerging market, are addressed by relying on aggregate financial reports and macro trends from sources such as the SBV and World Bank with clear disclosure of data boundaries to maintain transparency and credibility (Bryman, 2016). Third, the lack of emission reduction quantification, which restricts the ability to directly assess environmental impact, is flagged as a direction for future research, thereby allowing the study to focus on financial and policy scalability in the current scope (Maxwell, 2012).

## **4. Results and Comparative Analysis**

This study explains Vietnam's current state of green finance, starting with policymaking effectiveness, followed by the development of green bonds, investor outlook, and catastrophe (CAT) bond feasibility.

### **4.1. Policy Effectiveness and Regulatory Frameworks**

Vietnam's green finance landscape has undergone gradual institutional development over the past decade, marked by a series of regulatory initiatives aimed at integrating environmental and social considerations into financial decision-making processes. A pivotal starting point was Directive No. 03/CT-NHNN issued by the State Bank of Vietnam (SBV) in 2015, which encouraged environmental and social risk screening during credit evaluation. This was followed by the Green Banking Development Scheme (SBV, 2018), which sought to align banking practices with global sustainability standards and Circular No. 101/2021/TT-BTC by the Ministry of Finance (MOF), which reduced green bond issuance fees by 50% as a fiscal incentive. Complementing these efforts, Circulars No. 155/2015/TT-BTC and No. 96/2020/TT-BTC introduced Environmental, Social, and Governance

(ESG) disclosure requirements for listed companies, gradually aligning Vietnam’s disclosure landscape with those of ASEAN and EU economies (Table 1).

Policy Name	Issuing Body	Year	Key Objectives/Provisions	Observed Impact/Limitations
Directive 03/CT-NHNN	No. SBV	2015	Mandated environmental and social risk screening in lending.	Initiated green credit growth, but non-binding.
Green Banking Scheme	SBV	2018	Aligned banking practices with global green standards.	Framework-level only; lacks enforcement mechanisms
Circular 101/2021/TTBTC	No. MOF	2021	Reduced green bond issuance fees by 50%.	Positive incentive, but insufficient to overcome broader barriers
Circular 155/2015/TTBTC	No. MOF	2015	Introduced ESG disclosure requirements for listed companies.	Early transparency measure, limited scope
Circular 96/2020/TTBTC	No. MOF	2020	Updated guidelines on ESG disclosure requirements.	Gradual progress, but lacks taxonomy support

Table 1: Key Green Finance Initiatives in Vietnam; source: Authors

By 2023, these policy efforts contributed to green credit reaching 4-5% of total lending, with 22-26% annual growth across 47 financial institutions (VietnamPlus, 2023; World Bank, 2024). Although notable, these figures underscore the limited systemic impact of current policies, which remain voluntary in nature and lack a formal and enforceable green taxonomy. In the absence of mandatory compliance or standardized definitions, market actors face uncertainty in implementation, and the risk of greenwashing is high. These policies signal direction but do not impose enforceable obligations, resulting in fragmented institutional responses rather than coordinated sector-wide transformation.

Comparative evidence supports this conclusion. For example, China’s 2015 Green Bond Catalogue and the establishment of Green Finance Pilot Zones have led to over USD 180 billion in green bond issuances by 2023, driven largely by top-down mandates and incentive alignment (OECD, 2024). Similarly, the EU’s Sustainable Finance Disclosure Regulation (SFDR) enforces ESG reporting standards and taxonomies, facilitating consistent classification and accountability across member states (European Commission, 2022). These systems offer a prescriptive regulatory model, in contrast to Vietnam’s ‘soft law’ approach, which relies on guidelines rather than binding directives.

Without a formal green taxonomy, Vietnam lacks a shared definition of what qualifies as ‘green,’ thereby undermining investor confidence and market integrity in the GSS. This regulatory gap hinders the scaling of green financial products and contributes to capital allocation inefficiencies. Although the issuance of ESG-related circulars is commendable, their limited scope and voluntary status fall short of international best practices.

This suggests that while Vietnam’s regulatory interventions have laid the foundational groundwork, they have not yet achieved the ‘regime-level’ transition necessary to mainstream green finance. Instead, what is observed can best be characterized as ‘niche-level experimentation,’ where isolated initiatives by pioneering institutions are not yet supported by a comprehensive legal and fiscal infrastructure.

In summary, Vietnam's current policy architecture offers important directional guidance but lacks the mandates, taxonomies, and enforcement mechanisms required to institutionalize green finance at scale. A shift from voluntary norms toward mandatory regulations and targeted fiscal incentives is necessary to drive systemic adoption and align with global sustainable finance trajectories.

## **4.2. Green Bond Market Development: Case Studies and Benchmarks**

Vietnam's green bond market remains promising, with total issuances surpassing USD 1 billion by 2023, yet accounting for only 1.5% of the total domestic bond market (Tuoi Tre News, 2024; VietnamPlus, 2023). This low share reflects the country's early stage of market development and the concentration of activity among a few pioneering institutions. The investor base remains narrow, predominantly comprising institutional actors, while retail investor engagement is limited, largely because of a lack of accessible products, clear green labeling, and transparent ESG disclosure frameworks.

Despite these limitations, two Vietnamese financial institutions have emerged as early leaders: the Bank for Investment and Development of Vietnam (BIDV) and the EVN Finance Joint Stock Company. Their case studies illustrate both the potential and constraints of green bond issuance in Vietnam's current regulatory environment.

### **Case Study: Bank for Investment and Development of Vietnam (BIDV)**

BIDV is the most prominent Vietnamese institution proactively engaging with international green finance frameworks. In 2023, BIDV issued VND 2,500 billion (approximately USD 104 million) in green bonds, certified under Moody's SQS2 assessment framework, a signal of alignment with global expectations of transparency and environmental impact (World Bank, 2024; BIDV, 2023). As of September 2023, BIDV's total green loan portfolio had reached VND 71,000 billion (~USD 3 billion), with 97% of the funds allocated to renewable energy projects, particularly wind and solar infrastructure (World Bank, 2024; BIDV, 2023). This issuance is significant for several reasons. First, it shows that Vietnam's state-owned banks can meet rigorous international standards, which is an important reputation marker for the country's financial sector. Second, it reveals the reliance on external verification frameworks, such as Moody's Second-Party Opinion (SQS2 rating), to fill the credibility vacuum left by the absence of a national green tax policy. Note that without a centralized taxonomy or disclosure system, the scope of what qualifies as "green" remains institutionally subjective and difficult to benchmark.

From a systemic perspective, BIDV's case illustrates a form of niche innovation in an underregulated environment. Its leadership is not primarily a function of a conducive ecosystem but rather the result of institutional capacity and political alignment with national climate goals.

However, this success is difficult to replicate without supportive structural mechanisms, such as tax incentives, ESG registries, or a centralized monitoring authority. Thus, while BIDV sets a valuable precedent, it also highlights the fragility of a system that is overly reliant on first movers operating without a comprehensive national framework.

### **Case Study: EVN Finance Joint Stock Company**

EVN Finance, a subsidiary of Vietnam Electricity (EVN), issued VND 1,725 billion (USD 75 million) in green bonds in 2022, verified by GuarantCo and ResponsAbility Investment AG, two internationally recognized institutions in the sustainable investment field (GuarantCo, 2022; World Bank, 2024). These bonds are dedicated to funding clean energy infrastructure, particularly solar energy assets, and have received substantial attention from foreign impact investors.

Unlike BIDV, EVN Finance operates as a non-bank financial institution, making its entry into the green bond market particularly noteworthy. This demonstrates that non-bank actors can play a pivotal role in

diversifying the green finance ecosystem. However, EVN Finance’s success hinges on international partnerships and project-specific guarantees rather than domestic regulatory support. Its reliance on GuarantCo’s guarantee structure, for instance, reflects the Vietnamese market’s risk aversion and dependence on external de-risking mechanisms to attract capital.

Furthermore, EVN Finance’s focus remains sectoral, limited to energy, and it lacks a broad ESG-integration strategy. While the issuance succeeded in attracting global attention, its replication has been minimal so far. This highlights the systemic challenge of scaling up green finance without coordinated policy support. The lack of secondary market development, retail engagement, and diversification beyond energy further constrains market growth potential.

### 4.3. Strategic Insights and Comparative Perspective

These two cases collectively demonstrate Vietnam’s capacity to engage with international sustainable finance mechanisms and attract global capital for green projects. However, they also expose a dual-layered fragility in the system: one stemming from the absence of regulation and the other from market fragmentation (Table 2).

<b>Key Challenges/Observations</b>	Definitional ambiguity due to absence of national green taxonomy; limited policy support constrains scalability.	High-quality verification and strong international interest; replication hindered by systemic policy and market fragmentation.
<b>Allocation to Green Projects</b>	97% allocated to renewable energy (wind and solar projects)	100% dedicated to verified clean energy infrastructure
<b>Green Portfolio Value (as of Sep 2023)</b>	VND 71,000 billion (~USD 3 billion)	Not publicly disclosed (energy sector specific)
<b>Certifications/Verifications</b>	Moody’s SQS2 Framework	GuarantCo and ResponsAbility Investment AG
<b>Type of Bond</b>	Green Bond	Green Bond
<b>Bond Value</b>	VND 2,500 billion (USD 104 million)	VND 1,725 billion (USD 75 million)
<b>Year of Issuance</b>	2023	2022
<b>Institution</b>	BIDV	EVN Finance

Table 2: Green Bond Issuances and Portfolio Details of BIDV and EVN Finance

Although BIDV and EVN Finance have issued technically sound and externally verified green bonds, their experiences remain exceptional rather than foundational. The green bond ecosystem in Vietnam is currently held together by a handful of capable institutions rather than an enabling infrastructure. This sharply contrasts with international examples such as: France, which issued over EUR 45 billion in sovereign green bonds underpinned by a robust legal framework and ESG disclosure mandates (OECD, 2024); Indonesia, which successfully launched retail green sukuk, engaged individual investors, and broadened financial inclusion (World Bank, 2022); while Thailand has institutionalized ESG reporting standards through its Securities and Exchange Commission, fostering transparency and trust.

In these markets, the state acts as a facilitator, creating conditions for scale, trust and transparency. In Vietnam, by contrast, market success depends on institutional bravery and international partnerships rather than systemic design. To move beyond isolated cases, Vietnam must:

1. Introduce a legally binding green taxonomy, as both BIDV and EVN Finance face definitional ambiguity.
2. Establish a public registry for green bond issuances to build market transparency and secondary trading depth.
3. Expanding fiscal and non-fiscal incentives, such as tax relief and ESG scoring, encourages other institutions to follow suit.

Without these systemic reforms, the green bond market will remain a patchwork of pilot projects rather than a functioning vehicle for sustainable transformation.

### 4.3. Investor Behavior and Market Participation Challenges

Investor behavior remains a significant bottleneck in scaling green finance in Vietnam. Empirical surveys reveal persistent issues of low awareness, limited trust, and risk aversion among retail investors and SMEs. For example, recent data indicate that only 30% of SMEs are aware of green credit offerings, and only 15% of retail investors express confidence in green bonds, largely due to fears of greenwashing and perceived regulatory ambiguity (Diep & Yen, 2024; IFC, 2023). This low-trust, low-awareness environment creates a psychological barrier that suppresses the demand for green financial products, even when supply side innovations are present.

Segment Name	Characteristics	Key Barriers	Behavioral	Recommended Tailored Policy Interventions
Low-knowledge low-trust	Rural SMEs, informal sector	Financial lack of ambiguity	illiteracy, awareness, aversion	Foundational financial literacy programs, simplified product information.
High-knowledge low-trust	Fintech-savvy youth	Greenwashing lack of transparency, perceived risk	fear,	Green-bond labeling, digital ESG platforms, verifiable impact reporting.
Low-knowledge high-trust	Middle-income consumers banking with state institutions	Lack of awareness of green products, limited outreach		Targeted green banking outreach leveraging existing trust, simplified green product offerings.
High-knowledge high-trust	Institutional investors (e.g., AIA, Prudential)	Limited product diversity, incentives	insufficient	Greater product diversity, tax incentives, robust ESG ratings

Table 3: Investor Behavioural Segments and Tailored Policy Interventions

These findings align with the behavioural finance theory, which highlights the role of cognitive biases, information asymmetries, and ambiguity aversion in investor decision-making (Lo, 2005; OECD, 2020). In the Vietnamese context, the absence of standardized green definitions and insufficient ESG disclosures reinforce these biases. Investors struggle to differentiate between genuinely sustainable offerings and superficial green products, exacerbating skepticism and deterring participation.

Moreover, while Vietnamese consumers are increasingly exposed to sustainability themes through global media, they continue to prioritize short-term financial metrics such as return, liquidity, and

perceived safety. A McKinsey-backed study by Edwards *et al.* (2023) shows that even among urban, higher-income individuals, green product adoption remains minimal unless accompanied by explicit government backing or clear risk-adjusted returns. This indicates that financial motivation alone is insufficient; green finance must overcome narrative gaps and trust deficits.

To unpack these behavioural barriers more precisely, Diep and Yen (2024) propose a 2x2 investor segmentation model, which this study adopts as an analytical framework. This model classifies investors along two dimensions: financial literacy (low vs. high) and trust in green finance (low vs. high). Each segment exhibits distinct challenges and requires tailored policy responses (Table 3).

**Low-knowledge-low-trust segment:** Includes rural SMEs and individuals in the informal sector. They face financial illiteracy, low access to ESG information, and a generalized distrust of formal finance. For this group, foundational interventions, such as public financial literacy campaigns and outreach via local banking agents, are essential.

**High-knowledge-low-trust group:** Predominantly fintech-savvy youth and professionals who engage with digital finance platforms. They are aware but remain skeptical, often citing greenwashing concerns. Targeted policies, such as verifiable green bond certification, digital ESG dashboards, and mandatory impact disclosures, are recommended to build transparency.

**Low-knowledge-high-trust segment:** Typically, middle-income clients bank with state-owned institutions. Although they trust financial intermediaries, they lack an understanding of green finance products. Clear product labeling, simplified application procedures, and bundled offerings with traditional savings products can enhance uptake among this group of women.

**High-knowledge-high-trust group:** Institutional investors (e.g., Prudential, AIA) and some affluent urban individuals. They are willing to participate but require more sophisticated instruments, such as tax incentives, secondary market liquidity, and advanced ESG integration to scale up their involvement.

International precedents reinforce these lessons in the following ways. In the EU, the Sustainable Finance Disclosure Regulation (SFDR) mandates clear product classification, enabling both institutional and retail investors to distinguish sustainable investments. Similarly, Thailand's Securities and Exchange Commission (SEC) enforces ESG disclosure standards that have improved retail participation and market trust (World Bank, 2022). Vietnam, lacking such rigorous regulatory instruments, remains caught in a 'low-participation equilibrium' where limited investor trust constrains product growth, and product scarcity further dampens investor interest.

To operationalize the 2x2 segmentation, we pair low-knowledge-low-trust audiences with simplified, taxonomy-labeled deposits/notes distributed via state banks, while high-knowledge-low-trust users receive digital ESG dashboards and verified impact reports (IFC, 2023; Edwards *et al.*, 2023). For institutional segments, scale depends on taxonomy alignment, secondary market liquidity, and fiscal incentives, which together reduce ambiguity aversion and increase allocation to labeled debt (Lo, 2005; OECD, 2020).

#### **4.4. Catastrophe Bond Feasibility and Scenarios for Vietnam**

Vietnam's acute vulnerability to climate change, manifested through frequent floods, typhoons, and droughts, necessitates the exploration of innovative financial mechanisms to enhance climate resilience. The conspicuous absence of catastrophe (CAT) bonds in its financial architecture, particularly when contrasted with global peers who have effectively leveraged such instruments, is increasingly conspicuous. Despite estimated economic damages of USD 2.5 billion in 2017 alone and projections that climate-induced losses may reach up to 3% of GDP annually by 2030 (General Department of Disaster Prevention and Control, 2019; World Bank, 2021), Vietnam has yet to issue a CAT bond.

CAT bonds are parametric insurance-linked securities that trigger payouts when predefined climate thresholds are reached (e.g., wind speed and rainfall). This ensures rapid post-disaster liquidity for governments or institutions, mitigating fiscal pressure without needing to assess actual loss - a feature particularly useful for countries such as Vietnam, where damage-assessment infrastructure is still underdeveloped (Ando *et al.*, 2022; OECD, 2024).

#### 4.5. Global Benchmarking Insights

Several countries with similar climate exposures offer compelling case studies. Jamaica’s USD 185 million CAT bond (2021), supported by European Insurance-Linked Securities (ILS) investors, provided effective post-hurricane relief. Mexico’s USD 485 million FONDEN-backed bond (2020) and the Philippines’ USD 225 million issuance via SEADRIF (2019) similarly showcase how CAT bonds can function as climate adaptation tools and fiscal stabilizers (Ando *et al.*, 2022).

Scenario design parameters. For Vietnam, we specify (i) sovereign coverage for typhoon and flood perils via a World Bank/SEADRIF-facilitated SPV; (ii) corporate coverage for state-linked energy assets (BIDV/EVN Finance) to protect cash flows; and (iii) an ASEAN pooled layer to diversify risk. Triggers use observable metrics (e.g., JTWC maximum sustained wind speed, 24-hour rainfall at national gauges, river-stage exceedance) with layered payouts (e.g., 30/60/100% at increasing severities) and independent calculation agents to ensure speed and credibility (Ando *et al.*, 2022; OECD, 2024). This design minimizes basis risk and aligns with the data infrastructure available through multilateral facilities. Table 4 provides a comparative overview of Vietnam’s green finance and disaster risk financing frameworks relative to global peers, highlighting areas of strength and needed reform.

Country/Region	Key Policy Frameworks	Green Bond Market Size / Share	Key Green Finance Products	CAT Bond Adoption	Noteworthy Strengths / Lessons Learned
Vietnam	Voluntary policies; nascent ESG disclosure; no green taxonomy	USD billion (≈1.5% of domestic bond market)	1 of Green credit; green bonds (BIDV, EVN Finance)	No	Institutional pioneers; strong political will; lacks mandatory frameworks and disaster financing tools
China	Green Bond Catalogue (mandatory); Green Finance Pilot Zones	USD 180 billion (2023)	Green bonds; green credit	Limited	Top-down enforcement; robust issuance scale; unified policy architecture
France	Legally binding EU Taxonomy; SFDR; Green Deal fiscal strategy	EUR 45 billion (sovereign green bonds)	Sovereign green bonds; ESG-focused bonds	Limited	Advanced ESG integration; strong legal foundation; investor trust through transparency

<b>Indonesia</b>	Sovereign green sukuk; national green taxonomy	Growing rapidly	Retail green sukuk; green bonds	No	Retail participation success; policy innovation; regional taxonomy alignment
<b>Thailand</b>	SEC-mandated ESG disclosures; taxonomy in development	Emerging	Green bonds; green credit	No	Strong regulatory reforms; investor confidence through disclosure mandates
<b>Jamaica</b>	Legal infrastructure for CAT bonds; ILS investor engagement	N/A	CAT bonds	Yes (USD 185 million, 2021)	Early adopter of parametric bonds; effective risk transfer; regional collaboration
<b>Mexico</b>	FONDEN sovereign disaster framework; parametric triggers	N/A	CAT bonds	Yes (USD 485 million, 2020)	Multi-hazard coverage model; public-private integration; institutional maturity

Table 4: Comparative Green Finance Landscape: Vietnam vs International Benchmarks; source: Authors

These international cases demonstrate that CAT bonds are not solely reliant on financial innovation; they demand robust regulatory environments, legal definitions for instruments such as Special Purpose Vehicles (SPVs), disaster modeling capability, and investor education. Vietnam currently lacks these prerequisites, preventing the formation of a legal or operational foundation for CAT bonds.

#### 4.6. Key Barriers in the Vietnamese Context

Vietnam's roadblocks are primarily institutional and legal, rather than financial. as noted by the OECD (2024). Three central constraints persist.

1. **Absence of a Legal Framework:** Vietnam has no provisions for establishing SPVs or parametric payout structures, which are the backbone of the CAT bond architecture.
2. **Lack of Risk Modeling Infrastructure:** Unlike Mexico or the Philippines, Vietnam lacks a standardized, government-supported disaster risk modeling system capable of feeding reliable data into parametric triggers.
3. **Low Investor Awareness and Market Depth:** Institutional investors in Vietnam are unfamiliar with CAT bonds, and there are no domestic precedents to build trust or market knowledge.

#### 4.7. Scenario-Based Feasibility Assessment

To address these gaps while leveraging existing green finance experience, this study proposes three following tailored CAT bond implementation scenarios: sovereign bond, corporate bond, and regional pool; each benchmarked against successful international precedents (Table 5).

Scenario Type	Proposed Mechanism/Issuing Entity	Target Assets/Risks	Key Global Benchmarks	Primary Benefits/Challenges for Vietnam
Sovereign Bond	World Bank / SEADRIF	Public infrastructure, flood-prone areas (Mekong Delta)	Philippines (2019), Mexico (FONDEN model)	Fiscal resilience, international expertise; requires legal framework development.
Corporate Bond	BIDV Finance / EVN	Renewable energy infrastructure	Jamaica (2021), Mexico (2020 corporate models)	Builds on existing green bond experience; requires specific legal/regulatory support.
Regional Pool	ASEAN+3 SEADRIF	Diversified climate risks across region	Caribbean Catastrophe Risk Insurance Facility (CCRIF)	Reduced premiums through risk-sharing; requires strong regional cooperation

Table 5: Proposed Catastrophe Bond Scenarios for Vietnam; source: Authors

These scenarios are structured to align with Vietnam’s current capacities and its gradual path towards legal and institutional readiness. Importantly, the corporate issuance route via pioneers such as BIDV and EVN Finance could serve as a lower-risk, scalable entry point, building on their green bond experience and international recognition (World Bank, 2024).

#### 4.8. Policy Implications and Future Pathways

Rather than viewing CAT bonds as a distant objective, Vietnam should consider them a complementary tool for existing mitigation-focused finance (e.g., green bonds). Their parametric nature makes them especially suited for adaptation and resilience, areas where Vietnam remains underfunded. The Ministry of Finance, in coordination with the SBV and external partners such as the World Bank and SEADRIF, should begin technical feasibility assessments, starting with flood-prone provinces in the Mekong Delta.

Incorporating CAT bonds into Vietnam’s green finance strategy would not only diversify the country’s sustainable finance toolkit but also send a strong signal of climate adaptation readiness to domestic and international stakeholders. This shift is essential if Vietnam is to meet its estimated USD 368-380 billion green investment needs by 2040 and withstand the intensifying financial risks posed by climate change (Vietnam Investment Review, 2024).

### 5. Discussion

Vietnam has made encouraging strides toward building a green financial system. However, the country remains constrained by systemic limitations, including a lack of regulatory clarity, shallow market depth, low investor confidence, and the complete absence of climate resilience tools, such as catastrophe bonds (CAT bonds). These shortcomings collectively hinder Vietnam's capacity to mobilize the scale of capital necessary for a net-zero transition and climate adaptation.

### **5.1. Structural Limitations and Regulatory Ambiguity**

Vietnam's green finance policy framework remains normative rather than prescriptive, and lacks enforceable mandates or a unified taxonomy. This voluntary approach contrasts sharply with those of global leaders such as the European Union, with its Sustainable Finance Disclosure Regulation (SFDR), and China, with its Green Bond Endorsed Project Catalogue, both of which mandate compliance and provide clear eligibility criteria for green assets (European Commission, 2022; Climate Bonds Initiative, 2024). The absence of such instruments in Vietnam results in ambiguous definitions and inconsistencies in their application, significantly increasing the risk of greenwashing.

Moreover, Circular No. 101/2021/TT-BTC offers modest transaction-cost incentives. Broader fiscal tools, such as tax deductions, green loan guarantees, and blended finance mechanisms, prevalent in peer economies such as Indonesia and France, are absent. These instruments have proven crucial for shifting capital flows toward sustainable projects (OECD, 2024). Without such systemic levers, Vietnam's green finance environment will remain fragmented and overly reliant on voluntary adoption of green finance.

### **5.2. Pioneering Institutions and Systemic Inertia**

BIDV and EVN Finance have emerged as pioneers in Vietnam's green finance ecosystem, issuing certified green bonds aligned with international standards such as Moody's SQS2 and GuarantCo verification. These efforts, while commendable, are institution-led and have not been widely replicated in other countries. This limited diffusion reflects broader systemic inertia. The absence of standardization and policy enforcement creates high entry barriers for other institutions, stalling broader market participation and innovation in the field.

This dynamic aligns with Auld *et al.* (2008), who caution that voluntary, private-led initiatives without public backing tend to yield marginal improvements and risk stalling before reaching a systemic scale. Vietnam's reliance on a few market leaders without building supporting regulatory infrastructure suggests a model that is neither resilient nor scalable. Without policy reform, these pioneering efforts risk becoming isolated success stories rather than catalysts of systemic change.

### **5.3. Behavioural Barriers and the Imperative for Tailored Engagement**

Investor psychology is a deeply rooted challenge. Survey data show that only 30% of SMEs are aware of green credit, and only 15% of retail investors trust green bonds (Diep & Yen, 2024; IFC, 2023). These figures highlight a chronic trust deficit driven by a lack of transparency, regulatory uncertainty, and low financial literacy. According to the behavioural finance literature, ambiguity aversion and status quo bias play key roles in suppressing market engagement (Lo, 2005; Thaler & Sunstein, 2008).

Vietnam's financial culture, which is largely risk-averse and underexposed to sustainability frameworks, requires segmented interventions. As outlined in Section 4.3, tailored approaches, such as targeted green banking outreach, ESG product labeling, and simplified communication strategies, are essential. Thailand's success in enforcing ESG disclosure and investor transparency through SEC regulations demonstrates that building behavioural trust requires regulatory scaffolding, not just education.

### **5.4. The Critical Absence of Catastrophe Bond Infrastructure**

One of the most critical oversights in Vietnam's green finance strategy is the absence of a catastrophe (CAT) bond infrastructure. This is particularly troubling given the country's exposure to climate-related disasters, including floods and typhoons, which cost an estimated USD 2.5 billion in 2017 (General Department of Disaster Prevention and Control, 2019). With insurance penetration remaining below 3%, the fiscal risk of natural hazards is disproportionately borne by the government.

The barriers to CAT bond implementation in Vietnam are primarily legal and institutional, such as the lack of frameworks for special purpose vehicles (SPVs) and parametric triggers, rather than capital or investor appetite. This is evident in comparison to Jamaica's 2021 CAT bond (USD 185 million) and the Philippines' 2019 issuance through SEADRIF (USD 225 million), both of which were facilitated by strong regulatory infrastructure and international partnerships (Ando *et al.*, 2022).

Vietnam's current green finance focus remains overly mitigation-centric, emphasizing renewable energy. However, without resilience-focused tools such as CAT bonds, the country risks being vulnerable to shocks that could derail its sustainable development agenda. Incorporating CAT bonds would diversify financial tools, attract impact investors, and alleviate post-disaster fiscal pressure.

### **5.5. Vietnam's Global Standing and Future Trajectory**

Vietnam is at a strategic inflection point. The country has demonstrated strong political will and early-stage institutional innovation through entities such as the BIDV and EVN Finance. However, systemic gaps in policy coherence, investor engagement, and financial product diversity continue to prevent the market from reaching its full potential.

In comparison with international leaders:

- China boasts top-down enforcement and fast-tracked market scaling.
- France combines robust legal mandates with ESG integration across the bond markets.
- Indonesia offers inclusive financial models, such as retail green sukuk.
- Jamaica and Mexico illustrate the effectiveness of disaster risk bonds for climate adaptation.

Vietnam can leverage its regional relationships and international development ties to adopt such innovations. Its flexible governance model and willingness to experiment position it well for adaptation, but only if future reforms are proactive, integrated, and rigorously enforced.

### **5.6. Policy Recommendations**

This study proposes a sequenced roadmap comprising five interrelated policy actions to enhance Vietnam's green finance ecosystem and improve its resilience to climate-related risks. These recommendations are grounded in the empirical findings outlined in Sections 4 and 5, supported by international precedent, and tailored to Vietnam's institutional context, regulatory capacity and market readiness. Their strategic implementation is essential for enabling Vietnam to meet its net-zero commitment by 2050 and strengthening its position as a regional leader in sustainable finance.

First, it is important to establish a legally binding national green taxonomy. As outlined in Section 5.1, the absence of standardized definitions for green investments fosters inconsistent practices, heightens greenwashing risks, and erodes investor trust. A green taxonomy offers a clear classification framework essential for aligning credit allocation, bond certification, and ESG reporting with environmental goals. Drawing from the ASEAN Taxonomy for Sustainable Finance and the EU Taxonomy, Vietnam should prioritize sectors critical to decarbonization and adaptation - namely, energy, agriculture, construction, and transportation - in its initial rollout (ASEAN Taxonomy Board, 2022; European Commission, 2022). A look at precedents in the EU and Indonesia shows that early versions of national taxonomies were drafted and piloted within a 12-18-month time frame (World Bank, 2022). Moreover, rapid yet consultative development, led by the State Bank of Vietnam (SBV), Ministry of Finance (MOF), and State Securities Commission (SSC), with input from financial institutions and civil society, will help ensure both legitimacy and enforceability. Key performance indicators (KPIs) should include the

adoption rates of taxonomy by regulated institutions and reductions in unverified green bonds post-implementation.

Second, Vietnam should develop a legal and institutional framework for catastrophe bonds (CAT bonds). Despite being one of the most climate-vulnerable countries in Southeast Asia, Vietnam currently lacks parametric risk-transfer mechanisms. This stands in contrast to peer nations like the Philippines, which launched a USD 225 million CAT bond via SEADRIF and the World Bank in 2019, and Jamaica, which issued a USD 185 million CAT bond in 2021 (Ando *et al.*, 2022; OECD, 2024). Implementing CAT bonds requires a complex enabling environment, including legislation for special purpose vehicles (SPVs), disaster data infrastructure, and a legal basis for parametric pay-outs. A three-year timeline is therefore appropriate and aligns with the average preparatory phase in comparable economies (World Bank, 2021). A phased approach is advisable, beginning with a sovereign pilot bond focused on high-risk areas like the Mekong Delta, co-developed with the World Bank or SEADRIF, before expanding to corporate-level issuance by entities such as BIDV or EVN Finance.

Third, Vietnam should introduce fiscal incentives for green finance. While regulatory frameworks have expanded, market participation remains shallow because of limited demand-side support. Drawing on the EU Green Deal and Indonesia's green sukuk strategy, Vietnam could implement tax credits for institutional green bond investors, loan guarantees for SMEs in clean technology, and blended finance models for infrastructure (Schatzenstaller, 2023; Climate Bonds Initiative, 2024). The urgency of stimulating private sector participation required for fiscal reform is in line with Vietnam's growing climate investment gap. These incentives should be conditional on compliance with forthcoming national taxonomy and ESG reporting requirements to safeguard financial and environmental integrity.

Fourth, Vietnam should mandate ESG reporting by all publicly listed companies and major financial institutions. Currently, ESG disclosures are voluntary and inconsistent, undermining market transparency and investor confidence. Thailand's SEC provides a proven model: its mandatory ESG regime, implemented within 18 months, significantly increased the reporting quality and market alignment with global standards (World Bank, 2023). Vietnam should follow suit by adopting frameworks such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) and integrating them into SSC listing regulations and SBV banking supervision. A phased rollout - beginning with VN30 companies and expanding to all large-cap firms - will ease compliance while accelerating market-wide standardization. The success of this policy should be monitored through ESG score improvements, foreign investor inflow, and compliance rates.

Finally, Vietnam should scale up national green finance literacy and outreach programs targeting SMEs, retail investors, women, and youth-led businesses. The findings in Section 4.3 indicate widespread behavioural barriers, with only 30% of SMEs aware of green credit products and only 15% of retail investors trusting green bonds. Global evidence from the IFC and McKinsey shows that targeted education campaigns, when sustained over a 1-2 year period, can measurably shift consumer behaviour and increase trust in sustainable finance instruments (Edwards *et al.*, 2023; IFC, 2023). Vietnam should integrate green finance modules into high-school economics curricula, SME support programs, and digital platforms such as e-wallets and banking apps. Communication campaigns should be tailored by segment, and performance should be tracked through changes in awareness, product uptake, and financial inclusion.

Together, these five policy interventions form a cohesive strategy to bridge institutional gaps, unlock private capital, and enhance climate resilience. By aligning with international benchmarks and accounting for Vietnam's domestic readiness, the proposed timelines offer a feasible yet ambitious roadmap for achieving the 2050 net-zero goal.

In summary, the proposed recommendations are not standalone interventions but interdependent levers that, when implemented in a coordinated and sequenced manner, can fundamentally transform Vietnam's green-finance ecosystem. They respond directly to the structural and behavioural challenges identified in this study and are based on international experience and domestic feasibility. Their

successful implementation will require strong political will, interagency collaboration, and continuous stakeholder engagement. If pursued with rigor and urgency, these measures can help Vietnam build a resilient, inclusive, and innovation-driven green financial system capable of supporting its climate goals and sustainable development.

## **6. Study Limitations and Future Research**

While this study offers timely and policy-relevant insights into Vietnam's green finance landscape and the potential role of climate debt instruments, it has several limitations that must be acknowledged.

First, the research relies primarily on secondary data sources, including policy documents, institutional reports, and financial databases, which constrain the ability to draw causal links between green finance policies and environmental or market outcomes. For instance, while trends in green credit growth and green bond issuance were analyzed in relation to specific policy interventions, the absence of disaggregated firm- or investor-level data prevents precise attribution of outcomes to individual instruments. Moreover, key behavioural barriers, such as investor distrust or SME-level access challenges, were identified through existing surveys and industry reports rather than original data collection. This reliance on secondary sources limits the study's empirical granularity and leaves open questions regarding the micro-level dynamics that shape green finance adoption in the country.

Second, the absence of extended-period data on emissions reductions and adaptation outcomes restricts the ability to evaluate the actual environmental impact of these programs. While credit volumes and bond issuances are useful indicators of market development, they do not directly measure effectiveness in terms of carbon abatement, climate risk mitigation or resilience building. This challenge reflects a broader issue in emerging markets, where reliable emissions-linked financial datasets are either unavailable or are fragmented across institutions.

Third, the study does not include stakeholder interviews or fieldwork, which could have enriched the analysis of institutional readiness, the legal feasibility of catastrophe bonds, and investor risk perception. Without primary insights from regulators, financial institutions, or policymakers, some assumptions about capacity and implementation timelines, though grounded in international benchmarks, may not fully reflect the realities of Vietnam's financial governance environment.

These limitations highlight several important avenues for future research. First, researchers should prioritize collecting primary data through interviews, structured surveys, and field experiments involving SMEs, banks, and retail investors. Such efforts would allow for a more robust understanding of behavioural finance barriers and institutional bottlenecks, as well as a more accurate modeling of policy effectiveness. Second, future studies should seek to construct linked datasets that match green financial flows with emissions performance or resilience metrics, thereby enabling the empirical testing of the environmental impact of specific financial instruments. Third, the legal and technical feasibility of catastrophe bonds in Vietnam warrants a dedicated legal and actuarial study, ideally conducted in partnership with government agencies and multilateral organizations in Vietnam.

Finally, Vietnam's transition from niche green finance initiatives to a full-scale green financial system presents a rich opportunity for comparative research within ASEAN and across other climate-vulnerable economies. By tracking the evolution of policy frameworks, regulatory enforcement, and financial innovation over time, researchers can contribute to building a regional evidence base that informs adaptive and scalable models of climate finance.

## **7. Conclusion**

In conclusion, while institutional pioneers like BIDV and EVN Finance show promise (World Bank, 2024), Vietnam's green finance ecosystem remains constrained by regulatory ambiguity, shallow markets, and behavioural inertia, needing USD 368-380 billion by 2040, with CAT bonds addressing underfunded resilience (Vietnam Investment Review, 2024). Coordinated reforms can position Vietnam

as a regional leader, offering a replicable model for developing climate-vulnerable economies through collaborative partnerships.

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## Appendix

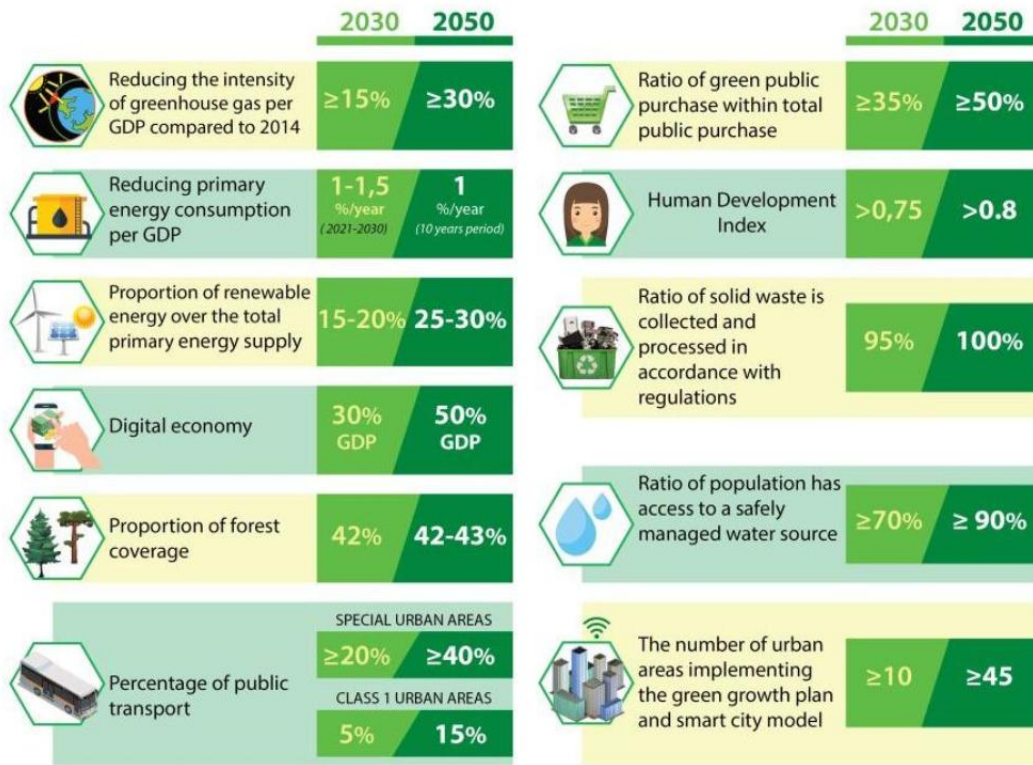


Figure 1: Vietnam National Strategy on Green Growth, for 2021-2030 period, vision to 2050 (source: Vietnam News Agency).

