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****Veritas*** is Latin for truth, reality.

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Source: https://www.scientificamerican.com/article/a-quirk-of-geology

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POLICIES ISSUES IN A DEVELOPING SOCIETY (NIGERIA): A CASE STUDY OF ANAMBRA STATE SOCIAL POLICIES, ADMINISTRATION, SUCCESS AND CHALLENGES

Andrew C. Ezeanya*

Abstract

This paper shall look at social policies issues in a developing society (Nigeria): A case study of the Anambra State Social Policies, Administration, Success and Challenges. Over the years, various governments around the globe, perhaps, a lot in developing society/countries are not pursuing social policies and administration inventiveness, for the benefit of the citizenry. Every well established government addresses social policies and administration issues for the common good. The primary purpose of government social policies and administration is to ensure inclusiveness, equity, social balance, and social peace. Social policies range from public healthcare, to public pensions, affordable housing and public welfare. This article will revisit, review and examine the Anambra State social policies, administration, success and challenges. A government social policy statement mirrors the government declarative intents and actions of both objective and subjective nature. This paper pays particular attention to the Anambra State government healthcare policy, welfare policy, housing policy and pension policy, administration, success and challenges. The Anambra State's policy administration challenges are added to weak government institutions, resources constraint and insecurity among others. This poor service delivery system has put Nigeria/nation-state to test as a developing society. This paper shall gauge the effectiveness and ineffectiveness of delivering the social policies agenda to the people of Anambra State in Nigeria.

Key Words: *Social Policies, Administration, Success, Challenge.*

Introduction

It is difficult to fully comprehend successful government performance when media discourse on government and governance is saturated with accounts of shortcomings and failures (Beyens & McConnell, 2028, p.1). Over the years, the issue of government social policy performance to some extent in Anambra State in Nigeria was not subject of public discourse. The social policy discourses are restricted to governments, scholars, and researchers. The point at issue is that some indigenes of Anambra State lack policy knowledge of government administration. But scholars, researchers and some politicians understand that government social policy development administration is anchored along policies and programs that work; framed around and about community's needs. A community according to Edubirdie (2022) may refer to individuals living in small groups or in big social units practicing the same norms, religion, values, identity or sharing basic government services while residing in a common geographical area. "A particular community is developed by using government resources and programs to benefits the entire populace". The direction provided by policy action revolves around areas of community needs. Hence, "the resource within the social policy roadmap is used to improve families and individual quality of life". In most cases, a government agenda may contain a set of principles, guidelines, and rules formulated and adopted to achieve long term-goals. The Anambra State government expected to create or formulate a policy strategy that carries everybody along social policies for the common good. The reflection question is how is Anambra State's administration successful in the areas of policies? This paper shall address the question in the course of analysis.

Method

This paper will adopt content analysis by analyzing the Anambra State social policies, administration, success and challenges. Applying content analysis, the paper shall attempt to analyze the state government policies issues with regard to public pension, healthcare, welfare, and affordable housing. The paper shall source materials from secondary data such as the State Gazettes, Journal publications, Newspaper publications, Magazine publications, Government documents, Annual reports, Public data base, Scholarly articles, Seminar Papers, Symposium papers, Workshop papers and Internet materials, Materials also was sourced from Toronto Public Library.

Brief History of Anambra State

The State of Anambra is one of the 36 States in Nigeria, created in 1991. It is located in the Southeast region of Nigeria. The Igbo people have a rich history dating back to the 9th century AD. The history of Anambra state is rooted in the Igbo people that constitute the majority of the states' population. Archaeological excavations at Igbo–Ukwu and Ezra have unearthed artifacts showcasing advanced craftsmanship in iron, bronze, copper and pottery, indicating a highly developed civilization (Apley, 2001, p.1). The Anambra State of today was part of the former East-central State. The East central State as we know before comprises of Abia State, Imo State,

Anambra State, Enugu State and Ebonyi State. The name Anambra was derived from Omanbala River. The Ezu Omanbala water flows into River Niger. The seat of the Anambra State government is in Awka, the capital city. Anambra State is known as home for all (Nigerians). The Igbo (Ibo) constitute 98% of the populace and Igala people are 2% population. The Igala People live in the Northwest part of the State. In the Federal Republic of Nigeria, Anambra State is eighth in ranking in terms of population and came second as one of the most densely populated states in Nigeria. (Source: https://anambrastate.gov.ng/history/).

Social Policy and Social Welfare in Contrast

Social work and welfare studies were developed in the latter half of the 20th century. The terms "social" and policy was probably used indiscriminately. These terms was building on the basis of social administration, Social policy was established as an independent field that concentrated on institutional or governmental initiatives, meant to better society (Renwick, 2010). The early scholars stressed the value of group approach to welfare, such as Richard Titmuss cited in (Renwick, 2010) noted that the 1940s and 50s, were crucial in shaping our understanding of social policy". Merriam Webster Dictionary online: defined social welfare as organized public or private social services for the assistance of disadvantaged groups. Edubirdie (2022) described social welfare as the organized system of social services and institutions designed to aid individuals and groups to attain satisfying standards of life and health.

Suffice to say "Social welfare encompasses the wellbeing and interest of large number of people, including their physical, educational, mental and emotional, spiritual and economic needs". Welfare according to Hayes (2022) is a range of government programs that provide financial or other aid to individuals or groups who cannot support themselves. In contrast, Wiener (2016) describe social policy to be a plan or action of government or institutional agencies aim to improve or reform society, but "some professionals and University scholars consider social policy as a subset of public policy".

So "social policy action development provides directions or instructions on how certain tasks can be executed, as well as helping the policy makers or staffs who initiated the program to make the right decision about certain matters". According to Patel (2020) longitudinal studies play an important role in research and policy because of unique data they offer. Patel again stresses thus, "Longitudinal studies collect structural information on children, adults and households, often across multiple generations, and over many years and decades" (2020, p.4). Their explanatory and predictive power comes from their design, tracking the same people over time, rather than providing a snapshot of people's lives.

Canada's Social Policy, a Paradigm

Canada will provide a better understanding of the social policies program. The Canada Encyclopedia (2020) describes a social program in Canada as offering a wide range of programs to help Canadians with their financial, personal, social and emotional wellbeing. A social policy provision defines socio-economic status of groups as a way of identifying the ordinary citizens. It also identifies the less privileged families and individuals of the state that need social assistance (Development Canada, 2025). The social policy provision opens access to public services, and supports it as a way of reducing inequalities in the state.

To this end, Health Canada ensures all Canadians have access to hospitals and physicians. In the area of housing, several policies exist to help homelessness especially grants, and rebates for homeowners, low cost public housing and subsidized housing exists throughout Canada (Development Canada, 2025). The "public service pension plan was designed to provide Canadians with a retirement income that is payable during their lifetime. Pension benefits are based on a person's, salary, pension, age, and reason".

A successful policy starts with effective planning. A good plan and design of a policy begins with a well formulated policy itself. The policy's objectives must be clear and consistent as well as transparent (Development Canada, 2025). It has to contain an "institutional framework and approval at the highest level of policy reviewers". These shall include progress, growth, and positive changes as the indices of development process. It also adds to social, economic, physical, environmental and demographic components (Development Canada, 2025). The rise in population leads to development in quality of life. The government plays a central role with respect to expansion or creation of local, state income and opportunities on youth's employment without adverse impact or damage on the environments resources (Development Canada, 2025).

Social development writers write various roles of the State government more especially the affordable housing, but low affordable housing is needed in the rural communities because many families in the rural areas are facing the problem of housing and having roof over their heads. The missing programs are about family and individual support such as poverty, reduction, and unemployment support added to housing, healthcare and pension. The composition is mainly government legislation, principles, guidelines, and activities that affect the living conditions conducive to human welfare, such as a person's quality of life (Social Policies in Community Development, 2022).

Government of Anambra State in Nigeria's Social Policy

The purposes of social policies are designed to meet various needs of the people in numerous manners to enable them to fully participate and live an independent life. Taylor-Gooby (2019) views social policy as a field of study rather than a discipline. Taylor-Gooby noted that social policy focuses on human needs and the ways on how governments and other bodies can do to meet it (p.1). Researchers and authors have explored government social policy from various perspectives, highlighting its complexities and potential impacts. Some scholars argue that it is a crucial tool for addressing social problems and promoting well-being, while others express concerns about its cost, bureaucracy, and potentials for overreach.

Patel (2020) stated that many social policies can be difficult to formulate and implement properly because they depend on a level of knowledge, mobilization, governance, and policy control that is rarely possible in real life (p.1). However, the concerns of every government are to meet the policy's developmental needs of the societies. The reason being that the Social Policy Program Benefit helps families and individuals in the areas of food, healthcare, affordable housing and pension. As that being the case, housing, healthcare and pension are constrained and challenged as individuals, and families in Anambra State have not fulfilled their potentials in actual concepts of social policies and delivery programs.