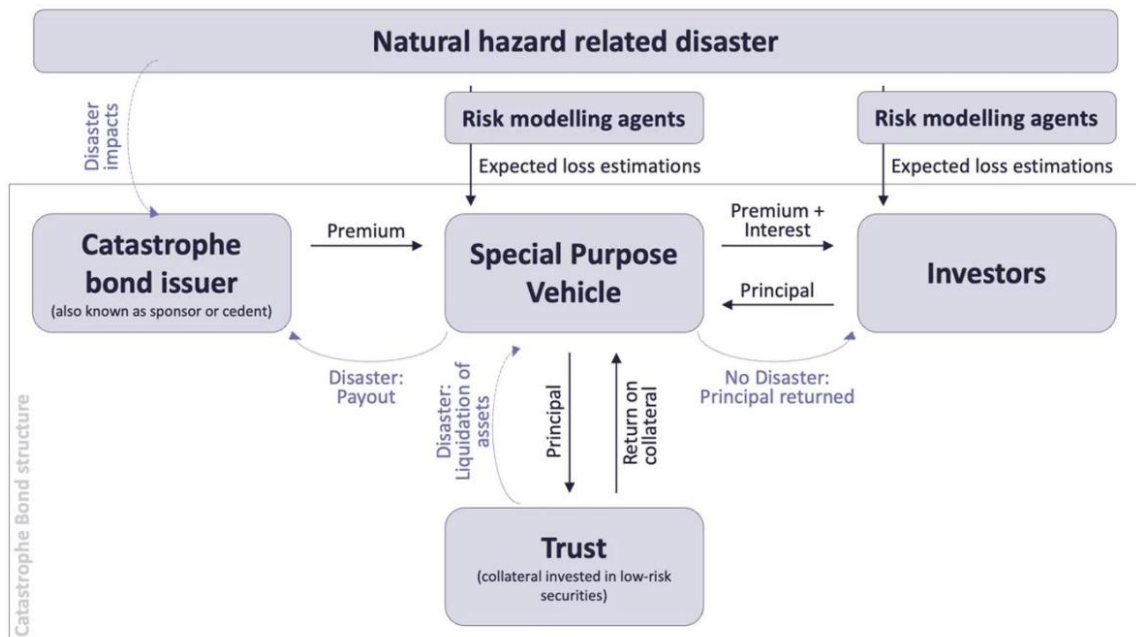


Figure 2: CAT bond model (Source: Reitmeier, 2024)

# Mother Tongue, Starting Age, and Child's Response to Schooling in Primary Schools in Lagos State, Nigeria: Implications for Policy and Institutional Administration

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## Abstract

*The issue of using the mother tongue as a medium of instruction in early childhood and primary education in Nigeria has recently attracted many comments. Similar to this is the adoption of age restriction as a requirement for admissions into all levels of education in Nigeria. It is on these premises that this study examined the nexus among the mother tongue, starting age, and child's response to schooling in the multilingual city of Lagos, Nigeria. Taking into cognisance the shock of transitioning from home to school for the first time, the study investigated how differences in the language of instruction and starting age impacted children's adaptability and enthusiasm at the first entry into school. A descriptive survey research design was used, and the population consisted of all the approved 11,550 Early Childhood Care and Development Centres (ECCDC) with all their 43,309 teachers in Lagos State. A random sampling technique was used to select 578 ECCDC and 2,165 teachers. A set of questionnaires and an open-ended interview were the instruments used for the collection of data. Three hypotheses were tested using regression analysis at 0.05 level of significance, and the results showed that both mother tongue and starting age do not predict a child's response to schooling. The findings provide critical understandings for policy formulation and institutional administration aimed at enhancing children's early educational experiences in multilingual and multicultural contexts. The study, therefore, recommends de-emphasising the use of mother tongue and flexibility in admission policies into all levels of education in Nigeria.*

**Keywords:** admission requirements, mother tongue, multilingual, response to schooling, starting age

## 1. Background to the Study

Children's response to schooling has always been a major concern for early childhood educators, researchers and school administrators. For example, Perry, Dockett, and Howard (2000) expressed concerns about the types of adjustments a child is expected to make on their first call in school. These adjustments, they reported, may make schooling unattractive to children in the first instance. More children begin the school system by following the state's approved and compulsory school requirements. These requirements are stereotypically founded on a definite chronological age, and they seem to be created more for suitability and supposed fairness than based on what empirical studies have shown about child development. Implicitly, changing from home to school is not always easy for children. The reason for this may not be unconnected with the challenge of leaving all the familiar people for a completely strange environment. At this stage, it may not be easy to acclimatise quickly to the new environment with its new requirements. This partly accounts for the reasons why many children are somehow reluctant to go to school in the first instance. The challenges could be more profound if the child's mother tongue is not the language of instruction in the school. This is quite common in a multilingual city like Lagos (Nigeria). Mother tongue is the first language a child learns or acquires from interaction with their immediate environment, such as the family. Since language and identity are linked, it becomes very difficult for immigrants in a foreign land to drop their native language for a new one and also become fluent in such a language. Mother tongue education refers to the use of a person's native language or first language for teaching at both formal and non-formal levels (Abijo, 2014). Keysar, Hayakawa and An (2012) maintained that adopting a foreign language could be hard as it increases cognitive load and leads to greater reliance on intuitive and affective processes. This may lead to a low response to schooling in children. Since the children already have some challenges to cope with, the issue of coping with a language different from their mother tongue may make it difficult for them to respond well to school.

In Nigeria, the national policy on education (Federal Republic of Nigeria, 2013) stipulates that the mother tongue or language of the immediate environment should be used as a medium of instruction for the first three years in primary schools. During this period, the English language should be taught as a subject. This presents a serious issue in a multilingual city like Lagos. In Lagos, almost all the ethnic groups in Nigeria and Africa are represented. The issue of what constitutes language of the immediate environment, therefore, becomes critical.

Another serious issue in a child's response to schooling is the starting age. In Nigeria, the approved starting age for primary school is six years, which is different from what obtains in the United Kingdom. In the United Kingdom, children usually start primary school at four and must do by five. Piaget's (1936) theory of cognitive development advocates that enrolling a child in school before they are psychologically ready would not be of benefit to him. In this regard, a child may not be considered capable of responding well to school if they have not reached a suitable developmental stage. Against this backdrop, can we then conclude that the inability of some children to respond well to schooling during the initial year is due to mother tongue and starting age? How do the mother tongue and starting age impact on child's response to schooling? All these are the thrust of this study.

### **1.1. Statement of the Problem**

The affection between mother and child is (generally) born from nature. From the womb, the mother communicates with the child. When the child is born, the affection continues, and the baby naturally clings to the mother. The baby develops gradually and acquires the language of the mother; hence, it is called the mother tongue. As this cordiality continues, the child is released to school. The first few days or weeks in school are not always easy. This is understandable as the schools present a new set of requirements. The fact that the child is also expected to live independently of the home may be another reason for his unwillingness to go to school. It becomes more difficult if the language of instruction at school is not the same as the mother tongue. Added to this problem is the starting age. This study, therefore, investigated the relationship among mother tongue, starting age, and the child's response to schooling at the primary school level.

### **1.2. Objectives**

The general objective of this study was to investigate the relationship among mother tongue, starting age and the child's response to schooling. Specifically, the study:

1. evaluated the relationship between mother tongue and the child's response to schooling in Lagos State;
2. investigated whether the starting age of a child significantly predicts their response to schooling; and
3. examine the joint correlation among mother tongue, starting age, and the child's response to schooling.

### **1.3. Research Hypotheses**

The following hypotheses were tested in this study:

1. Mother tongue and child's response to schooling are not significantly correlated in Lagos State.
2. Starting age will not significantly predict child response to schooling in Lagos State.
3. Mother tongue and starting age do not jointly predict a child's response to schooling in Lagos State.

## 2. Literature Review

The issue of mother tongue in Nigeria's education system, especially at the primary level, is hinged on the belief that children understand better when taught in their primary language. According to Nishanthi (2000), the mother tongue is defined as the first language a baby learns from their parents. This is otherwise known as the native language.

Recognising the importance of the mother tongue, Awopetu (2016) reiterated that its benefits lie in the fact that it categorises a large part of the child's environment so that objects, actions, ideas, attributes, etc., are given names that are familiar to the learners. This, therefore, makes it easier for them to understand the teacher better.

Ozoemena, Ngwoke, & Nwokolo (2021) conducted a study on the prospects of mother tongue as a medium of instruction in Nigerian primary-level education. Data were collected through a purposive sampling technique from 150 public and private primary school teachers in the Gwagwalada Area Council of the Federal Capital Territory (FCT) of Nigeria. The instrument for data collection was a structured questionnaire. The result of the analysis showed that the multilingual nature of Nigeria and the lack of terminologies for instructional materials and science equipment in the indigenous languages were inhibitions to the use of mother tongue as a medium of instruction at the primary level of education in Nigeria.

Awopetu (2016) conducted a study on the impact of mother tongue on children's learning abilities in early childhood classrooms using an experimental research design approach. All preschool children in the Akure South Local Government Area of Ondo State, Nigeria, were used as samples. Two schools were selected, one served as an experimental group, while the second was used as the control group. The study found that the pupils in the experimental group, where the mother tongue was used as the medium of instruction, performed better than those who were taught in English in the control group.

Nishanthi (2000) further reiterated the nexus among mother tongue, critical thinking and literacy skills. He maintained that a child who consciously develops his mother tongue would simultaneously foster his critical thinking ability and literary skills. However, he warned that in many developing countries (Nigeria inclusive), a high proportion of children enter the school system with a deficiency in the language of the classroom. This is because teaching is often carried out in the old colonial languages such as French, English and Portuguese, which they do not speak at home. The end result of this according to Nishanthi is the inability of primary school children to read fluently or write clearly.

Buckley (2003) discovered a gap between mother tongue and language of instruction among children in their early school years. He explained that the consequential effect of this is that the linkage between the home and the school becomes disconnected. Hence, the child may drop out of school before completing the lower primary classes. In concluding his report, he suggested an inquiry into the language vocabularies of the child by the school to see if some of them could be adopted for use in the school.

Ellis (2010) established that children already had some experiences, including knowledge of language, before joining the formal school system. He was, however, worried that the school system does not always bother about the usefulness of those experiences and languages to the smooth take-off of the academic journey.

Skutnabb and Kangas (2000) found that bilingualism, which comprises the mother tongue and language of instruction, which in most cases is English, has a positive relationship with child learning. Implicitly, when a child develops competency in two or more languages, they gain more understanding of the contents of the school curriculum.

Noormohamadi (2008) examined the link between language and cognitive development, he found that language intellectualises thought to a greater degree. He concluded that children who are taught in their

mother tongue learn concepts and intellectual skills that are more relevant for them to function in their entire life than those who are taught with foreign language.

Another crucial variable considered in this study is the school starting age. Starting age, otherwise known as the age of starting school, is the statutory number of years a child must attain before beginning to attend school. This varies from country to country. For example, in Nigeria, the National Policy on Education (FRN, 2013) stipulates that a child is qualified to enter pre-primary education at age five, after which he/she will transit to the primary level at age six. By age six, he/she is expected to have completed primary school. Invariably, a child is expected to start Junior Secondary (JS) One at the age of 12 and complete their secondary education (Senior Secondary School) at the age of 17. This accounts for the reason why some universities in Nigeria, especially the University of Lagos, set their entry age at 16. Other countries such as Northern Ireland, England, France, and Finland set their ages of compulsory education at four, five, six and seven, respectively.

Sharp (2002), in a paper presented at the LGA seminar in London on “When should our children start school?” argued that the early year school starting age adopted by the British was to protect the child from exploitation at home and unhealthy conditions on the street. She added that an early school starting age would enable the child to leave school on time and join the labour force at a young age.

Dockett and Perry (2002) listed four conceptions of readiness in a child’s response to schooling. These include maturationist, environmental, social constructivist and interactionist views. Of these four views, only the maturationist view is closely related to age. This is because the maturationists believe that children’s response to schooling is influenced by their inner “time clocks” for development. This means that readiness in children for schooling cannot be controlled. They are ready to learn when they are ready.

Dhuey, Figlio, Karbownik and Roth (2017) investigated the relationship between school-starting age and children’s cognitive development from ages six to 15. They used a regression discontinuity design and large-scale population-level birth and school data from the state of Florida. They reported that children who are older performed better than those who are younger at the start of elementary school.

In another study conducted by Black, Devereux and Salvanes (2011) on the role of school-starting age on long-run outcomes, such as IQ scores at age 18, it was reported that the effect was positive at a younger age but tended to disappear as the child grew older. This means that the younger the age, the lower the level of school achievement and vice versa, at an early age of schooling.

The study of Cascio and Schanzenbach (2007) that investigated the relationship between age and education production function found no evidence of the relevance of age in children's school achievement. However, they observed that disadvantaged children assigned to a classroom where they are among the youngest students are less likely to take college entrance examinations than others of the same biological age.

Cook and Kang (2018) studied the correlation between school-entry age, redshirting patterns, and disparities and achievement. They found that there was a reduction in the male-female achievements of those who had delayed entry.

From the various literature reviewed, it is obvious that issues on mother tongue and school starting age, as they affect children's response to school, are not new. They have received considerable attention from many researchers, as indicated in the review. However, the literature review revealed that there was a population gap in the studies, as the studies were conducted in monoethnic societies. The findings may therefore not apply to a cosmopolitan city like Lagos, where we have over a hundred ethnic groups with diversities in mother tongue and various cultural beliefs about when a child should start school.

### **3. Methodology**

The study used the descriptive survey research design and a mixed-method approach. This enabled an in-depth investigation of the problem using both quantitative and qualitative methods. Quantitative data were collected, and then qualitative data were used to explain or elaborate on the quantitative results. The rationale for this approach was that the quantitative data provided a general picture of the research problem to explain the general picture of how children respond to schooling in a multilingual society.

The population comprised all the approved 11,550 Early Childhood Care and Development Centres (ECCDC) with all their 43,309 teachers in Lagos State (Universal Basic Education Commission, 2022). A random sampling technique was used to select 578 ECCDC and 2,165 teachers. The choice of Lagos was because it is a multilingual society where almost all ethnic groups in Nigeria can be found. It made it easy to get the impact of mother tongue on early school starters.

Two instruments were used to collect data from the participants. The first one was a Likert-scale type questionnaire entitled “Mother Tongue, School Starting Age and Child’s Response to Schooling Questionnaire”, otherwise known as MTSSACRSQ. The MTSSACRSQ administered to teachers was divided into two parts, namely, part A, which gathered information on the bio-data of participants and part B, which sought information on the independent variables (mother tongue and starting age) and the dependent variable (child’s response to schooling) in the study. The indicators of mother tongue were language background, frequency of use, and proficiency, while cognitive and physical readiness were used as indicators of school starting age. Child’s response to schooling were viewed around academic performance, classroom participation, and relationships with peers. The instrument was validated by two lecturers, one each from the Department of Educational Management and the Department of Psychology. The test-retest reliability method was used to ascertain the reliability of the instrument, and a reliability coefficient of 0.89 was obtained.

The second instrument was an open-ended oral interview administered to the same set of teachers. This solicited information on how well or not a child responded to school at the outset of their school days, and it also complemented the data gathered from the questionnaire. The selected respondents' email addresses and phone numbers were collected, and a Google Form questionnaire was sent to the addresses for ease of administration and collection of the questionnaire. Hypotheses one and two were tested using regression analysis, while hypothesis three was tested with multiple regression analytical tools.

#### **3.1. Theoretical Framework**

This study was anchored on Jean Piaget's theory of cognitive development (Piaget, 1936). The theory maintains that the level of intelligence changes as the child grows and moves from one developmental stage to the other. He divided the child's developmental stages into four, namely, the sensorimotor stage (from birth to two years), the preoperational stage (from two to seven years), the concrete operational stage (from seven to 11 years), and the formal operational stage (from 12 years to adulthood). The theory equally holds that all children, irrespective of cultural or socio-economic background, go through the stages in the same order. The interpretation of this is that children exhibit behaviours that are peculiar to each stage of development. For example, at the sensorimotor stage, the child learns by exploring the environment and through self-recognition. The child recognises at this stage that even if an object disappears or is hidden, it still exists. At the tail end of this stage, the child begins to acquire language. This starts with a symbolic representation of objects. Proper language acquisition and development are prominent features of the preoperational stage. At this stage, the child uses mental representation to describe and categorise objects. He also tends towards becoming egocentric as he expects everybody to see objects from his perspective.

Serious logical thinking begins at the third stage, that is, the concrete operational stage. The child begins to think logically as he understands the principle of reasoning from specific information to general

principles. He understands at this stage that his thoughts are unique only to him, as others view issues differently.

The last stage, which is the formal operational stage, is characterised by the use of deductive logic or reasoning from general to specific. Concerns about philosophical, moral, ethical, and social issues also feature prominently at this stage.

The relevance of this theory to the study is that different cognitive activities occur at different stages of life. Since no individual can skip any of these developmental stages, it becomes important to expose a child only to activities that are peculiar to each stage. Implicitly, if no serious language acquisition or cognitive reasoning would be achieved at the first stage of development, that is, the sensorimotor stage, it could therefore be more beneficial to keep the child at home at this stage, where the mother tongue could be introduced, rather than being at school.

## 4. Results

### 4.1. Hypothesis One

Hypothesis One stated that mother tongue and the child's response to schooling are not significantly correlated in Lagos State. The regression analysis is presented in Table 1.

Variable	Coefficient	Standard Error	t-value	p-value	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
Intercept	5.20	0.45	11.56	<0.001	4.30	6.10
Mother Tongue (Yoruba)	0.30	0.15	2.00	0.045	0.01	0.59
Mother Tongue (Igbo)	0.10	0.18	0.56	0.575	-0.26	0.46
Mother Tongue (Hausa)	-0.05	0.20	-0.25	0.803	-0.44	0.34
Mother Tongue (Other)	0.12	0.14	0.86	0.389	-0.16	0.40
R-squared	0.032					
Adjusted R-squared	0.018					
F-statistic	2.87			0.021		
Number of Observations	2165					

**Predictor** = Mother Tongue **a. Dependent Variable** = Child's Response to Schooling

Table 1: Mother Tongue and Child's Response to Schooling; source: Original Research

A regression analysis was run to determine the contributions of mother tongue (Yoruba, Igbo, Hausa, and others) to the child's response to schooling. The analysis showed that Yoruba had a P-value of 0.045. This showed that children whose mother tongue is Yoruba are more likely to adjust better to schooling, while Hausa, Igbo, and others with P-values greater than 0.05 did not show significant effects on child's response to schooling. However, the overall model had a low R<sup>2</sup> value of 0.032. This means that generally, the mother tongue does not explain much of the variance in the child's response to schooling, as it accounted for only 3.2%. Based on this, it can be concluded that mother tongue does not predict a child's response to schooling.

## 4.2. Hypothesis Two

Hypothesis Two stated that starting age will not significantly predict child response to schooling in Lagos State. The regression analysis is presented in Table 2.

Variable	Coefficient	Standard Error	t-value	p-value	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
Intercept	4.50	0.30	15.00	<0.001	3.90	5.10
Starting Age	0.05	0.10	0.50	0.616	-0.14	0.24
R-squared	0.0006					
Adjusted R-squared	0.0002					
F-statistic	0.25			0.616		
Number of Observations	2165					

**Predictor** = Starting Age **a. Dependent Variable** = Child's Response to Schooling

Table 2: Starting Age and Child Response to Schooling; source: Original Research

The regression analysis showed (with a P-value of 0.616) that starting age does not significantly predict a child's response to schooling. The R-Squared and Adjusted R-Squared with low values indicated that a child's response to schooling is not determined by the starting age.

## 4.3. Hypothesis Three

Hypothesis Three stated that mother tongue and starting age do not jointly predict child response to schooling in Lagos State. The regression analysis is presented in Table 3.

Variable	Coefficient ( $\beta$ )	Standard Error	t-statistics	p-Value
Constant	2.75	0.15	18.33	< 0.001
Mother Tongue	0.42	0.08	5.25	< 0.001
Starting Age	-0.30	0.05	6.00	< 0.001
R-Squared	0.62			
Adjusted R-Squared	0.61			

Table 3: Joint Contributions of Mother Tongue and Starting Age on Child's Response to Schooling; source: Original Research

The table displayed a positive correlation between mother tongue and a child's response to schooling ( $\beta = 0.42$ ). This indicates that children educated in their mother tongues (Hausa, Igbo, or Yoruba) responded more favourably to schooling than those instructed in a foreign language. The p-value of < 0.001 supported this assertion. However, the starting age, with a coefficient of -0.30, adversely impacted the child's response to schooling. Consequently, the earlier a child begins schooling, the better their level of response and adjustment. Furthermore, the R-squared value of 0.62 showed that 62% of the variance in a child's response to schooling is explained by the two predictors: mother tongue and starting age, while the remaining 38% may be attributed to other factors such as socio-economic background, parental involvement, and school quality, which were not included in the study. Therefore, mother tongue and starting age do not collectively predict a child's response to schooling.

## 5. Discussion

The first finding of this study showed that the mother tongue does not predict a child's response to schooling. This finding disagrees with earlier reports by Skutnabb and Kangas (2000), Nishanthi (2000),

Buckley (2003), and Noormohamadi (2008), who discovered a positive correlation between mother tongue and child performance in school. This disparity may be linked to the difficulty in defining what a mother tongue is in a multi-ethnic society like Lagos. For example, a child in Lagos may acquire three to four languages from their mother and neighbourhood. The mother may be a polyglot who speaks two or more languages, all of which may be spoken to the child without clear delineation. Inter-ethnic marriage, which is very common in the Lagos metropolis, may also contribute to why the mother tongue does not significantly influence a child's response to schooling. A Yoruba woman married to an Igbo man may adopt English as the primary medium of communication in the family, making it the child's mother tongue. Since the child acquires this language as a primary means of communication from the mother, adjusting to the formal school setting becomes easier, as there will be synergy between the language spoken at home and at school.

The second finding of this study showed that a child's response to schooling is not determined by the starting age. This finding agrees with the earlier finding of Sharp (2002), who maintained that school starting age does nothing more than protect a child from exploitation and unhealthy conditions on the street. It therefore has nothing to do with adjustment to schooling. However, the study is in disagreement with those of Dockett and Perry (2002), Dhuey, Figlio, Karbownik and Roth (2017), Black, Devereux and Salvanes (2011), Cascio and Schanzenbach (2007), and Cook and Kang (2018). They found a positive correlation between starting age and the child's response to schooling. The disparity in the findings may be due to variation in the child's mental health, cognitive abilities, and behavioural tendencies. Implicitly, a child with good mental health, sound cognitive ability, and positive behavioural tendencies may respond well to schooling regardless of age.

### **5.1. Implications for Policy and Institutional Administration**

The following are the implications of these findings for policy and institutional administration:

Firstly, de-emphasising the use of the mother tongue in basic education in Nigeria: It is high time the provision of Section 1(8g) in the National Policy on Education be reviewed. This section mandates the use of the mother tongue or the language of the immediate environment as the medium of instruction in the first four years of basic education in Nigeria. The problem of what constitutes the language of the immediate environment in a multilingual society like Lagos, Port Harcourt, Abuja, etc., renders this policy impracticable. This, therefore, shows that the policy of mother tongue in the National Policy on Education is not relevant to the Nigerian education landscape. Education policy makers and administrators, therefore, need to rethink priorities by focusing on English, which is the official language in Nigeria, instead of the individual mother tongue.

Secondly, flexibility in enrollment policies: Since starting age does not significantly impact a child's response to schooling, the age-based enrollment policy at all levels of education in Nigeria should be abolished. Flexible guidelines that would allow children to start school when they are psychologically ready should be encouraged rather than by age.

## **6. Conclusion**

This study carefully investigated the predictive strength of mother tongue and starting age on a child's response to schooling. The findings showed that neither mother tongue nor starting age predicts a child's response to schooling. It further revealed that the plurality of Nigeria's ethnic structure, with three major and hundreds of minor ethnic groups, makes the country unsuitable for the adoption of mother tongue as a language of instruction at any level of the country's education system. The starting age, which has been a major issue in school admission, especially at the tertiary education level, should be deprioritised. Possession of foundational or basic literacy, numeracy, and socio-psychological readiness in a child should be emphasised rather than the starting age. Since this study was carried out in a multi-ethnic society, it may not be possible to generalise the findings. A mono-ethnic society without the characteristics of Lagos State, Nigeria, may present a different finding. Therefore, further research that will look into the correlation among the variables in a monolingual society is necessary.

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# Semiotics of Symbolic Wordplay in the Selected Yorùbá Sports News on Radio Stations in Ibàdàn, Òyó State, Nigeria

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## Abstract

*Language use in news broadcasting is mainly determined by the themes of discussion. The general belief is that the language of broadcasting is primarily simple, noncritical and self-explanatory. Language use in Yorùbá sports news in recent times has deviated from this norm, making the language of broadcasting more critical. This makes the literary use of language in Yorùbá sports broadcasting apparent. Among the literary expressions employed in making the language of sports news aesthetic is symbolic wordplay. Since the use of this Yorùbá traditional literary device is evident in Yorùbá sports broadcasting, there is a need to study and explain the motive of its use, the forms and the meaning it generates. Three Yorùbá sports news broadcasters were purposively selected from two radio stations across Ibàdàn metropolis. Two sports news reports were collected from each of the selected broadcasters. These served as the study's primary data. The study's secondary data included Yorùbá oral materials used in the analysis. Structuralist semiotics was employed for data analysis. This study revealed that the use of symbolic wordplay is common among the Yorùbá sports news broadcasters. This is employed to signify different things that are central to the news reports. The device constitutes one of the major literary devices employed in Yorùbá sports news broadcasting. The study also affirmed that symbolic wordplay is more used in reporting the Barclays Premier League than other football competition, and it is a means of creating humour in sports news broadcasting.*

**Keywords:** *broadcasters; Ibàdàn; radio stations; symbolic wordplay; Yorùbá sports news*

## 1. Introduction: Historical Overview of Sports News and Analysis in Yorùbá Language

According to Etika and Edwin (2018), radio and television are considered broadcasting media. Both of them are tools mainly employed to deliver information to the public. It must be stated that before the establishment of radio and television stations, telegraph and telephone were the first two systems of communication used by the British colonial government in the British-colonised West African countries, including Nigeria (Adéjùmò, 1974). Telegraph, as a means of public information in Nigeria, dates back to 1895. The first recorded use of wireless telegraphy in Nigeria occurred in 1913. These two systems of communication developed into wired wireless, a system also known as Wired Radio and the Radio Distribution Service (RDS). Through this, news from Great Britain was reported in the British colonies. The news reports at this time do not exclude sports news since sports, after politics, is the second most important aspect of international relationships (Ibagere, 2015). With the birth of broadcasting stations in 1933, news reports in Nigeria became more popular. In 1951, the Nigerian Broadcasting Service was inaugurated (Etika & Edwin, 2018). Through the existing broadcasting stations, the news of Emmanuel Ifeajuna, the first Nigerian and the first black person to win a gold medal in the Commonwealth Games in 1954, was reported throughout Nigeria. Also, the news of Hogan Bassey's success as the first person of Nigerian descent to become a world boxing champion in 1957 also gained public attention through the radio stations existing during the period. These sports news reports were made before Nigeria's independence in 1960. With the establishment of the first television station in 1959 (Kur & Nyekwere, 2015), sports news across the country was broadcast on local television stations. As noted by Eco (2015), television stations contributed immensely to the development of sports in Nigeria around the 1980s, with much focus on football.

Nigerians nowadays show much interest in football compared to other games. Many of them are supporters of different national and foreign football clubs. Since the news of football club competitions is broadcast on national radio and television stations in English and in various indigenous languages,

Nigerians listen to them and even make comments whenever permitted. It must be clarified that it is not only football news that is presented in English and indigenous languages on Nigerian broadcasting stations; other sports news like boxing, table tennis, lawn tennis, and swimming, among others, are also broadcast, but the most popular sports news on Nigerian broadcasting stations is football news.

After national and state news broadcasts on radio and television stations in Nigeria, sports news is also reported. It has become the tradition of Nigerian radio and television stations to broadcast the indigenous language version of the news broadcast in English. This, without doubt, has helped sports news broadcasting in the country. Apart from reporting sports during national and state news broadcasts, there also exist special programmes predominantly dedicated to sports news. These programmes are mainly sports analysis. According to Kiaribèé (2012), Larry Izamoye on Brila F.M. 88.9 in the year 2000 was one of the foremost sports analysts who popularised this culture. An example of such sports programmes in Yorùbá language is “*Lóri Ọ̀dàn*” (On the pitch), a programme started by Gbéngá Adékòyà (Bòbò Nice) on Ogun State Television Station, Abèòkúta in 2003. During an interview session held with Gbéngá Adékòyà in the year 2012, he explained that he was the one who started the Yorùbá version of the sports programme on mass media in southwest Nigeria when he worked with the Premier F.M. 93.5 Ìbàdàn in 1991. He added that there was a fifteen-minute section dedicated to sports news and analysis in the daily early morning programme “*È ẹ̀ jí iré*” (Do we wake up well?) of the station. When the programme stopped, he moved to OGTV in 2003, where he continued an independent Yorùbá sports programme with the name “*Lóri Ọ̀dàn*” (On the pitch). As of today, many Yorùbá sports analysts are on different radio and television stations across Nigeria doing different Yorùbá sports news and analyses. Many of them are on social media like Facebook, Twitter and WhatsApp. Şolá Ayégbajéjé, Kólá Ọ̀mótòşòşò and Babatúndé Saheed are among the renowned Ìbàdàn-based sports news broadcasters who present their sports news and analyses in Yorùbá language on radio and television stations in Ọ̀yó States.

Şolá Ayégbajéjé and Kólá Ọ̀mótòşòşò were doing their sports news programmes during the first period of this study’s data collection (year 2012) on Amúlúúduń 99.1 F.M., Ìbàdàn. Both were doing the programme interchangeably throughout the days of the week. This programme is a station’s programme. When Şolá Ayégbajéjé started the programme on Monday, Kólá Ọ̀mótòşòşò continued on Tuesday. This is how the programme is held between 8:05 am and 8:30 am every day. Babatúndé Saheed broadcasts his sports news programme called “*Lóri Pápá*” (On the pitch) on Fresh F.M. 105.9 every day between 12:00 pm and 12:30 pm, also during this period.

The language used while broadcasting their sports news is Yorùbá. At times, they code-switched and code-mixed with English if there was a need to do so. Language use in news broadcasting is mainly determined by the themes of discussion. As mentioned above, the language of broadcasting is primarily simple, non-critical and self-explanatory. Language use in a special manner may be “an obstacle to communication” (Kangiwa & Koko, 2021: 669) in mass media. A systemic functional grammar which is understood by the audience is required in news broadcasting (Aporbo, 2023). These norms have been deviated from in Yorùbá sports news radio broadcasting. Literary language is used not only for informative purposes but also for aesthetic purposes, hence the use of symbolic wordplay in sports news. Literary language is critical and non-casual. The use of literary language as done in this type of Yorùbá sports news has become a lacuna which requires scholarly attention in order to underpin the motive of its use and the underlying meaning of the usage. Therefore, this study aims to uncover factors responsible for the use of symbolic wordplay in Yorùbá sports news and the symbolic meanings this language use could generate.

## **2. Literature Review: Language Use in Sports News Broadcasting**

As stated above, a systemic functional grammar which is understood by the audience is required in news broadcasting (Aporbo, 2023). Aporbo’s examination of discourse analysis of news broadcasting shows that the use of negative adjectives and disjunctive syntax in news broadcasting will continue to create misinformation. He, therefore, states that it is necessary reporters act upon the already existing internal legal framework of communication in news reports. Kangiwa and Koko (2021) also explore

the use of Nigerian languages in mass media. These researchers emphasise that language has the potential to create mutual intelligibility on one hand and could generate misunderstanding on the other hand, depending on the use. As a result, Kangiwa and Koko (2021) explain that positive national language use as a means of communication in mass media is required and should be promoted. However, the scholars support the constant use of Nigerian indigenous languages in mass media to save them from dying. It is very apparent that the perception of the scholars reviewed above is in support of the formal use of language in mass media so as to improve its communicative function.

Considering the primary motive of mass media, it is indisputable that mass media is a means of disseminating information for national and societal promotion. This primary function has been greatly moderated through the use of language across the world. Hamood (2023), while explaining the language use in media, states that oblique language is used in news broadcasting. Among the linguistic devices Hamood states that broadcasters employ in recent times are idiomatic compounding and rhetorical expressions to make news broadcasts more interesting and memorable. Hamood's analysis reveals that ellipses are the most employed expressions in the news bulletins of the news radio stations. This is an attempt to promote the station as well as the broadcaster, most especially in recent times when sport has become a prominent business enterprise. In the light of this, Arne and Helland (2011) argue that sports news broadcasting is playing an important role in national development, as it has integrated several business activities in the media industry. To sustain audience and customers' patronage, several technicalities have been incorporated in sports broadcasting. Martin (2015), while supporting this opinion, states that language is used in reporting sports headlines in Kenya to incite and captivate sports audience, to make soccer look like a battle and a matter of revenge in order to raise people's tension. In doing this, several literary devices like idiomatic expressions, metaphoric and hyperbolic expressions are employed. Sufa and Liusti (2022) also maintain that figurative language styles are used in sports news, including simile, metaphor, personification, allusion, eponym, epithet, irony, cynicism, sarcasm, satire, innuendo, synecdoche, metonymy and antonomasia. They also argue firmly that the most employed figurative expression is metaphorical figurative language.

### **2.1. Symbolic Wordplay**

According to Olátúnjí (2005:36), "... wordplay is the juxtaposition of lexical items which are somehow similar in shape, to produce an effect of verbal dexterity". Olátúnjí (2005) defines symbolic wordplay as a literary device that is based on playing the sound of a lexical item, which is a noun, with the sound of a verb that shares some syllabic similarities with the noun, on the attribution of the activity or virtues suggested by the verbal element to the object signified by the noun. Olátúnjí (1972) has earlier mentioned something similar to this. What this implies is that there is an interconnection between the syllable of the lexical item (noun), which is used to create verbal dexterity, and the meaning implied by the verb. The verb shares some similarity features from the meaning of the word or syllabic element(s) of the lexical item it was played on. With this, the action suggested by the verb is symbolically embedded in the noun. As a result, listeners who are familiar with such usage would have arrived at the meaning even before the verbal item to which the noun is applied is mentioned. Ògúndèjì (1991) explains that this type of wordplay is common in *ofò* (Yorùbá incantatory poetry). Considering the combined words in 'symbolic-wordplay,' "symbol" is the third element of object in Pierce's sign's trichotomy. It is a sign that has a relationship of arbitrariness or is conventionally related to its object. As a result, a symbol does not have any sense of physical link to its object but is culturally or conventionally associated with it. Because of the consideration of cultural arbitrariness in interpreting the signification of 'symbolic wordplay,' cultural factors play important roles in the interpretation of this device.

### **2.2. Theoretical Framework: Structural Semiotics of Language Use**

According to Walle, Willems and Willems (2006), linguistic structuralism is defined as a set of general principles and opinions believed by notable European linguists of the inter-war period who were all profoundly influenced by Ferdinand de Saussure's *Course de linguistique générale*. Language, according to Walle *et al.* (2006), is a system of signs. These signs to Saussure establish the relationship

between the concepts of language meaning (the signified) and the language sounds (acoustic images), (the signifier). According to Eco (1976) and Walle *et al.* (2006), Saussure postulates that both the signifier and the signified are inseparable. As noted by Selden and Brooker (2005), Saussure views linguistic items as symbols which do not correspond to their referents but which are signs of two parts (signifier and signified). A signifier is the sign vehicle, while the signified translates the thought or the referent of the signifier. Signifier is a linguistic mark, while the concept engendered by this mark is the signified. Saussure is also of the opinion that the relationship between signifier and signified is logical to the idea and sound that connects them. He, however, postulates a theory called "semiology", which he defines as a scientific study of sign system. Semiotics or semiology, is conceived as an independent terminology and as one of the most fruitful concepts derived from general structuralism.

Coupled with the signifier and the signified, the interrelationship between language and sign system accounts for the realisation of some concepts. Among these are the *langue* and the *parole*, the synchronic and the diachronic language use, and the syntagmatic and the associative words relation. Saussure's concept of language, according to Walle *et al.* (2006), is divided into two. These are *langue* and *parole*. *Langue* could be simply defined as a social, essential, passive and conventional sense of language meaning. This is general and societal, and it is not individual-oriented. On the other hand, *parole* is individual, accidental, active and not conventional language perception. *Parole* can also be defined as the individual realisation of the system in actual instances of language (Selden & Brooker, 2005). Users of language tend to make what is general, societal and conventional personal and individual. This is possible as a result of language codification and estrangement. Thus, general and familiar words are made personal and unfamiliar in a literary sense, and this is where sign system featured in literary language use.

Another of Saussure's concepts of language and sign systems is the diachronic and synchronic language meanings. While explaining the relationships between these concepts, Walle *et al.* (2006) define synchronic language perspective as a means of studying language meaning at a specific point in time. Diachronic, on the other hand, is a study of language meaning and how it changes over time. Language changes over time, but the context in which language is used matters the most, because the communication space contributes immensely to language meaning. Lotman (1990) calls this language-context relationship the semiotics of space (semiosphere). According to Walle *et al.* (2006), Saussure differentiates between two classes of language relationships. These are syntagmatic and associative relations. Syntagmatic relations are possible arrangements of linguistic units on the linear axis of speech construction. This is a relationship of signs in the speech chain. That is, the syntagmatic relation among the language units that constitute a speech form. This has to do with what comes before or after each unit of a speech form and the relationship involved. Associative relationship is the relationship between a sign and other signs that are not involved in a speech situation. These are signs that are based on memory and can replace units involved in a given speech. This associate relation is very important because it makes meaning-making in language use possible. In modern linguistics, the distinction between the construction of sentences and the association of meaning is better referred to as syntagmatic and paradigmatic language relationships.

Though structuralism and semiotics are interrelated as shown above, there still exist lines of delineation between the two. Structuralist literary analysis aims at examining the features involved in the language use of literature. Semiotics, on the other hand, moves beyond the level of linguistic features of literature as it examines signs and signification possibilities which may exist outside the linguistic boundary. As applied in this study, signs and significations are examined from the structuralist and semiotic language perspectives.

### 3. Research Method

#### 3.1. Context

This study adopted a descriptive literary design. It is based on Yorùbá language use in local sport news broadcasting. The research area is Ìbàdàn metropolis, Òyó State, Nigeria. The two radio stations involved are Amúlùúdùn Radio, 99.1 MHz, Móniyà and Fresh 105.9 FM, Challenge, Ìbàdàn. The study, though, is literature-based; its scope covers broadcasting as its primary data is collected from radio stations' programmes.

#### 3.2. Participants

Three Yorùbá sports news broadcasters are purposively selected from two radio stations across Ìbàdàn metropolis. Two sports news reports are collected from each of the selected broadcasters. The sportscasters were also interviewed. Fixed interview sessions were also conducted with six audiences of the programmes; two audiences for each of the programmes. These serve as the study's primary data. The study's secondary data include other Yorùbá oral materials used in the study's analysis.

#### 3.3. Procedures

The study's primary data were collected using recording devices during the live programmes of the selected sports news. These occurred on September 9th and October 10th, 2012 (Şolá Ayégbajéjé's sport news), August 20th and September 9th, 2012 (Kólá Omotósó's sport news) and July 5th and 7th, 2020 (Babátundé Saheed's sport news). Interview sessions were also held with the sportscasters and six members of their audiences. The study's secondary data constitute the relevant Yorùbá oral materials found related to the arguments established in the study in an attempt to state the exact significations of the signs used by the broadcasters. The study employed a descriptive approach of data analysis, using structuralist semiotics as a theoretical framework.

### 4. Data Analysis

Sport news broadcasters like Şolá Ayégbajéjé, Kólá Omotósó and Babátundé Saheed employ symbolic wordplay in casting their sport news. The use of this literary device is central to these broadcasters. The device is mostly employed when the report of clubs' football fixtures or the news of the played matches is given. The following is an example of symbolic wordplay in announcing a football match fixture.

*Ó yá o! Barclays Premier League máa wáyé lónù! Liverpool máa gbàlejò Swansea City 7:45pm! Fàákája máa bé lààrin Stoke City àti Chelsea lónù! 3pm ni. **Lónù náà ni Aston Villa máa sí filà lóri Southampton láago méta ọsán!** Reading lónù máa gba West Brom lálejò láago méta ọsán náà ni! Ìjàkú akátá máa bé silẹ lààrin Sunderland àti Westharm United láago méta ọsán! Fulharm yòò lẹ kítìpí pèlú Wigan Athletic láago méta ọsán òní...!* (Ayégbajéjé, 22/9/2012 in Kíaribè, 2012)

It has started! The Barclays Premier League will occur today! Liverpool will host Swansea City at 7 pm! There will be a match between Stoke City and Chelsea today. It is today that Aston Villa will play Southampton at 3 pm! Reading will host West Brom at the same time! There will be a tough match between Sunderland and Westharm United at 3 pm. Fulham will play against Wigan Athletic at 3 pm...!

Şolá Ayégbajéjé in the above excerpt reports the Barclays Premier League match fixtures, but when he gets to the point of announcing the match between Aston Villa and Southampton, he employs symbolic wordplay. The expression “*Lónù náà ni Aston Villa máa sí filà lóri Southampton láago méta ọsán!*” is a symbolic wordplay. The /f/ sound in “*filà*” is played on the /v/ sound in the name of the football club “Aston Villa”. The wordplay is possible here because both sounds are fricatives. If we do a literal translation of the words in the expression, the meaning of this usage would be “It is today that Aston

Villa will remove the cap on Southampton's head at 3 pm!". "...*ṣí filà...*" (remove one's cap), as it is used in the expression, is symbolic. In the Yorùbá social context, if a contestant removes the opponent's cap at the point of competition/quarrel, it means the doer has posted a great challenge to the opposition, expecting a serious fight in response. As a result, "...*ṣí filà...*" as employed in the above context is a social indexical sign, signifying a challenge in expectation of a vital fight back.