This is why Taylor-Gooby (2019) states, as the welfare state developed; social policy. Scholars identified the gaps in welfare provision and assumptions about priorities and about how people live that directed provision. To this effect, social policy as a declarative intent and proactive measure, challenges the government of Anambra State to provide for the people. Since the people cannot to a greater extent provide for themselves, for instances, housing, employment insurance, healthcare and security among others. By this provision, a social policy statement is a declarative for equity, fairness and inclusive development within community/society.

The various benefits provided by the State government are clearly not accessible. Moreover, Anambra State government's social policy information and development is sketchy because not much is revealed about government policy programs that benefits families, individuals and communities at large. This could be the reason social policies in Anambra State left dearth of information and literature in public domain. It does not articulate comprehensive social policies issues in the main of unemployment insurance, food security, healthcare, pension, housing etc. Scarcity of research document and available data on policy issues about the Anambra State government social policies which provide an insufficient reference discourse on these areas of concern.

Government of Anambra State in Nigeria's Housing Policy

In the opening statement, Ogujiuba and Mngometulu (2022) cited in Chukwudi and Owoh (2023) contended that developing nations face a different set of challenges, including resource constraints, limited access to education, healthcare and political instability, all of which can hinder the sustainability of community projects. In African nations like Nigeria, where the focus is often on overcoming poverty, healthcare, health disparities, infrastructure deficits, and sustainability hinges on addressing issues such as corruptions, inadequate funding, and the capacity building needed to empower local communities Chukwudi and Owoh, 2023, p.1). Franco & Tracey, 2019; Meyer, Zachmeyer, Paccione, Cardenas, Zernial & Smith, 2023; and Orie (2023) argued that a comprehensive understanding of these prevalent issues across diverse contexts is crucial for designing effective strategies to ensure the sustainability of community development initiatives worldwide cited in Chukwudi and Owoh 2023, p.1). Pagani and Binder (2021) stressed the urgent imperative to provide a housing supply that is environmentally sustainable, acceptable and desirable for its users.

In a similar sentiment, the state of Anambra in Nigeria, the primary problem with housing includes a major housing shortfall, high costs and issues in buying and developing land. Other issues like high interest rates, inadequate funding, and inadequate development control made these challenges even harsher. The public corporation of Anambra State somehow eulogies and according to Nwosu and Okafor (2021), the public corporation of Anambra State provides goods and services at a minimum cost to the members of the public. Housing corporation Nwosu and Okafor adduced that public corporation is charged with the responsibility of providing affordable housing for the benefit of the entire populace.

However, there is a dearth of scholarly works on various roles of the State government, more especially on the areas of affordable housing, with emphasis on low income or affordable housing program hence; many families in the rural areas are facing the problem

of housing and having a roof over their heads. These are the challenges many families are facing in the rural areas in Anambra State. Even with this picture, the Anambra State Housing Corporation had issues and challenges on ground due to the flaws of housing provision in the State, and it is reflected in the rural areas.



Source:
https://www.google.com/search?q=housing+image+in+Anambra+state&rlz

The policy alleviation for families and individuals in respect to unemployment, housing, healthcare, and pension does not adequately reflected. A community development programs anchored around and about social policies addresses those areas of needs. A housing policy means commitment by the government "to develop a set of principles, rules or guidelines for building affordable housing". According to Patel (2020) the strategy for building affordable housing could mean to regulate activities of a community based program funded by government. Also, the policy program could also be funded by agencies to meet the social welfare needs of the individual and people in the area of housing…. Patel (2020) also states that impacting policy is difficult not only because of the challenges of translating research into policy-speak but also because of challenges inherent in the policymaking process itself.

In spite of these challenges, a social policy that is formulated, monitored and followed is capable of minimizing risk taken in implementing a series of community program, "while increasing the opportunity of meeting the aims and desired objectives of the program". This is because the incomes of developing social policies in community development programs have effects of positive benefits. In this situation, it raises the morale of the people who initiate the program as well as motivating them to monitor and keep the program operating. Social policies ensure that community programs meet individual and group needs of particular issues.
A clarion submission, social policies create no room for mismanagement of funds or other activities that might endanger the function of the program. It sustained planned activities and makes them become productive. It provides ways of communicating with people living in a community where the program is going to be executed. To what extent does the Anambra State government communicate with the communities about housing? This question is for the Anambra State Housing Corporation representatives.