We can also point to another example of this literary device employed by Ṣolá Ayégbajéjé on the 21st of October, 2012. Ayégbajéjé was reporting the football match between Manchester United and Everton. The match was won by Everton with one goal to nil. Marouane Fellaini scored the lone goal. Ṣolá reported this while saying that:

*Gbogbo Manchester United! È tún ti bèrè sí níi jẹ èfó tètè. Kí lẹ tún fi ṣewó lánàá? .... Manté, pèlú gbogbo owó té ẹ ná! Manté, ṣé kì í ṣorí àwọn Arsenal ló mú un yín? Manté, sàà titun! Kí ló dé? Sàà titun, èfó tètè lẹ tún máa jẹ lósè yìi? Èyi té ẹ jẹ ní sàà tó kojá rẹ é o! Manté, kí ló dé? Kí ló dè è!!! Kí ló dé té ẹ tún té lánàá lówó Everton pèlú gbogbo àwọn agbábòlù té ẹ kó sówó iwájú! Manté, ẹ tún té!*

Manchester United Football Club! You have started to eat African spinach again. What did you start the season with yesterday? Manchester United, with the huge amount of money you spent! Is it not Arsenal's spiritual head that is making you perform badly? In this early stage of the season! What happens? At the early stage of the season, you were defeated? This was what happened to you last season! What happened to you, Manchester United? Why were you defeated by Evaton yesterday, with all the players you have at the front line? Manchester United, you lost again!

In the above excerpt, Ayégbajéjé makes a jest of Manchester United football club for losing the match against Everton at the early stage of the season. He translates the club's name, Manchester United, into Yorùbá through the word borrowing process. The first syllable /ma-/ and the last /-ter/ were used by the sportscaster to form the new Yorùbá word (Manté). He converted the /n/ sound in 'Manchester' to a syllabic nasal sound /n/ and employed it as a continuous tense marker. What this signifies is that the action the reporter wants to use the new word to portray is continuous; it does not just happen; it has been happening for some time in the past and may not likely stop till the end of the session.

Coming back to the element of symbolic wordplay in the excerpt, the expressions "*È tún ti bèrè sí níi jẹ èfó tètè. Kí lẹ tún fi ṣewó lánàá*", "*Manté, sàà titun! Kí ló dé? Sàà titun, èfó tètè lẹ tún máa jẹ lósè yìi?*" and "*Manté, ẹ tún té!*"; The last syllable of the borrowed word "Manté" is played on the syllables of the last word in the noun phrase "*èfó tètè*". The last syllable of "Manté" and both syllables in "*tètè*" have some consonant and vowel sounds in common. These are /t/ and /ɛ/ sounds. What makes the difference between "-tè" and "*tètè*" is that, morphologically, "-tè" is a monosyllable while "*tètè*" is a bisyllable. Secondly, the /ɛ/ in "-tè" carries a high tone while both /ɛ/ sounds in "*tètè*" carry low tones. As a matter of fact, "Manté" and "*tètè*" are independent words with different meanings. Because some of the sounds in both words share some similar characteristics, and the fact that they are used closely together in a set of sentences describing the same thing, makes them be considered as being used to play on one another. In this situation, *èfó tètè* is played on *Manté* because it comes after it in the usage. Also, what actually makes the usage a symbolic wordplay is that once *èfó tètè* is mentioned, one would think of the noun *Manté*, and this will make one think that "-tè" in the word iconises Manchester United football club's fall of disgrace. Considering the sentence, "*Manté, ẹ tún té!*" (Manchester United, you lost again!), the focus of the sportscaster for playing "*èfó tètè*" on "Manté" becomes apparent. The word "tè" as used in this sentence could either mean "to fall into disgrace" or "becomes tasteless". Whichever, both have negative meanings when used to describe human or non-human beings' performances among the Yorùbá people.

Though one would have expected that because Manchester United football club have eaten *èfó tètè* (African spinach), they will win all their games. This is because there is a Yorùbá proverb that reads "*tètè kì í té lánàá èfó*" (African spinach does not fall into disgrace amidst the group of vegetables).

*Tètè* in this regard would have symbolically signified Manchester United football club if the club's rich history of football achievement is put into consideration. In this sense, other football clubs would, therefore, symbolise other types of vegetables which African spinach was said would not fall into disgrace amidst. But this is not the case. The implication of this is that it is not the Yorùbá symbolic meaning of *tètè* that concerns Ayégbajéjé the most in the usage; what actually concerns him at the semiosphere are the sounds that made up *tètè*, which the presenter was able to play on with the sounds in “Manté” and “tè.”

Kólá Omótòṣòṣò also employs this device in his sports news presentation. Consider the examples below from Kólá Omótòṣò's sports news report on the 20th of August, 2012, about the Super Falconet's match.

*Ààmì ayò tí ò látatì, ni egbé agbábòṣù Falconet ti ilẹ̀ wa Nàìjíríà fì borí àwọn ojùgbà wọn tilẹ̀ Korea Republic. Nígbà tí ifesèwonsè dé isẹ́jú méeédógún, fifteen minutes ni Ngozi Okobi, ló mi àwọn, àfì jùà, eré ni wón pè é. Ifesèwonsè, ó tún tè sí isẹ́jú mètàdín-ní-àádòrin, òun ni Desire Oparanozie bá tún mi àwọn, àfì jùà.... E jé kí n máa sọ fún yín pé ifesèwonsè yòò tún sún sí iwájú fún ìdíje FIFA Under 20 Women World Cup lónì ni tí ò ní dọ̀la... Àmọ̀ láàárò téní, àwọn àti America ó kojú ara wọn. Tó bá ti wá di ní déédé agogo mọ̀kànlá láàárò yìi, **orilẹ̀-èdè Argentina àti Canada òun ni wón yóó máa ká ẹní ara wón nilẹ̀ nígbà ilẹ̀ China yóó máa ẹ̀ ifànfà pẹ̀lú orilẹ̀-èdè Germany....***

It was two goals to zero that the Falconet football team of our country, Nigeria, defeated their counterpart from the Republic of Korea. It was when the match reached fifteen minutes that Ngozi Okobi scored, and they thought it was a joke. When the match also reached sixty-seven minutes, Desire Oparanozie scored another goal... Let me also tell you that the football competition for the FIFA Under 20 Women's World Cup continues today, not tomorrow... This morning, they will be playing America. When it is eleven o'clock this morning, the Argentine and the Canadian under-20 football team will be removing one another's mat while China will be quarrelling with Germany...

The excerpt above is loaded with many figurative expressions, which would not be examined here in order to focus on the study's objective. What concerns us the most is the last statement employed to report the fixture in this competition. The statement is “*Tó bá ti wá di ní déédé agogo mọ̀kànlá láàárò yìi, orilẹ̀-èdè Argentina àti Canada òun ni wón yóó máa ká ẹní ara wón nilẹ̀ nígbà ilẹ̀ China yóó máa ẹ̀ ifànfà pẹ̀lú orilẹ̀-èdè Germany....*” (When it is eleven o'clock this morning, the Argentine and the Canadian under-20 football teams will be removing one another's mat while China will be quarrelling with Germany....). The syllable /ká/ (means to remove) is symbolically played on the syllable Ca- /kæ/ in the noun "Canada" (A country in North America). It is the /kæ/ syllable of the noun "Canada" that motivated the choice of the verb in the expression “*ká ẹní ara wón nilẹ̀*”. This is intentionally done by the sportscaster to make the reported news look interesting and aesthetic.

The expression “*...ká ẹní ara wón...*” (to remove one another's mat) is idiomatic and symbolic. It is idiomatic because the expression's meaning is not suggested by the string of lexical items in it. However, it is symbolic because in the Yorùbá cultural context, removing each other's mats is an indexical signification of a fight. The sense which could be deduced from the idea of removing one another's mats is that the people involved are no longer tolerating one another and are fed up with each other. So, removing one another's mat as it is used here is indexically signifying a fight, a quarrel or a misunderstanding. The fight meant by the sportscaster is not, in actual sense, a real fight but a tough football competition.

Another example of symbolic wordplay in Kólá Omótòṣòṣò's sports news featured in the news he reported on 26 September 2012, as shown below:

*Ojó ti lọ, mò n lọ ilẹ̀...! E le pe Kólá Omótòṣòṣò fún ikéde àti ipolówó ojà nikan, 08057189123! Adékólá Omótòṣòṣò lorúko tẹ̀mi! E é pàdẹ̀ ẹnikejì mi lóla, Sọ́lá Ayégbajéjé! Ó yá nígbà yẹn Ẹ̀un Ojó tí n múlẹ̀ kò jé kí wón ó rí àwọn mi! **Ó mú jàbùlání kò júbó lówó ẹ̀!** Dáúdà Abimbólá,*

*akònimòn-òngbá tó n ̀ se dáadáa niyẹn. Lóri ọwọ yẹn, èmi àtiyìn ó pàdé lójọ Friday lóri ọwọ yẹn! Ó le wòyàn jù! (Kíaribèè, 2012.41)*

Time has gone, I'm going home...! You can call Kólá Ọmótòşòò for announcement and advertisement only, 08057189123! Adékólá Ọmótòşòò is my name! You will meet my colleague tomorrow, Şólá Ayégbajéjé! Now Şeun Ọjó is keeping my goal post so that I would not concede! **He keeps Jabulani<sup>1</sup> Perfectly!** Dáúdá Abímbólá is a coach who is performing well. With that, you and I shall meet on Friday! You stare too much!

Kólá Ọmótòşòò is rounding off the sports news of the day. After he had made the closing announcements, he acknowledged Şeun Ọjó, one of the people working with him on the programme. He described him as a good keeper who keeps *Jabulani* perfectly. During the early stage of the World Cup hosted by South Africa in the year 2010, according to Bloomfield (2010), *Jabulani* is described by many players as a ball which movement is unpredictable, particularly for keepers, because it is really difficult to judge its trajectory. So, for a keeper to keep *Jabulani* perfectly, such a keeper must have been a very good and professional keeper. Extending the meaning of *Jabulani* to mean a possible disturbance which could feature in a programme, as done here, is what Riffatarre (1978) called expansion of meaning. *Jabulani*, as employed in this semiotic space, is then a symbolic signifier of unwanted situations, difficulties and disturbances which are not easy to manage, and which could only be properly managed by an experienced manager.

The words “*jabulani*” and “*jàbò*” in “*Ó mú jàbùlànì kò jàbò lówó è*” are symbolically played on one another. We got to know during the course of our research that the short form of *Jabulani* is *jabu*. If this is the case, the user has, therefore, carefully played the two words together. The “*jabu*” and “*jàbò*” might not have the same origin, but when considering their sounds, they share some features in common. Looking at the morphology of both words, the sounds that make the difference in both words are vowels /ɔ/ in “*jàbò*” and /u/ in “*jabu*”. It must be pointed out that though these two vowels are independent sounds, they still share some features in common; they are back round vowels. This is what makes the pronunciation of the word (*jàbò*) very close to the word (*jabu*). This similarity is exactly what makes the wordplay possible in the usage. Considering the unmanageable feature of the ball *Jabulani* while trying to keep by keepers and its trajectory complication and inconsistency, *Jabulani*, therefore, directly connotes the meaning of the verb “*jàbò*” (to fall off from one’s hand) in Yorùbá language. By extension, “*jabulani*” as it is played on with “*jàbò*” is then a perfect signifier of the act of falling off (*jàbò*), difficulties and obstacles that are capable of disrupting the sport news programme, which the sportscaster acknowledges his goalkeeper (programme editor) to be very good at managing them.

Babátúndé Saheed is also among the sportscasters who are fond of using this symbolic wordplay. In his sports news of 11 July 2020, there are examples of symbolic wordplays. Let's consider the excerpt below as an example:

*È jẹ ká lọ sòrílẹ̀ èdè Itálóóóó, nínú ìdíje Serie-A. Lazio yóó gba Sassuolo lálejò. Aago mérin kojá işéjú méeédógún ni. Ikò Spezia àti Roma, àwọn méjèjè yóó mú nńkan nilẹ̀ láago méfà àbò. Juventus! **Ijà tó fa láńtá dání láàrin Juventus àti Atalanta**, iyẹn di aago mėsàn-án ku işéjú méeédógún.*

Let's go to Italy, to the Serie A football competition. Lazio will host Sassuolo. The time is a quarter to four pm. Spezia and Roma will play at half past six pm. Juventus! The fight that carries a kerosene lantern along will happen between Juventus and Atalanta, which will come up at a quarter to nine pm.

Babátúndé Saheed, in the above excerpt, is announcing the Serie A match fixture of the day. The match between Lazio and Sassuolo, and also the one between Spezia and Roma, was announced. While

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<sup>1</sup> The word, as explained in an article (*Jabulani*) on babynames.com, is a Zulu word that means rejoice or happy. The football used in the World Cup hosted by South Africa in 2010 was named *Jabulani*.

announcing the football match that will take place between Juventus and Atalanta, the sportscaster describes the match as “*Ìjà tó fa lántà dání láàrin Juventus àti Atalanta*” (The fight that carries kerosene lantern along will happen between Juventus and Atalanta). We should firstly mention here that the match that will actually happen between the two teams is not a fight in a real sense, but a football competition. The sportscaster intentionally selects the word “*ijà*” (fight) instead of “*eré*” (play or match) because of the expression “*fa lántà dání...*” (that carries kerosene lantern along...) he employed. He does this purposely for two reasons. The first is that the game will be played in the evening when the skies must have gotten dark, especially when there is no electricity. The lantern that the sportscaster is pointing to in this context is the actual kerosene lantern (or other forms of lantern) that the football viewers carry along while going to viewing centres or coming from the place late in the evening, when the atmosphere is dark. Secondly, if the game referred to as a fight by the sportscaster is considered with a kerosene lantern, which usually generates heat when it is on, what the lantern in the semiotic context of a fight is signifying is the prediction of how tough this match would be. The lantern, therefore, becomes an indexical signifier of the hotness and toughness of the predicted match. Because the usage “*...fa lántà dání*” (... carries kerosene lantern along) is capable of generating more than one meaning as it does here, then the expression is a dual sign.

Like the expressions analysed before, the words “*lántà*” and “Atalanta” in the excerpt above are symbolically played on one another. The words “*lántà*” and “*-lanta*” in the Atalanta are of the same spelling and pronunciation, though they are words of different languages. It is the name, Atalanta, that brings about the choice of “*lántà*” (a borrowed form of lantern in English) by the user. So, the user, as a result of this, purposely selects “*lántà*” to be able to play on Atalanta in order to do two things at the same time: to bring about the effect of wordplay and to predict the toughness of the match. Another instance where Babatúndé Saheed makes use of symbolic wordplay is in the sports newscast on July 5th, 2020, featured in the excerpt below:

*Ó yá páápàpáá, torí pé lánàá, up Chelsea! Omọ oba Dòsùmú, Chelsea Àjùmòbí bread gbogbo Amúlóko! Olálékan Oláanúkan niyè-èn! Òtúnba Mùtù Owóyemí.... Number one ni ò. Gbogbo Chelsea ni Ìjọba Ìbílẹ̀ Egbédá, kò sólúwa è pátápátá kiáfàtàmalà ní tilétoko! Sé è mò pé Egbédá nílẹ̀, ó tún lóko! Ní tilétoko, òun ni number one! È má jé n tàn yín! Chelsea na Watford! **Ìwàkuwà bí ọkọ tí kò dúa ni Chelsea wà wọn lánúú!** Ààmì ayò méta sodo ni. Èyin Chelsea, ọrọ métaméta yìi, è è maa mójú tó o ní ò!*

Now quickly, yesterday, up Chelsea! Prince Dòsùmú, Chelsea Àjùmòbí bread of the whole Amúlóko! That is Olálékan Oláanúkan! Òtúnba Mùtù Owóyemí.... He is the number one. All Chelsea fans at Egbédá Local Government, no one can withstand you everywhere! You know that Egbédá is both the home and the village! Everywhere in Egbédá, he is the number one! Do not let me deceive you! Chelsea defeats Watford! They drove them roughly like a bad car yesterday! They defeated them with three goals to nil. You, Chelsea fans, in this case of three goals, you must find a solution to it!

The sportscaster compares the way the Chelsea football team defeated the Watford football team to how a bad car is driven roughly. A bad car is driven roughly because the driver will not mind if it gets spoiled, since the car is already bad. In this case, the Watford football team is not a car which could be driven. The sportscaster knew this; he just intentionally selected the verb “*wà*” (to drive) because he wanted to play on the name of the club so as to make a jest of them. The verb “*wà*” (to drive) is then played on the “*Wa*” of the syllable “*Wat*” in the title of the football team “*Watford*”. The verb “*wà*” is also played on the noun “*iwàkuwà*” (rough driving), which was used to describe how Watford was defeated. “*Wà*” (to drive) that was used to play on the name of the club “*Watford*” and the noun “*iwàkuwà*” (rough driving) in this instance is indexically signifying the football possession and the domination of the Chelsea football team over its opposition (Watford) which makes it possible for Chelsea to defeat her with three goals to nil.

## 5. Discussion of Findings

In this paper, it has been established that language use in news broadcasting requires simple and non-critical expression. It has also been discussed that this norm has been deviated from in Yorùbá sports news broadcasting. This is because symbolic wordplay is employed in the sports news of three notable sportscasters within Ìbàdàn metropolis. These sportscasters are Ṣolá Ayégbajéjé, Kólá Omótóṣòó and Babatúndé Saheed. Because literary and critical language use is employed in Yorùbá sports news broadcasts, it is required that scholarly attention be paid to the modes of expression, the motive of use and the possible meaning the usage could generate. This study has shown through its analysis how these are realised in Yorùbá sport news broadcasts. The study's data analysis shows that symbolic wordplay is more commonly used in announcing the results of the played matches and match fixtures. Out of the six examples of the symbolic wordplays analysed, three were used to report the results of the played matches, while two were used to announce match fixtures. The remaining one is used to make a closing remark.

Symbolic wordplay is more commonly used in reporting the foreign league football competition than the local league football competition. This is evident in our data, out of the six examples of symbolic wordplays analysed from the three sportscasters, four were used to report foreign football league results, while only one was used to report the result of an international competition. The remaining one is neither used to report local, foreign, nor international competition. We also find out that symbolic wordplay is more used in reporting Premier League football competition than other football leagues, either local or international. This is because out of the six examples of symbolic wordplays analysed, three were used in reporting the "Premier League" football competitions, one was used to report "Serie A" football competitions, one was used to report international games, and the other one was not used to report any football league competition.

Different complex meaning derivations were generated through the use of symbolic wordplay in Yorùbá sports news broadcasting, as revealed in the data analysis. This includes a social indexical sign of challenge in expectation of a vital fight back, a disgraceful fall, a tough football competition, obstacles that are capable of disrupting the sports news programme, prediction of the toughness of a match and football possession and domination. The motive behind the use of symbolic wordplay, as revealed during the time of our research, is for station promotion and aesthetics. This is discussed more in the concluding part of this study.

## 6. Conclusion

The study is limited to Yorùbá sport news radio programme broadcasting of some selected broadcasters in Ìbàdàn, Nigeria. The language of news is expected to be simple, non-critical and self-explanatory as discussed above. This is not the situation of things in sports news broadcasting in Yorùbá language nowadays. Sports news has become an aesthetic where non-casual, critical and literary expressions are foregrounded. This might be seen as a misplacement of priority because news is supposed to be informative and not for aesthetic purposes. On the other hand, the use of noncasual, critical and literary expressions may not be totally considered a misplacement of priority when other factors apart from the informative function of news are considered. Our interview with some audience of Yorùbá sports news revealed this. The audiences of this type of sports news are supporters of different Barclays Premier League and other European leagues' football clubs. This audience primarily makes jest of one another, most especially when their football clubs are defeated. During interview sessions held with the selected sportscasters, we were informed that the aim of creating light jests, which supporters of each of these football clubs make against their opposition after defeating them, formed the basis of their sports news. They claim that their style of Yorùbá sports news was initiated to gain audience, not only for the sports programme but also for their various radio stations. In this situation, sports news is employed as a means of gaining more audience by the sportscasters, through their use of language, for their programmes and for the radio stations. Therefore, sports news in this regard is not only employed for informative purposes, but also as a means of creating language aesthetics and station promotion. It is required that the language of broadcasting on Yorùbá sport news television programmes be studied. This will unveil

new broadcasting technicalities that have been introduced to complement the traditional sports news broadcasting styles.

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# Impacts of Technology on Supply Chain Management: Evidence from LEED-Certified Ready-Made Garment Companies of Bangladesh

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## Abstract

*This study investigates the impact of technology on supply chain management and logistics in Bangladesh's ready-made garment (RMG) industry. With the sector experiencing significant technological advancements such as RFID, AI, and blockchain, the focus is on how these tools drive operational efficiency in inventory management, production, and transportation. Employing a qualitative methodology, semi-structured interviews with six supply chain managers provided in-depth insights. Data were analysed using thematic analysis to uncover key trends and challenges. The research highlights the role of technology in enhancing sustainability and ethical sourcing while identifying key challenges like infrastructure gaps, cost constraints, and workforce skill limitations. The findings aim to provide valuable insights for industry stakeholders and contribute to ongoing debates on technology integration in RMG supply chains.*

**Keywords:** Bangladesh, LEED certification, logistics management, readymade garment sector, supply chain management, technology integration

## 1. Introduction

As technology has become increasingly integrated, the ready-made garment (RMG) industry is going through a transformative period that significantly impacts logistics and supply chain management. The RMG business, which is known for its quick trends and international supply chains, has been dramatically impacted by technological advancements (Attaran, 2020). According to StartUs Insights (2022), the recent technological trends in the RMG industry include virtual RMG (33%), Blockchain (17%), artificial intelligence (AI) (16%), sustainable clothing (11%), and others (23%). The growing RMG industry of Bangladesh is expected to generate US\$4,087.8 million as revenue by 2028 with a CAGR of 18.5%. Understanding and navigating the revolutionary changes brought by technology in this dynamic sector is crucial, which is why the Bangladesh RMG industry is the subject of this study on the effects of technology on supply chain management and logistics. According to Tönnissen and Teuteberg (2020), the RMG business is confronted with growing challenges, including the sustainable preferences of the customers, ethical sourcing, and quick product turnover.

The RMG industry, with its fast-paced trends and worldwide supply chains, is undergoing an evolutionary transformation driven by technology. As consumer demands shift toward sustainability and transparency, RMG brands need to modify their supply chain practices (Mubigmann, von der Gracht & Hartmann, 2020). In the RMG sector, the problem is the lack of a comprehensive understanding of how technology is integrated and impacts supply chain dynamics, specifically about Blockchain and AI applications in production, transportation, and inventory management systems. The industry may find it more difficult to adjust to shifting consumer needs and adopt best practices as a result of this knowledge gap (Coyle *et al.*, 2021). With a particular focus on the Bangladesh RMG industry, this study attempts to investigate the significant impact of technology on supply chain management and logistics in the RMG industry. Specifically, it examines particularly the deployment

of technology in inventory management, production planning, and transportation within the supply chain of the Bangladesh RMG industry. The specific objectives are-

- To assess how technology adoption is creating operational efficiency in terms of inventory management, production planning, and transportation in the Bangladesh RMG Market.
- To address the role of technology in increasing sustainability and ethics within the supply chain processes, like environmental impact and responsible sourcing in the Bangladesh RMG industry.
- To identify the challenges associated with integrating technology into the supply chain in the Bangladesh RMG industry.

The research questions are given below:

- How does the adoption of technology by the Bangladesh RMG industry create operational efficiency in inventory management, production, and transportation?
- How does technology integration by the Bangladesh RMG industry contribute to considering sustainability and ethical practice?
- What are the major challenges associated with integrating technology into the supply chain in the Bangladesh RMG industry?

The study is significant because it offers insightful information about how technology adoption and integration impact supply chain processes in the RMG industry, which is helpful for academia and industry stakeholders like competitors, customers, suppliers, and professionals in the field. Industry stakeholders can be guided or be aware of the potential challenges associated with technology integration and develop strategies to promote sustainability and creativity. From an academic perspective, it adds to the growing debate on supply chain changes brought by technology.

## **2. Literature Review**

According to Attaran (2020), modern supply chain management is now developed by its incorporation of technology, specifically in the dynamic setting of the garment sector. This study of the literature evaluates how the industry's adoption of technology has transformed operational efficiency and sustainability practices. This section presents a discussion on technology adoption and operational efficiency in inventory management, production management, transportation management, and technology integration, as well as the contribution to sustainability and ethical practice.

### **2.1. Technology Adoption and Operational Efficiency in Inventory Management**

Technology adoption in inventory management improves operational efficiency by automating processes, enhancing accuracy, and facilitating real-time tracking. It lowers costs, reduces errors, and supports better demand forecasting and inventory control (Braglia *et al.*, 2020). According to Dehgani and Navimipour (2019), the adoption of technology in inventory management has become a crucial factor in driving operational efficiency in the fast-paced and ever-changing RMG industry. In that study, they also found that in inventory management, Radio-Frequency Identification (RFID) stands out as a game-changing technology. In another study by Tonnisson and Teuteberg (2020), RFID entails the use of wireless communication to identify and track objects using unique tags, giving companies real-time supply chain visibility into product supply and modern technology connected with sophisticated inventory management systems processes huge volumes of data on inventory units, order fulfillment, and customer demand by using data analytics. In addition, Fatorachian and Kazemi (2021) posit that technology-enabled inventory management makes order fulfillment processes more effective. According to their study, technology-enabled order processing automation guarantees concise and real-time order fulfilment, increasing customer satisfaction. Meanwhile, Blichfeldt and Faullant (2021) showed in their study that E-commerce platforms and modern inventory systems work together smoothly, giving companies the ability to manage shipments and online orders, and give customers real-time updates on the process of their buying processes. To find bottlenecks, smooth procedures, and maximize the effectiveness of the entire supply chain, visibility is essential.

## **2.2. Technology Adoption and Operational Efficiency in Production Management**

Production management is the process of planning, organizing, and controlling manufacturing processes to ensure that items are produced efficiently (Newman and Gough, 2020). According to Govindaraj *et al.* (2024), production management, which was formerly considered by manual procedures and stand-alone systems, has experienced a significant change as a result of the introduction of cutting-edge technology, improving accuracy, adaptability, and response to market changes. On the other hand, Huang, Fang and Lin (2020) stated that production process optimization now depends heavily on Automated Production Planning Systems. These systems estimate demand, allocate resources effectively, and create production plans that are optimized by using complex accounting and data analytics. Javaid *et al.* (2022) added that the design, manufacturing, and distribution teams can collaborate and communicate with each other more easily because of digital tools. Kurdi *et al.* (2022), in their analysis, showed that real-time information may be acquired and shared by stakeholders through cloud-based systems, which promotes collaboration and guarantees that all production-related aspects are consistent with broad corporate objectives. Then, Lagorio *et al.* (2022) stated that applications for the Internet of Things (IoT) that are integrated into machinery and equipment collect data in real time about performance, requirements, and productivity. Also, Lee *et al.* (2022) stated that businesses may apply predictive maintenance techniques with this data-driven strategy, which limits downtime and maximizes overall equipment effectiveness (OEE). Moreover, according to Mangla *et al.* (2020), lean manufacturing concepts are consistent with the use of technology in production management. Efficiency outputs and cost reduction are achieved by technology-driven processes through waste reduction, setup time reduction, and production flow optimization. In addition, Neumeyer, Santos and Morris (2020) stated that modern technology, such as robotics and computer numerical control (CNC) equipment, automates repetitive jobs to guarantee accuracy and productivity in manufacturing.

## **2.3. Technology Adoption and Operational Efficiency in Transportation Management**

Transportation management refers to the strategic planning, implementation, and optimization of the flow of goods from the point of origin to the point of destination. It entails choosing carriers, controlling freight, guaranteeing adherence, and enhancing supply chain delivery effectiveness (Periyasami & Periyasamy, 2022). According to Saurabh and Dey (2021), technology use in transportation management has been essential in the RMG sector for reforming logistics processes, improving operational efficiency, and guaranteeing smooth and economical delivery of goods. Similarly, Sihombing (2024) stated that the incorporation of modern technology that enhances supply chain visibility facilitates real-time tracking, optimizes route planning, and characterizes the changing properties of transportation management. Unhelkar *et al.* (2022) showed in their study that a key element of the technology revolution in transportation management is the use of GPS tracking systems. GPS trackers use satellite technology to give running vehicles real-time location information. Again, Dehgani and Navimipour (2019) posit that proactive decision-making is made easier by real-time tracking, which helps companies react quickly to delays, disruptions, or adjustments to the supply time frame. In addition, according to Tönnissen and Teuteberg (2020), route optimization software has become a key component of equipment for transportation management. These systems use statistical equations to determine the best fuel-efficient routes for transportation based on several variables, including traffic, delivery schedules, and fuel economy. Then, Ivanov, Dolgui and Sokolov (2019) elaborated that real-time visibility tools increase the operational effectiveness of transportation management even further. According to Coyle *et al.* (2021), technology integration in transportation management reflects cloud-based platforms and Electronic Data Interchange (EDI).

## **2.4. Technology Integration and Its Contribution to Sustainability and Ethical Practice**

According to Huang *et al.* (2020), in reaction to international demands for ethical and ecological standards, the RMG industry has been using technology as a strong weapon to change its supply chain. Javaid *et al.* (2022) stated that a ground-breaking method for increasing supply chain traceability and transparency is blockchain technology. Blockchain offers an unchangeable and transparent record in the context of the RMG industry, where raw materials like textiles and clothing go through a complicated

international supply network. Krishnan *et al.* (2024) added that technology adoption also makes it easier to track and lessen the effects on the environment. Businesses can monitor and assess environmental elements through sophisticated systems and sensors that are frequently included in IoT applications. According to Fatorachian and Kazemi (2021), technology is crucial for maintaining ethical supply chain activities in the field of responsible sourcing. Businesses can precisely screen suppliers using digital tools and platforms to ensure social responsibility and ethical standards are being followed. Unhelkar *et al.* (2022) stated that predictive analytics utilizes machine learning and AI to predict demand, prepare optimum production schedules, and minimize the risk of overproduction and surplus inventory. Lagorio *et al.* (2022) stated that technology integration also assists in adopting ethical RMG initiatives by enabling companies to make customers aware of their dedication to ethical business practices.

## **2.5. Challenges Associated with Integrated Technology in the Supply Chain**

Huang *et al.* (2020) stated that there are many challenges in the way of the RMG industry's efforts to incorporate technology into its supply chain, from infrastructure constraints to resistance to change. According to Javaid *et al.* (2022), the current infrastructure obstacles are one of the main challenges to technology integration in the supply chain of the RMG industry. According to Unhelkar *et al.* (2022), the lack of technical skills and digital literacy in the workforce is a major problem. A workforce qualified to operate, maintain, and utilize these technologies is necessary for the effective integration and use of technology. According to Mangla *et al.* (2020), one of the biggest barriers facing companies willing to incorporate technology into their supply chain management is cost. According to Neumeyer *et al.* (2020), the adoption of technology is hindered by human factors as well, such as resistance to change. Because they are habituated to traditional means, employees, management, and other stakeholders may resist the adoption of new technologies in fear of losing their jobs, ignorance of the new systems, or inability to maintain workflows. According to Unhelkar *et al.* (2022), as supply chain operations increasingly adopt technology, privacy and data security issues are becoming more emerging. Robust cybersecurity protections are important for the collection, storage, and transportation of sensitive data, including customer and confidential business data.

## **2.6. Gap Analysis**

One significant gap in the research is the limited attention paid to the context-specific barriers the RMG industry in Bangladesh has when aiming to integrate technology into its supply chain. Previous research offers broad perspectives, but is limited to tackling the complex problems particular to this situation. It would be beneficial to conduct more studies to gain a more comprehensive understanding of the trends, cultural influences, and regulatory factors that specifically impact technology integration in Bangladesh's RMG supply chain. This would enable potential solutions for sustainable and effective integration.

## **2.7. Theoretical Framework**

The framework illustrates how the RMG business in Bangladesh is driven by Sustainability and Ethical Practices, and how Operational Efficiency is greatly impacted by technology adoption. Issues with infrastructure, skill gaps, cost implications, resistance to change, and other issues are highlighted, indicating possible roadblocks in the supply chain integration process. To successfully and significantly transform the sector through technology, these difficulties must be addressed.

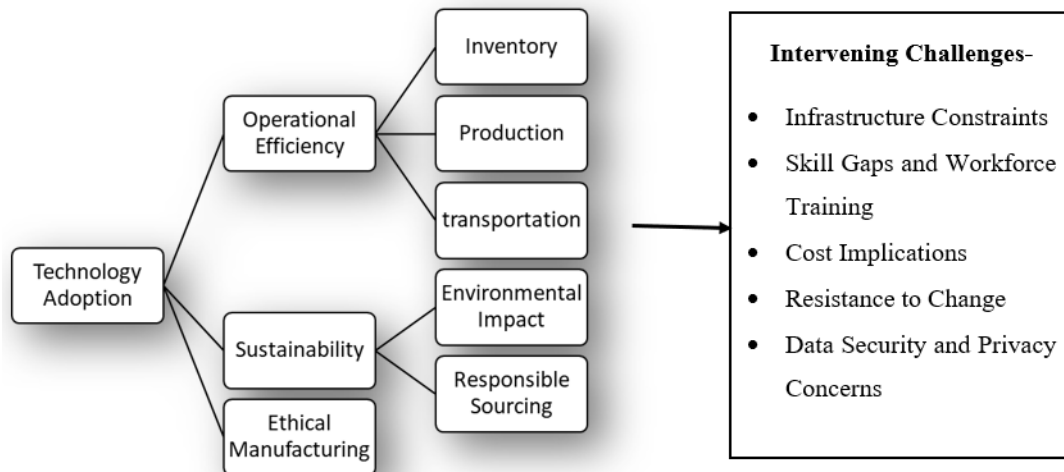


Figure 1: Theoretical Framework; source: Author

### 3. Methodology

Pragmatism was selected since it permits an adaptable and comprehensive methodology that ensures positivist and interpretive components (Saunders, Lewis & Thornhill, 2016). The use of a pragmatic approach ensures that the research can proficiently tackle the complexities of the subject matter and produce practical insights. For this study, a qualitative research design was employed since it provided a comprehensive examination of the viewpoints and experiences of the research subjects consistent with the integration of technology into the supply chain and logistics of the Bangladeshi RMG industry.

#### 3.1. Sampling and Participants

Primary data was collected for this study with a focus on obtaining deep, insightful information on the perceptions of stakeholders about the adoption and practice of technology in the supply chain and logistics of the Bangladeshi RMG sector (Haydam & Steenkamp, 2020). Representatives from RMG labels, producers, suppliers, logistics companies, and industry experts were among them. Purposive sampling was used, which reflected the selection of participants based on their knowledge of the adoption of technology within the sector and their relevance to the objectives of the study (Keleman & Rumens, 2008). For that reason, six supply chain managers (aged between 35 years and 55 years) who worked in the RMG industry of Bangladesh have been chosen for the study, ensuring a wide representation of opinions guided by knowledge and experiences (Table 1). Six supply chain managers from the RMG sector participated in the study, which was appropriate considering its exploratory, qualitative design. Rather than statistical generalization, the goal was to obtain profound insights. In order to prevent non-response bias, experienced participants were chosen through deliberate sampling, rapport was established in advance, and flexible scheduling for follow-up reminders was offered (Thomas, 2021). Participants were selected from a variety of companies to capture a range of viewpoints, and data saturation was achieved, guaranteeing adequacy. Although the sample size was limited, it was well-chosen, rich, and relevant. For this study on technology adoption, Saunders *et al.* (2019) suggest a sample size of 5 to 30 participants for semi-structured interviews. This range ensures that it achieves data saturation while obtaining in-depth insights relevant to the research focus.

No.	Name	Company	Position
01.	Md. Rasheduzzaman	Snowtex Sportswear Ltd.	Production Manager
02.	Mahadi Tushar	Sepal Garments Ltd.	Production Director
03.	Monirujjaman Monir	Vertex Sweaters Ltd.	Senior Manager (Production Planning and Control)
04.	Md. Zahidul Islam	Anowara RMGs Ltd.	Production Manager
05.	Rakib Hossain	Amir Shirt's Limited	Senior Executive
06.	Md. Sifat Zaman	Cotton Field BD Ltd.	Senior Production Manager

Table 1. Profile of the Participants; source: Original Research

### 3.2. Data Collection

To collect qualitative data, semi-structured interviews were held with the selected participants. Open-ended questions intended to gather information about participants' perspectives, experiences, and difficulties with the use of technology in the supply chain have guided the interview. There were 12 open-ended questions in the interview under the 3 research objectives, respectively. Every question during the interview was asked in English. Moreover, it is anticipated that all of the interviewees, being high-level staff, would readily respond to every question. To save time and ensure convenience, the interview was held over the telephone, and it took almost 20 minutes per interviewee. The responses were recorded with the consent of the participants.

### 3.3. Data Analysis

The recorded interviews were transcribed word-for-word and analyzed using thematic analysis, a systematic method for identifying, analyzing, and reporting patterns (themes) within qualitative data (Braun & Clarke, 2006). Thematic analysis involved an iterative coding process to classify data into meaningful themes aligned with the research objectives. This process included:

**Familiarization with the Data:** The interview data were thoroughly reviewed multiple times to understand the key patterns and trends related to the impact of technology on logistics and supply chain management in the Bangladeshi RMG sector.

**Generating Initial Codes:** Systematic coding was applied to identify significant features within the data. Initial codes were generated for key technologies, contributions to operational efficiency, sustainability practices, and challenges in technology integration.

**Theme Development:** The codes were grouped into overarching themes to provide a deeper understanding of the research topic. The main themes that emerged included:

- *Operational Efficiency:* Technologies like barcoding, RFID, IoT-enabled machinery, and AI were identified as driving factors in improving inventory, production, and transportation management.
- *Sustainability and Ethics:* Key themes included the use of eco-friendly materials, real-time tracking, and blockchain for ethical sourcing, promoting a more sustainable and transparent supply chain.
- *Challenges in Technology Integration:* Common barriers identified were infrastructural constraints (e.g., poor connectivity, outdated systems), skill gaps (inefficiency, lack of productivity), cost constraints (limited investment), and resistance to change among stakeholders.

**Reviewing and Refining Themes:** The themes were refined iteratively to ensure they accurately captured the participants' views and aligned with the study's research objectives. This process involved verifying the relevance and coherence of each theme.

Defining and Naming Themes: Each theme was clearly defined and named to ensure clarity and consistency in understanding the impacts of technology adoption. These themes highlighted both the positive contributions of technology to operational efficiency and sustainability, as well as the challenges faced in its integration within the RMG sector.

### 3.4. Ethical Considerations

Ethical approval was obtained, and all participants were informed about the study’s purpose, their rights, and data confidentiality. Consent was secured before recording interviews, ensuring transparency and compliance with ethical research practices.

## 4. Data Analysis and Findings

The results of the data study are shown in this part, with an emphasis on how technology adoption has impacted logistics and supply chain management in the Bangladeshi RMG sector. It emphasizes operational efficiency improvements, sustainability, ethical practice promotion, challenges regarding technology integration, and suggestions for improved technology adoption using thematic analysis of interview data.

		Key Themes	Frequency of Mentioning	Representative Quote
Inventory Management	Key Technologies	Barcoding	6	'For example, Barcoding, RFID, and advanced IMS (Inventory Management System) improve accuracy and streamline processes for increased control and efficiency of inventory management.'
		RFID	5	
		Advanced MIS	4	
	Contributions	Real-time Tracking	5	'Through real-time tracking, automation, and data analytics, technology integration in inventory management improves operations, reduces errors, and provides instant data for the Bangladeshi RMG sector'
		Automation	5	
		Data Analytics	4	
Production Management	Key Technologies	Automation	4	'As an industry insider, I found that Bangladeshi RMG's production management is influenced by technology. A few notable examples of technology that improve operational efficiency and accuracy are automation, AI, and IoT-enabled machinery.'
		AI (Artificial Intelligence)	4	
		IoT-enabled Machinery	6	
	Contributions	Reduced Lead Times	6	'Technology integration in production planning reduces lead times, maximizes resource

		Resource Allocation	6	allocation, and enables real-time communication. This helps enhance schedules, decrease, and heighten flexibility toward fluctuating market requirements to achieve a competitive advantage.'
		Real-time Communication	6	
		Proper Scheduling	4	
		Flexibility	4	
Transportation Management	Key Technologies	GPS Monitoring	6	'As a professional in this field, I have found how technology is revolutionizing transportation in Bangladesh's RMG industry. GPS monitoring, real-time visibility tools, and route optimization software enhance productivity and logistics management.'
		Real-time Visibility Tools	6	
		Route Optimization Software	4	
	Contributions	Use of eco-friendly materials	6	'By lowering costs, enhancing visibility, and ensuring on-time delivery, technology integration in the transportation system of the Bangladeshi RMG sector increases operational efficiency.'
		Real-time Tracking	4	
		Adoption of sustainable practices	6	

Table 1. Assessing How Technology Adoption Is Creating Operational Efficiency; source: Original Research

After conducting a thematic analysis of the participants' opinions, several important themes emerged about the level of technology utilization in operational efficiency in three areas, including inventory management, production management, and transportation management in the Bangladeshi RMG industry. The three key technologies used in inventory management that were found to be the most effective were barcoding, RFID, and improved IMS. These technologies enhance the operational efficiency of inventory management in the Bangladeshi RMG sector, were real-time tracking, automation, and data analytics. Again, currently the most used technologies in production management are IoT-enabled machinery, automation and AI. These technologies increase operational efficiency in inventory management primarily by reducing lead times, optimizing resource allocation, and ensuring real-time communication, as well as by advancing production schedules and maintaining flexibility.

Also, some key technologies for operational efficiency were route optimization software, real-time visibility tools, and GPS tracking. These technologies enhance operational efficiency by ensuring on-time delivery, improving visibility, and reducing cost.

	<b>Key Themes</b>	<b>Frequency of Mentioning</b>	<b>Representative Quote</b>
Sustainability	Use of eco-friendly materials	6	‘Technology in the Bangladesh RMG industry minimizes environmental impact by using eco-friendly materials, real-time tracking of production processes, and adopting sustainable practices, fostering a greener and more responsible supply chain’
	Real-time Tracking	4	
	Adoption of sustainable practices	6	
Ethical Implementation	Traceability via Blockchain	6	‘Technology assists the Bangladeshi RMG industry with ethical sourcing by providing traceability via blockchain, guaranteeing transparency, and using data analytics to screen suppliers and ensure materials that are ethically and socially supplied’
	Transparency	6	
	Data Analytics	4	

Table 2: Addressing the Role of Technology in Increasing Sustainability and Ethics; source: Original Research

Several major themes were found from a thematic analysis of participant responses about how technology has been used to increase sustainability and ethical practice in the supply chain operations of the Bangladeshi RMG industry. The use of environmentally friendly materials, real-time manufacturing process tracking, and the adoption of sustainable practices were the key themes mentioned the most. Also, the three themes that were mentioned most frequently were data analytics, transparency, and blockchain-based traceability for ethical implementation.

	<b>Key Themes</b>	<b>Frequency of Mentioning</b>	<b>Representative Quote</b>
Infrastructural Constraints	Slow connectivity	4	‘Infrastructure constraints, such as slow connectivity or obsolete systems, hinder the effective integration of technology by causing delays, data inaccuracies, and disruptions in communication within the Bangladesh RMG industry's supply chain.’
	Obsolete systems	5	
	Delays	6	
	Data inaccuracy	5	
	Disruptions in communication	4	

Skill Gaps	Inefficiency	6	‘The current team of employees is evident with lower productivity and efficiency’
	Lack of productivity	6	
Cost Constraints	Limited investment in technology	6	‘Limited budget and cost constraints are creating several obstacles like limited investment in technology, limited innovation, and slow adoption rate’
	Limited innovation	5	
	Slow adoption rate	4	
Resistance to Change	Reluctance	6	‘Resistance to change among stakeholders, including employees and management, can hinder the successful integration of technology in the Bangladesh RMG industry's supply chain by raising reluctance, hindering collaboration, and slowing down the adoption process’
	Lack of Collaboration	5	
	Slowing down Adoption	3	

Table 3: Identifying the Challenges Associated with Integrating Technology into the Supply Chain; source: Original Research

Several key themes were found from a thematic analysis of participant comments on how challenging it is to integrate technology into the supply chain of the Bangladeshi RMG sector. The themes that were mentioned the most as infrastructural constraints were poor connectivity, out-of-date systems, delays, inaccurate data, and communication disruptions. Two major themes found from a thematic analysis of participant responses about how labour skill gaps make it challenging to adopt technology into the supply chain of Bangladesh RMG industry are lack of efficiency and productivity. The fact that the theme of limited investment frequently reflects the difficulties caused by limited financial resources, which can hinder innovation efforts and hamper the acceptance of new technologies. Three main themes found from a thematic analysis of participant responses on how stakeholders' resistance to change makes it challenging to adopt technology into the supply chain of the Bangladeshi RMG industry are reluctance, impeding collaboration, and slowing down the adoption process.

## 5. Discussion on Findings

Thematic analysis of participant responses directs findings about technology adoption and its effect on operational efficiency in the supply chain of the Bangladeshi RMG industry, which is generally consistent with existing research on the topic (Table 1). According to the literature, using technology may greatly increase operational efficiency by enhancing visibility across the supply chain, improving accuracy, and simplifying tasks (Irfan, Wang and Akhtar, 2020). Barcoding, RFID, real-time tracking, automation, and data analytics are themes in inventory management that are consistent with literature that emphasizes the advantages of these technologies in terms of increasing inventory accuracy, decreasing mistakes, and providing greater control over stock quantities (Pal, 2020). These results are consistent with existing research that emphasizes how crucial technology-enabled inventory management systems are to enhancing operational effectiveness and customer service.

Similarly, themes found in production management literature reflect the significance of technology in reducing production processes, cutting lead times, and optimizing resource allocation. These themes include automation, AI, IoT-enabled machinery, and real-time communication (Lee, 2021). The results of this study are consistent with the literature, which indicates that technology integration can improve

production scheduling, flexibility, and overall operational effectiveness and efficiency. In terms of transportation systems, the themes that have been found, like GPS tracking, real-time visibility tools, and route optimization software, are consistent with existing literature that reflects how technology can improve logistics management, enhance efficiency, and ensure real-time delivery (Hader *et al.*, 2022). The results of this study are supported by other research, which suggests that technology-enabled transportation systems can result in lower costs, better delivery outcomes, and more customer responsiveness.

The results of the thematic analysis about how technology can enhance sustainability and ethics (Table 2) in the supply chain of the Bangladeshi RMG industry both support earlier research and offer insightful new knowledge that enhances the understanding of these areas. It shows that technology plays an important role in increasing sustainability in the RMG supply chain. Examples of this include real-time tracking and practicing sustainable activities (Caldarelli, Zardini & Rossignoli, 2021). This result is consistent with other studies that emphasize how technology may increase sustainability through waste reduction, improved resource management, and the encouragement of eco-friendly behaviour (Wang *et al.*, 2020). The focus on environmentally friendly products and real-time monitoring tools is consistent with existing research that reflects how technology is enabling sustainable sourcing and production systems.

It also reflects how important technology is for ensuring traceability and transparency procedures in ethical sourcing practices. This result is consistent with existing research that emphasizes the contribution of technology, such as blockchain and data analytics, to improve supply chain reliability and transparency. The focus on blockchain-based traceability is consistent with research indicating that the technology might update supply chain transparency by offering transparent and unchangeable records of product sourcing (Akram *et al.*, 2022). It further finds the contribution that digital tools and platforms have to traceability and transparency in sustainable purchasing. This result is consistent with research that highlights how crucial digital technologies are to providing customers with the information they need to buy sustainable products (Kalyar, Shafique & Ahmad, 2020). Research indicates that digital platforms may empower customers by providing them with access to detailed product information, including environmental and ethical concerns. This is supported by the emphasis on real-time data and product information.

The theme analysis conducted on the challenges in adopting technology into the supply chain of the Bangladeshi RMG industry offers insights into the issues that stakeholders face (Table 3). By placing these findings in the context of the body of knowledge already available on supply chain technology adoption, it may better highlight the difficulties and consequences involved.

Infrastructure-related limitations to technology integration, such as slow connectivity and outdated systems, are found. This is consistent with other studies that emphasize the need for a strong infrastructure for effective technology integration. Inadequate connections and outdated technologies may cause disruptions in communication, delays, and inaccurate data, which can hinder the smooth integration of technology across the supply chain (Agrawal *et al.*, 2021). The results reflect how important it is to overcome infrastructure limitations to enhance technology adoption and improve supply chain efficiency. In addition, it indicates that a major challenge to the integration of technology is skill gaps in the workforce. This result is consistent with previous research prioritizing the value of trained human capital in utilizing technology properly. Reduced efficiency and productivity can result from an ineffective and unproductive workforce caused by a lack of skills, which can hinder dedication to accept new technologies (Camargo, Pereira & Scarpin, 2020). The results indicate the necessity of funding training and upskilling programs to minimize skill gaps and provide the workforce with the confidence to adopt new technology.

Cost constraints are found as a hindrance to technology integration in the RMG supply chain. This result is consistent with earlier studies that found limited funding might reduce efforts to invest in technology and innovate. Cost constraints preventing large investments in technology might lead to low innovation and poor adoption rates, which would affect the competitiveness of the sector negatively. The results

demonstrate how important it is to remove financial challenges by carefully allocating resources and designing investments to enhance technological innovation and adoption (Fung *et al.*, 2021). Finally, it identifies the issue of stakeholders' reluctance to adapt when it comes to the adoption of new technologies. This result is consistent with research that shows how organizational culture and change management may help enhance the adoption of new technologies. The adoption process can be slowed down, and collaboration is hindered by management and staff resistance to change, which can neglect the potential advantages of technological integration (Alves *et al.*, 2022). The results demonstrate how complex it is to develop an innovative culture and offer sufficient assistance and training to tackle reluctance and enhance the adoption of new technologies.

## **6. Conclusion**

The research infers that technology plays a transformative role in the supply chain management of the Bangladeshi RMG industry, enhancing operational efficiency and promoting sustainability. Tools such as RFID, AI, and blockchain have streamlined processes and increased transparency, supporting ethical sourcing and eco-friendly practices. However, the industry faces notable challenges, including infrastructure limitations, skill shortages, and resistance to adopting new systems. These issues underline the need for targeted investment and training. Overall, while technology integration has shown positive outcomes, addressing these challenges will be crucial to fully leveraging technological advancements for long-term industry growth and resilience.

### **6.1. Limitations of the Research**

The qualitative insights of this study cannot be statistically generalized; the transferability of the findings is limited by their reliance on a small purposive sample of six managers. Although data saturation was attained, the variety of viewpoints might have been limited by the homogeneity of the participants. Despite their convenience, telephone interviews limit the ability to observe nonverbal clues, which can sometimes enhance qualitative interpretation. Furthermore, contextual specificity may limit the applicability of the study to other businesses or national settings because it is based in the Bangladeshi RMG sector.

### **6.2. Further Research**

Subsequent evaluations were directed to further explore the perceptions of various participants in the Bangladeshi RMG sector, such as producers, vendors, merchants, and customers. Studies that follow the enhancement of technology adoption over time may offer a more thorough analysis of the effects that technology has on industrial ethics, sustainability, and operational effectiveness. Future studies could examine how advanced technologies like AI, machine learning, and the IoT could enhance supply chain operations in the Bangladeshi RMG sector, focusing on how quickly technology is developing. Studies that compare the supply chain practices and technological adoption of the Bangladeshi RMG industry to those of other countries may provide insightful comparisons and benchmarks for improvement.

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# Influence of Parenting Style and Substance Use on Antisocial Behaviour among Inmates in Selected Correctional Centres in Ogun State

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## Abstract

*This study investigated the influence of parenting style and substance use on antisocial behaviour among inmates of selected correctional centers in Ogun State, Nigeria. Three hypotheses were formulated for the study. The study adopted a descriptive survey research design. The study population comprised inmates from four correctional facilities in Ogun State, Nigeria namely; Ilaro correctional facility, New Abeokuta correctional centre, Abeokuta, Ijebu Ode correctional facility and Sagamu correctional facility. A simple random sampling technique was used to select 200 inmates from each correctional facilities in Ogun state using Taro Yamane formular which formed the sample for the study. The study employed a structured questionnaire divided into four sections titled "Influence of Parenting Style and Substance use on Antisocial Behaviour among Inmates." Face and construct validity were ensured and a reliability alpha coefficient of 0.75, 0.86 and 0.98 were generated for each variable in section B, C and D using Cronbach's alpha. Direct administration and retrieval method were used for data collection. Data collected were analysed using inferential **statistical** analysis methods of linear regression. The findings revealed that the null hypotheses were rejected for hypothesis 1, hypothesis 2 and hypothesis 3. The study concluded that parenting style and substance use relatively and jointly contribute to antisocial behaviour among inmates of selected correctional centres in Ogun State. It further recommended that targeted interventions by Government agencies, schools, non-governmental organizations and community health centres within correctional centres that incorporate parenting education programs and promote authoritative parenting practices, such as warmth, consistency, and discipline should be established.*

**Keywords:** *antisocial behaviour, correctional centres, inmates, parenting style, substance use*

## 1. Introduction

Every country has established an institution where they keep offenders. These include individuals who are awaiting trial or who are under trial in the criminal courts. These are called "correctional centres" or "prisons." Correctional centres or prisons are established for various reasons, which include, but are not limited to, educating offenders, preventing reoffending, and, most commonly, the correction or rehabilitation of inmates. In modern times, many 'prisons' are no longer referred to as prisons. Rather, they are called 'correctional facilities, services or centres.'

Misbehaviour by inmates in jails often causes issues both for other prisoners and for the staff (Arbach-Lucioni, Martinez-García & Andrés-Pueyo, 2012). Antisocial behaviour is a mental health condition characterized by a lack of respect for social standards regarding appropriate behaviour, impatience, aggression, impulsivity, contempt for others' feelings and safety, as well as disregard for one's safety, and consequences of one's actions (Fonagy *et al.*, 2020). Additionally, it is a pervasive pattern of disregard for societal rules and the rights of others, characterized by exploitative, guiltless behaviour, deceitful actions, repeat criminality, and consistent social irresponsibility (Gobin *et al.*, 2015; Sadock, 2015).

Antisocial behaviours are actions that violate societal norms, laws, or the rights of others, often characterized by aggression, deceitfulness, impulsivity, and a lack of remorse (Fisher, Torrico & Hany, 2024). These behaviours can manifest in various forms, including criminal activities, physical violence, destruction of property, and persistent patterns of rule-breaking (Ojo, 2015). Antisocial behaviours are not limited to overt acts of defiance but may also include covert behaviours, such as lying and manipulation, which disrupt social harmony (American Psychiatric Association, 2022). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), antisocial behaviour is a core feature of Antisocial Personality Disorder (ASPD), where individuals consistently disregard the safety and well-being of others (American Psychiatric Association, 2022). However, antisocial behaviour is not exclusive to clinical diagnoses and is often studied as a broader spectrum of actions observable in both clinical and non-clinical populations (Otto *et al.*, 2021).

Antisocial behaviour describes all behaviours, attitudes, and personality traits that people engage in that appear to be dysfunctional, in that they often have negative interpersonal and societal outcomes (Hashmani & Jonason, 2019). These behaviours, which are termed antisocial, are conducts that are hostile to other people, their property, or violate social norms, because they cause bodily harm or mental anguish to other people or their possessions (Cabrera *et al.*, 2017). This kind of behaviour can take many different forms, such as lying, dangerous sexual behaviour like having multiple sexual partners, breaking the law, using drugs, and doing things that bother other people, like stealing, damaging property, cheating, or being verbally or physically aggressive (Pears, Kim & Fisher, 2016).

The psychologist has long held an interest in parenting and its effects on the socialization and the development of their youngsters (Sazelo *et al.*, 2023). Parenting is a complex task, particularly when considering the different elements, processes, and dynamics it comprises (Pinquart, 2017; Rose *et al.*, 2018). Parenting style is defined as strategies people use in rearing their children. Usually, parents are unaware of the effects of their parenting style on children's behaviour (Kiran, Farooqi & Ahmed, 2019). A parenting style is a psychological construct speaking to standard procedures that parents use in youngster raising (Faraz & Shahanawaz, 2015).

There are four types of parenting styles, which include authoritarian, authoritative, permissive and neglectful parenting styles (Baumrind, 2005; Eze, 2021). Authoritarian parenting is where parents establish the rules and expect that children will follow them without exception. Children have little or no involvement in problem-solving challenges or obstacles (Sanvictores & Mendez, 2022). Parents expect that children will follow all the rules all the time. If children challenge the rules or ask why such rules are obeyed, they are usually told, "Because I said so." Children are not usually given the reasons for the rules and there is little room for any negotiation (Eze, 2021). The second type of parenting is authoritative parenting style. Here, parents establish rules that children are expected to follow. There are situations where there may be some exceptions to the rule. They often tell children the reasons for the rules and are more willing to consider a child's feelings when setting limits (Sanvictores & Mendez, 2022). Authoritative parents tend to use consequences instead of punishments, more of positive consequences to reinforce good behaviour and may be more willing than authoritarian parents to use reward systems and praise (Eze, 2021).

Permissive parenting style is the third type of parenting, where parents do not offer much discipline, but tend to be lenient and may only step in when there is a serious problem. There may be few consequences for misbehaviour because parents have an attitude of "kids will be kids" (Janius, Jemat & Amdan, 2024). Permissive parents may take on more of a friend role than a parent role. They may encourage their children to talk with them about their problems but may not discourage a lot of bad behaviour (Kuppens & Ceulemans, 2019). Another parenting style is the neglectful parenting style where parents tend to be neglectful and often do not meet their children's basic needs and may expect children to raise themselves (Sanvictores & Mendez, 2022). Sometimes, this may be due to parents' mental health issues or substance abuse problems. They may also lack knowledge about parenting and child development or may feel overwhelmed by life's other problems. Neglectful parents tend to have little knowledge of what their children are doing (Eze, 2021). Based on Tumusabe, Kazara and Moses (2022), neglectful parenting is a style where parents do not address their child's needs or wants beyond providing food, clothing, and shelter. These children are given little guidance, discipline or nurturing

from their parents. And in many cases, children are left to raise themselves and make major and minor decisions. It is a contentious parenting style, and because of that, it is easy to pass judgment on these parents. However, whether you are an authoritarian, authoritative, permissive or neglectful parent or know someone who is, remember that this parenting style is not always intentional (Janius, Jemat & Amdan, 2024).

Parenting style is a critical determinant of an individual's psychological, social, and behavioural development (Sanvictores & Mendez, 2022). It shapes how children interact with their environment, their emotional well-being, and the overall trajectory of their lives (Kuppens & Ceulemans, 2019). Parenting style significantly influences a child's ability to form healthy social relationships. According to Li, Wang and Li (2021), authoritative parenting, which is characterized by high levels of responsiveness and appropriate discipline, fosters strong social competence in children. This style encourages open communication, teaching children how to navigate social settings with empathy and confidence (Janius, Jemat & Amdan, 2024). Parenting style directly impacts the likelihood of engaging in antisocial behaviours such as substance use, aggression, and criminality. As noted by Wang, Qian and Chen (2020), neglectful or authoritarian parenting increases the risk of antisocial tendencies, as these styles either fail to provide adequate supervision or create resentment through excessive control. The impact of parenting extends well into adulthood, shaping personality traits and coping mechanisms (Tumusabe, Kazara, & Moses, 2022). Secure attachments formed under authoritative parenting create a foundation for responsible behaviour and adaptive coping strategies (Chen, Liu & Zheng, 2022).

Poor parenting styles by parents would increase children's preference to commit antisocial behaviours. Just like parenting style, studies have confirmed the relationship between antisocial behaviour and substance use (Oluwole, Habibat & Babatunde, 2017), though a complex one. Substance use has been acknowledged not only as a global social and public health problem but is also associated with antisocial behaviours (Dahlman *et al.*, 2021). Antisocial behaviours and substance use appear to occur regularly in serious offenders; that is, offenders with high scores on one self-report measure also have high scores on the other self-report measure (Ukeh, 2021).

Substance abuse, also called drug abuse, is a term simply used to denote the use of certain chemicals for the purpose of creating pleasurable effects in the brain (Oluwasanmi, 2022). Over 190 million drug users can be found around the globe; this number is steadily on the increase exponentially, especially among youth (Mandal, 2021). Substance use is the application of a drug to cure an illness, prevent a disease or improve health, in line with prescription of a qualified medical doctor. However, substance use becomes an abuse when substance is taken for reasons other than medical purpose, in an amount, strength, frequency or manner, capable of causing damage to the physical or mental functioning of an individual (Sahu & Sahu, 2016). Substance abuse can result in substance addiction. This usually happens when the abuser develops tolerance and dependence. Substance tolerance is a condition where the user needs more and more of the drug to experience the same effect (Sahu & Sahu, 2016). When this happens, the smaller quantities which were sufficient earlier no longer satisfy the user and they are ultimately compelled to increase the quantity of drug/substance intake. Gradually, dependence on the drug develops.

In Nigeria, substance use among prisoners is assuming an alarming dimension as evidenced by the rate of recidivism as well as the prevalence of drug dependency among ex-prisoners (Ugwuoke & Mfon, 2018). Substance use has become a recurrent problem which poses a risk to public safety and by extension, national security. Even with the security apparatus on ground in the various prisons nationwide, these prohibited substances still find their way into the prisons (Ugwuoke & Otodo, 2016). With the water tight security set-up in our prisons, it is expected that these substances should be detected; unfortunately, drugs and other psychotropic substances still make their ways through the eagle-eyed security into our prison yards. According to a study by Ugwuoke and Otodo (2016), the prevalence of substance use among prisoners is high. Different classes of drugs are consumed by prison inmates and this poses a great security to the immediate prison environment, and the nation at large. Apart from posing serious security malady, drug use among inmates also degrades their physical and mental health, and defeats the essence of imprisonment which is for reformation and rehabilitation. Most prisoners who use illicit substances had learned the habit before imprisonment, and when they

come into prison, they tend to continue with the habit (Ugwuoke & Otodo, 2016). A considerable number of prisoners not only continue drug use in prison but practice high-risk behaviour such as injecting and needle sharing. Although there are limited data on the drug problem in prisons, studies indicate that up to 50-60% of drug abusers still use drugs in prison with about one third of them injecting drugs (Ugwuoke & Mfon, 2018).

The correctional centre system is a home for idle minds due to lack of what to do, lack of workshop facilities and lack of good skills, which the inmates would like to learn, no good recreational facilities and other amenities. It is a well-established fact that the greatness of any nation is judged by the kind of treatment given to persons in her correctional centres (Akpolaro, Skiru & Ubong, 2023). With the increase in antisocial behaviour among inmates, there is a need to understudy variables that influence it, hence, the reason for considering parenting styles and substance use.

### **1.1. Statement of Problem of the Study**

Antisocial behaviour, characterized by persistent patterns of disregard for societal norms and the rights of others, remains a critical challenge in understanding and addressing the psychological and social dimensions of inmates' rehabilitation. Despite extensive research into the factors contributing to antisocial behaviour, the roles of parenting style and substance use remain inadequately explored, particularly within incarcerated populations. Existing studies have largely focused on general populations (Edens *et al.*, 2015; Ikediashi & Akande, 2015; Cabrera *et al.*, 2017), leaving a gap in knowledge about how these variables interact specifically among inmates, a subgroup with unique psychosocial experiences.

Research highlights that parenting style is a critical determinant of behavioural outcomes, with authoritative parenting often associated with positive behaviours, while neglectful and authoritarian parenting styles may predispose individuals to antisocial tendencies (Kuppens & Ceulemans, 2019; Sanvictores & Mendez, 2022). Similarly, substance use has been established as a predictor of deviant behaviours, with individuals often engaging in criminal activities to sustain addiction (de Jong, Bernasco & Lammers, 2020; Allen *et al.*, 2021). However, there is a paucity of studies that examine how these two variables - parenting style and substance use -independently and jointly contribute to antisocial behaviour among inmates.

Furthermore, the mechanisms through which parenting styles and substance use interact to influence antisocial behaviour remain poorly understood. For example, it is unclear whether substance use acts as a mediating factor between parenting style and antisocial behaviour or if its influence is entirely independent. This knowledge gap limits the development of targeted intervention strategies aimed at reducing recidivism and promoting the reintegration of inmates into society.

## **2. Literature Review**

### **2.1. Concept of Parenting Style**

Parenting is a complex task, involving multiple elements, processes, and dynamics (Rose *et al.*, 2018). Parenting style refers to the emotional climate in which parents raise their children (Pinquart, 2017). It includes the strategies and approaches parents use to guide, control, and socialize their children. These styles are shaped by cultural, social, and individual factors, and they play a critical role in the psychological and behavioral development of children (Pinquart, 2017). Importantly, parenting style has a significant influence on the likelihood of children engaging in antisocial behaviors such as aggression, rule-breaking, and substance abuse (Sorkhabi & Koc, 2021).

Parenting style can be broadly defined as the overall approach parents adopt to guide, discipline, and nurture their children, shaped by cultural practices and personal experiences, and often ranging from authoritative to authoritarian orientations (Martinez & Gonzalez, 2018). It involves the guidelines parents establish for their children's behaviour, which mirror parental values about caregiving, discipline, and expectations (Harrison, Wang, & Liu, 2021). From a psychosocial perspective, parenting style plays a crucial role in shaping children's emotional regulation and self-worth (Jenkins, Harper & McDonald, 2019). It can also be understood as the interactive relationship between caregiver and child

that directs behavioural and developmental outcomes (Cohen & Kessler, 2018). Moreover, it represents the broader framework in which parents balance control, support, and autonomy (Beck & Richards, 2020). At its core, parenting style reflects the emotional climate parents create through their attitudes, behaviors, and expectations within the home.

## **2.2. Concept of Substance Use**

Substance use is commonly understood as the ingestion of psychoactive substances that alter an individual's mental state, perception, and behaviour (Jones, Williams & Lewis, 2017). It is often described as a pattern of consuming drugs, alcohol, or tobacco that can result in both short- and long-term negative health consequences. Beyond this, it is considered a complex phenomenon influenced by factors such as age, gender, culture, and environment, and it becomes problematic when habitual consumption escalates into abuse despite awareness of its harmful effects (Nguyen & Kim, 2021). As a major public health concern, substance use has been linked to higher rates of physical illnesses, mental health disorders, and social challenges (Rodriguez, Smith, & Johnson, 2022). It can also be understood as the intentional use of substances such as alcohol or drugs for pleasure or stress relief, with social influences like peer pressure and family environment shaping its prevalence among adolescents (Green & Thompson, 2019). Furthermore, the repeated use of substances despite awareness of their harmful consequences highlights its addictive nature (Patel & Sharma, 2018).

Although drug abuse is widely recognized as a health problem that should be addressed through interventions grounded in health and social welfare policies while respecting the human rights of users, appropriate strategies remain insufficient. Onyegbula (2017) emphasized concerns raised by Professor Obot, Director of the Centre for Research and Information on Substance Abuse (CRISA), regarding the rapid increase of substance abuse in Nigeria without corresponding access to treatment. This view was echoed by Glen Prichard, UNODC Project Coordinator on Drugs and Related Organised Crime in Nigeria, who noted that treatment access was critically limited. In fact, only 1,000 people were reported to have accessed drug treatment in 2016 in a country of about 180 million people, revealing a substantial treatment gap (Onyegbula, 2017).

## **2.3. The Concept of Antisocial Behaviour**

Antisocial behaviour is generally understood as actions that violate societal rules and the fundamental rights of others (Amaefule, 2022). More broadly, it refers to attitudes and behaviours that contravene social norms as well as the personal or property rights of individuals. Such tendencies often arise from an inability to respect the rights of others (Fortin, 2023) and may manifest in forms such as assault, vandalism, arson, theft, armed robbery, and other delinquent acts that undermine community order (Gaik *et al.*, 2020). Antisocial behaviour also encompasses deliberate actions that disregard the welfare of others, including frequent temper tantrums, bullying, and disruptive conduct, with parental influence and environmental exposure to violence playing a critical role in its development (Chang, Park & Lee, 2020).

These behaviours typically emerge during adolescence, a stage marked by profound biological, cognitive, and psychosocial changes that influence emotional regulation, impulse control, and risk-taking tendencies (Odgers *et al.*, 2018). Beyond developmental changes, epigenetic, structural, psychological, and social factors all contribute to the likelihood of antisocial conduct (Sijtsema & Lindenberg, 2018). Developmental theories of crime suggest that while many adolescents eventually desist, a smaller group persists into adulthood, maintaining antisocial patterns over time (Moffitt, 2018). Supporting evidence from Ireland indicates that antisocial behaviours reaching the level of minor criminal offences peak between the ages of 15 and 20, with most offenders being first-timers who do not reoffend. Ultimately, antisocial behaviour has far-reaching consequences not only for those directly involved - who may face marginalization, stigma, and legal sanctions - but also for their families and communities, whose cohesion and well-being are often disrupted (Odgers *et al.*, 2018)

## **2.4. Parental Style and Anti-Social Behaviour**

Research evidence shows that parenting style has a strong relationship with children's behavioural outcomes. A study conducted among 681 mothers of primary school children in Tehran, Iran, revealed

that the authoritative parenting style - characterized by high responsiveness and high demands - was linked to fewer internalizing and externalizing symptoms in children (Alizadeh *et al.*, 2011). This aligns with Baumrind's (1971) earlier work, which highlighted the effectiveness of authoritative parenting compared to authoritarian approaches, particularly in helping children avoid drug-related problems.

Substance use within correctional facilities has also been identified as a major social and security concern. A literature review by Ugwuoke and Mfon (2018) found that incarcerated individuals primarily abused caffeine, alcohol, cigarettes, opioids, and marijuana. The review further noted that many substances were smuggled into prisons by uncooperative staff and visitors, while also proposing strategies to strengthen the Nigerian Prison Service in response to rising cases of drug dependency among inmates.

Antisocial behaviour and prison environments are equally critical to understanding the psychosocial development of young offenders. In a study involving 40 participants from two prisons in South-Western Cameroon, it was found that overcrowding, experiences of abuse, solitary confinement, and the availability of social support significantly shaped the stability of identity among child prisoners, though healthcare services showed no direct negative influence (Njie & Joseph, 2020).

The influence of parenting styles on antisocial personality disorder (ASPD) has also been examined within Nigerian correctional settings. Findings from a survey of 314 inmates in Benue State revealed that permissive parenting significantly predicted ASPD, while authoritative, authoritarian, and uninvolved parenting styles did not (Iveren, Onyi & Apeon, 2024). Similarly, an investigation into psychopathology and personality traits among inmates in Kirikiri prisons showed a high prevalence of mental health challenges, although no statistically significant associations were found between personality traits, parenting styles, and psychopathology (Daramola & Oladimeji, 2022).

Beyond inmates themselves, the consequences of incarceration extend to their children. A study of children with incarcerated fathers reported higher emotional and behavioural difficulties compared to children from non-incarcerated families or families with low dysfunction (Domžalska, Skowroński & Wolańczyk, 2022). Notably, the impact was more pronounced among girls, with parental imprisonment exacerbating behavioural and emotional challenges during adolescence.

## **2.5. Substance Abuse and Anti-Social Behaviour**

The co-occurrence of substance use disorder (SUD) and antisocial personality disorder (ASPD) is a common finding among incarcerated individuals. A study involving 250 inmates diagnosed with the Mini International Neuropsychiatric Inventory (MINI) revealed that 57.6% had SUD and 11.2% had ASPD, with most participants being male (97.6%) and an average age of 35.4 years (Olagunju *et al.*, 2022). Among those with SUD, 35.2% had poly-SUD - most often linked to psychotic and dependence syndromes involving cannabis - while 22.4% had mono-SUD characterized by alcohol, nicotine, or opioid dependence. The study further highlighted that SUD was more prevalent among participants charged with robbery and conviction, whereas ASPD was associated with prior and long-term imprisonment.

High rates of substance use have also been reported in other African prison contexts. In a correctional facility in Jimma, Southwest Ethiopia, a large proportion of inmates were found to have engaged in substance use within the 12 months preceding incarceration, with khat being the most commonly used substance, followed by alcohol, nicotine, and cannabis (Yitayih *et al.*, 2018). Factors such as urban residence, psychopathy, family history of substance use, and low social support were significantly associated with SUD. Despite the psychosocial consequences and health risks, many inmates reported not receiving treatment before imprisonment, pointing to a substantial gap between service needs and availability, and raising concerns about relapse after release.

Evidence from Nigeria further underscores the widespread misuse of substances among prison populations. A survey of 128 inmates in Benue State prisons found that 82.8% reported substance use and misuse for reasons ranging from relieving fatigue, alertness, dejection, and depression to health-related purposes (Awopetu & Ajonye, 2011). These findings highlight the psychosocial drivers of substance abuse among incarcerated populations.

Risk factors such as self-control and peer influence also play a crucial role in inmates' substance use patterns. Research on jail inmates demonstrated that the effect of self-control on substance misuse was fully mediated by the presence of substance-using friends (Malouf, Stuewig & Tangney, 2012). The study further showed that age moderated the association between peer influence and substance misuse: younger inmates were more susceptible to marijuana use through peer influence, while older inmates showed stronger associations with cocaine misuse. These findings emphasize the importance of both intrapersonal and social factors in shaping patterns of substance misuse within correctional settings.

## **2.6. Parenting Style, Substance Use and Antisocial Behaviour**

Parenting style has been shown to influence children's behavioural outcomes significantly. Evidence from a study involving 681 mothers of primary school children in Tehran, Iran, demonstrated that the authoritative parenting style - characterized by high responsiveness and high demands - was associated with fewer internalizing and externalizing symptoms in children (Alizadeh *et al.*, 2011). These findings are consistent with Baumrind's (1971) earlier work, which emphasized the superiority of authoritative parenting over authoritarian approaches, particularly in helping adolescents avoid drug-related problems.

Substance use within prisons has also been identified as a pressing social and security challenge. A literature review examining this issue revealed that inmates commonly used caffeine, alcohol, cigarettes, opioids, and marijuana, with many of these substances entering prisons through the actions of uncooperative staff and visitors (Ugwuoke & Mfon, 2018). The study further recommended strengthening the Nigerian Prison Service to better manage the growing population of inmates struggling with psychoactive drug dependence.

Antisocial behaviour among incarcerated youths has been linked to adverse prison conditions. Findings from a study of 40 minors in two prisons in South-Western Cameroon indicated that factors such as overcrowding, physical and sexual abuse, solitary confinement, and inadequate social support negatively impacted the development of stable identity among young prisoners, whereas healthcare services did not show a direct negative influence (Njie & Joseph, 2020).

## **2.7. Causes of Antisocial Behaviour**

Rejection by parents has been shown to play a central role in the development of antisocial behaviours, often producing aggressive individuals prone to violence and confrontations. Lack of parental involvement, where parents appear as mere guests in the home, also contributes to this problem, as emotional neglect is frequently substituted by material gifts that fail to address children's psychological needs (Amaefule, 2022). Beyond parental influence, antisocial tendencies may also stem from negative school environments. For instance, disrespectful teachers who discourage collaboration and instead promote unhealthy competition have been linked to the rise of problematic behaviours among students (Amaefule, 2022; Akubue, 2021).

Peer influence further accelerates antisocial behaviour. When children with aggressive tendencies are rejected by their well-adjusted peers, they often form associations with other marginalized youths. These groups normalize and reinforce antisocial conduct and, in many cases, this progression results in gang membership (Farrington, 2015).

Family instability adds another layer of risk. Parental histories of antisocial behaviour, substance abuse, or psychiatric disorders—particularly maternal depression—create environments where antisocial traits flourish. Inconsistent parenting, coercive discipline, single parenthood, divorce, and economic distress have also been linked to behavioural problems in children. Additionally, the widespread exposure of children to media violence through television, movies, the internet, and video games further compounds the problem, contributing significantly to antisocial development.

## **2.8. Objectives of the Study**

The general objective of the study was to investigate the influence of parenting style and substance use on antisocial behaviour among inmates in selected correctional centres in Ogun state, Nigeria. Specifically, the study aimed to:

- examine the influence of parenting style on antisocial behaviour among inmates;
- investigate the influence of substance use on antisocial behaviour among inmates;
- determine the combined influence of parenting style and substance use on antisocial behaviour among inmates of selected correctional centers in Ogun state.

## **2.9. Research Hypotheses**

The study was guided by the following null hypotheses:

H<sub>1</sub>: There is no significant influence of parenting style on antisocial behaviour among inmates of selected correctional centers in Ogun state.

H<sub>2</sub>: There is no significant influence of substance use on antisocial behaviour among inmates of selected correctional centers in Ogun state.

H<sub>3</sub>: There is no significant joint influence of parenting style and substance use on antisocial behaviour among inmates of selected correctional centers in Ogun state.

## **3. Methodology**

The study adopted a descriptive survey research design for the study. The justification for the choice of survey research design is due to the quality nature of the study and data used for the study. This design is appropriate to obtain information and to systematically design the phenomenon. The study population comprised of 4,488 inmates according to Ogun State Judiciary as announced by the chief judge in May, 2025. Inmates from four correctional facilities in Ogun State namely; Ilaro correctional facility (797), New Abeokuta correctional centre, Abeokuta (999), Ijebu Ode correctional facility (664), Sagamu correctional facility (560) and Ibara (1468). Four correctional centres were sampled for the study namely: Ilaro correctional facility (797), New Abeokuta correctional centre, Abeokuta (999), Ijebu Ode correctional facility (664) and Sagamu correctional facility (560). Taro Yamane formula was used to select a total of 200 inmates using simple random sampling which formed the sample size for the study viz: Sagamu (37), Abeokuta (66), Ilaro (53) and Ijebu Ode (44). This represents an approximate 93% confidence level of the population. From each correctional facilities in Ogun State. The study employed a structured questionnaire divided into four sections titled “Influence of Parenting Style and Substance use on Antisocial Behaviour among Inmates.” The instruments were designed on a four-point Likert-type scale. Direct administration and retrieval method were used for data collection. Validity and reliability of the instruments were ascertained as the content validity of the instrument was carried out and finally given to an expert who ratified and corroborated the adoption of the instrument.

### **3.1. Data Collection Procedure**

Data for the study were obtained through the distribution of standardized questionnaires to selected respondents within the study population. The study employed a structured questionnaire divided into four sections, each targeting specific study variables: socio-demographic information, the Antisocial Behaviour Scale, the Steinberg Parenting Style Questionnaire, and the Drug Abuse Screening Test (DAST-20). The objectives of the study were thoroughly explained to the participants—who were inmates—to ensure clarity, understanding, and compliance. Validation of instrument was done by experts in social sciences and scale development. Face and construct validity were ensured and a reliability alpha coefficient of 0.75, 0.86 and 0.98 were generated for each variables using Cronbach alpha. Ethical approval was sought and obtained from the Ethical Board of the Ogun State Correctional Service, following the established protocols of the correctional facility. All ethical considerations, including confidentiality, informed consent, and voluntary participation, were strictly observed throughout the data collection process. The questionnaires were administered by the researcher, with the assistance of a trained research assistant. The process was carefully supervised to provide

clarification if any participant had questions. Upon completion, the questionnaires were retrieved immediately to prevent data loss.

Data Analysis: The data collected were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequency counts, means, and standard deviations, were used to summarize the socio-demographic characteristics of the respondents. Inferential statistics, specifically regression analysis, were employed to examine the influence of parenting style and substance use on antisocial behaviour. All hypotheses were tested at the 0.05 level of significance.

## 4. Results

### 4.1. Hypotheses Testing

H<sub>1</sub>: There is no significant influence of parenting style on antisocial behaviour among inmates of selected correctional centers in Ogun state.

Model	Sum of Squares	N	Df	Mean Square	F	Sig.	R	R Square	Adjusted R Square	Std. Error of the Estimate
Regression	48876.9	200	1	48876.9	70.421	0.000 <sup>b</sup>	0.512 <sup>a</sup>	0.262	0.259	26.3452
Residual	137426		198	694.071						
Total	186303		199							

a. Dependent Variable: Antisocial Behaviour

b. Predictors: (Constant), Parenting Style

Table 1: Linear Regression Analysis showing Influence of Parenting Style on Antisocial Behaviour among Inmates in Selected Correctional Centers in Ogun State; source: Original Research

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	194.664	7.853		24.788	.000
Parenting Style	-.518	.109	-.250	-4.771	.000
Substance Use	-2.904	.251	-.606	-11.583	.000

Dependent Variable: Antisocial Behaviour

Table 2: Coefficient of Multiple Regression Analysis Showing Contributions of Parenting Style on Antisocial Behaviour among Inmates in Selected Correctional Centres in Ogun State; source: Original Research

A simple linear regression was conducted to determine whether parenting style significantly predicts antisocial behaviour among inmates. The result revealed that the model was statistically significant,  $F(1, 198) = 70.42$ ,  $p < 0.001$ , indicating that parenting style is a significant predictor of antisocial behaviour. The model explained approximately 26.2% of the variance in antisocial behaviour ( $R^2 = 0.262$ , Adjusted  $R^2 = 0.259$ ), suggesting a moderate effect size. The regression coefficient for parenting style was negative and significant:  $B = -1.06$ ,  $t(198) = -8.39$ ,  $p < 0.001$ . This implies that as the quality of parenting style (likely more positive/structured) increases, antisocial behaviour significantly **decreases** among inmates. Specifically, for every one-unit increase in the parenting style score, antisocial behaviour decreases by approximately 1.06 units.

Since the p-value is less than 0.05, the null hypothesis ( $H_0$ ) is rejected. Therefore, there is a significant negative influence of parenting style on antisocial behaviour among inmates of selected correctional centers in Ogun State.

H<sub>2</sub>: There is no significant influence of substance use on antisocial behaviour among inmates of selected correctional centers in Ogun state.