Government of Anambra State in Nigeria's Healthcare Policy



Source:
https://www.google.com/search?q=Image+of+anambra+state+hospital&rl

The health inequalities are differences in health that are not only unnecessary and avoidable, but are also considered unfair and unjust cited in the public health Ontario work book (2018, p.1). Health according to WHO (2005) is the state of complete physical, mental and social well being of an individual and not merely the absence of disease or infirmity. Specialists and agencies at different levels of healthcare services provision recognize Global Health Services Provider. The reality to this is that the 2nd tier of governments in Nigeria is responsible for healthcare services accentuated by private medical services and organizations. Decisions, actions, plans and specific healthcare goals are not undertaken to realize the health policy definition within the frame of health policy agenda. Even though, several researchers acknowledge series of problem which to the writer is not limited to rural areas but crisscross over to urban communities. The example from Canada shows that community hubs in Ontario (2025) provide for the Ontarians a central access point for a range of needed health and social services along with cultural, recreational, and green spaces to nourish community life.

It is not "true to say that the 1946 attempt to arrange health development service was ""pseudo in content"". Despite its shortcomings, Nigeria's 1946 Ten Year Plan for Development and Welfare was a major advancement in the nation's public health planning. Although it wasn't a completely integrated design in the contemporary sense, it was a carefully considered attempt, particularly in light of colonial Nigeria" The assistance from foreign investors, philanthropists, and governments at every level make no differences on the issues of the healthcare development and delivery system. Ekwurunke (2005) noted that traditional

medical practitioners who serve the majority of the populace also belong to the privatized category. The critical set back to developing countries of the world, it's the lack of proper and adequate attention to the difficulties faced by... Regions in (Envy, 1987) cited in Benita (2015. p.2) Health policy care sum up the state of healthcare delivery of any government but this is not the case in some countries, more often the state of poor healthcare delivery system is a nightmare in developing or under-developing countries.

It is not anathema to say that instead of referring developing societies as developing, it is under, under developing because public health for the common good is not a public interest health issues. In most developing societies, healthcare delivery suffers the worst attention leading to weak healthcare provision by the government. Bentina (2015) stresses that healthcare services are the most basic of all essential services and their services cannot be overemphasized, the general health of a member of any society can be seen as a part of an interrelated set of conditions which have to do with a man's capacity to adjust to his immediate environment and to utilize it to his optimum advantage (Benita 2015, p.1).

Government of Anambra State in Nigeria's Pension Policy

According to Beyens & McConnel (2018) pessimism abounds in contemporary discourse about the performance of the government and the services they deliver. Amagwu (2025) made a compelling revelation about "the inherent limitations and poor administration of pensions in Nigeria, resulting to none payments, accumulated backlog, frustrations and associated pains on the pensioners". The current pension's act which gave rise to the emergence of the current Pension Fund Administrators (PFAs) which is government appointed/approved, companies engaged in the pension fund administration. According to Amagwu, the pensioner who suffers in financial difficulties and is unable to access his accumulated savings domiciled in the PFA account at times dies, while the PFA smiles to the bank consistently with huge interest income earned from the pensioners fund (p.1).

The "Canada Pension Plan, retirement pension is a monthly, taxable benefit that replaces part of your income when you retire. If you qualify, you will receive the CPP retirement pension for the rest of your life." (Government of Canada, 2025, modified, p.1). The workers pension is critical to their welfare after retirement, either from private or public service. The public pension policy plans were funded by contributors from public sector employers and occasionally from public employees. In every country whether developed or undeveloped, public sector employees are the largest group with active and growing pension funds. Ezenwa (2024) observed that pensioners in Nigeria face significant challenges when attempting to access their retirement benefits through the contributory pension scheme. The public pension policy plans were funded by contributors from public sector employers and occasionally from public employees.