Model	Sum of Squares	N	Df	Mean Square	F	Sig.	R	R Square	Adjusted R Square	Std. Error of the Estimate
Regression	95108	200	1	95108	206.496	0.000 <sup>b</sup>	0.714 <sup>a</sup>	0.511	0.508	21.4611
Residual	91194.8		198	460.58						
Total	186303		199							

a. Dependent Variable: Antisocial Behaviour; b. Predictors: (Constant), Substance Use

Table 3: Linear Regression Analysis Showing Influence of Substance Use on Antisocial Behaviour among Inmates of Selected Correctional Centres in Ogun State; source: Original Research

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	178.996	7.515		23.817	0.00
Substance Use	-3.422	0.238	-0.714	-14.37	0.00

a. Dependent Variable: Antisocial Behaviour

Table 4: Coefficient of Multiple Regression Analysis Showing Contributions of Influence of Substance Use on Antisocial Behaviour among Inmates of Selected Correctional Centres in Ogun state; source: Original Research

A simple linear regression analysis was conducted to assess whether substance use significantly predicts antisocial behaviour among inmates. The result showed that the model was statistically significant,  $F(1, 198) = 206.50$ ,  $p < 0.001$ , indicating that substance use has a significant influence on antisocial behaviour. The model explained approximately 51.1% of the variance in antisocial behaviour ( $R^2 = 0.511$ , Adjusted  $R^2 = 0.508$ ), indicating a strong effect size compared to the previous model. The regression coefficient for substance use was statistically significant and negative:  $B = -3.42$ ,  $t(198) = -14.37$ ,  $p < 0.001$ . This means that increased substance use is associated with significantly higher levels of antisocial behaviour (as substance use scores increase, antisocial behaviour decreases numerically due to the inverse coding, or the negative relationship indicates worsening behaviour as substance use increases).

Since the p-value is less than 0.05, the null hypothesis ( $H_0$ ) is rejected. Therefore, substance use significantly predicts antisocial behaviour among inmates of selected correctional centres in Ogun State. The direction of the relationship is negative, suggesting that higher substance use is linked to greater antisocial tendencies.

H<sub>3</sub>: There is no significant joint influence of parenting style and substance use on antisocial behaviour among inmates of selected correctional centers in Ogun state.

Model	Sum of Squares	N	Df	Mean Square	F	Sig.	R	R Square	Adjusted R Square	Std. Error of the Estimate
Regression	104555	200	2	52277.4	125.98	0.000 <sup>b</sup>	0.749 <sup>a</sup>	0.561	0.557	20.3707
Residual	81748.2		197	414.965						
Total	186303		199							

a. Dependent Variable: Antisocial Behaviour

b. Predictors: (Constant), Substance Use, Parenting Style

Table 5: Multiple Regression Analysis Showing Joint Influence of Parenting Style and Substance Use on Antisocial Behaviour among Inmates in Selected Correctional Centers in Ogun State; source: Original Research

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
(Constant)	194.664	7.853		24.788	0.00
Parenting Style	-0.518	0.109	-0.25	-4.771	0.00
Substance Use	-2.904	0.251	-0.606	-11.583	0.00

a. Dependent Variable: Antisocial Behaviour

Table 6: Coefficient of Multiple Regression Analysis showing contributions of parenting style and substance use on antisocial behaviour among inmates in selected correctional centers in Ogun State

A multiple linear regression was conducted to examine the joint influence of parenting style and substance use on antisocial behaviour among inmates. The regression model was statistically significant,  $F(2, 197) = 125.98$ ,  $p < 0.001$ , indicating that the combination of parenting style and substance use significantly predicts antisocial behaviour. The model accounted for approximately 56.1% of the variance in antisocial behaviour ( $R^2 = 0.561$ , Adjusted  $R^2 = 0.557$ ), reflecting a strong joint effect of the two predictors. Parenting Style was a significant negative predictor of antisocial behaviour:  $B = -0.518$ ,  $t(197) = -4.77$ ,  $p < 0.001$ , indicating that less effective parenting styles are associated with higher levels of antisocial behaviour. Substance use also significantly predicted antisocial behaviour with a stronger effect:  $B = -2.904$ ,  $t(197) = -11.58$ ,  $p < 0.001$ , suggesting that higher levels of substance use are associated with significantly greater antisocial behaviour. Since the overall model is significant and both predictors contributed uniquely and significantly, the null hypothesis ( $H_0$ ) is rejected. This confirms that parenting style and substance use jointly exert a significant influence on antisocial behaviour among inmates of selected correctional centers in Ogun State.

## 5. Discussion of Findings

This study investigated the influence of parenting style and substance use on antisocial behaviour among inmates of selected correctional centers in Ogun State. All three hypotheses formulated were supported with significant results at the 0.05 level.

Hypothesis one revealed a statistically significant negative influence of parenting style on antisocial behaviour among inmates of selected correctional centers in Ogun State. The regression analysis demonstrated that parenting style accounted for approximately 26.2% of the variance in antisocial behaviour ( $R^2 = .262$ ,  $F(1,198) = 70.42$ ,  $p < 0.001$ ), with an inverse relationship ( $\beta = -0.512$ ,  $p < 0.001$ ).

This finding implies that antisocial behaviours are not hereditary but can be linked to negative parenting styles. According to Adebajo and Aborisade (2024), parental involvement in the children's lives was found to be influential and contribute to adolescents' healthy psychological growth. This result aligns with previous research asserting that parenting style plays a crucial role in shaping behavioural tendencies, especially during formative years. Baumrind's (1971) typology of parenting - authoritative, authoritarian, permissive, and neglectful - emphasizes that children raised under authoritative parenting (which balances warmth and control) are less likely to develop antisocial tendencies. In contrast, authoritarian or neglectful parenting has been associated with increased risk of deviant behaviours, including aggression, defiance, and criminality. Furthermore, the result reinforces the position of social control theory, which posits that weak family bonds and inadequate supervision foster deviant behaviours. Alizadeh *et al.* (2011) reported that authoritative parenting - characterized by high responsiveness and demandingness - was associated with fewer internalizing and externalizing behavioural problems among children. Similarly, Baumrind (1971) emphasized the protective effect of authoritative parenting in reducing risky behaviours such as substance misuse during adolescence. These results reinforce the idea that structured and supportive parenting practices create a foundation for adaptive social behaviour, which persists into adulthood. Conversely, the current study's outcome resonates with the findings of Iveren, Onyi and Apeon (2024), who reported that permissive parenting significantly predicted antisocial personality disorder (ASPD) among incarcerated individuals in Benue State. While the present study did not isolate specific parenting styles, the observed negative association suggests that maladaptive parenting - such as permissive or uninvolved styles - may heighten vulnerability to antisocial tendencies. However, this result contrasts with Daramola and Oladimeji (2022), who reported no significant relationship between parenting style and psychopathology among inmates in Kirikiri prisons. The disparity may stem from differences in the operationalization of variables, with the current study focusing specifically on antisocial behaviour rather than broad psychopathological symptom.

In the context of inmates, poor parenting might have resulted in weakened internal controls and moral regulation, making individuals more susceptible to antisocial conduct. Therefore, improving parenting education and early family interventions could serve as preventive measures against the development of antisocial behaviours.

Findings from the second hypothesis showed that substance use had a statistically significant and negative influence on antisocial behaviour among inmates. The regression results indicated that substance use explained 51.1% of the variance in antisocial behaviour ( $R^2 = .511$ ,  $F(1,198) = 206.50$ ,  $p < 0.001$ ), with a strong inverse relationship ( $\beta = -0.714$ ,  $p < 0.001$ ). This suggests that higher levels of substance use are strongly associated with increased antisocial behaviour among the inmate population. Okoro *et al.* (2020) previously reported that there is a high prevalence of psychoactive substance use and disorders among new prison inmates with tobacco, cannabis and alcohol as the common ones. This result supports existing literature that has consistently linked substance use with heightened antisocial and criminal behaviours. According to the psychopharmacological model, substance use, particularly of drugs that alter perception and impulse control, may directly contribute to violent or antisocial acts (Ibimiluyi, 2023). Inmates with a history of substance abuse may engage in antisocial conduct as a means of sustaining addiction, influenced by impaired judgment and reduced moral restraint. Moreover, the finding aligns with the general strain theory, which argues that individuals experiencing psychological or environmental stressors (such as addiction) may resort to deviant behaviour as a coping mechanism. In this study, the inmates' antisocial actions may have been both a consequence and a reinforcement of their substance use history, thereby forming a cyclical relationship between addiction and antisocial conduct. The evidence emphasizes the need for substance use rehabilitation programs in correctional settings as a vital strategy to reduce recidivism and enhance behavioural reform. The result conforms to the study of Olagunju *et al.* (2022) that psychotic and dependence syndromes involving cannabis misuse were the most prevalent poly-SUD, and mono-SUD was characterized by alcohol, nicotine, and opioid dependence syndromes. Substance use disorder was more likely in participants charged with robbery and convicted, while ASPD was associated with prior and long-term imprisonment. The finding aligns with the work of Alizadeh *et al.* (2011), who reported that authoritative parenting - characterized by high responsiveness and demandingness - was associated with

fewer internalizing and externalizing behavioural problems among children. Similarly, Baumrind (1971) emphasized the protective effect of authoritative parenting in reducing risky behaviours such as substance misuse during adolescence. These results reinforce the idea that structured and supportive parenting practices create a foundation for adaptive social behaviour, which persists into adulthood. This finding corroborates the reports of Ugwuoke and Mfon (2018), who identified psychoactive substances such as caffeine, alcohol, marijuana, and opioids as commonly used among prison populations, often facilitated by non-compliant prison staff and visitors. Similarly, Yitayih *et al.* (2018) documented a high prevalence of substance use disorder among Ethiopian prisoners, linking it to prior psychosocial vulnerabilities, poor social support, and the likelihood of recidivism due to inadequate treatment services. The present study's result also aligns with Olagunju *et al.* (2022), who found substance use disorder prevalent among Nigerian inmates, often co-occurring with anti-social personality disorder (ASPD). Taken together, these findings emphasize that substance use is not merely a coping mechanism within prisons but a behavioural risk factor strongly associated with antisocial conduct. This outcome mirrors the perspective of Malouf *et al.* (2012), who observed that substance use dynamics among inmates were mediated by peer associations and moderated by self-control, underscoring the interplay between individual predispositions and environmental factors. Furthermore, the combined influence identified in this study supports an integrative understanding of antisocial behaviour, where distal factors (parenting practices) interact with proximal risk factors (substance use) to shape behavioural outcomes. Ultimately, this outcome underlines the importance of holistic intervention strategies that address both family dynamics and individual behaviours. Correctional rehabilitation programs must therefore integrate psychological counselling, substance abuse treatment, and family therapy to effectively mitigate antisocial tendencies among inmates. Conversely, the current study's outcome resonates with the findings of Iveren *et al.* (2024), who reported that permissive parenting significantly predicted ASPD among incarcerated individuals in Benue State. While the present study did not isolate specific parenting styles, the observed negative association suggests that maladaptive parenting - such as permissive or uninvolved styles - may heighten vulnerability to antisocial tendencies. However, this result contrasts with Daramola and Oladimeji (2022), who reported no significant relationship between parenting style and psychopathology among inmates in Kirikiri prisons. The disparity may stem from differences in the operationalization of variables, with the current study focusing specifically on antisocial behaviour rather than broad psychopathological symptoms.

The third hypothesis tested the joint influence of parenting style and substance use on antisocial behaviour. The multiple regression analysis indicated a significant combined effect, with the two predictors accounting for 56.1% of the variance in antisocial behaviour ( $R^2 = 0.561$ ,  $F(2,197) = 125.98$ ,  $p < 0.001$ ). Both parenting style ( $\beta = -0.250$ ,  $p < 0.001$ ) and substance use ( $\beta = -0.606$ ,  $p < 0.001$ ) made significant and independent contributions to the model. This result affirms the multidimensional nature of antisocial behaviour, which is influenced by both familial and individual factors. The joint impact indicates that negative early-life experiences, such as dysfunctional parenting, combined with later-life maladaptive behaviours like substance use, interact to exacerbate the development of antisocial traits. The finding reflects the cumulative risk hypothesis, which suggests that the accumulation of multiple adverse factors increases the likelihood of behavioural problems. Ultimately, this outcome underlines the importance of holistic intervention strategies that address both family dynamics and individual behaviours. Correctional rehabilitation programs must therefore integrate psychological counselling, substance abuse treatment, and family therapy to effectively mitigate antisocial tendencies among inmates.

### **5.1. Implications of the Study**

This study makes a significant contribution to the existing literature by providing context-specific empirical evidence on the predictors of antisocial behaviour among inmates in Nigeria, an area that remains under-researched. By examining the combined influence of parenting style and substance use, the study underscores how both early-life family dynamics and personal behavioural choices significantly shape deviant behaviour. Notably, the research demonstrates that these factors together account for over 56% of the variance in antisocial behaviour, offering a robust explanatory model.

The study also highlights the importance of early intervention in family systems and substance abuse prevention as key components of criminal rehabilitation efforts. By focusing on inmates within correctional facilities in Ogun State, the study adds local relevance to global discussions on criminogenic risk factors, emphasizing the need for integrated, psychosocial approaches in correctional management and reintegration strategies. This work thus serves as a foundational step for future research and policy aimed at reducing recidivism and promoting behavioural reform among incarcerated individuals.

## 6. Conclusion

This study investigated the influence of parenting style and substance use on antisocial behaviour among inmates of selected correctional centres in Ogun State. The findings revealed that both parenting style and substance use significantly predicted antisocial tendencies among the inmate population. Specifically, poor parenting styles were associated with increased antisocial behaviours, while substance use was identified as a strong contributing factor to deviant behaviour and antisocial behaviour.

Furthermore, the joint influence of parenting style and substance use provided a more comprehensive explanation of the antisocial behaviours observed, accounting for over half (56.1%) of the variance. These findings emphasize the complex interplay between early-life family environments and personal behavioural choices in shaping individual conduct, particularly among those involved in the criminal attitude and behaviours which are referred to as antisocial behaviour. Conclusively, it can be said that parenting style and substance use relatively and jointly contribute to antisocial behaviour among inmates of selected correctional centres in Ogun State. The results highlight the urgent need for targeted interventions within correctional centres that incorporate parenting education programs that promote authoritative parenting practices, such as warmth, consistency, and discipline. Government agencies, schools, non-governmental organizations and community health centres should organize workshops and seminars to educate parents on the impact of their parenting style on their children's behaviour. Also, young adults should be sensitized on the negative effect of substance abuse to their mental health which will directly shape their social behavior.

### 6.1. Limitations and Further Suggestions

The study relied on self-reported data, which may be subject to social desirability bias or inaccurate recall, particularly given the sensitive nature of the topic and also the sample was restricted to a specific geographic area and institutional setting, which may limit the generalizability of the results to other correctional centres or regions. The authors suggest that further studies could investigate how socioeconomic status interacts with parenting styles and substance use to influence antisocial behaviour among inmates. Understanding this relationship may provide a more holistic view of the root causes of delinquency and inform more targeted intervention strategies and finally research assessing the impact of specific rehabilitation and intervention programs targeting parenting-related issues and substance abuse within correctional centers could help refine and optimize strategies to reduce antisocial behaviour and recidivism.

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# Evaluating the Effectiveness of Academic Supervision in Nigerian Public Universities in the South-West: A Comparative Study of Lecturer and Graduate Student Perspectives

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## Abstract

*This study investigates the effectiveness of academic supervision within Nigerian public universities by comparing the perspectives of both supervisors and graduate students. Its primary objective is to identify and quantify the perceptual gaps between these two groups across key dimensions of the supervisory relationship, including supervisor accessibility and approachability, discrepancies in the expected versus actual frequency of feedback, divergent understandings of support adequacy, and differing approaches to mentorship. The research employed a non-experimental survey design, utilising two instruments—the Supervision in Nigerian Public Universities Questionnaire (SNPUQ) and the Academic Supervision in Nigerian Public Universities Questionnaire (ASNPUQ) which were adapted from the established Advisory Working Alliance Inventory developed by Schlosser and Gelso (2001). Data were collected from a sample of 292 postgraduate students and 115 lecturers across six Nigerian public universities. Analysis using descriptive statistics and an independent samples t-test revealed a statistically significant divergence in the mean scores of supervisors and students on the core constructs of supervision. The findings expose a critical misalignment in perceptions concerning accessibility, approachability, feedback, and the humanistic aspect of mentorship, indicating a fundamental weakness in the foundation of postgraduate education. In light of these results, the study strongly recommends that public tertiary institutions proactively address this issue by moving beyond assumed supervisory competence and instituting formal, mandatory professional development programmes for academic staff.*

**Keywords:** *academic support, accessibility, mentorship, supervision, supervisors*

## 1. Introduction

Academic supervision is the foundation of postgraduate studies and academics capacity development and the strongest interface where knowledge is transferred, research skills are developed, and academic ethics are fostered. In Nigerian public universities, it is an interface in operation between graduate students (Masters and PhD candidates) and lecturers (supervisors). Effective supervision finds its origin in perpetual positive criticism, intellectual guidance, methodological guidance, and professional know-how leading to individual scholarly growth in the student. The effectiveness of the system is always in doubt, between the ideal pedagogic models and the parsimony of the Nigerian university setting. Such an environment would most likely be defined by factors such as perpetual underfunding, geometric growth in student enrolment without corresponding faculty growth, scarcity of infrastructure, and periodic industrial action by university lecturers' unions.

For the supervisor, supervision is a difficult addition to already substantial loads of teaching, paperwork, and fear of "publish or perish." Success at their supervisory task is typically discouraged by large numbers of supervisees, limiting the amount of one-to-one care each student may receive. Moreover, limitation of access to new electronic libraries, research labs, and low research budgets, also invade their ability to fund pioneering research. The majority of supervisors, particularly those of previous generations, may also lack knowledge of current tools and research methods, therefore lagging behind the scholarship requirements emerging in the developing world (Omodan & Tsotetsi, 2022).

The student-supervisor relationship is probably the one most significant factor that affects their scholarship and prompt graduation. Students complain about a number of issues such as lack of sufficient student-supervisor interaction, delayed feedback on thesis chapters, lack of proper definition

of supervision process, and in some instances perceived issues of power, thereby hindering research path negotiation or raising concerns (Adeyemo, Ogunyinka & Adedoja, 2020). The anxiety and uncertainty born of inadequate supervision could result in long completion periods, high rates of dropout, and, in the worst case, academic plagiarism because the students are unable to find their way through their research work without supervision.

Though it is valued in terms of its worth globally, the system of academic supervision in Nigerian public universities is usually discovered to be functioning ineffectively, postgraduate studies being least effective. The cause of this problem lies in the enormous gap between set standards of academic supervision and actual experience of graduate students and lecturers. This is manifested in a number of critical aspects.

One particularly problematic postgraduate learning issue in Nigerian state universities may be the problem of delayed graduation and drop-out. Most of the students, particularly at the doctoral level, are not able to complete their programmes within the projected period (Ibrahim & Ogunyinka, 2021a). Rather, most are in the abiding phase normally characterized by the "all but dissertation" syndrome in which the coursework is completed but the thesis remains pending. For others, suspension persists for decades, and in most instances, results in ultimate withdrawal from the scheme entirely. All these penalties do not merely allude to a humongous wastage of individuals' initiative and effort but also wastage of national resources in creating higher-order human capital which never gets the chance to realize its full potential.

On top of this, students might experience supervision that is inconsistent and variable in quality. Instead of being in a similarly uniform institutional setting, the process of supervision relies nearly entirely on the availability, willingness, and ability of the allocated lecturer. Arguably, there is inconsistency in method of supervision, while some enjoy excellent guide and vigilant mentors, others are left to contend with minimal or no direction, occasional criticism, or even desertion. Similarly, the weakened formalised structures within the universities introduce disparities that undermine the integrity of supervisees' postgraduate study and academic development.

Lecturers are expected to supervise students without any formal training in mentoring or pedagogy, relying on intuition or informal apprenticeship style they themselves were originally received. Students are compelled to suffer underfunding of research projects with little or no institutional support for grants, fieldwork assistance, or access to pertinent current research literature. In addition, technology meant to support open communication, such as secure virtual platforms for remote supervision could affect the support system for students, especially those enrolled in distance or part-time courses.

The interpersonal nature of supervision also introduces a vulnerable element. The supervisor-student working relationship is close by definition and thereby susceptible to tension. Incongruent expectations, incoherent communication, or incompatible power easily could cause misunderstanding or even discord. Students at times are perceived as being exploited, slighted, or treated unfairly, and supervisors at times perceive students as uncommitted. Arguably, the majority of the universities may not have adequate mediation avenues or codified codes of conduct for the purpose of dealing with such complaints. In the absence of the stipulated redress channels or conflict resolution, these relational disjunctures become open sores eroding trust and degrading research.

These issues reflect not only individual failings but also institutional shortcomings, highlighting the need for study on academic mentorship. Although problems in postgraduate study are widely acknowledged, more empirical, solution-focused research on academic supervision is still needed, driven by clear gaps in the existing literature.

Most existing research focuses on a single factor either the student or the supervisor. There has been a general absence of studies following and comparing simultaneously the experience and perception of the students and supervisors. Comparative evaluation is crucial in establishing mismatched expectations

that typically make up the majority of supervisory malperformance (Adeyemo *et al.*, 2020). For example, if the example is taken to be a supervisor who considers the rate of feedback to be good whereas a student considers it to be neglectful, without double-perspective research, interventions can correct only half of the issue. Also, it is unclear whether there is enough data to test the impact of specific institution policies or the lack thereof on supervisory efficiency. The disparity between describing general problems and assessing specific policy interventions and their effects must be filled (Omodan & Tsotetsi, 2022).

Additionally, transformative and interactive studies are required. Studies should involve stakeholders (lecturers and students) in developing and evaluating evidence-based models for supervisory improvement rather than just identifying. While postgraduate supervision has been widely studied, far less attention has been given to the specific points where lecturers' assumptions clash with students' actual experiences. There is a need for more targeted research that uncovers some of these mismatches in some detail. This research seeks to fill that gap and provide evidence on which to base more responsive and effective supervisory practice.

### **1.1. Research Aim**

The aim of the study is to investigate how supervision is perceived and delivered, comparing lecturers' expectations and approaches with students' experiences.

### **1.2. Research Questions**

The study will provide answers to the following questions:

How do graduate students and supervisor differ in terms of:

- a. Supervisor Accessibility & Approachability:
- b. Frequency of feedback
- c. Supervisor support
- d. Mentorship

### **1.3. Theoretical Perspective**

Two philosophical frameworks that are useful for analysing the effectiveness of academic supervision in Nigerian public universities serve as the foundation for this study. These are Tinto's Theory of Student Integration and Vygotsky's Sociocultural Theory of Learning. In the Nigerian context, where supervision issues are influenced by systemic constraints, institutional design, and expectations from society, both provide a model of how supervision functions as an academic exercise as well as an institutional and relational practice.

Vygotsky's Sociocultural Theory focuses highly on learning as social mediation wherein knowledge is constructed through a process of interaction between the learner and the more knowledgeable other (Jaramillo, 1996). In postgraduate supervision, the lecturer plays the role of the "more knowledgeable other" in order to assist the student towards independent research capability from dependent learning. This support may be in the form of research design guidance, writing feedback, or modelling of scholarly conventions. The theory also emphasizes the zone of proximal development (ZPD) concept, which equates to the gap between what a learner can achieve independently and what can be achieved with support (Vygotsky, 1978).

In supervision, the ZPD is specific because supervisors are tasked with striking the right balance between support and gradually releasing responsibility so that students are independent, not dependent on them. In Nigerian postgraduate supervision, where quality is inconsistent and supervisors' formal

training is minimal, Vygotsky's model emphasizes the value of systematic, deliberate mentoring as opposed to leaving the student to go it alone through the research process. It reminds us that effectiveness is not just a function of subject knowledge, but relational pedagogy which closes the gap between potential student achievement and actual attainment (Adeyemi & Adeyinka, 2022).

A competing strategy is also offered by Tinto's Theory of Student Integration, which emphasises the circumstances in which students persevere and succeed in university. According to Tinto, student perseverance and timely graduation depend heavily on social integration (belonging to the academic community) and academic integration (engaging with learning, faculty and research) (Davidson & Wilson, 2013). According to Tinto's theory, professional identity illustration, academic socialisation to disciplinary communities, and conference participation are all components of effective supervision that go beyond technical research guidance (Karp, Hughes, & O'Gara, 2010).

Supervision is thus a key integrating device: inadequate or intermittent supervision results in disaffection and isolation of academics, with increased risk of extended completion times or withdrawal. In Nigeria, where students would often complain of feeling disconnected as a result of communication breakdown, resource shortages, or paucity of mentorship, the Tinto model helps understand why even as students start off being motivated, attrition is high. By means of improvement of supervisory practices for increasing intellectual challenge and sense of belonging, the university can directly improve the completion rate and minimize wastage of talent and resources (Ibrahim & Ogunyanka, 2021b).

Complementary aspects of efficient supervision are clarified by both theories. Vygotsky shows how scaffolding in the ZPD builds capacity by examining the micro-level dyadic interactions between a supervisor and a student. On the contrary hand, Tinto illustrates how persistence is maintained through integration into university life by situating supervision within broader institutional and social processes. Because both models recognise both the underlying forces that determine whether students achieve success or failure, in addition to the proximal relational processes of supervision, they are therefore highly helpful in the study of the postgraduate situation in Nigeria.

## **2. Methodology**

The survey utilised a non-experimental survey design, which was suitable in collecting data from a large group of postgraduate students and lecturers in selected public universities of Nigeria. A multistage sampling method was utilized to provide sufficient representation of the study population. Nigeria's South-West geopolitical zone was the focus area, covering six states: Lagos, Ogun, Oyo, Osun, Ondo and Ekiti.

As made available by the National Universities Commission (NUC), Nigeria boasts 283 universities in total, comprised of 69 federal, 66 state, and 148 private universities. There are 135 public universities if federal and state universities are counted. Precisely, this study was conducted from public universities in the South-West.

In the initial stage of sampling, three states Ogun, Lagos, and Osun were selected randomly from among the six South-West states. At the second stage, stratified random sampling was applied in choosing two universities from every one of the three selected states in a manner that incorporated state-owned and federal universities equally. This led to a total of six universities that were involved in the research. At the third and last level, proportional random sampling was used to recruit participants from selected universities. In each institution, 50 postgraduate students and 20 lecturers were randomly selected, and a total of responses from 292 postgraduate students and 115 lecturers were obtained from the six universities.

Two instruments were utilised for data collection: the Supervision in Nigerian Public Universities Questionnaire (SNPUQ) and the Academic Supervision in Nigerian Public Universities Questionnaire

(ASNPUQ). The two instruments were adapted from the Advisory Working Alliance Inventory developed by Schlosser & Gelso (2001), which measures the quality of the student-supervisor working alliance. The ASNPUQ was created to reflect supervisors' perceptions of supervision with regard to such factors as accessibility and approachability, how often they receive feedback, supervisory support, and mentorship. The SNPUQ was, nonetheless, created to reflect the same facets of students to enable comparative analysis across the two groups' perceptions.

All the items were placed on a 5-point Likert-type scale and consisted of 20 items with five subscales: (i) Supervision Approachability and Accessibility (4 items), (ii) Feedback Frequency (4 items), (iii) Supervisor Support (4 items), (iv) Quality of the Supervisor-Student Relationship (4 items) and (v) Mentorship (4 items), while demographic attributes had 4 items. The instruments were found to be reliable. The validity of the questionnaire was ensured by having it checked by experts as well as conducting a pilot test with reliability measured by Cronbach's alpha coefficient having high values. The computed Cronbach's Alpha values for the subscales were found to be high: Accessibility and Approachability ( $\alpha = 0.83$ ), Frequency of Feedback ( $\alpha = 0.79$ ), Supervisor Support ( $\alpha = 0.81$ ), quality of the supervisor-student relationship ( $\alpha = 0.85$ ) and Mentorship ( $\alpha = 0.88$ ). The questionnaire was distributed online as well as manually to lecturers and graduates of selected universities. Non-response bias is removed by sending reminders to participants while also checking for significant differences between early and late respondents to ascertain representativeness

Descriptive and inferential statistics were used to analyse the respondents' data. The responses were reported using descriptive statistics such as means, standard deviations, frequencies, percentages, and range (minimum and maximum). To determine if the mean responses of faculty members as well as postgraduate students to the crucial aspects of academic supervision differed significantly, a paired samples t-test was employed.

Of the 292 graduate students surveyed, a slight majority (55.8%) were females. In addition, a total of 161 representing 55.1% are between 30 years and 39 years old while 131 or 44.9% are between 40 years and 49 years old. The respondents were evenly distributed among Master's (44.2%), Ph.D. (44.9%), and M.Phil./Ph.D. (11%). The areas of specialisation of respondents also showed wide variation and included Arts and Social Sciences (32.9%), followed closely by Education, Humanity/Management Science disciplines.

In contrast, of the 115 lecturers, a total of 79 or 68.7% are male while 36 or 31.3% are female. The age distribution of the lecturer shows that 60 or 52.2% are between 50 years and 59 years old, 50 or 43.5% between 40 years and 49 years old while 5 or 4.4% are 60 years old and above.

### 3. Results

The independent samples t-tests presented in Table 1 reveal significant differences between supervisor and graduate student reports on all measured dimensions of support. Supervisors consistently rated the supervisory environment as more supportive, with statistically significant higher mean scores for accessibility ( $t = 10.17$ ,  $p < 0.05$ ), approachability ( $t = 3.26$ ,  $p < 0.05$ ), responsiveness ( $t = 5.73$ ,  $p < 0.05$ ), and availability ( $t = 5.59$ ,  $p < 0.05$ ). This result demonstrates a clear gap, suggesting that supervisors perceive themselves as providing substantially greater accessibility and approachability than is experienced by their graduate students.

Similarly, evidence from Table 2 indicates that supervisors reported experiencing significantly higher levels of feedback than graduate students. Specifically, supervisors rated their interactions as being markedly higher in timeliness ( $t = 4.110$ ,  $p < 0.05$ ), frequency ( $t = 3.92$ ,  $p < 0.05$ ), delays ( $t = 15.520$ ,  $p < 0.05$ ), and consistency ( $t = 4.050$ ,  $p < 0.05$ ). These results indicate a statistically significant disparity in feedback —received as perceived between the two groups.

Variable	Respondents	N	Mean	Std dev	t	df	Sig.P	Remark
Accessibility	Student	292	3.35	1.16				
	Supervisor	115	4.33	0.73	10.17	405	0.00	Significant
Approachability	Student	292	3.57	1.42				
	Supervisor	115	4.03	0.72	3.26	405	0.00	Significant
Responsiveness	Student	292	2.89	1.60				
	Supervisor	115	3.79	0.82	5.73	405	0.00	Significant
Availability	Student	292	3.01	1.16				
	Supervisor	115	3.69	0.94	5.59	405	0.00	Significant

Table 1: Mean Differences in Perception of Supervisor Accessibility & Approachability between Students and Supervisor; source: Original Research

Variable	Respondent	N	Mean	Std. Dev.	t	df	Sig.P	Remark
Timeliness	Student	292	3.12	1.199				
	Supervisor	115	3.64	1.078	4.110	405	0.00	Significant
Frequency	Student	292	3.12	1.199				
	Supervisor	115	3.62	1.064	3.920	405	0.00	Significant
Delays	Student	292	2.00	0.668				
	Supervisor	115	3.53	1.172	15.520	405	0.00	Significant
Consistency	Student	292	3.11	1.200				
	Supervisor	115	3.63	1.087	4.050	405	0.00	Significant

Table 2: Mean Differences in Perception of Feedback Frequency between Students and Supervisor; source: Original Research

Furthermore, Table 3 reveal significant differences between supervisor and graduate students in terms of support. Supervisors consistently rated with statistically significant higher mean scores for guidance ( $t = 3.490$ ,  $p < 0.05$ ), emotional support ( $t = 9.570$ ,  $p < 0.05$ ), professional development ( $t = 7.730$ ,  $p < 0.05$ ), and problem-solving support ( $t = 2.570$ ,  $p < 0.05$ ). This result demonstrates a clear gap, suggesting that supervisors perceive themselves as providing more support than is experienced by their graduate students

Variable	Respondent	N	Mean	Std. Dev.	t	df	Sig.P	Remark
Guidance	Student	292	3.23	1.232				
	Supervisor	115	3.69	1.095	3.490	405	0.00	Significant
Emotional support	Student	292	2.67	1.339				
	Supervisor	115	4.01	1.055	9.570	405	0.00	Significant
Professional Development Support	Student	292	3.12	1.104				
	Supervisor	115	3.95	0.916	7.730	405	0.00	Significant
Problem-Solving Support	Student	292	3.01	1.058				
	Supervisor	115	4.16	0.779	2.570	405	0.00	Significant

Table 3: Mean Differences in Perception of Supervisor Support between Students and Supervisor; source: Original Research

As shown in Table 4, a significant difference was reported between supervisor and graduate mentorship. Supervisor consistently rated with statistically significant higher mean scores for encouragement ( $t= 8.365, p<0.05$ ), active mentorship ( $t= 5.735, p<0.05$ ) and institutional opportunities ( $t= 3.911, p<0.05$ ). However, there is no significant difference in the mean scores of the supervisor and graduate students in alternative mentorship ( $t= 0.636, p>0.45$ ).

Variable	Respondent	N	Mean	Std. Dev.	t	df	Sig.P	Remark
Alternative mentorship	Student	292	3.89	1.599	0.636	405	0.45	Not Significant
	Supervisor	115	3.99	0.922				
Encouragement	Student	292	2.67	1.493	8.365	405	0.00	Significant
	Supervisor	115	3.92	0.929				
Active mentorship	Student	292	3.12	1.446	5.735	405	0.00	Significant
	Supervisor	115	3.95	0.877				
Institutional opportunities	Student	292	3.45	1.424	3.911	405	0.00	Significant
	Supervisor	115	4.02	0.973				

Table 4: Mean Differences in Perception of Mentorship between Students and Supervisor; source: Original Research

#### 4. Discussion, Recommendations and Implications of the Study

The main finding of this study, which is that supervisors and graduates perceive a substantial difference in accessibility, approachability, feedback, and the interpersonal aspect of mentoring, points to an important weakness in the postgraduate university system. This conflict suggests that the supervisory relationship, ideally a partnership of guided intellectual development, is often fraught with unspoken expectations and mismatched understandings.

From the perspective of Tinto's theory, this relational disconnect reflects a breakdown in academic integration, where weak faculty–student interaction could increase the risk of dropout. From Vygotsky's Sociocultural Theory of Learning, this also represents a damaged ZPD: students cannot access the responsive guidance and feedback needed for learning. The problem is therefore not only interpersonal but structural, as the system fails to provide the academic and social support necessary for effective postgraduate socialisation and academic development.

The discrepancy in supervisor accessibility and approachability indicates that an open-door policy is not merely a physical reality but a psychological one; students may perceive supervisors as intellectually or emotionally unavailable even when they are physically present. This aligns with research highlighting that ineffective communication and infrequent contact are primary drivers of student anxiety and dissatisfaction (Jepchirchir & Ogula, 2022), potentially stalling research progress and fostering a sense of academic isolation.

The divergence in perceptions of feedback, support and mentorship is particularly telling, pointing to a fundamental conflict in the very definition of the supervisory role. Supervisors may conceptualise their duty as providing periodic, high-level academic critique, operating from a traditional, hierarchical model of expertise transfer. Students, however, increasingly seek a more holistic and humanised mentorship relationship. This encompasses not only timely and constructive feedback on their work but also supportive guidance for their professional development and empathetic recognition of the profound personal challenges inherent in the PhD journey. As Barnes and Austin (2009) argue, effective supervision must transcend technical direction to foster the student's growth into an independent scholar, a process that is inherently relational and psychological. When feedback is perceived as

delayed, vague, or overly critical without supportive scaffolding, it can erode the student's confidence and intellectual risk-taking, undermining the core of the educational enterprise.

To bridge this gap, a multi-pronged approach is recommended. First, institutions should move beyond assuming supervisory competence and implement mandatory, ongoing development programs. These should equip supervisors with skills for providing structured, formative feedback and emphasise the importance of the relational, human aspects of mentorship. Second, the adoption of a formal supervision compact or agreement at the start of the candidature is essential. This living document would facilitate a dialogue to align explicitly expectations on meeting frequency, communication protocols, feedback turnaround times, and the scope of pastoral support, thereby pre-empting many common sources of conflict.

The implications of these findings are profound. For students, persistent negative experiences can lead to decreased well-being, imposter syndrome, and thesis non-completion. For institutions, this represents a significant loss of talent, diminished research output, and reputational damage. Conversely, by humanising the supervisory relationship by recognising that a graduate student is not merely a junior academic but a whole person navigating a complex life stage universities can cultivate a more inclusive, productive, and equitable academic culture. This shift from a purely transactional model of supervision to a relational, person-centered one is not a soft option but a strategic imperative. It is the key to enhancing completion rates, improving research quality, and, most importantly, ensuring that the arduous journey of a graduate degree is a transformative and empowering experience rather than a solitary ordeal.

## 5. Conclusion

Based on the comparative analysis of lecturer and graduate perspectives, this study concludes that a significant perceptual gap exists regarding the effectiveness of academic supervision in South-West Nigerian public universities. The findings have shown that graduates have consistently reported lack of accessibility and lack of mentorship and supervision, which is largely unrecognized by their lecturers and is critically affecting postgraduate education.

A key limitation is the study's geographical focus on South-West Nigeria, which constrains the generalisability of the findings to other regions. It is also subject to response bias because it is based on self-reports.

Future studies should thus adopt a longitudinal design to follow the development of relationships between supervisors and students over time. It is also crucial to widen the scope of the study to cover private universities and other geo-political zones across Nigeria to gain insights into supervisor-student relationships at the national level.

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# Water in Distress: Exploring the Adverse Effects of Flood and Adaptation Strategies in Kalpur, Bangladesh

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## Abstract

*As well as being vulnerable to floods due to its geography, Bangladesh faces a higher risk of flooding associated with climate change. This article aims to explain the adverse impacts of floods on the overall ecology in the local context of Bangladesh, including accommodation and rehabilitation issues, damage to agriculture and infrastructure, increased vulnerability of domestic animals, difficulties in social relations and religious practices, health problems, water crisis, and livelihood and economic problems. However, people in that area tend to adopt different adaptation strategies, such as, changing livelihood strategies, alternative accommodation, floating agriculture, harvesting rainwater, creating net fencing, travelling by boat or raft, receiving relief assistance, taking refuge in schools and storing food to adapt to the damage associated with floods.*

**Keywords:** *adaptation, flood, impact, vulnerability*

## 1. Introduction

*“You know, brother. During the flood, everywhere you look is water. But you can’t use that water in any way. What a tragedy it is.”*

One of the participants responded sarcastically when we asked them about the flood scenarios in their area. However, his sarcasm cannot hide the grim realities of the flood. Flooding is one of the most recurring disasters in Bangladesh, as it has unique geographical features that increase the risk of being exposed to floods (Islam *et al.*, 2024). After its independence, Bangladesh has been a victim of a total of 86 floods (Islam *et al.*, 2024). However, anthropogenic causes like climate change, land-use changes, and demographic changes aggravate the risk (Islam *et al.*, 2024). While floods have some positive impacts on agricultural production, they have a number of negative effects on the overall economy and environment of the country, including damage to crops, water resources, livestock, human lives, and human health (Rumana, Ahmed & Mostafa., 2018). Despite there being recommendations for structural flood management (Dottori *et al.*, 2023), many people in developing countries still rely on communitybased adaptation strategies (Rumana *et al.*, 2018). The existing literature in this arena often investigates the negative effects of floods, but they have rarely explored how floods damage an entire ecosystem in a local context.

In this context, this article explores the adverse effects of floods on the multifaceted aspects of the environment in Kalpur, a small village in Gopalganj. As Kalpur is situated in a lowland region near the town of Gopalganj, it is frequently affected by floods for a certain period of time. For this reason, we chose this place to investigate the effects of the floods and people’s adaptation strategies to combat them in a local context.

Using a mixed-methods approach, we investigate how floods affect the lives of human and non-human beings. Additionally, we explore the adaptation strategies people adopt to cope with the disaster. As we were conducting an exploratory study, we did not have any prior hypotheses. However, two research questions guided our study:

- How do floods disrupt different aspects of the environment of Kalpur?
- How do people cope with the adverse impacts of floods?

## 2. Literature Review

### 2.1. Floods in Bangladesh

Bangladesh has often been vulnerable to flooding due to its unique geographical location. Bangladeshi people are regularly exposed to four types of floods, which are flash floods, local rainfall floods, monsoon river floods, and storm-surge floods (Islam *et al.*, 2024). Climate change has recently heightened the risk of flooding. As a result, an increasing number of people are vulnerable to the damage of floods (Islam *et al.*, 2024).

The existing literature on the adverse effects of floods indicates that it has devastating impacts on the overall Bangladeshi economy. However, Dhaka, Rajshahi and Sylhet are much more vulnerable to floods compared to the coastal region of Bangladesh (Haque & Jahan, 2015). A study conducted by Zayed *et al.* suggests that almost 25 % of household income and assets have been damaged in the floodaffected areas (Zayed *et al.*, 2025). While floods play an important role in preserving the balance of the wetland ecosystem, they have many adverse impacts on the environment, including damage to crops, water resources, livestock, human lives, and human health (Rumana *et al.*, 2018). Additionally, according to the researchers at Georgetown University, the flood victims are subject to suffering from mental health problems, including depression and anxiety (Thomson, 2023). Different factors, including health displacement, loss of income, and disruption of education, can be highly detrimental to the mental health of adolescents (Sunny *et al.*, 2024). A study conducted by Mamun *et al.* also suggested that suicidal behavior was increased among flood-affected people due to increasing psychological burdens (Mamun *et al.*, 2021). However, people living in disadvantaged areas are much more vulnerable than others when flooding occurs. Owing to the patriarchal culture of Bangladesh, women in rural areas are the worst victims of floods (Nahar, 2025). However, they adapt to the situation by utilizing local knowledge and taking economic and non-economic initiatives (Nahar, 2025).

### 2.2. Adaptation Strategies of Flood

Prior research on the adaptation strategies towards floods and flood management indicates that while developed countries rely on structural measures to adapt to floods, including strengthening protection through river dykes, creating detention areas, structural and non-structural modification of infrastructures, and relocation (Dottori *et al.*, 2023), most developing countries in the subcontinent rely on community-level adaptation strategies. For example, A study conducted by Devkota, Cockfield and Maraseni (2014) finds that people in the two Terai districts utilize different adaptation strategies (such as monitoring the rainfall, initiating communication, taking care of victims, selecting location, exchanging help with each other, preparing a temporary settlement plan, and coordinating with governmental and non-governmental agencies). Another research study, conducted on the char<sup>2</sup> farming households of Bangladesh, suggests that determining flood adaptation strategies is more critical for females than their male counterparts. Different aspects, including access to agricultural land, agrarian labor, and literacy, play influential roles in determining adaptation strategies (Naz, Doneys & Saqib, 2018).

### 2.3. Research Gap

Careful observation reveals that while much of the literature explores the multiple negative impacts of floods, they rarely portray how floods disrupt an entire ecosystem in the local context of Bangladesh. In this regard, this article strives to illustrate how floods destabilize the entire ecosystem of Kalpur by exploring the adverse impacts on the multiple aspects of the ecology. Additionally, it highlights the adaptation techniques that the flood-affected people adopt at the community level, which are hardly discussed in the previous research.

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2 Chars are temporary river islands formed by silt deposits.

## 2.4. Objectives of the Study

The objectives of the study are:

- to explore the adverse effects of floods on the multifaceted aspects of the environment in Kalpur and
- to investigate the adaptation strategies of the flood-affected people to reduce damage.

## 2.5. Conceptual Framework

We relied on the concept of the ecosystem to understand the adverse effects of the flood on the overall environment of Kalpur. The concept of ecosystem is intended to describe “a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a bubble of life (Byjus, 2020).” We utilized the concept to describe how hazards, such as floods, can disrupt the balance of an ecosystem.

Another concept that we frequently utilize in this research paper is vulnerability. While the concept of vulnerability can be challenging to define, it may be conceptualized as “the conditions determined by physical, social, economic, and environmental factors or processes which increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards”. We have utilized the concept of vulnerability to understand how Kalpur's various ecological aspects are exposed to flooding.

Our article focuses on the disastrous effects of one hazard, and that is the flood. Flood is regarded as the most widespread water-related hazard and can be defined as “water overflowing onto land that usually is dry.” Another objective of our study is to investigate the adaptation strategies of Kalpur residents to mitigate or resist the impacts of floods. The concept of adaptation can be conceptualized as “the adjustment of organisms to environmental conditions and other living things either in an organism's lifetime (physiological adaptation) or in a population over many generations (evolutionary adaptation)” (Shetty & Waterlow, 2003).

## 3. Methodology of the Study

Based on a mixed-method approach, this study explored the multi-faceted impacts of the recurrent floods on the ecology of Kalpur, a village of Gopalganj. We have utilized both primary and secondary sources of data to investigate the adverse effects of floods. While at the beginning we reviewed secondary sources of data, including books, articles, and book chapters, we mainly relied on primary sources of data, which were collected from field research.

### 3.1. Data Collection

While we relied on quantitative data collection techniques to collect demographic information and occupational status, qualitative techniques were utilized to gather the impacts of floods on the lives of humans and nonhumans as well as their environment.

In our study, we collected data by conducting semi-structured interviews and focus group discussions. As we conducted our fieldwork in Bangladesh, we interacted with our participants in Bengali. Later, we translated the acquired data into English.

### 3.2. Sampling

We utilized random sampling to conduct our semi-structured interviews to avoid any bias in the study. However, purposive sampling has been utilized in conducting focus group discussions to ensure the participation of people belonging to different ages and genders.

In avoiding non-response bias, we kept our interviews short so that participants could talk spontaneously. On the other hand, despite utilizing the simple random sampling, we ensured that each member of the population had an equal chance to participate in the study, which helped us to avoid homogeneity in our information.

### 3.3. Semi-Structured Interviews

We conducted 26 semi-structured interviews to collect data on the overall flood impacts in Kalpur. By following this method, we ensured that we could control the time and quality of interviews to some extent while ensuring the participants' spontaneity.

### 3.4. Focus Group Discussions

We also conducted four focus group discussions to gather collective perceptions on the adverse effects of floods. The groups consisted of people belonging to different classes, ages, and genders. Moderation of a focus group discussion involved helping the smooth participation of the people in the focus group discussion. While moderating the focus group discussion, we ensured the fact that every person could participate in the group discussion spontaneously. We also gave preference to the voices of underrepresented people.

### 3.5. Data Analysis

We have utilized a mixed-methods approach to analyze the acquired data. Interviews were conducted in the Bengali language as Bengali is the native language of the participants. Later, these interviews were translated into English. While we used quantitative methods like frequency distribution to reveal the percentages of the sociodemographic information of the participants, narrative analysis is preferred to analyze the qualitative data.

### 3.6. Study Area

Kalpur is a village of Gopalganj, which is situated in a lowland near the town of Gopalganj. This area is also known as a swamp area, which is frequently flood-affected throughout the year. Owing to climate change, floods have become more recurrent.

The communications system of Kalpur is not good. The study area and surrounding localities have only one road, which is flooded with water in the rainy season. Consequently, by boat is the only way to communicate with people at that time. As the overall ecosystem is suitable for agriculture, most of the people depend on agriculture for their subsistence.

## 4. Results

### 4.1. Adverse Effects of Floods

#### 4.1.1. Accommodation and Rehabilitation Issues

During a flood, people in the affected areas often fail to find shelter. At that time, houses were submerged, so no one could stay. Sometimes, people go to their relatives' houses until the water level decreases. Sometimes they take refuge at the primary school in the neighbourhood. However, some people have to adopt alternative methods to survive such disasters. The following narrative can express it clearly:

*“My house is just beside the canal. There is no other house around. In the time of the flood, the water in my house was up to the waist. The bed went under the water. Later, we were forced to stay on the roof. It is difficult for the whole family to be together there, but somehow I am adapting. If I need anything, I bring it to the boat. It has been very difficult to cook and eat for a few days after the flood. We arranged to cook on the boat. There is no relative's house nearby from where we can cook and bring food or we go there.”*

This narrative not only provides the helplessness of the participant but also indicates individual endeavours to adapt to the circumstances.

#### 4.1.2. Agriculture and Food Security

Most of the people in this area depend on agriculture for their livelihoods. It has been observed in the study that agriculture is one of the most vulnerable sectors due to floods. At the time of a flood, farmers are unable to cultivate multiple crops, including rice, jute, and paddy.

Floods also damage farmers' stored seeds, crops, and vegetables. When buying seeds in post-flood areas, the cost of seeds is high, and most of them are procured from outside the local area. As a result, poor farmers are forced to use wet seeds, resulting in low germination. Changes in flooding also affects crop production. Owing to floods and inundation, in most cases farmers could not plant paddy on time. In addition to paddy harvesting, winter crops are also delayed. Changes in flooding also affects crop production. As a result of floods and inundation, in most cases, farmers could not plant paddy on time. In addition to paddy harvesting, winter crops are also delayed. On the other hand, crops failed to mature because of an untimely flood, which hampered the livelihoods of farmers.

The disastrous effects of untimely floods in the agricultural sector eventually threaten people's food security in the studied area. Poor people cannot buy food at high prices as frequent floods damage many crops. On the other hand, many people are forced to eat rotten food due to floods. The nutrition of pregnant women is also threatened. They should consume nutritious food with adequate protein during this time but it is not possible during floods. Consequently, both the woman herself and the child she gives birth to or is about to give birth to may suffer from malnutrition.

#### 4.1.3. Infrastructural Damage

Frequent and untimely inundation continuously damages the infrastructure of this area, including roads, schools, dams, tube wells, and electricity poles. Roads leading to schools in flood-affected areas have been destroyed. Many roads in the area are still underwater. In particular, the newly constructed unpaved road leading to Kalpur Uttarpara was submerged in floodwater. As a result, the soil of the road has been washed away by water. In many places, the dam had broken and required to be repaired. The tube well in front of the school went into the nearby pond due to soil erosion. There is only one paved road in the middle of this village, which is submerged in floodwater. As a result, the road pitch has eroded in many places. Electricity poles were uprooted as the floodwater continued.

#### 4.1.4. Unsanitary Sewage System

During floods, latrines are submerged or are in a state of being nearly submerged, except those whose latrines are slightly higher or in a better position; all the others get flood water mixed with the dirty water of the latrine, which overflows. Those whose latrines are submerged in water directly take boats or rafts to defecate into the water. As there is no urban system for sewage disposal in rural areas, sporadic defecation leads to contamination of other elements of the environment, such as water pollution. The consumption of this contaminated water can cause various diseases, including abdominal pain and worm infections.

#### 4.1.5. Vulnerability of Domestic Animals

Many families in this area keep livestock to meet their family needs. Livestock are often affected by floods. During this time, people focus on taking care of themselves, often ignoring the needs of the livestock. In severe flood situations, people have to move out of their homes in search of shelter, and in many cases, they cannot take livestock with them. Again, there is a shortage of animal food. Cow health deteriorates due to a lack of adequate food. Milk supply decreases. In many cases, milking stops. It causes severe economic losses. In times of economic crisis, human beings sell their animals for economic survival.

#### 4.1.6. Difficulties in Maintaining Social Relations and Religious Practices

Most people in the area are Muslims. A big mosque in the area, named Kalpur Dakshinpara Jame Masjid, is built very nicely on the side of the road. There is a huge field, a madrasa, and a graveyard next to it. In the morning, children come here to study, and Muslims come to pray. In the afternoon, games are organized in the field where everybody meets and talks. Moreover, if someone died in the

area, their funeral prayers were offered in the field because there was less space in front of the mosque. Children cannot attend the Madrasah due to travel difficulties caused by floods; those who have a boat or a house with a char (a bridge or wooden *sako*), i.e., a transport system, go to pray. The whole system of social relationships gets disrupted.

#### 4.1.7. Injury and Drowning

In the time of floods, people in the study area are exposed to drowning and different forms of injuries. People are particularly anxious about the drowning of the children because they usually cannot swim. Sometimes little children fall into the water while playing and no one can rescue them. One of our participants told us about such a horrible incident:

*“We have 3 children aged 3 to 5 years at home. They always play together. One day during the floods, my 3-year-old child fell into the water while playing. Two other kids were sitting there crying. But no one tried to lift him out of there because they could not swim either. No one called me either. I suddenly ran there looking for Naheed (the baby who had fallen in the water) after hearing the sound of crying. I went and saw my son drowning in the water. I quickly lifted him out of the water and squeezed the water out of his stomach. Amjam uncle (a middle-aged man) heard my cries and came and breathed into my baby's mouth to restore breathing.”*

Local people are also afraid of snake bites during the floods. Snake infestation increases in the country during floods, and since this is a remote area, venomous snakes are a menace during monsoons. According to one of our participants:

*“Snakes come and bite people by the road, by the house, in the bush, and even inside the house. People are afraid to go out of the house. Especially if you go out at night, you must take a light and a good stick. Those who fish by boat at night see 3-4 snakes almost every day. Sometimes, if they see a poisonous snake and there are some people nearby, they kill the snake out of anger. According to their commentary, each snake is 3 to 5 hands long. However, snakebites did not usually occur. One said it happened once a few years ago. The snake bite victim died on the road while being taken to the hospital.”*

#### 4.1.8. Transportation

The only road in the village suitable for the movement of water was damaged in the flood. People reported that road conditions are very bad during monsoons due to continuous flooding. Almost every year, during the monsoon season, heavy rainfall causes extensive damage to all local roads in the study area. Owing to rising sea levels and northerly water pressure, rainwater is unable to drain away from the locality. As a result, the suffering of people is extreme as the water is stagnant for a long time. There is only one bazaar (*haat* in local parlance) for the surveyed village and several other surrounding villages. People depend entirely on local village markets and weekly village markets (*haats*) for their income as well as livelihood. People living here use the local market to buy and sell their products. There is only one road for the people of the surrounding seven villages to go to the market or hospital, bank, police station, or any official work. Therefore, the condition of the road is affected by its use. Due to floods, its condition worsened. According to one participant:

*“Apart from going anywhere from home, the boat was the only vehicle for maintaining social contact. Transportation and social communication were much more difficult for this region. Boats are the only way to go to the market to meet someone, see a doctor, buy medicines, or buy vegetables and food for the family. If you need to do these things, you have to go to those who have boats and ask for them. Again, if people take the boat on the market day, they have to ask to go with them. Then they can take it. Many times they get upset, say harsh words. But I can't afford it, so I listen to all that and pretend not to hear it.”*

#### 4.1.9. Waterborne Diseases and Health Problems

As a result of the flood, water accumulated in various places in Gopalganj and caused waterlogging. At this time, this health problem became evident due to the lack of a proper water drainage system. Many

people defecate in open spaces around the river. The water of the reservoir is polluted by human waste and various forms of garbage in the area. People have to drink the water of these reservoirs without purifying it, use it for food purposes, or use it for washing dishes, washing clothes and so on. Because of this, diarrhea, cholera, and typhoid are among the various waterborne diseases that affect people. When the water goes down, these diseases become more common. The rate of disease depends on how much immunity a person has, how many germs have entered their body, and what kind of environment they live in. Water is the carrier and vector of various germs. So there is a high risk of various skin diseases from touching this water. Owing to damp weather, various types of skin diseases like skin scabs, fungal infections, and itching occur.

It was found from all the respondents of this survey that health facilities were heavily damaged during floods. There is only one health care centre for this area, which is located on the riverbank at Boulatli Bazaar. It is almost impossible to go there and get treatment if someone is sick in the time of a flood. Moreover, the health centre is often closed during the rainy season due to flooding. During this period, various waterborne diseases like diarrhoea, cholera, jaundice and skin-related problems are most common. In particular, children and elderly people usually suffer from these types of health-related problems. On the other hand, floods affect the health of expectant mothers. Pregnant women do not have access to any health facilities during floods. According to the local people of the study area, one has to go far away from the flood-prone areas for any kind of health facilities. Floodwater enters the entire area. Water is contaminated by various bacteria and toxic substances. Although contact with this water is harmful to human health, they also complain that due to a lack of safe water, they are forced to use this water for various daily activities. According to one of our participants:

*“At the end of last year's floods, my five-year-old son was infected with typhoid and was in Sadar Hospital for a long time. At that time, I also suffered financial loss due to the flood. Additionally, a lot of money was spent on the treatment of my son. Since then, I and my family have always drunk and used tubewell water, even though the tubewell is far away from my home. When it is not possible to bring water from tube wells, we boil water and use it.”*

#### 4.1.10. Lack of Water

Almost every house in Kalpur village has a faucet. But almost always tap water contains arsenic. Only two taps in the area are free of arsenic. But one of them is almost undrinkable due to the high salt content. As a result, everyone in the area uses the other faucet as the only source of water collection. In other regions, drinking water is usually collected by women but men in this area collect the drinking water. As the tubewell is located next to the mosque and far away from the house, men usually bring water to the house while walking or playing, or praying. If the man is not at home, the women bring water at a time other than the time of prayer. It is also seen that the tap is located up to one kilometre away from some houses. In that case, routine fetching of water is seen as a problem.

This problem becomes more severe during floods as there is water all around. Transportation becomes impossible. All the walking paths are submerged in the water. As a result, some families can sometimes bring water with the help of those who have boats. Those who cannot fetch water have to boil and drink polluted flood water, which causes various diseases. People get sick.

#### 4.1.11. Education

Owing to the floods caused by climate change, the people of Kalpur village of Boulatli union of Gopalganj district suffered damage to the education sector. In most cases, schools and colleges are closed for a long time due to flooding. Moreover, the activities of educational institutions as shelters during floods are also unavailable. This region is spread over a large area, but has only one educational institution. Even if the water does not enter the educational institution and classes stay open, students cannot come to the school due to the difficulty of transportation. Then the school will be declared closed anyway. Again, when the flood intensity is high, the infrastructure of these schools and colleges is damaged and it takes a lot of time to repair them. In most cases local people do not come forward to repair the infrastructure of these educational institutions and they will wait for government assistance instead. Sometimes this help takes a long time to come. Because of this, the activities of the educational

institutions of the region are closed. Many students are unable to continue their studies while helping families with the flood situation and many students dropped out of school due to social and economic problems due by floods.

One participant of this study is Sajib (age 16 years). His father worked as a day laborer and supported the family by selling milk from their two cows. But two of their cows died during the flood. As a result, the daily income of their family comes to the bride. Sajib has to work in a restaurant in the district headquarters to meet this deficit and his studies stopped.

#### 4.1.12. Livelihood and Economic Problems

The livelihoods of local people are often affected by flash floods. Most of the people in the village earn their livelihood by agriculture and agriculture-related work. All these people became unemployed due to the flood. Crops that had been hard-earned throughout the year were unripe and lost in the harvest or washed away by floodwaters. So those affected must spend the day eating food stored in the house. There is no money saved. As a result, they cannot buy and eat according to demand and so many have to make money by taking loans at available interest rates to buy their daily necessities. But later, they have to struggle to repay the loan.

### 4.2. Adaptation Techniques

#### 4.2.1. Change of Livelihood Strategies

Despite people from various professions living in the studied area, most of the people depended on agricultural work for their livelihoods. During the rainy season, they earn a livelihood by selling their produce. However, they are forced to change their source of income due to the harshness of the environment, including catching fish and selling them, doing various temporary jobs (day labourers) in other people's houses. Many people are also migrating to other places in search of work. On the other hand, some people started fish farming using the floodwater. One of the participants in the study area said:

*“We became jobless due to the flood. Later, we, four friends, decided to mark out a certain area and do fish farming with a net fence. Accordingly, we started working. We contacted the people who have land in the place we specified. Five people had to pay us cash for that place. They said that the rest of the landowners will be given a share of the fish during fishing. This is how we fish here. We didn't have to work too hard to feed the fish because of the free water between the bills and enough algae to grow. Costs are also reduced. But we always have to keep an eye on whether the fence is broken or the net is torn. Or whether someone is taking our fish. We have benefited greatly from fish farming in this way.”*

#### 4.2.2. Alternative Accommodation

When the house was submerged in water due to a flood, they immediately took shelter in the school as it was on a slightly higher level. If water gets inside the school, they will take shelter in a relative's house nearby.

#### 4.2.3. Floating Agriculture

During the flood, it is almost impossible to cultivate anything. In this case, the local people build *kachuripana* piles (water hyacinth or *gaito/gait* in the local language) and put rat-raised soil, rotting (*kachuripana* roots) etc. on it and cultivate there. Most of the time, creeping plants (gourds, pumpkins, peppers, cucumbers, rorbati, sem and others) are planted in this way.

One of the participants said:

*“Due to prolonged flooding and inundation of the country's low-lying areas, it is not possible to grow any crops or vegetables in the local public fields, resulting in poor farmers in the area. They suffer from lack of essential nutrients along with financial malaise. In this case, it is possible to solve this problem mainly by cultivating vegetables and crops in rafts. Moreover,*

*after the water dries up, the manure and compost can be used as organic fertilizers on the cropgrowing land. Employment is created for rural people during floods. I think it is possible to increase the daily nutrition and income of the family as well as contribute to the national economy by cultivating crops or vegetables in rafts during floods or in waterlogged areas. Moreover, this system is very simple. In this case, first of all, bamboo rafts should be placed on the water. Depending on the stability of the waterlogged area, thick piles of debris should be piled on it so that it remains buoyant throughout the waterlogging. After 10-15 days with a layer of dung and compost, vegetable seeds should be sprinkled or seedlings should be planted. Various vegetables for floating cultivation such as lettuce, spinach, coriander, cauliflower, cabbage, tomato, beetroot, cucumber, bitter gourd, gourd, chichinga, rice pumpkin, sweet pumpkin, bean, turnip, brinjal, potato, pepper, onion, garlic, ginger and mustard can be selected.”*

#### 4.2.4. Provision of Net Fencing to Fish Enclosures

The fish farmers panicked during the flood because there was a possibility that fish would be released into the open water, causing losses to the fish farmers. They buy pre-prepared nets from the market, which are neatly hung around the perimeter during floods. As a result, the amount of damage is reduced to a great extent.

#### 4.2.5. Rainwater Harvesting, Storage and Use

Most of the sources of fresh water were destroyed by floods. Moreover, almost all the tube wells in the area contain arsenic. The two wells that are arsenic-free are far and away. It is easy to get water from there during the dry season. But during the monsoon season, the roads become waterlogged, causing a major problem in traffic. In this case, more water has to be brought by others' boats or rafts. That is why they carry pitchers, jugs, buckets and bottles to carry water so that they do not have to fetch water for the next few days. Moreover, it rains a lot during this time. Rainwater is also stored in clean containers, which reduces the scarcity of fresh water.

#### 4.2.6. Treatment by Indigenous and Local Knowledge

Flood victims are suffering from multiple health problems, including diarrhea and itching. They try to drink dietary saline liquids to prevent loose stools. If dietary saline solutions are not available, homemade salt-molasses syrup is used as an alternative. Additionally, rice starch, chira water, and canned water are used, with safe water as a fallback option, to ensure the patient recovers quickly. If the level of diarrhea and vomiting increases and the child appears dehydrated, the child will be taken to the nearest health centre or doctor.

#### 4.2.7. Travel by Boat or Raft

Travel becomes a major problem during floods as local roads are submerged. The road that connects the house to the paved road leading to the market or mosque is sunken. Some people are able to manage using a *char* and *sako* (a small makeshift bamboo bridge) combination. But the worst sufferers are those whose homes are far away and have no connections to make communications. All these houses look like islands in a flood. They build or buy boats for transportation. Those who cannot afford to buy a boat travel by using rafts made of banana tree wood or bamboo.

#### 4.2.8. Relief Assistance

Residents get help from various organizations during floods. Low-weight relief is distributed from their village, and full-weight relief, like rice and wheat flour, is distributed from various agency centres. BRAC, Grameen Bank, NGO Prashika, Asha, Caritas, Self-reliant Bangladesh, Public Development Efforts, Legal Aid and other organizations provide relief, but the people of Kalpur village also get relief through wealthy local people, volunteer organizations, and others. The Grameen Bank helps people during floods. They also arrange loans for people.

#### 4.2.9. Adaptation Process in the Education Sector

During the flood, students had no other way to travel except by boat. But not everyone has a boat. In that case, students come to school by catching a lift with those who have boats near their houses. Those who do not have boats may make banana wood rafts to travel to school. When educational institutions are closed during floods, many times local older children take responsibility for teaching the younger education and the elders of the area often try to keep these institutions open by repairing the infrastructure of the educational institutions by collecting subscriptions.

#### 4.2.10. Storage

Most families in the area store as much of their food as they can. Some families have to sell crops instead due to poverty. They preserve food with their indigenous knowledge. Gola (made of *hogla* (cattail plant) or *khari* bamboo, raised with straw and fenced with mats) is used to store paddy. There are two places where rice storage takes place. One is the storage room where clay pots are made and the other is to be kept in sacks.

### 5. Discussion

This paper primarily deals with the multifaceted impacts of floods on the ecological aspects of Kalpur, a low-lying area of Bangladesh. Situated in a vast river delta, Bangladesh has been a recurring victim of floods (GRICCE, 2023; Islam *et al.*, 2024). Recently, climate change has elevated the flood risk to a significant extent (Hossain, Sohel & Ryakitimbo, 2020). The existing pieces of literature on the impacts of floods suggest that the recurrence of floods in Bangladesh may lead to different types of damage to various sectors of Bangladesh, including crops, agricultural products, infrastructure, and the economy (Rumana *et al.*, 2018). Additionally, people belonging to the disadvantaged sections of this country are much more vulnerable to this flooding. In this context, our article aims to show how a hazard like a flood disrupts the lives of human and non-human beings in a local context in Bangladesh. The findings of the article show that hazards like floods have adverse effects on people, animals, crops, and infrastructure. Victims of floods often deal with several problems, including damage to property, livelihood problems, disruption of normal lives, lack of clear water and fuel, and problems in income generating activities. Owing to personal hygiene issues and domestic violence, women and children are considered the most vulnerable in such disasters. We utilized the concept of the ecosystem to understand how floods can negatively affect the overall environmental conditions of Kalpur. According to the concept of ecosystem, both biotic and abiotic components are interrelated and play a vital role in protecting the balance of an ecosystem (Byjus, 2020). In this light, the study argues that the abundance of an abiotic component (water), because of the flood, destabilizes the function of the whole ecosystem of Kalpur and badly affects the living components of this ecosystem, which increases their vulnerabilities.

On the other hand, Islam and Sharif (2024) claim that Bangladeshi people tend to select adaptation strategies based on the nature of the calamity. While the prior research on flood adaptation strategies often recommends structural changes (Dottori *et al.*, 2023), people in developing countries still rely on community-based adaptation strategies (Devkota *et al.*, 2014; Naz *et al.*, 2018). In this regard, we aim to investigate the adaptation strategies of the people to cope with the damage of the flood in the local context of Bangladesh. It shows that the people of Kalpur adapt to the flood situation by changing livelihood strategies, searching for alternative accommodations, discovering new strategies for agriculture, utilizing rainwater for alternative harvesting and storage, getting relief assistance, and providing net fencing. In line with the findings of some previous research (Islam & Shafie, 2017; Islam & Sharif, 2024), this research paper also shows that people in the study area often use their local knowledge, like floating agriculture, to adapt to the problems caused by floods.

By analyzing the multifaceted impacts of floods in the local context of Bangladesh in terms of the ecosystem theory and exploring the various adaptation strategies that people utilize to mitigate the damage, this paper can provide valuable insights into the studies on climate change and disaster management in Bangladesh.

## 6. Conclusion

Based on a mixed-methods approach, we aimed to explore the adverse effects of floods on the overall environment of a local area of Bangladesh. For this reason, we selected an area that is regarded as frequently flood-affected. It has been revealed that a flood negatively affects multiple aspects of an environment, which eventually disrupts the balance of the ecosystem. However, the flood-affected people try their best to adapt to the situation by adopting different strategies at the community level.

### 6.1. Limitations

The study was intended to explore the multifaceted adverse impacts of floods and the adaptation strategies they adopt to reduce the damage associated with floods, which can be very time-consuming. However, the duration of the fieldwork was limited. Though we have utilized techniques like semistructured interviews to gain more information in the shortest possible time, it is possible that valuable insights might have been missed. Additionally, no funding was available to conduct the research. But we tried hard to maintain the integrity and reliability of the research.

### 6.2. Recommendations

Based on the research, we want to suggest some recommendations for future research and policy initiatives. They are:

- More qualitative research should be conducted on the overall impacts of floods from a micro point of view;
- Local knowledge should be emphasized in selecting adaptation policies and
- An equal distribution of resources is needed to reduce the damage.

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# The Mirror Image of Retired Police Officers and Corruption among Serving Officers in Nigeria

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## Abstract

*The study examines the mirror image of retired police officers and corruption among serving officers in Nigeria, offering scrutiny on how corruption has survived and mutated across generations among members of the Nigerian Police Force (NPF). The youngest recruits, in most cases, nurse the idealism or ambition of continuing in the same manner even before joining the force. The work employed both social strain and frustration-aggression theory to analyse the subject matter, suggesting that serving members of the NPF suffer frustrations as a result of the obstacles they experience from the job. This study explores a qualitative research design to examine the views of serving and retired police officers on corruption. A purposive sampling technique was employed to select participants. The sample includes 10 serving officers and 10 retired officers, with a total of 20 respondents. The study results revealed that corruption exhibited among serving officers is adopted or adapted from the officers' mirrored image of retired officers as a survival strategy. In order to address properly the root cause of corruption in the NPF, there must be a deliberate reform that will address the real cause of corruption in the force with the aim of nipping the challenges in the bud. The study concluded that bold reforms must be pursued with the aims of improving welfare, enforcing accountability, and fostering a new ethical culture of policing. Thus, the NPF should engage both serving and retired officers as agents of change to rebuild public trust and fulfill the NPF mandate of justice and service.*

**Keywords:** *corruption, mirror-image, retired-officers, serving-officers.*

## 1. Introduction

The formal social control institution as prescribed by the constitution to preserve lives and property is the police. The duty and task before the Nigerian Police Force (NPF) is to preserve law and order in the society and within the controversial spaces in the country's socio-political landscape. The NPF is established with high ideals of upholding public protection and justice. Over the years, the NPF has drifted away and evolved into a symbol of dysfunction in the eyes of many Nigerians. The issues surrounding this establishment are not only limited to active officers patrolling the streets or investigating crime scenes; the issues are extended into the legacies of retired police officers who once wore the uniform and now walk among civilians.

Retired police officers embody decades of experience, accumulated knowledge and, perhaps most significantly, a reflection of institutional values during their years of service. The experiences of retired officers are not devoid of corruption, exemplified in bribery and other forms of illegal and unethical conduct. Regrettably, this has formed a mirrored image of the police personnel, which often reveals a persistent culture of corruption, inefficiency, and abuse of power. Apart from Nigerians in general, an average officer might have formed a mirrored image from observing police behaviours while still serving and after retirement from the force. The mirrored image might have formed a sort of entrenched false ideal definition that serving officers rationalise and operate with in their daily job obligations; however, this is contrary to the police rules of engagement as captured in the Police Service Acts. Onje, July 21<sup>st</sup>, 2025, reported a case of police protest right at the heart of the Police Headquarters in the Federal Capital Territory, Abuja, Nigeria, where officers recounted that they received retirement benefits that were less than three million Nigerian naira (less than \$2,000) and a monthly pension allowance of forty thousand Nigerian naira (less than \$35); many also affirmed that they are yet to receive any form of payment since their retirement. Others reported that they barely can feed themselves and their families; some are homeless, some ill and cannot cater for their medical needs due to lack of or ineffective health insurance. Drawing from the foregoing, it becomes suspected that servicing officers have observed the suffering and degradations experienced by retired officers; this thus becomes what

propels them into corruption as a way of augmenting for the future. Aborisade and Fayemi (2015) state that instead of serving officers representing the NPF by ushering in an ethical practice, some serving officers and retirees are living testaments to entrenched malpractice and corruption in and outside the force. The continued failure to shape the behaviours of serving and retired officers makes the NPF lose confidence amongst the Nigerian populace (Udeuhele & Elechi, 2022).

The researcher describes the concept of mirror image as a sort of formed cognitive map that serving officers developed after carefully observing retired officers' after-service life. The outcome of the mental observation produces an experience of fear that they (serving officers) assume might befall them on their retirements. Thus, they seek alternative approaches to mitigate for retirement, either using extortion or bribery. The notion of a "mirror image" between retired and serving officers draws scrutiny on how corruption survives and mutates across generations among members of the NPF. Considering the trend of corruption among the NPF personnel, the youngest recruits in most cases nurse the idealism or ambition of continuing in the same manner even before joining the force. Thus, it is seen as a mentorship from a distance watch that is quickly moulded with informal mentorships or shadow guidance from observing servicing officers and retired officers who reinforce these outdated codes of conduct. Thus, the long watch of bribery, extortion, selective enforcement of the law, and loyalty to powerful political actors have become a normal practice handed down to young and old officers like valuables (Ibrahim, 2019a; Foluke, 2018; Ulo, 2021; 2024; Oní, 2024). This silent curriculum undermines even the most well-intentioned reforms introduced by policymakers or watchdog organizations.

Consequently, the mooted idea is that there are institutional weaknesses in teams of training, oversight, and accountability; these gaps have created fertile ground for corruption in the NPF. Thus, serving officers are not witnessing the impunity enjoyed by their predecessors, some of whom remain influential within communities and political circles and have adopted some similar strategies to navigate their careers. Again, it has been observed that there is a lack of effective disciplinary structures that has also laid precedence for misconduct to fester while community trust in law enforcement plunges (Osayande, 2008; Edigin, 2015; Igbo, 2017). The supposed immunity displayed by most retired officers as a form of benefit as one-time uniform men, and often helped perpetuate corruption, encourages serving officers to maintain the status quo rather than disrupt it (Afrobarometer, 2023; Ulo, 2024; Nsirim & Nwakanma, 2022).

However, it is not all serving and retired officers who propel this mould of misrepresentation of the NPF. The study in the course of fieldwork saw a number of officers, both serving and retired, who have spoken out against the injustices within the NPF, advocating for reform and urging transparency amongst serving and retired officers. Nevertheless, the voices of these few officers are often outshone by the more dominant inheritance of calm and involvement in the act. Contravening this posture of the bad imaging already cultivated by the personnel. Thus, stamping out corruption amongst officers, both serving and retired, needs essential reimagining of the NPF by building confidence about the force and already bad imagery in the minds of the populace by showcasing real accountable engagement by the police officers, both serving and retired. This display should be a genuine ploy of accountability and trust building that reflects a real and proper service to Nigerians. This show of genuineness needs to be stirred with professionalism and accountability, thereby fostering a high level of moral management and real variation in the NPF and in the minds of the populace (Guardian Nigeria, 2025).

The study critically examines the relationship between serving and retired officers from the place of corruption. The study seeks to address the culture of corruption among the Nigerian police force and set a new part of corrupt culture among police officers, both serving and retired. The challenges and significance of redesigning the ugly circumstance around the NPF are what this study seeks to address. This study will serve as a guide for policymakers, government functionaries, and security agencies for effective policing.

## 2. Corruption among Serving Officers

Notwithstanding the continuous reform efforts in the NPF, corruption still thrives among active personnel in the force, constituting the cankerworms eating the fabric of the police's integrity and dissipating public trust. The Nigerian public considers the daily show of extortion by members of the NPF as an integral part of corruption, which has paved the way for corrupt citizens to perpetuate their criminal activities. The NPF officers made blocks and checkpoints along major roads and, in some cases, arrested innocent citizens with the aim of extorting money from them, which has remained one of the most visible corrupt practices engaged in by the NPF personnel (Otodo *et al.*, 2023). In a study conducted by Umeagbalasi (2025), as reported in 2025 by the International Society for Civil Liberties and Rule of Law (Intersociety), it was revealed in the study that the NPF personnel in the South East region alone have extorted about ₦15 billion from motorists over a period of two months during the festive season. The act of corruption cumulates harassment, false allegations, and unlawful detention of road users, with the said personnel demanding bribes with threats on their victims (Kabir, 2018; Ulo, 2024).

The existing corruption in the NPF is related to the meagre salary structure. For the purpose of emphasis, the lowest rank in the police salary structure receives less than \$30, the average police officer receives a salary of about \$120, and the highest rank receives a token sum of about \$450. This might be one of the breeding grounds of corruption within this police system, especially when these incomes are not commensurate in terms of the purchasing power of the present economic reality. Odumosu and Fakeye (2018) maintained that the inadequate salary system within the NPF is a cause for concern, as most officers could not meet their financial obligations for family life; many cannot afford comfortable shelter, quality food, educational insurance for their children, and health care systems and welfare. The accumulation of all put together are the building blocks of corruption in the NPF, which are reflected in members' extortion and bribery.

Table 1 below presents a better picture that depicts the frustrating salary structure of the NPF.

A reflection of Table 1, which represents the NPF salary structure, indicates a worrying state of affairs. The Inspector General of the police receives a meagre sum of ₦ 711,450 (\$425), and the least in the ranks (Constable) receives a frustrating salary of not more than ₦ 43,293 (\$25) as a monthly salary. It becomes clearer that the reasons for officers' extortions and bribery are not far-fetched. Although the management of the NPF is perceived to deliberately cover up officers' corruption. It is in the public domain that the top-ranking officers see the junior officers but show no capacity to enforce the law on such erring officers, as the case may be. This clandestine attitude is seen as an institutional cover-up by the top-ranking officers, who are also perceived to be beneficiaries of the proceeds from the bribe. According to Igbuzor (2008), a former NPF commission commissioner stated that most of the investigations carried out by the commission are mostly influenced, thereby derailing the outcome of justice and perpetuating corruption because most erring officers are not disciplined. Meanwhile, Faniyi (2022) argued that the absence of quality disciplinary measures and effective independent oversight has unlocked the flourishing of misconduct, allowing for high-level corruption in the midst of citizens' hardship.

Another stroke of decay in the NPF is the area of recruitment, which has been plagued with nepotism, political interference and corruption, not minding the integrity of the NPF being at stake. A former inspector general of police, Arase (2024), stated that the recruitment exercise of the NPF in the past was characterised by political influence and corruption, thereby leading to the recruitment of unqualified personnel. The study by Gabriel and Jaja (2024) cited outdated curricula, inadequate funding, and poor training infrastructure as some of the major barriers to the professional development of the force. These lapses are said to be the contributing factors that are making the NPF system flawed, making them not uphold the ethical standard and earning the trust of the public.

<b>Ranks</b>	<b>Salary (Monthly)</b>
Inspector General of Police	₦ 711,450
Deputy Inspector General of Police	₦ 546,573
Assistant Inspector General of Police	₦ 499,750
Commissioner of Police	₦ 302,970
Deputy Commissioner of Police	₦ 278,852
Assistant commissioner of police	₦ 212,938
Chief Superintendent of Police	₦ 199,732
Superintendent of Police	₦ 172,089
Deputy Superintendent of Police	₦ 170,399
Assistant Superintendent of Police	₦ 156,318
Inspector of Police	₦ 87,135
Sergeant Major	₦ 62,204
Sergeant	₦ 55,000
Corporal	₦ 50,000
Constable	₦ 43,293

Table 1: Nigeria Police Salary Structure; source: <https://inquiresalary.com.ng/> (2025).

### 3. Corruption among Retired Officers

The NPF retirees tend to be involved in corrupt practices in a most subdued way, using the influence of serving officers as a formal colleague. It is also recognised during the study that most retired officers still have influence in the NPF as they have the tendency to influence directly or indirectly serving officers. In most cases they employ the mechanism of mentorship or cultural norms or political networks. These retirees' influence is also being felt when agitating for police accountability and reforms (Aborisade & Fayemi, 2015).

Despite the harsh economy coupled with a spirit of survival by the NPF retirees. They try to continue their instillation of informal mentorship, thereby transmitting the corrupt practices they are used to as serving officers. Thus, they deliberately instill this outdated, corrupt practice in the serving officer, thereby neglecting the professionalism and ethical standards of the NPF. These retirees pass down the mentality of survival policing tactics relying on extortion through their informal mentorship. This breeds opposition to oversight functions by the authorities in charge of such functions, thereby creating unquestionable loyalty to authority. This behavioural transmission is regarded as “social reproduction”, which perpetuates institutional corruption (Aborisade & Fayemi, 2015). Thus, serving officers in most scenarios see the retirees as their role models, thereby emulating their wrongful acts, which they believe were successful even though their success was built on wrongful acts.

In the situation of persistent acts of corruption perpetrated by the retired officers beyond the barracks, they wield influence through political connections. These connections make them an intermediary power broker, shielding misconduct from legal or institutional scrutiny. The retired officer uses their influence to intervene during disciplinary measures or provide cover for illegal activities, which enables them to function effectively as protectors of the status quo (Guardian Nigeria, 2025). This meddling with concession internal justice instruments entrenches loyalty-based hierarchies within the police force (BusinessDay, 2025). Based on their consistent hold and benefit from corruption, this set of officers tends to silence and resist transformative reforms with the NPF strategically. Despite the overwhelming flaws experienced within the NPF, many retired officers desist from openly validating structural reforms. The retired officers are strategically silent on reforms; their silence may be born out of implicating themselves or losing influence among the serving officers. According to PRNigeria (2025), retirees choose to protest institutional flaws like poor pension schemes; however, they are persistently unwilling to back broader calls for transparency or human rights accountability. This resistance deters reform campaigners and decelerates educational shifts needed to restore public trust in the NPF.

#### **4. Theoretical Frame: (Frustration Aggression and Social Strain Theory)**

The work combined both Merton's social strain and Dollard *et al.*'s frustration-aggression theory (Merton, 1938; Dollard *et al.*, 1939). The latter is anchored in Merton's axiom of innovation, which maintains that people seek shortcuts when they feel that the societal-laid principles for attaining success goals are unclear or do not favour them. A member of the NPF values success just as other members of society do; however, in light of the meagre salary and huge task involvement for the job. Thus, they innovate by applying alternative rent-seeking means to achieving their success (respect/wealth).

The mirror image of the serving NPF members becomes clearer when the frustration-aggression theory is applied. The theory holds that people exhibit aggression when they experience frustration emanating from the feeling of a blocked success goal. Serving officials of the NPF mentally mirror their lives subjectively with that of the retired members. These are retired officers, many of whom are yet to receive their meagre retirement benefits, and even when paid will require a long period of waiting after numerous protests and public ridicule. Serving NPF officers develop the feeling of deprivation and frustration, especially when they compare themselves with those serving in other sister organizations internally and externally. Many of the retired officials have no homes, health insurance or active pension benefits. It becomes imperative for serving members of the NPF to thus innovate and showcase their frustration through engagement in corruption as a way of seeking alternative sources of funds to balance for the meagre salary and palliative retirement plans.

#### **5. Methodology**

The study adopted a qualitative research design to explore the views of serving and retired NPF officers on corruption, with a focus on perceptions, experiences and institutional influences on corruption in Nigeria. The qualitative approach is appropriate given the study's focus on uncovering nuanced social dynamics, informal mentorship patterns, and cultural legacies within the NPF. Qualitative research uses several techniques, including interview, focus groups, and observation (Tenny, Brannan & Brannan, 2025). The target population consists of retired police officers and serving officers within the NPF. The researcher adopted a purposive sampling technique to select respondents who possess firsthand knowledge of the internal workings of the NPF and have an understanding of the subject matter. The researcher interviewed 10 serving officers and 10 retired officers across various ranks. This makes a total sample of 20 officers, all within the Asaba metropolitan police. The sample size was considered adequate for a qualitative survey. The reasons for the choice of the sample size is as a result of the research scope which focus on specific population or case study (members of the NPF), saturation point (police corruption has been over researched), agreeing with the depth of understanding while upholding manageability in data collection and analysis (Guest, Bunce & Johnson, 2006; Babbie, 2016; Yin, 2018).

The data for the study was collected through semi-structured interviews, which provide flexibility for respondents while maintaining consistency across interviews. Prior to the interview section, the

questions as contained in the interview guide were subjected to validation by a senior colleague of the Department of Criminology. The interview was done one-on-one with the interviewed officers. The researcher informed the respondents on the nature of the research before the interview was carried out, and consent was obtained with the assurance of confidentiality after educating them on the right of withdrawal. Given the sensitive nature of the topic, rapport and trust building, clear communication, flexible scheduling, incentives, anonymity and pseudonyms were used to protect the identity of officers and ensure that they remain focused to the interview. The outcome of the interview was analysed using transcription, thematic, content, comparative analysis, these fix methods was considered necessary for a nature of work like this.

## 6. Findings

The results of the analysis are presented in the two tables below.

Rank	Items	Responses	Interpretations
<b>Constable</b>	Retirement Imaginations	“I fear to imagine retirement because the experiences I have observed from retired officers are very awful; most of them can barely feed, clothe themselves, and see their wards through school and the worst many can’t even afford rents.”	They are afraid of retirement because retired officers are suffering bitterly after they leave active service
	Survival Through Corruption	“Our salary is not enough to feed a family. We’re expected to look sharp, report daily, and risk our lives, but we’re paid peanuts. Collecting money from road users is survival.”	Corruption is normalized as a coping mechanism for economic hardship.
<b>Corporal</b>	Retirement Imaginations	“A mere look at officers protesting every day over payment of retirement benefits, pensions and gratuity should propel any officer to start looking for any survival means to allow for augmenting the weak salary and pension.”	Officers start engaging in corruption as innovation to augment the meagre salary and retirement plans.
	Peer Influence	“When I joined, I saw others collecting money at checkpoints. I was told, ‘If you don’t do it, you will be seen as weak or stupid.’ It’s the culture here.”	Peer pressure reinforces corrupt behaviour as a norm.
<b>Sergeant</b>	Retirement Imaginations	“When you see retired police officers on the streets, especially those of junior cadre, you will understand that the only way to survive this job is corruption, as the salary is nothing.”	The afterlives of police officers create fears among serving officers. This instigates corruption.
	Mentorship by Superiors	“My first patrol supervisor told me, ‘Do not come back empty-handed.’ He explained how to collect bribes without drawing attention. That is how I learnt the ropes.”	Corruption is taught through informal mentorship and expected performance.
<b>Inspector</b>	Retirement Imaginations	“The first thing one should think of as a serving officer is safety, and the other is retirement. The fear is very dreadful because the lived experiences of retired serving officers are frustrating: no car,	The retired officer creates a sense of fear for serving officers who, in the bid to avert similar experiences, choose corruption.

	Public Perception	no house, can't feed well, no active health insurance, no retirement benefits and no pension."  "People insult us, call us thieves. But they do not know what we go through. We are not all bad, but the system makes it hard to stay clean."	Defensive posture; corruption is rationalised due to systemic challenges.
<b>DSP</b>	Reform Skepticism	"Every few years, they announce reforms, new uniforms, and new slogans, but nothing changes. The same corrupt officers stay in power. It is just for show."	Deep distrust in reform efforts and institutional sincerity.
<b>ASP</b>	Moral Conflict	"I wanted to serve with integrity, but I quickly realised that honesty does not get you far. You either bend or break. I still struggle with that."	Ethical dissonance between personal values and institutional expectations.
	Political Interference	"Retired officers still have influence. They call in favours, protect their boys, and block disciplinary actions. They are part of the corruption network."	Corruption is sustained through external and political patronage.
<b>SP</b>	Accountability Mechanisms	"When officers are caught, they are investigated by their friends. Most cases are buried. If you have someone at the top, you are untouchable."	Internal accountability is viewed as corrupt and ineffective.
	Recruitment and Training	"Some officers cannot even write a proper report. They were recruited through connections. Training is outdated, and we are not equipped to serve professionally."	Poor recruitment and training undermine ethical standards.
	Hope for Change	"There are good officers who want change, but they are afraid. If we had better pay, strong leadership, and real oversight, things could improve."	Reform is possible but requires structural and cultural transformation.

Table 2: Serving Officers' Perceptions toward Corruption in Nigeria: Rank-Based Responses Source: Author Interview 2025

<b>Rank</b>	<b>Items</b>	<b>Responses</b>	<b>Interpretations</b>
<b>Inspector</b>	Retirement Imaginations	“Any reasonable serving officers would do anything to survive life after retirement, including corruption.”	Retired officers acknowledged that retirement plans go with the act of corruption, especially as benefits and pensions are very unreasonable and usually take years of delays.
	Legacy of Corruption	“We did what we had to do. The system was broken even back then. Today’s officers just took it to another level.”	Acknowledges past corruption and its evolution.
<b>Inspector</b>	Retirement Imaginations	"While still on active service, serving officers should be smart by doing everything possible to save for retirement because suffering is real after retirement.”	Acknowledges corruption as smartness.
	Mentorship Influence	“We taught them how to survive, not how to steal. If they are corrupt, it is their choice.”	Denies direct influence but admits informal guidance.
<b>Inspector</b>	Retirement Imaginations	“If I knew I would experience the financial difficulty on retirement, I would have chosen any available means, including engaging in corruption. I regret it now, and I will encourage any serving officer to start early, as the salary is too meagre.”	Encouraging corruption among serving officers.
	Denial of Responsibility	“I retired clean. I do not know what these young officers are doing now.”	Rejects any link between retired and serving officers.
<b>DSP</b>	Retirement Imaginations	I don’t blame any officers who extort and collect bribes; it’s the only way they can survive the job. If you didn’t engage in corruption, it would be difficult to feed, clothe, or have a home or even see your children through school.	Retired officers support corruption, seeing it as a survival technique.
	Systemic Failure	“We were part of a system that rewarded loyalty over honesty. It is difficult to blame only the young ones.”	Accepts institutional complicity in corruption.
<b>DSP</b>	Political Patronage	“Some of us still have connections. We help our boys when they are in trouble. That is how the system works.”	Admits ongoing influence and protection of corrupt officers.
<b>ASP</b>	Reform Advocacy	“I speak out against corruption. I tell young officers to do better than we did.”	Advocates for change, but acknowledge past flaws.
<b>SP</b>	Defensive Legacy	“We served during tough times. Do not compare us to today’s officers who extort openly.”	Deflects blame and draws generational contrast.

CSP	Cultural Transmission	“They still come to us for advice. We must be careful what we pass down. Some of us glorify the wrong things.”	Recognizes the mentorship role in perpetuating corruption.
	Pension and Welfare Frustration	“We are treated like trash after retirement. If officers are corrupt today, it is because they fear ending up like us.”	Links corruption to fear of post-retirement hardship.
	Institutional Reform	“We need to support reforms and stop shielding bad officers. Our silence is part of the problem.”	Calls for accountability and admits complicity through silence.

Table 3: Retired Officers’ Perceptions towards Corruption in Nigeria: Rank-Based Responses; source: Author Interview 2025

## 7. Discussion of Findings

The study results as drawn from the interviews revealed that serving officers of the NPF turn to corruption as a means of innovation after a rationalisation of the suffering of retired officers through an intersubjective projection of the defining officers’ lived experiences while serving and likely future retirement outcome. A constable asserts, *“I fear to imagine retirement because the experiences I have observed from retired officers are very awful; most of them can barely feed, clothe themselves, and see their wards through school, and the worst can’t even afford rent.”* The assertion of the officer presents serving officers’ fears propagated from the observed suffering of the daily life of retired officers. The excerpt of a retired inspector presents a lucid concordance to that of the serving constable: *“While still on active service, serving officers should be smart by doing everything possible to save for retirement because suffering is real after retirement.”* This assertion suggests that serving officers should engage in corruption as innovations to augment future retirement plans, considering the meagre salary, gratuity and pension. This result aligns with the report of Onje (2025); retired officers recounted that they received retirement benefits that were less than three million Nigerian naira (less than \$2,000) and a monthly pension allowance of forty thousand Nigerian naira (less than \$35); many also affirmed that they are yet to receive any form of payment since official retirement. Others reported that they barely can feed themselves or their families; some are homeless, ill and can’t cater for their medical needs due to lack of or ineffective health insurance. The awful lived daily experiences faced in the job by serving officers, coupled with the meagre salary, are married to the observation of the suffering of retired officers, forming the mirror image usually propagated by fears of retirement even while still serving.

The study results from the interview revealed that corruption is seen by serving officers as a means of survival strategy. A constable stated, *“We are not paid enough. Collecting money is how we survive.”* This statement by the officer echoes the economic worry that energises unethical behaviour. According to Ibrahim (2019a), poor salary and a deficiency of welfare support are among the major causes of police misconduct, specifically among junior-ranked officers. Going forward, this is obviously seen in the suffering of retired officers, which may have arisen from the survivalist mindset of serving and retired officers. According to Sahara Reporters (2025), it reported that retired officers have in the past protested that they have been receiving as little as ₦1.6 million after decades of service to the nation, making serving officers have resentment of retirement and justify the reason for their corrupt tendencies as a form of future security.

The study results further revealed how corrupt practices are informally taught to them by senior officers and retirees across ranks, as stated by serving corporals and sergeants. One sergeant noted, *“My supervisor told me, ‘Do not come back empty-handed’”* While the retired officers self-proclaimed to

offer “survival tips”, nevertheless, some retired officers denied encouraging corruption. This result aligns with the study of Aborisade and Fayemi (2015); the researchers opined that corruption in the NPF is a socially communicated norm, passed down through informal mentorship and peer modelling. The “mirror image” is clear: retired officers shaped the corrupt culture that serving officers now inherit.

The study findings revealed a missed expression about their deepest distrust of any police reform efforts, which is agreed upon by both serving and retired officers. A serving DSP said, *“Reforms are just talk. Nothing ever changes.”* A retired inspector echoed this, *“We were part of a system that rewarded loyalty over honesty.”* This disbelief aligns with the Independent Corrupt Practices Commission (ICPC), which notes that corruption in the NPF has remained “virtually unchanged in form and format” despite decades of reform attempts by various Inspectors General of Police (IGP). This flaw of internal accountability instruments, as emphasised by Ibrahim (2019a), has led to widespread impunity in the NPF.

The study also revealed that retired officers use their political connections to shield their corrupt cronies, who are serving personnel, to continue to wield their influence among serving personnel. A CSP stated, *“Retired officers still pull strings; they are part of the corruption network.”* A retired DSP confessed to helping “their boys” avoid disciplinary action. The act of illegality, as mirrored in the NPF, is a rooted support system for serving officers, where loyalty is rewarded by their cronies. The Guardian (2025) reported that undermining integrity, accountability, and reform will enable more informal influence from retired officers on serving officers through their informal networks.

Consequently, the findings of the study revealed that some serving and retired police officers stated moral discomfort about the status quo in the NPF. Thus, a serving ASP said, *“I joined to serve with the mindset of integrity, but the system forces you to compromise on the job”*. Again, a retired DCP stated, *“We need to support police reforms and stop shielding bad police officers”*. These voices in the NPF represent a minority but are crucial for change. Ibrahim (2019b) argues that ethical awareness must be nurtured within the force to respond to the existing institutional decay of the NPF. Thus, the recent announcement of the IGP’s officers’ welfare inducements for ethical conduct is a step in the right direction (ICPC & PS, 2008).

## **9. Results, Implications and the Way Forward**

In order to address properly the root cause of corruption in the NPF, there must be a deliberate reform that will address the real cause of corruption in the force with the aim of nipping the challenges without playing lip bud. It was revealed in the study that one pressing issue in the force is poor remuneration and a lack of welfare for officers (serving and retired) (Ibrahim, 2019b). To solve this problem, the government needs to pay attention to the welfare and salary upgrades of the officers. As noted earlier, retired officers had protested because of the insignificant amount received as retirement benefits of ₦1.6 million after decades of service to the nation (Sahara Reporters, 2025). This said amount fails to reflect the sacrifice put into the service of the NPF over the years; hence, they desperately solicit income through corrupt means as future security. Thus, an improved pension pay and scheme will restore dignity in the force, especially among the young police officers.

The NPF has designed a structural mentorship for officers, and their training should include modules of integrity, public service ethics and accountability to nip the challenges stated by Aborisade and Fayemi (2015). Thus, promoting integrity and misconduct due to peer pressure will increase ethical mentorship and the internal culture of the force. To reduce scepticism, the Police Complaints Commission should be granted autonomy to prosecute cases independently, as this will restore trust (ICPC, 2024). This will build public confidence and deter impunity.

The NPF officers should be monitored, while necessary feedback should be gathered from the public as a criterion for promotion of officers, instead of just the routine three years of service. Consequently, the Police Act should be reviewed to reflect modern standards of accountability and human rights. Also, an annual corruption audit should be undertaken in the force, and a report published publicly to punish any offender. This implies that ethical conduct should attract reward for the institution.

## 9.1. Contribution to Knowledge

The research analysed corruption in the police system from the standpoint of mirror image, which explains that corruption is orchestrated as a result of fear of retirement, especially after the observation of the life states of retired officers. On this note, the research added to knowledge by leveraging the mirror image of retired police officers as a major cause of corruption among serving officers in Nigeria. The mirror image was well captured in both theories as employed in the study (Social Strain and Aggression Frustration Theory), postulating that serving officers have observed retired officers' afterlives' struggles and suffering and tend to innovate and exhibit their angers and frustrations using corruption (extortion and bribery) as a means of survival amidst the meagre salary and to augment retirement plans.

## 10. Conclusion

The study examines corruption of the serving and retired NPF officers. It was revealed in the study that corruption has been in existence for generations within the NPF. It is discovered that serving officers having mirrored retired serving officers adopt or adapt to corruption (bribery and extortion) as a way to cater for their meagre salaries and augment their retirement plans. Also, some retired police officers still play the role of shaping corruption among the serving officers, a practice that they were involved in as a survival means during their service years. These retired officers now serve as mentors to the serving officers. The study noted that serving officers degrade themselves to corruption tendencies, such as extortion, abuse of power, and bribery, which are normalised and even expected from them by their superiors. This act has made the public lose confidence in the institution, while the officers attribute it to poor remuneration, weak accountability and fear of post-retirement neglect. This “Mirrored Image” concerning these officers remains a sorry state in the mind of the people, and the continued act will continue to dissipate distrust and confidence amongst citizens. It is therefore necessary to reprimand unethical norms inherited from their predecessors. However, in the midst of these mirrored images, there are few voices within the force still advocating for integrity and reform; these few voices often hope for transformation. To end this ugly cycle, bold reforms must be pursued with the aims of improving welfare, enforcing accountability, and fostering a new ethical culture of policing. Thus, the NPF should engage both serving and retired officers as agents of change to rebuild public trust and fulfil the NPF mandate of justice and service. Also, erring corruption officials who fall short of the required ethical responsibility of the job should be sanctioned.

The researcher faced some limitations as a result of funding and gaining access to police officers who constituted the respondents for this study. Many refused to discuss freely in their official premises as a result of the regimented working environment.

Although the study has contributed to knowledge in that serving officers' develop corruption strategies as a result of the fear of being caught in the same web that retired officers are experiencing after retirement. A fear that emanated from the mirror image, which occurs after serving officers intersubjectively analyse themselves in the lives of retired officers; thus, anger and frustration create a sense of innovations among serving officers, which are showcased in extortions and bribery. The study suggests further research that will incorporate more eclectic approaches involving a qualitative and quantitative approach with a greater sample size.

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# Test-Taking Skills and Test Anxiety in Multiple-Choice Versus Essay Mathematics Tests: Perspectives of Senior Secondary Students and Teachers in Lagos State

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## Abstract

*The study investigates students' and teachers' understanding of test-taking skills and test anxiety of different test types in mathematics. A qualitative research design was employed for the study. Personal interviews were conducted with thirty-one participants, including fifteen teachers and sixteen students in Senior Secondary School II and III. The data were analysed with narrative, thematic and data visualisation techniques. Findings revealed that teachers and students expressed that before taking a test, students need adequate preparation by studying similar past questions, the method of answering questions, as well as where they previously made mistakes and errors from the marked scripts. Also, while taking a test, students require skills such as time management, organization, shortcuts method, several trials, being focused, and test-wiseness, among others. Furthermore, participants in the study expressed that students experience more anxiety in essay test types than in multiple-choice ones. In addition, many of the students indicate their preference to write an objective test rather than an essay test because of their perception that they can easily guess the answer. However, some students preferred the essay test because it allows them to show their work and get some marks. The study recommends that teaching must include test-taking and test practice under realistic conditions. Schools should also take into account accommodations to anxious students, such as extra time or the use of an alternate form of test, to ensure assessment equity.*

**Keywords:** *text, test, anxiety, test-taking skills, test type*

## 1. Introduction

Assessment is described as a systematic process of collecting information about student progress towards the learning goals (Dixon & Worrell, 2016). Similarly, a good assessment should provide information about learners' behaviour as well as how well they have mastered instructional content, this information serves as feedback and can be used to improve the performance of the learners (Andrade & Brookhart, 2016). In addition, Lau (2016) asserts that when the assessment is aligned with the process of teaching and learning, it will have a positive effect on students' learning and motivation. Classroom assessment is important in teaching and learning processes and has been identified as a foremost method of improving learning outcomes.

The Nigeria National Policy on Education asserted that assessment at all levels of education shall be to measure accurately the abilities of students and improve learning among others (Adesemowo, 2005). Assessment is useful in the teaching of mathematics as it enables teachers to see how their students approach problems and at what level the students applied the knowledge when solving mathematical problems. Consequently, teachers need to understand students' potential, problems and learning difficulties in mathematics in order to provide appropriate remedy and feedback to attain meaningful learning.

A test is an assessment instrument for measuring the behaviour of students in all the domains of learning (Gronlund & Linn, 1990; McMillan, 2018). The achievement test focus on cognitive learning, and is usually for determining the degree of learning that has taken place after a series of delivery of instruction. There are basically two types of achievement tests: the essay type and the objective type. Experts have argued, however, that each of these test types has its strengths and shortcomings that affect the reliability and validity of the outcome. Learners must be proficient in test-taking in order for the test to serve adequately as a measure of their achievement level. By implication, to attain success in a test

situation, it is important for students to know and apply appropriate test ability strategies, ensure adequate preparation and effective time management (Bicak, 2013).

Test-taking skills are required by students and enable them to decide what to do before, during, and after the test. Also, test-taking skills could help students to translate and utilize knowledge acquired through classroom learning process to answer and respond to questions appropriately while taking tests. Test-taking skills are categorized into three skills: before during after test skills (Dodeen, Abdelfattah & Alshumrani, 2014). Before-test skills help in test preparation to practice similar question that may be presented during a test. During test strategies help in developing skills such structural organization, time management and testwiseness while after test strategies help students to make use of appropriate feedback from the purpose of improving learning.

Test-taking skills are transferable skills and if acquired, students are at a vantage point to use these skills across a variety of subjects and within different settings and conditions. Moreover, most test-taking skills are also useful in a students' practical life, highly beneficial to their effective use of time, empower them to set priorities, afford them with the ability to work both fast and accurately, and ensure ideas become directly evident. Additionally, test-taking skills can be useful to eliminate any feelings of tension and anxiety that may interfere with students' ability to communicate what they know in a test situation ((Dodeen, Abdelfattah & Alshumrani, 2014). The fact that students' achievement is measured by test scores points to the anxiety that they experience in a bid to do well.

Anxiety plays a vital role in giving a powerful signal to the individual about the level of preparedness for the test. Test anxiety can affect students' ability to perform optimally and prevent them also from demonstrating their knowledge on examinations optimally (Javanbakht & Hadian, 2014). Some students possess the knowledge of content to perform very well in testing situations, but are affected by excessive anxiety. Studies have shown that test-anxious individuals perform poorly under evaluative and stressful situations than low-test anxious persons (Busari, 2012). Learning to solve problems is ultimate in mathematics, which a student requires specific skills to show their proficiency in testing situations. In addition, some students could be familiar with the subject matter and perform poorly on tests due to poor test-taking skills. However, large number of students have not acquired the skills they need in mathematics tests.

The West African Examination Council (WAEC) Chief Examiner's reports in 2016, 2017 and 2018) highlight that the prominent weaknesses that candidates have in public examination are the inability to interpret word problems, and writing answers to the required degree of accuracy and logical reasoning among others. Many students encounter difficulties in applying their mathematical knowledge into finding the solution to problems, especially in text-based problems that demand comprehension skills in addition to mathematical thinking processes (Leonard, 2017).

In most testing scenarios, it is commonly assumed that student performance is primarily influenced by the test's content and difficulty, as well as the cognitive abilities of the test-takers. However, research shows that emotional and behavioural responses during testing particularly test anxiety and test-taking skills can significantly have an impact on outcomes (Cassady & Johnson, 2002; Malespina, Seifollahi & Singh, 2024). Students may fully understand the subject matter but still perform poorly due to inadequate strategies for managing time, interpreting questions, or coping with stress. Similarly, even well-prepared students may underperform because anxiety hinders their ability to think clearly or recall information.

These issues are especially concerning in mathematics, a subject where performance is often sensitive to confidence and clarity of thought. Moreover, the type of assessment used can influence student performance, as various formats may exacerbate anxiety or demand specific test-taking strategies. Since anxiety levels and test-taking skills can differ depending on the test type, relying solely on test scores to measure mathematical competence may be misleading. Therefore, the study explores the teachers and students' understanding of test-taking skills and test anxiety and how it affects mathematics performance in objectives and essay test types.

The study provides answer to the following questions:

- i. What skills do students require to do well before, during and after taking a test?
- ii. How does test type affect mathematics performance in essay and objectives test?
- iii. How does anxiety affect the mathematics performance in essay and objective test type?
- iv. How can test anxiety be addressed?

## 2. Theoretical Framework

Two theories, Dodson's Law of Drive Theory and DeSkeyer's Skill Acquisition Theory provided the framework for the study

### 2.1. Dodson's Law of Drive Theory

The study was informed by the Inverted-U-Principle theory, which was derived from Yerkes-Dodson's Law of Drive Theory (Yerkes & Dodson, 1908). The theory links arousal to performance; hence it is referred to as the theory of Arousal and Performance. According to McCandless (1967), 'arousal' is the level of excitement or activation generated in the central nervous system to trigger production of the energy required to perform the desired task. The level of arousal of energy experienced by the individual determines the effectiveness of that individual's performance on the task at hand. The underlying argument in the theory is that if arousal increases up to a certain level, performance on a task would increase as well; but if arousal became too great and continuous, then performance would deteriorate. This means that at the onset of the arousal state, the individual would still feel confident in his/her ability to control the arousal pressure, and desire to perform a task would continue to improve. But, once the arousal gets to a peak level, the individual would start to doubt his/her ability to cope, and her/his performance would automatically begin to drop.

Arousal leads to anxiety, and there is a progressive relationship between a person's level of anxiety and the ability to function effectively. However, when the anxiety level builds up too high, performance declines because the individual's attention will be focused on the feelings to the extent that he/she loses focus of the task at hand (Syokwaa, Aloka & Raburu, 2014). The arousal-performance process gradually builds up from a lower level to the optimum level (the top of the inverted U). Rathus and Nevid (1995) asserted that at each level the individual's functioning capacity is altered to conform to the arousal-performance interaction.

Deducing from the arousal theory, an easy or simple task such as adding simple numbers does not require focusing on several tasks simultaneously, and can be accommodated by high levels of arousal. On the other hand, a complex task such as solving a maths problem with many steps require attending to many factors at once. For this reason, complex tasks are better handled at lower levels of arousal. However, both over-arousal and under-arousal can have negative effects on performance.

In an attempt to explain the existence of individual differences in ability to cope with varied anxiety levels, Syokwaa *et al.* (2014) arrived at the concept of individualized zones of optimal functioning (IZOFs). They stated that each individual has an optimal level of pre-performance anxiety which resulted in peak performances. Accordingly, if the pre-performance anxiety lies outside the area of IZOF, whether too high or too low, the performance will deteriorate. The inverted U-principle also states that individuals who are exposed to the same anxiety energy are likely to react differently because of the difference in their IZOF's levels, a fact that accounts for differences noted in their academic performance outcome.

In relation to the Inverted-U principle, therefore, this study assumed that in a normal situation, a student would need some level of anxiety which will positively energize him/her to attend to academic pursuits. Their performance ability, either at mild and moderate anxiety levels is likely to bring forth desirable grades. But once the anxiety escalates and goes beyond optimum level, there is the possibility that the student's academic achievement would drop. This study, therefore, attempted to obtain a measure of

students' test anxiety levels, facilitating and debilitating anxiety and determine the connectedness with mathematics performance when tested on different test types.

## **2.2. DeSkeyer's Skill Acquisition Theory**

The study is also guided by skill acquisition theory as developed by DeKeyser (2007). This theory draws on John Anderson's (1982) Adaptive Control of Thought (ACT) model which itself is a kind of cognitive stimulus-response theory (Ellis & Shintani, 2013). Parziale and Fischer (2009) described it as a neo-Piagetian theory that amalgamates elements of both cognitive and behaviourist theories. The ACT is also described as the most well-known models of skill-based theories (Taie, 2014). Adaptive control of thought (ACT) is a framework for skill acquisition comprising two major stages in the development of a cognitive skill, i.e., declarative and procedural stages.

Declarative learning is acquiring information that one can speak about while procedural learning focuses on habit and the knowledge exercised during the performance of some tasks. The basic claim of Skill Acquisition Theory, according to DeKeyser (2007), is that the learning of a wide variety of skills shows a remarkable similarity in development from initial representation of knowledge through initial changes in behaviour to eventual fluent, spontaneous, largely effortless, and highly skilled behaviour, and that this set of phenomena can be accounted for by a set of basic principles common to acquisition of all skills.

In order to build proficiency with a skill, the learner must constantly engage with the skill knowledge through large amount of practice or constant engagement with same or closely related tasks (DeKeyser, 2007). According to DeKeyser (2007), practice with a given task is marked by decreased reaction time and error rate and interference from other tasks. Further, practice with a given task gradually decreases reaction time and error rate. DeKeyser, (2007) defined practice as "repeated performance of the same (or closely similar) routines."

Also, Newell and Rosenbloom (1981), as cited in DeKeyser (2007), opined that practice is the subclass of learning which only deals only with improving performance on a task that had already been successfully performed. However, for practice (procedural) to be worthwhile, the practice should be brief, engaging, purposeful, and distributed (Rohrer, 2009). Too much practice can be ineffective or lead to mathematics anxiety (Ghoshal, 2005).

Mathematics is ultimately about problem solving, requiring that learners apply the learned rules (declarative knowledge) to work on specific tasks and express their knowledge (procedural knowledge). How well learners utilize the skills will affect their overall performance. In mathematics, procedural fluency support students' analysis of their own and others' calculation methods, such as written procedures and mental methods with the aid of tools like calculators, computers, and manipulative materials.

On the other hand, procedural fluency extends students' computational fluency as it applies to all areas of mathematics. In the same vein, students practice of worked examples can also be useful in developing appropriate skills to solve mathematics problems and equally discover what procedure can be most appropriate in a given situation. In the context of this study, the measure of students' test-taking skills provides their procedural knowledge through test-preparation, during-test and after-test skills.

## **3. Method**

### **3.1. Design**

The study adopted a qualitative research design to explore the teachers and students' perceptions about factors that promote or hinder the test taking skills, test anxiety and mathematics performance of students as well as possible interplay between the factors

### **3.2. Sampling**

A sample size of thirty-one participants, including fifteen teachers and sixteen students, for the study is justified by qualitative research criteria set over the past. Creswell (1998) suggests 5 to 25 respondents, which is adequate for going into particular experiences, and Morse (1994) suggests 6 to 10 participants for in-depth interviews with profound data. Francis *et al.* (2010) further suggest that even ten participants are enough to confirm valid consensus. These hypotheses are indicative that the sample size will provide detailed information from both groups. The participants were picked using purposive sampling: fifteen mathematics teachers (five each from three district) were separately interviewed, and sixteen SSS II and SSS III students from two schools from two education districts were divided into three focus group discussion (FGD) sessions.

To achieve a suitably heterogeneous sample, the study intentionally selected participants from varied subgroups, considering factors such as age, gender, and academic level (SSS II and SSS III students), ensuring a broad spectrum of perspectives. To address non-response bias, follow-up contacts were made with initially unresponsive participants, and their reasons for non-participation were noted. This allowed for a clearer understanding of potential bias in the final sample. In addition, the study ensured informed school administrator consent and individual child assent were obtained. Also, interviews were conducted within the school premises and in a comfortable classroom environment, protecting privacy and confidentiality. Ethical issues included safeguarding children's well-being, minimizing distress, and respecting their right to withdraw at any time.

### **3.3. Instrumentation**

An interview guide was developed by the researcher to ascertain students' and teachers' understating of how test-taking skills and test anxiety affect mathematic performance. The use of interviews and open-ended questions helps to guide against restriction of information to enable a free flow of discussions. Three FGD sessions were conducted for the students. The FGD is selected as a quicker method of data collection from several participants in a study at once. Each FGD session had in attendance eight participants both male and female students. Validation of interview guide (IGMTS) involved a trial testing procedure carried out by the researcher on teachers and students selected from a secondary school outside the sample coverage. To improve the reliability of the instrument, a pilot test was conducted among teachers in another school that is not part of the sample. The lesson learned from the pilot study helped in to improve dialogue during the main study.

### **3.4. Method of Data Analysis**

The analysis followed Gillham's (2005) content analysis approach, which involves a systematic process of transcription, content examination, and inductive interpretation. The audio recordings were carefully transcribed into written form, with close attention paid to ensuring accuracy and completeness, every detail was transcribed during the process. Transcribed data were subjected to a combination of narrative and thematic analysis to identify patterns, recurring ideas, and meaningful themes emerging from participants' responses. Additionally, data visualisation techniques were employed to present the findings in a clear and accessible format, supporting the interpretation and communication of key insights.

## **4. Results**

Analysis and extract of the participant's responses to the research questions are presented below.

### **4.1. Skills Required by Students for Essay Mathematics Test**

The respondents were asked about test-taking skills that students require to do well before, during and after taking mathematics test. The data visual representation of the sub-themes deduces from responses from both the teachers and the students are presented in Figure 1.

#### 4.1.1. Skill Required before Taking a Test

Teachers responded that students need adequate preparation before taking mathematics test and that they need to study with a textbook, solved problems ahead and may need to consult with their colleagues or teachers when they cannot solve the mathematics problems. Mathematics teachers emphasise that students need a combination of critical academic skills to succeed in tests. Also, problem-solving is essential, as students must logically analyze questions and apply appropriate methods rather than rely on memorization. Accuracy in calculations and attention to detail are crucial, as minor errors can lead to incorrect answers. Understanding mathematical vocabulary helps students interpret questions correctly.

Regular practice with a variety of problems fosters flexibility and critical thinking. Additionally, effective time management and quick recall of basic maths facts are necessary, as hesitation in foundational steps can hinder overall performance during a timed test environment. However, the students revealed that some of them only study when they are informed there would be a test, for instance one of the students reported that “.... *if I hear that there will be a test, I will prepare.*”

It is also worth noting that some of the students indicate that they need to study very well and solve past questions before taking a test. Students feel that knowing formulas as a matter of concepts rather than mere memorization is the key to passing maths exams. Stressing the use of time in not hurrying is their emphasis. Practicing repeatedly with mixed problems reinforces confidence and preparedness. Also, remaining calm and alert while responding to the exam is necessary, as nervousness has a habitual inclination towards impairing recall and performance even after adequate study of the material.

#### 4.1.2. Skills Required While Taking a Test

##### 4.1.2.1. Teacher Responses

During mathematics tests, students are encouraged to "read each question carefully" to understand fully what is being asked, as misreading often leads to "simple but costly mistakes." Teachers emphasize that logical reasoning is vital - even if students forget a formula, they can still solve problems by thinking "step by step." Clear organization of work is also important; many lose marks not due to incorrect answers, but because "the examiner can't follow their process." Also, self-checking is considered a valuable skill, helping students identify and correct errors before submitting their test, which can greatly enhance their performance.

##### 4.1.2.2. Students Responses

Students identify several key academic skills that help them perform better during mathematics tests. One student shared, "*I always try to underline key words in the question so I don't miss anything important,*" which is a strategy that helps maintain focus and avoid careless mistakes. Estimating answers is another useful skill; as one student explained, "*If my final answer looks way off, I know I probably made a mistake somewhere.*" Time management is also emphasized, with students choosing to "*skip really hard questions at first and come back to them later*" to avoid getting stuck. Additionally, "*writing neatly*" is seen as essential to prevent confusion and calculation errors.

The responses from both the teachers and students provide similar view on the skills required while taking test. These include, time management, organization, focus and testwiseness, among others. However, the teachers were able to provide specific skills required for different test type as can be seen from their responses and presented in Fig 1. For the objective test, students required the ability to think fast, shortcuts, time saving and concentration. However, for essay tests, students required time saving, organization, and ability to attempt all questions among others.

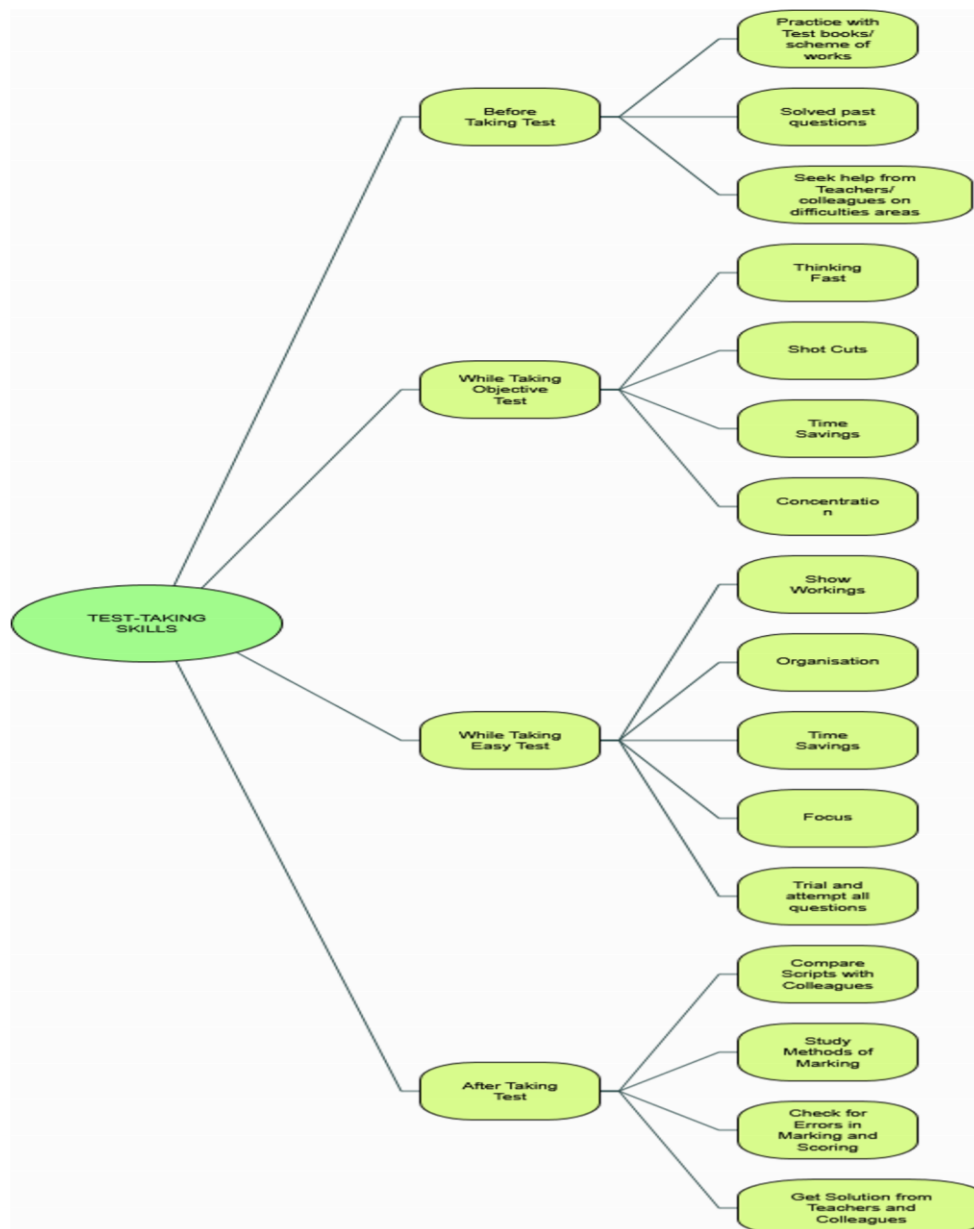


Figure 1: Skills Required Before, During and After Taking a Test; source: Field work, 2025

#### 4.1.3. Skills Required after Taking a Test

The teachers were asked what they expect the students to do with returned marked scripts while students were also asked what they do with them. Some of the teachers commented that students are expected to “... *compare with colleagues.*” Another one respond that to “... *study answer marking*” or “... *the method of marking.*” This implies that teachers used the marked scripts as a form of feedback. Another teacher commented that “... *if a student knows a formula but in the process of substituting the value in the formula, he made a mistake, that doesn't mean the student will fail it, I like them to study it.*”

Moreover, teachers expect students to study how the scripts are marked and score awarded, as one teacher commented that “... *students should check whether the teacher marks and calculates their scores properly ... [and] expect them to see where they have made a mistake.*” The instructors underscored the reality that students require a fusion of thinking, reflective, and interpersonal skills after taking a maths test to aid in their study and development. One teacher commented that “... *students need strong analytical skills so that they can look back and think about what they did well or poorly on*

*the test and where their thinking might have collapsed.*" This exercise in reflection is directly linked to self-assessment, which another teacher summarised as being "... *examining their test and spotting patterns in their error.*" These are skills that help students identify their weaknesses and improve specifically.

Alongside reflection, emotional resilience is also considered crucial. One teacher described how "*Students thrive on having a growth mindset and perseverance, so they can learn from mistakes instead of getting discouraged.*" This allows them to see mistakes as a means of development, and not as failure. Communication is also essential. One answer stressed that "*They should be able to explain their problem-solving process clearly, particularly when reviewing questions with their peers or teachers,*" which will assist collaborative learning and understanding.

Another skill emphasized by the teachers is effective time management. Learners must "... *assess how they spent their time on the test to better prepare for future tests*" so that they are able to accomplish tasks well and not do sloppy work in haste. Critical thinking is important. According to one teacher, students need to be able to "... *connect their test performance with broader maths concepts, not just worry about the test score.*" It assists in putting what they know into a larger picture of mathematics, leading to long-term retention and application.

On the other hand, when students were asked what they do with returned marked script they revealed that they differ. As one student put it, "*I do the questions that I got wrong and try to see why I made them,*" and this reflects a disposition to learn from mistakes. Another answered, "*I just look at the grade sometimes and put it away, but if I did not do well, I read the teacher's comments to figure out where I went wrong,*" as a grade-based reaction with sporadic checking. Another student answered, "*I compare what I've written with the correct ones and ask the teacher or my friends if I still don't understand,*" as a cooperative method of learning from error. Another student's response was "... *I used to keep the scripts, do nothing with.*" This implies that it could be possible that some of the students did not bother to study the marked scripts to check their mistakes and this could affect their subsequent performance.

Another student responded "*I will study my mistakes ... check my errors and correct myself [when] I get solutions from my teachers*" and "*I do keep the script and show it to my elder ones when I get home and they will correct me.*" It can be deduced from the responses that many of the students used the marked script as feedback and take actions that will enhance their study habits and learning like comparing with colleagues, checking that the score awarded to the student is correct and looking at the weaknesses of others. In short, while certain students pay attention to learning from the feedback, others only hear the grade until motivated by poor performance.

#### **4.2. How Test Types Affect Mathematics Performance**

The respondents were asked to indicate their perceptions about how test type affects mathematics performance in essay and objectives tests. Teachers observed that the test format objective or essay impacts students' performance in maths significantly. One commented that "... *the essay shows more of the students understanding.*" On the contrary, some of the teachers responded that "I don't think objective is a true picture, when they get a particular question, it doesn't mean they know it, it can be by gambling." Another said that "*Students perform better in objective tests because they can read the right answer even if they are doubtful about the procedure.*"

Objective tests are also regarded as more effortless and time-saving to finish, with one teacher remarking that "*Students who work quickly get higher grades, even if their grasp is inadequate.*" Guessing sometimes also yields marks, with "... *some students guess in objective tests and still receive marks.*" But essay questions are reported to be a better test of real understanding. One teacher said, "*Essay-type questions show more understanding, but students can't always explain themselves.*"

Another described how "*Essay questions make students walk through all their steps, which is where they break down thinking-wise.*" There are downsides, though, "*Poor writers lose credit on essay tests,*

*even if they do the maths," and "... test anxiety is increased with essay questions because students hate having to explain it all out in detail."* By implication, the teachers are of the opinion that the performance of the students in objective test type mathematics is not a true reflection of their level of understanding.

Consequently, using objective test types alone does not reflect the actual students' maths performance and would not also reveal students' weakness in a particular area of mathematics. Overall, teachers feel objective tests are effective for measuring recall and procedures, but essay tests more effectively measure reasoning and problem-solving abilities.

Also, when the students were asked which of the maths test type they would prefer and why, it was found that students have varied preferences for essay and objective type mathematics tests, most frequently based on comfort, test-taking strategy, and learning styles. Most students prefer objective tests, and one said, *"I like objective tests because they're faster to answer and sometimes you can guess if you don't know,"* pointing to speed and the opportunity involved in multiple-choice formats. One student concurred and stated, *"Objective tests are less difficult for me since I am anxious when writing long explanations on essay questions."*

Some prefer the availability of showing comprehension in written solutions. One said, *"I prefer essay tests because I can show my working and receive some marks even if the final answer is incorrect,"* valuing partial credit and process-oriented grading. In the same vein, another student responded, *"Essay questions assist me in understanding the steps, so I know the topic better,"* indicating that essay tests encourage more thorough study. Another balanced view was one student's statement, *"Objective is preferred when there's not much time, but essay allows me to prove that I actually do know what I'm doing,"* acknowledging the use of both modes by situation.

Another students' response was that *"... because objective you can guess, but I can pick anyone if I don't know the answer."* Another student responded that *"... right but in theory it is based on your working but objectives it can be based on guessing,"* *"I prefer theory test because in the objective, it is a game of play or lose,"* *"... objective, it has options and it is easy,"* and *"I preferred objective because it is easy, solve it, get the answer than the theory."*

These responses show that most of the students prefer objective test types because they can easily guess the answer(s). However, there were some who preferred theory (essay) test types in mathematics. As commented by some of them *"... theory, if you solve it, you can get more knowledge,"* *"... I prefer the theory,"* *"... theory shows you're working and if you make small mistake, then you can get it wrong"* and *"For theory, I will explain further, but the objective it is either I missed or I get the questions."* It can be observed that some of the students agreed that they prefer theory questions in mathematics as it gives them opportunity to show their working and at least get some marks, unlike the objective test type where they either get the answer right or not.

In general, there is variation but students favour balancing clarity, confidence, and fairness in deciding between test forms of essay and objective.

#### **4.3. How Anxiety Affects the Mathematics Performance in Essay and Objective Test Types**

The teachers were asked how anxiety affects the mathematics performance in essay and objective test types. Teachers widely agreed that anxiety does have an impact on students' performance on both essay and objective test forms of math, but differently. In essay tests, anxiety is more salient. As one teacher put it, *"Lots of students freeze on essay tests because they feel as though they have to defend every step, and that makes them even more anxious."* This anxiety frequently creates mental overload, another teacher explaining, *"Essay tests cause nervous students to forget procedures they usually know because they get bogged down trying to justify them."* Time management is also compromised, one explaining, *"Anxiety leads to time management issues on essay tests students take too long on one question and run out of time."*

Fear of doing something wrong is also a common source of anxiety. *"I have witnessed anxious students doing poorly on essay tests because they are afraid of getting something wrong in their written answer,"* one instructor said, and another added, *"Essay-style questions generate anxiety among students because they think that they must be flawless in their calculations and presentations."*

On the other hand, objective tests can reduce anxiety in some students because these require fewer written descriptions. *"There is less anxiety for some students in objective tests because they're only choosing an answer, not demonstrating how they arrived at it,"* one of the teachers commented. Objective tests are not anxiety-free, however. Some are perplexed by similarly-sounding options *"Students who are test anxious second-guess more in objective tests, particularly when having similar options."* Others might hurry: *"In objective tests, anxious students hurriedly answer the questions without fully reasoning them out."* One teacher saw the opposite, however: *"For anxious students, multiple choice provides some solace since there's always a possibility of getting it correct even when unsure."*

In general, anxiety impacts performance under both test forms, yet essay tests are more likely to generate heightened levels of stress since elaboration of responses is anticipated of them, whereas objective tests have some alleviation, though perhaps at a cost. Figure 2 presents data visualization of the deduction forms the responses on effect of anxiety on mathematics performance in the essay and objective test type.

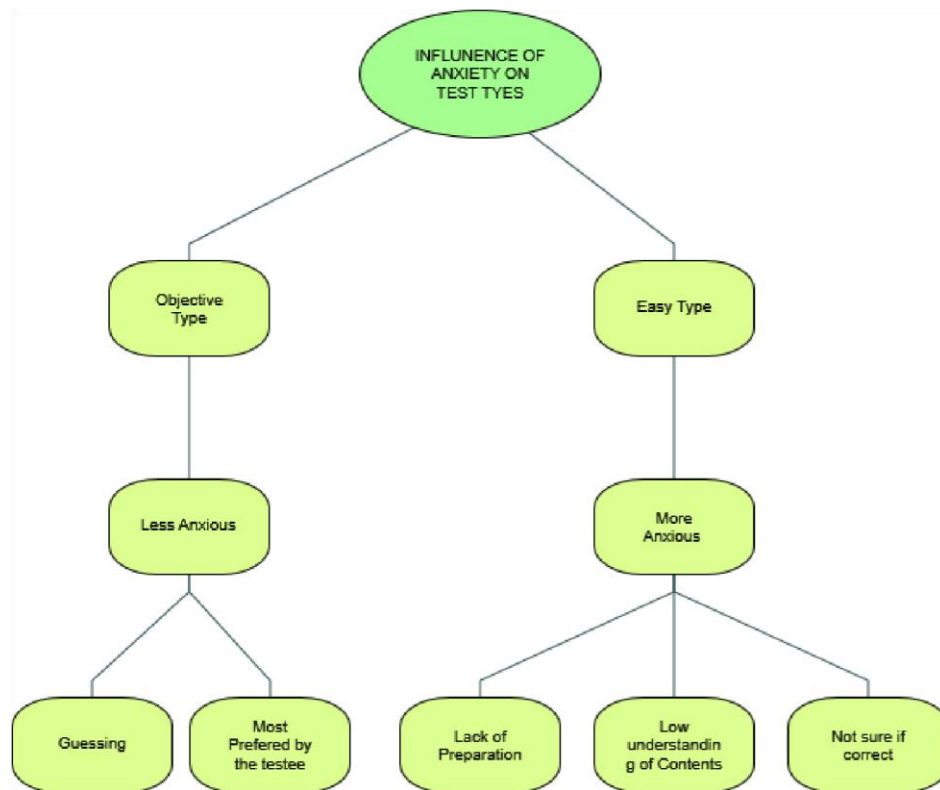


Figure 2: Anxiety and Mathematics Performance in Objectives and Essay Tests; source: Fieldwork

The students were asked which of the test types caused more anxiety during test situations. Students are worried to some degree based on the kind of mathematics test but are more worried when they are given essay tests. The biggest concern is that they may forget and not be able to articulate problem-solving steps explicitly. As one student said, *"I get more anxious with essay tests because I fear that I won't be able to recall all the steps to arrive at the solution."*

Another added, *"Essay tests concern me because I have to write it all out, and I'm a bad writer."* Time pressure contributes further to increased anxiety in essay formats. One student pointed out, *"I get more*

*anxious with essay tests because they take longer and I am worried I will not have enough time," while another felt there was a concern with "... a little error being able to affect the whole response." Concern with clarity and interpretation also arose in this group with one student indicating that the reason for greater anxiety with essay tests is that "I don't want the teacher not to understand my method if I don't write it down perfectly."*

While essay tests are normally more stressful, objective tests also turn out to be daunting for some students. One said, *"Objective tests stress me out more because the choices can be confusing and tricky,"* and another said, *"Objective tests make me anxious because I always second-guess which one is right, especially if they look similar."* Objective tests, however, are seen as less stressful by some because one student said, *"I'm less stressed in objective tests because I can at least guess if I don't know it."*

In sum, although both types of tests are anxiety-generating, students will feel more under pressure from essay tests since detailed explanations are called for, there is a time limit, and they are fearful of misunderstanding. From the comments, both the teachers' and students agreed that anxiety is higher in the essay test type because of inadequate preparation, lack of knowledge and mathematics phobia. In objective tests students can easily guess and are less anxious to take the test. However, some of the students also experienced anxiety in objectives test. One student commented *"... sometimes in objective tests, when you solve it you have the answers."* Thus, it can be deduced that mathematics anxiety is experienced in both essay and objective test types, but more in the essay test type. This main reason for the mathematics anxiety is lack of knowledge and inadequate preparation on the part of the students.

#### **4.4. How to Reduce Test Anxiety**

Mathematics teachers suggest some simple strategies for helping students cope with and reduce test anxiety. One of the key strategies is to create a positive learning environment. As one of the teachers said, *"Teachers should create a supportive environment where students feel safe to make mistakes and learn from them."* This has the effect of calming students such that they view exams as part of learning rather than high-stakes tests.

Knowing test conditions is also considered to be significant. One of the teachers suggested, *"Preparation using previous questions and timed mock tests will get students accustomed to the test environment and alleviate anxiety."* Along with that, emotional control strategies can prove to be beneficial. A teacher suggested, *"Use relaxation strategies like slow breathing or positive self-statements before and during testing."*

Another approach is to shift students' mindset away from perfectionism. *"Get students to think effort and progress rather than the score,"* advised one teacher. Confidence-building is also highlighted, with another adding, *"Assist students in building confidence by practicing regularly and celebrating little wins."*

Preparation and transparency can decrease anxiety too. *"Give clear instructions and tell students the test format beforehand so they can prepare,"* replied one teacher. Reducing pressure by test design was also cited: *"Reduce pressure by making assessments part of ongoing learning, not high-stakes testing only."*

Teachers also emphasize giving emotional support. *"Discuss students' concerns with them and teach them to manage stress,"* another suggested. Exposure on a slow basis with low-pressure projects was another proposal: *"Utilize low-stress activities and quizzes to gradually acclimate to tests."* Severely affected students might need accommodation. As one of the trainers suggested, *"Provide additional time or adaptive settings for students with a history of difficulty with anxiety."* Test anxiety must be addressed with a mix of emotional support, realistic preparation, paradigm changes, and, as appropriate, adaptive accommodations.

## 5. Discussion

The results from both student and mathematics teacher responses show that type of test and test anxiety have great effects on student performance in maths tests. However, students find objective tests less fearful, mainly because they are able to make informed guesses or spot correct choices at times. One of the students said, "I'm less nervous in objective tests because I can at least make a guess if I don't know the answer." By contrast, essay tests cause more anxiety because of the need to write out detailed explanations and step-by-step working. As described by one student, "*I get anxious on essay tests because I fear I won't recall all the steps to reach the solution.*" This is consistent with a study by Putwain and Daly (2013), which indicated that high-stakes tests involving written explanations were found to produce more anxiety, especially in mathematics.

Teachers also noted that anxiety interferes with students' capacity to show their actual knowledge, especially on essay tests. As one teacher highlighted, "*Essay tests can make nervous students forget processes they normally know because they get bogged down trying to describe them.*" This is corroborated by a description in a study by Ashcraft and Krause (2007), where it was established that anxiety compromises working memory, but more specifically for multi-step problem-solving exercises.

Compared to managing anxiety, instructional as well as affective strategies were implemented. Teachers cited the importance of a positive classroom, with one saying, "*Teachers should provide a supportive environment where students can feel safe to make mistakes.*" This is in agreement with Ramirez and Beilock's (2011) recommendation to alleviate anxiety by offering low-stakes practice and to promote a growth mindset.

Furthermore DeKeyser's (2007) Skill Acquisition Theory explains that with repeated, structured practice, learners move from effortful, declarative knowledge to automatic, procedural performance. This supports the teachers' view that regular problem-solving practice, textbook study, and collaboration build the foundational skills such as time management, organization, and logical analysis necessary for success in mathematics tests.

Yerkes-Dodson's Law (1908) further explains how moderate arousal enhances performance, while excessive anxiety especially during essay tests impairs it. This aligns with findings that students perform better on objective tests due to lower anxiety. Together, these theories highlight the need for both skill mastery through practice and emotional regulation to optimize test performance.

## 6. Conclusion

This study demonstrates that test anxiety and test-taking skills affect students' mathematics performance, with objective tests generally causing less anxiety than essay formats. Effective preparation, including practice, problem-solving, and time management, plays a crucial role in improving outcomes. However, the study is limited by its reliance on interviews as the primary method of data collection, which can introduce various forms of bias. The data depend on participants' ability to accurately recall and express their experiences, potentially leading to incomplete or distorted information. Additionally, the relatively small sample size may not fully capture the diversity of the broader student population, limiting the generalisability of the findings to other contexts or groups.

Future research should include larger, more diverse samples and consider longitudinal designs to better understand how anxiety and skills develop over time and impact performance.

The implications are that balanced assessment strategies are required to take both forms of test into account and to sustain students both emotionally and cognitively. The teaching must include test-taking and test practice under realistic conditions. Schools must also take into account accommodations to anxious students, such as extra time or the use of an alternate form of test, to ensure assessment equity.

Follow-up studies might investigate the long-term effects of test anxiety experiences on mathematical performance across various age groups. Further, studies on the efficacy of certain intervention techniques e.g., mindfulness training, metacognitive training, or test format modification would offer greater understanding in minimizing mathematics test anxiety. Cross-cultural comparison studies or cross-educational comparative studies may further reveal how structural features shape students' mathematics testing anxiety experience.

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## **Book Reviews**

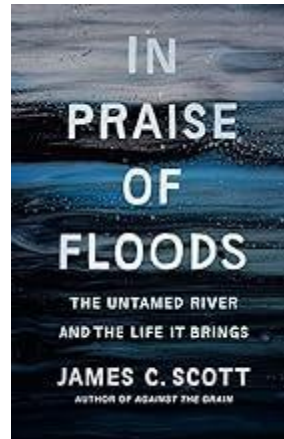
## In Praise of Floods: The Untamed River and the Life It Brings

James C. Scott

New Haven, CT & London: Yale University Press, 2025

ISBN: 9-780300-278491

XXIII + 221 pp.



“Floodwaters, as they move across the landscape, create a huge variety of habitats: backwaters, ponds, marshes, swamps, slow-moving warm waters, refuges from predators, and assemblages of food and habitat that favour a large variety of riverine species. At bottom, it is a story of habit and nutrition. The entire mechanism depends on the microbial richness of the floodplain, which represents the base of the food pyramid in the lifeworld of the river (pp.41-2).”

The late James C. Scott was a leading thinker about development and the relationship between the individual and the state, as well as a Southeast Asianist. He draws upon all of these domains in this, which is sadly his last book (and one that is not quite finished, as will be noted later). In his previous work, *Against the Grain* (2017), he argued persuasively against settled agriculture and how we might all be better off in a variety of ways if we were still semi-nomadic hunters and gatherers. As agriculture became established as the main form of food security, it inevitably led to the abandonment of the peripatetic life and its replacement by an existence defined by confinement in tiny spaces in which diseases, discontent and tyranny could all flourish. The act of brining the landscape into the service of humanity has not been a successful one. With *In Praise of Floods*, he approaches the subject from another direction. As the passage above explains, it is the act of flooding that brings life and renews downstream lands so that all flora and fauna can be replenished. The corollary of this, of course, is that any action that hinders this natural process diminishes the ability of nature to create and recreate what might be called the natural relations of life. In the modern world, such hindrances abound, ranging from dams to regulate the current and generate hydroelectric power to irrigation systems that slowly drain the energy from the flow of the water.

To illustrate this argument, Scott draws upon his extensive experience in Myanmar (he calls it Burma, for ‘performative’ political reasons) and, in particular, the River Ayeyarwady (also known as the Irrawaddy). He tells the story of how, as a young man, he would deflect questions from suspicious officials wondering what he was doing in the country by telling them that he was studying the river. In due course, he did study the river in some detail. In doing so, he enlists the help of researchers Naing Tun Lin and Maung Maung Oo, to whom he entrusts the task of interviewing local fishing people about

the role of *nats* – spirits, especially water spirits – in their lives and their cosmography. As Scott himself observes, no doubt with a mixture of emotions, he does not have enough time left to complete the work necessary fully to integrate the results of the research into the fabric of the book. Consequently, these histories sit on their own, like an island in the river of text, one which might seem a little strange to those who are not familiar with the folklore of Southeast Asia. In a work in which Scott permits so much of his personality to shine through, it is poignant. I might also add that, had the interviewers spent more time with the women of the fishing villages, they would have found some differences in opinion with respect to the natural world. Specifically, they dislike and fear the dolphins which the men claim assist them in their fishing (Zin & Walsh, 2019).

I have been following Scott's work, albeit somewhat behind the times at the beginning, since his *The Moral Economy of the Peasant* (1977), in which he very skillfully brought the reader into the mind of the eponymous protagonist and the choices that he (as the text is mostly framed) has to make. I am also familiar with and influenced by his *The Art of Not Being Governed* (2011), which everyone interested in the Southeast Asian region would benefit from reading. He was consistently able to incorporate a broad range of learning into his work with a light hand. It is not something that everyone who gets published by Yale University Press is able to do. He will be missed.

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## Marx's Literary Style

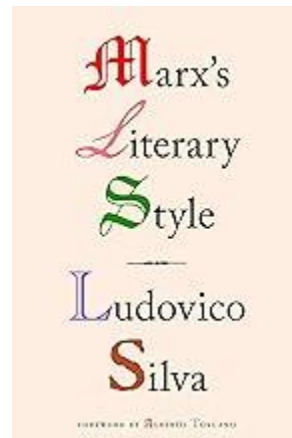
Ludovico Silva, with a foreword by Alberto Toscano

London and New York, NY: Verso, 2023 [1971]

ISBN: 9-781839-765537

XX + 104 pp.

Translated by Paco Brito Núñez



Ludovico Silva (1937-88) was a Venezuelan poet, philosopher and literary critic who is perhaps best known for the current book, which was first published in 1971 but not translated and published in English until 2023. He is also known for his work in demonstrating the entrance of ideology into society through media and advertising (*Teoría y práctica de la ideológica*) and the conception of symbolic surplus value (*La plusvalía ideológica*). He was a man well-placed, therefore, both to appreciate the eponymous literary style and, also, to describe it. This short book demonstrates the truth of these assertions.

It might be mentioned at this point that there are translation issues involved in the book. Not problems but issues to consider. First, Marx wrote primarily in German – it is in German that Silva read him. Yet the German original (and sometimes the French) is translated into English for this text, which was itself initially written in Spanish, now also translated into English. These west European languages are not completely alien to each other but they do have their nooks and crannies which are worthy of thought. Consider the well-known metaphor of (economic) base and (cultural and social) superstructure, which is one of the most well-known of Marx's many concepts (but which Marx referred to rather less often). Silva points out that 'economic structure' is *ökonomische Struktur*, while superstructure is *Überbau* rather than *Superstruktur*. Silva comments (p.53): "It is symptomatic that in the scientific expression Marx uses *Struktur* – a Latin-derived word designating a *concrete epistemological concept* that has an enormous theoretical importance in Marx's mature works." It is necessary, in other words, to take some care in trying to tie down exact meanings, and that is without taking into account, on the one hand, the dialectical nature of the writing in the ideological works and, on the other hand, the extensive rogue's gallery of political rivals and enemies that he devotes such energy to abusing and dismissing. With all of this going on, it is not surprising that criticism of his work has rarely gone beyond attempting to understand it on the surface and not onto its style and a mental map of the author based on his use and references and examples. There are two notable exceptions to this rule that spring to mind: the first is David Harvey, whose close readings of the early volumes of *Capital* and the *Grundrisse* do occasionally

look up from the page to grasp a bigger picture and the second is China Miéville, whose deconstruction of *The Communist Manifesto* comes with a systematic attempt to understand the man and his life (doubtless they are many others too, perhaps not writing in English).

Silva devotes an introductory chapter to defining his project. He describes a conceptual skeleton of ideas clothed in an 'expressive musculature' (p.1) and that "Its scientific system is supported by an expressive system." Since this musculature is articulated in chosen words and phrases (as Hegel describes art as the science of beauty that shows how people understand things and themselves), it is appropriate to consider the ways in which these words and phrases are chosen and what are the aesthetic considerations being used.

A second chapter discusses Marx's literary origins. Apparently, the young Marx considered himself a poet and did, indeed, write a couple of volumes of verse, inspired at least in part by Eros and, Silva observes, they were pretty rotten. Nevertheless, the sensibility of trying to write poetry and Marx's obviously voracious reading equipped him with a copious amount of material to draw upon to illustrate his works with vivid and well-chosen episodes from the literary past, notably including Shakespeare and the ancient Greeks. Silva also locates Marx within a society in ferment, wherein words are a principal alternative to the violence of the state as it resists change. Pamphlets, newspapers and books were the expression of ideas during a time of possible revolution and the knowledgeable and persuasive revolutionary was one who was all the more formidable in battle.

The third section sees Silva really getting on with his work. Entitled *The Fundamental Features of Marx's Style*, it occupies the largest part of the text. Having surveyed some of the texts to be considered in this chapter, he then engages with "The Expression of the Dialectic, the Dialectic of Expression (p.29)." Readers will be familiar with this approach from their own encounters with Marx and Silva describes it thus:

"It involves formulating a phrase and then following it up with another that says the inverse but that *uses the same words with inverted syntax*, and then, frequently, finishing it all off with a third phrase that also uses the same words but that also adds some new ones, thereby constituting a *synthesis* of the previously established antagonistic correlations (p.35)."

Silva then uses a graphical technique to demonstrate the various elements of an argument in opposition to each other in a striking manner. Subsequently, he moves on to "Marx's Great Metaphors (p.43)." Readers will perhaps be familiar with Marx's use of this technique and the issue of trying to establish what is metaphor and what is the conceptual formation that the metaphor is intending the reader to understand. This is another thorny issue. Silva concludes, along the way, that a genuinely literary style exists with metaphors "... where there is no dissonance or disproportion between the signs displayed and their intended meanings (p.46)." This is an echo, deliberate or not, of T.S. Eliot's concept of the objective correlative, which similarly argued that the language used to describe an emotional state (for example) should be of a magnitude and style that matches the stature of the state. King Lear's madness on the heath requires the most elevated language available, while the mundane bourgeois life rather less so.

This section concludes with a section on polemics, mockery and other issues. The reader is inclined to wonder, at this distance, whether Marx might have been better off, so to speak, in investing a little less time on the personal attacks which now seem so trivial and more on finishing the substantive works. After all, he was also spending most of his working life on the journalism that was able to keep together the body and soul of his household. Further, he wanted to make sure that all drafts be subjected to a

final process of editing to make sure all the literary stylistic elements were properly in place. However, it is done now.

Silva ends the book with a stylistic appraisal of Marx's oeuvre and then an epilogue on irony and alienation, which he considers perhaps the most important concept in Marx's work. Throughout, he has drawn on a pleasingly wide range of sources. *Capital* is prominent, of course, as is the *Grundrisse*, but we are also treated to *The Poverty of Philosophy*, *The Class Struggles in France* and *Reflections of a Young Man upon Choosing a Profession*, among others. It helps in convincing the reader of the quality of the analysis that as much of the totality of his work is included. The book is short but appears to be complete and to achieve its goal. It is a book worth reading.

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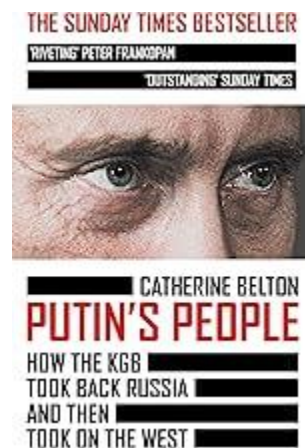
## Putin's People: How the KGB Took Back Russia and then Took on the West

Catherine Belton

London: William Collins, 2020

ISBN: 9-780007-576818

624 pp.



Years after the full-scale invasion of Ukraine, it seems like Vladimir Putin is and has always been the implacable enemy of the west – apart perhaps from patsies Donald Trump and MPs of the racist Reform UK party. Yet this need not have been the case. There have been moments since the fall of the Soviet Union that Russia could have been brought into a much more amenable framework. For example, after the terrorist attacks in the USA in 2001, Putin was the first world leader to call President George W Bush to express his condolences and then, against the advice of his own defence minister, allowed US forces to have access to Russia's Central Asian bases so as to launch attacks against Afghanistan (pp.188-9). However, these moments slipped away and, instead, a sense of grievance has come to grip much of the Russian executive power. As a result, we now witness apparently relentless assaults against the west, especially in the cybersphere, wherein Russian actors have demonstrated the ability to interfere in democratic elections such as for the US presidency and the EU referendum in the UK. Although Russia is a large and complex country with a multitude of different interests, it appears that they have all or mostly all been united into a coherent front under the leadership of Putin. How this has happened is the story Catherine Belton has chosen for this book and it is one she does with distinction and an abundant amount of detailed discussion. The result is very convincing.

Putin's rise is brutal: his enemies are brushed aside or crushed and his continually evolving coalition of interests, joining financiers with organized criminals, can help achieve his goals. Notwithstanding his grander goals, such as the recreation of the Russian Empire and the supposed denazification of Ukraine, Belton identifies a psychological issue that resulted from his past that may in part explain his subsequent actions:

“It was a telling indication of Putin's mindset, of how quick he would be to take offence at perceived slights in the years to come ... he ... had climbed to the top from a background of poverty, from the back streets of Leningrad, where he'd had to fight to win respect. A chip on his shoulder, the mark of an inferiority complex, was always there (p.186).”

It is, of course, necessary to support this kind of assertion with evidence and so the relation of his early life, his work for the KGB and the creation of his inner circle (*siloviki*) from that period is of crucial importance. His role in the war in Chechnya shows him as a dynamic leader who could speak the language of his people and share their horror of terrorist attacks (p.157). It marked a significant difference from the chaos of the preceding Yeltsin years, one which might see Russia restored to its rightful position among the forefront of the company of nations. Although not discussed so much today, it is important to remember that the economies of the former members of the Soviet Union, particularly Russia, were devastated by the structural adjustment policies inflicted by the International Monetary Fund at a time of triumphalism in the west. These caused “... hyper-inflation, falling standards of living, and tumbling output.” The program of privatization, meanwhile “... has in practice most usually enriched directors and managers rather than workers, while failing to provide incentives for transforming production (Burawoy & Krotov, 1993).”

As people on fixed incomes, such as pensioners, suffered as a result, the rupture between the state and its people was completed. The hard march of capitalism through the country made opportunities for those who had the means, the determination and the ruthlessness to seize them. In essence, an oligarchy emerged with a central executive able to use its constituent parts for his own purposes. A psychological flaw and a revanchist campaign have already been mentioned but these alone do not explain Putin's subsequent career: his ascension must be accompanied by the destruction of his enemies. When these are domestic, they can be persecuted through the means of the legal system or else become the victims of apparently accidental violence. When they are from elsewhere, then they can be suborned through a combination of embroilment in investment opportunities, establishment of complex personal relationships and the indulgence of personal appetites. Which leads to the most well-known example of this process, the current president of the USA.

The KGB's interest in Trump has been longstanding and he was approached as early as 1987 to visit Moscow, when the prospect of a Trump Tower Moscow was first dangled in front of his eyes (and it would continue to be dangled without resolution in the years thereafter). They thought they had their man then (p.477) because of the combination of greed, the desire to be seen to be important and his evident interest in Slavic women. Belton describes Trump after this initial contact as living in a world in which “... a network of ... money men and intelligence operatives surrounded him (p.477).” It is certainly the case that Trump's electoral victory delighted the Putin regime, who openly celebrated because they knew that they had at least some control over him and because his chaotic incompetence and divisive policies would damage the USA and, indeed, the rules-based multilateral system of globalization that had done so much to further American interests. Trump, for example:

“... actively encouraged Britain's prime minister Theresa May – and then her successor Boris Johnson – to deepen the UK's split from Europe, threatening to withhold a trade agreement with the US unless this did so (p.482).”

Belton stops short of claiming that Trump is actively and consciously working for the Russians but his actions betray his intentions. As Humbert Wolfe said of bribing a British journalist, "... seeing what the man will do unbribed, there's no occasion to."

It is clear that Belton has had exceptional access to sources often very close to the action. She uses the results well and presents what seems to be a comprehensive account of the career of Putin and his inner circle. There is less interest in trying to draw conclusions or implications, other than that the KGB has remained prevalent throughout the country and have returned to power as a result of routing the would-be reformers. It has appeared 30 years before that Russia had been "... on a new market path towards global integration," but that those who had been leading the way were either quickly compromised or it was revealed that they had been working for the KGB all along (pp.499-500). If this is the case, then what about the central role of Putin? Is he relegated to being the instrument of a much bigger power that rarely takes the limelight? Belton's argument is that he has been central to recreating a new police state that now serves him.

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Scam: Inside Southeast Asia's Cybercrime Compounds

Ivan Franceschini, Ling Li and Mark Bo

London and New York, NY: Verso Books, 2025

ISBN: 978-1-80429-691-2



At the beginning of January, 2025, the Chinese actor Wang Xing arrived in Bangkok for what he believed would be a casting call for a forthcoming film. However, he was met by people who turned out to be kidnappers and he was immediately taken to a scamming centre in Myanmar, from where he was expected to begin defrauding users of various social media (Gan, Jiang & Olarn, 2025). Fortunately for him, concerted police action led to his swift release and return to his home but the story sparked a great deal of interest in China and a fair amount of alarm. It is believed that this is a factor in the reduced number of Chinese students enrolling here at Krirk University in the current semester. That may be seen

as a minor part of a human tragedy but it does indicate that so many cross-border activities are interlinked and inseparable from each other.

Mainland Southeast Asia, which is the focus of this book, is home to a wide range of illegal activities, including unregulated mining, drug smuggling, gun running and modern slavery. Various factors cause this, including limited government capacity and the fact that large parts of the region are effectively autonomous or semi-autonomous zones. In Myanmar, in particular, the civil war has exacerbated the limit of state rule and the scamming centre and its variants represent another means of raising the revenue necessary to continue the armed struggle. These may be controlled by an armed faction or just the nodes of criminality within a broader network of conflicting forces (The Irrawaddy, 2025).

These centres can be well-resourced and deeply-embedded in a local economy, where other members may derive considerable economic benefit from their presence. When it became known that centres were operating in Kayin State, along the Thai border, Thai authorities cut off electricity supplies and internet signal – to no avail as back-up generators enabled activities to continue more or less as normal.

Franceschini, Li and Bo trace the origin of scamming centres to operations in Taiwan in the 1990s, which then spread to mainland China, then the Philippines and then the Mekong Subregion. At first, the main action was to be found in gambling and, following a pun in the Chinese language, ‘spinach cities’ began to emerge. However, the scale and nature of the industry were transformed by the coronavirus pandemic, which saw many millions of people trapped in accommodation and only able to communicate with the outside world by online means. Loneliness, boredom and financial problems combined to make large numbers of people vulnerable to predators. This led to the creation of numerous scams: phishing, romance scams, investment and job scams and so forth. What all these have in common is reliance on a large amount of labour, given that internet access is now pretty much ubiquitous and relatively cheap. If the principal cost of an industry is labour, then there are obvious incentives to reduce labour costs as much as possible. Once the possibilities of precarious work have been exhausted, then moving to slavery is the obvious next step.

As shown in heartbreaking detail in *Scam*, this involves relentless violence, physical and sometimes sexual, while workers can be sold to other centres, sometimes repeatedly, for thousands of dollars. This is a big business: in 2023 alone, Chinese authorities claim to have prevented telecommunications fraud of US\$45.3 billion, while in Hong Kong people lost US\$1.2 billion, people in Taiwan US\$270 million and Singapore US\$492 million. It is not surprising that a number of officials across the region can be persuaded to close their eyes to what is going on in their jurisdictions. Indeed, it is reported here that there are cases of collusion between police and scammer gangsters, with the former selling escapees back to the latter. Even when police aim to live up to their responsibilities, they have rarely received sufficient training (and are possessed of sufficient empathy) to be of much assistance. The same is true of members of nearby communities, who might also take the side of the gangsters in interactions with the slaves in the hope of monetary reward and fear of retribution. There are even stories of people posing as potential rescuers of slaves who themselves have plans to predate on them.

These issues are made worse, the authors argue, because of ambivalence of attitudes towards people who have apparently voluntarily taken jobs in the centres. There are indeed accounts of people who are in difficult circumstances and decide their best way out is to become a scammer. As a volunteer not resisting hard work, such people can avoid the violence inherent in the system. Of course, most people are lured in by job offers that seem perfectly legitimate and only realise their mistake when it is too late. It is reported that the Chinese government has intervened to prevent people travelling overseas when it is deemed that the traveller does not have a safe passage ahead of them. More generally, this ambiguity means that survivors may not receive much sympathy from other people as and when they have a chance

to reintegrate themselves into their previous lives. It is likely that such people find their trauma reinscribed as a result.

This is certainly a very timely book and the authors have conducted a wide range of interviews in order to make their case. In part, it is an academic study but the style is accessible and the content is certainly compelling. One third of the book is given over to endnotes, thereby demonstrating a degree of intellectual rigor. It is hard to know what the best response is. From my perspective, we will find ways to alert our students and other stakeholders to the threat and to help them identify their own vulnerabilities. Perhaps AI can be used to help in this case. Yet people are, of course, people and consequently likely to behave in non-rational ways, no matter how well prepared they may be. Scammers, of course, are well aware of this.

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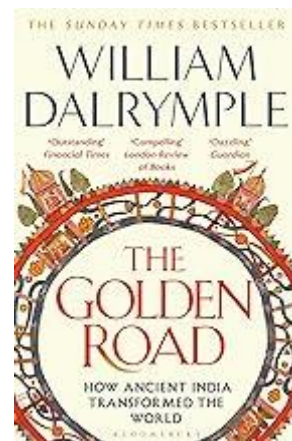
## The Golden Road: How Ancient India Transformed the World

William Dalrymple

London: Bloomsbury Publishing, 2024

ISBN: 978-1-4088-6443-2

482 pp.



From where I write, in northeast Thailand, less than half a kilometre away is a remnant of the Khmer empire, which once ruled this region. It is a temple known as Prang Ku (other sites are similarly known). It is an *Arogayasala* or hospital. In fact, it most likely united a number of state services, including health and religious support and, presumably, access to officials and troops. Prang Ku were built at a time of high prestige for what is now Cambodia (and with

whom we are, alas, at war) and the greatest achievement of its people, the Angkor Wat temple complex. I am fortunate enough to have visited it and one of the first impressions the visitor receives is how unlike most Buddhist art and architecture it is – indeed, it is clearly based on Hindu concepts. It then becomes increasingly obvious that the whole country and its society is quite strongly influenced by Indian ideas. One of the results of this is that when we were building our house here, one of the compulsory spiritual events to prepare the way was to invite a Brahmin priest to pacify the local spirits and gods so that we could subsequently live peacefully here.

While we are familiar with the presence of Indian culture all around (my university address is Ramintra Road, for example), not everyone is so aware. This is the basis of noted historian William Dalrymple's latest book, which aims to outline in detail the myriad influences of Indian culture, religion, trade and science on the world around them. He begins by attempting to dispel as mostly myth the concept of the Silk Roads which have linked China with the rest of the world and replace it with the eponymous Golden Road, which places India as the centre of the ancient world, bridging east and west. This is conducted with the assistance of an obvious degree of learning which is further indicated by the better part of 200 pages of endnotes. It is learning worn lightly, because the text itself reads more like a work of popular history rather than academic. This is characteristic: those who know his work from previous books on Indian history or through the podcast *Empire* which he presents together with Anita Anand will know how willing he is to be discursive about any particular historical circumstance. They will also know that he seems to have had a relative involved in pretty much any series of events the presenters are involved in relating.

This style can be both a benefit and a drawback. It is a benefit in that it makes his prose very easy to follow and to enjoy – which is necessary because there is such a wide range of people, countries and places to juggle with and place into some kind of order. However, it does mean that he can slip into what seems to be irrelevancy. I made mental notes half a dozen times to include an example of this in this review but looking at them now, I see that they are all just too long to quote. They may be gems of vignettes describing statues or temples or any of a dozen other examples of cultural production but they test the limits of the underlying theme. To restrict myself to a single example, consider the well-known case of the Chinese monk Xuanzang, who travelled to India to study Buddhism and collect sacred texts for translation for the home parish. This was successfully achieved and the story conflates with the story of the empress Wu Zetian (624-705 CE), who subsequently used Buddhism and Buddhist texts to buttress her own position, legitimize her rule and generally achieve her own goals. At what point does this story, lovingly told but at length, change from being an Indian one to a Chinese one? Perhaps if I did not know the story so well I would have more patience to letting Dalrymple come to the end of it but it is not an obscure one. The same may be said of the chapters dealing with Southeast Asia – I am not an expert in Southeast Asian history but I do have above average knowledge of it. Perhaps the book is not intended for me. It does come with an extensive series of admiring blurbs, with adjectives such as 'tremendous,' 'terrific,' 'mind-boggling,' 'engaging' and so forth liberally strewn through them. The book is treated as a thrilling and well-told story and for many people that will be perfectly sufficient. Others will

wonder whether all the effort that has been put into researching and writing the book has been well invested, considering that the text provided does not really sustain the central thesis. Yes, certainly, India has been influential and important in the past but at what point do we call the subcontinent India? Many parts of the region have strong links with other places through migration, trade, shared cultural attributes and so forth. Is Borobodur properly described as Indian-influenced when (it is argued) its shape was influenced by two texts that originated from within an Indian polity? Dalrymple himself acknowledges what has long been clear in Southeast Asia, that individual states chose those parts of Indian influence that were deemed useful in some way and ignored the rest. It is possible to argue that Indian influence was achieved through a version of soft rather than hard power, as might be said for the Cholas, but he does not make this as a sustained argument. Possibly, he was too taken up with the beauty of a statue or a reminiscence of when he himself was present at one of the historical sites.

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