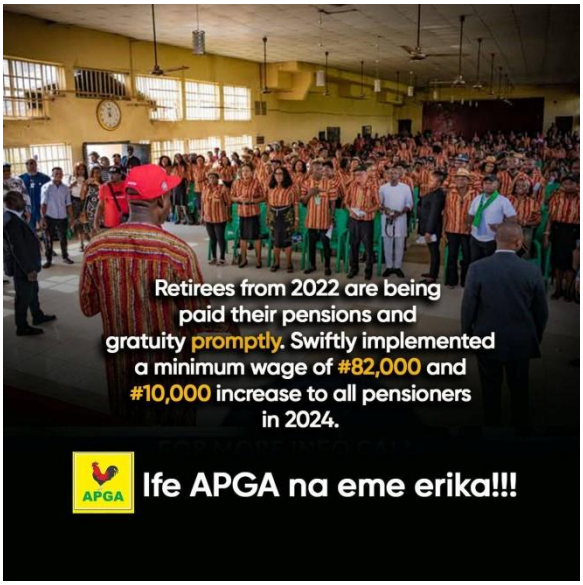


Anambra retirees to embark on hunger strike over 4 years unpaid gratuities

Source:
https://dailytrust.com/anambra-retirees-to-embark-on-hunger-strike-over-4-years-unpaidgratuities/

In Nigeria and by extension Anambra State lags with regard to retiree pension. Industrial court compels Anambra State Governor, Professor Chukwuma Soludo to review pension rate reported in (Source magazine. Thursday 21st July, 2022). A pension plan is an employee benefit that commits the employer to make regular contribution in the funds. A pension plan requires contribution by the employer and may allow additional contributions by the employee. The employee's contributions are deducted from wages. The employer may also match a portion of the workers annual contributions up to a specific percentage or dollar amount. These are two main types of pension plans: the define-benefit and define-contribution plans. In a defined contribution plan: the employer commits to making a specific contribution for each worker who is covered by the plan. This may be matched by contributions made by the employees.

The final benefit received by the employee depends on the plans investment performance. Obienyem (2025) observed that Governor Willie Obiano left pension arrears unpaid for five years. Obienyem asked critical questions, what became of the funds earmarked for pensioners? Were they diverted to projects crafted for optics and applause? Could it be that money meant to support elderly citizens was instead channeled into monuments of self glorification? Obienyem (2025) continued, the irony deepens, the same governor who built an airport later admitted using part of the savings left by the former governor of Anambra State, Mr. Peter Obi, not funds meant for retirees. So, "if the airport was not built with their gratuities, what exactly was done with billions owed to those who had served the state faithfully?" The current sitting Governor of Anambra State, Professor Chukwuma Soludo in red face cap below is addressing All Progressive Grand Alliance (APGA) political party in Anambra State.



Retirees from 2022 are being paid their pensions and gratuity under Professor Soludo.

Source:
https://www.google.com/search?q=image+of++paid+pensioners+in+anambra+state&sc

On the matter of unpaid pensions and gratuities, did anyone raise alarm? Where were the voices of accountability-legislators, labor unions, journalists, and civil society organizations? Why did the suffering of pensioners not spark public outrage? More painfully according to Obienyem (2025), one cannot help but express disappointment that those who claim to love Governor Obiano will as usual find no fault in him or even see the necessity of pointing out the truth-on the simple reason that he should be allowed to enjoy his retirement. Obienyem (2025) asks about the elderly men and women who under his watch were denied the means to enjoy their retirement. Are they less deserving of comfort, dignity or public sympathy? More importantly, where were our moral institutions, namely: churches, traditional councils, and community elders when the elderly were reduced to beggars? Why was such a deafening silence in the face of this moral failure? (p.4).

Anambra State Government Administration

A government administration is considered successful when a government successfully achieves its stated targets; maintain ethical and legal standards. Foster public confidence and is frequently viewed as successful (Wieeman. 2011, p.1). This involves making sure that the targets are unambiguous and straightforward, making choices according to evidence, and maintaining strong leadership and accountability. Especially the "goals the proponents set out to achieve and attract no criticism of any significance and/or support is virtually universal". So labeling a government policy or an agency as successful depends on which stakeholders are involved in the process and on the positions they take, it is contingent upon the purposes, timing and time horizons of the evaluator, the choice/weighting of the criteria used, the political context in which the assessment takes place, and a range of other factors (Bovens and Hart, 1996; McConnel, 2010). The administration measures the overall function success of a policy intervention by the extent to which intervention solves the problem it is created to solve. Wiersema (2011) noted that a successful government program and initiative share some fundamental elements such as clarity of purpose, committed and sustained leadership. Syed (2024) states, "the program offered a deep dive into understanding how governments make decisions, develop, analyze and manage policies, and the impact of the latest development issues and initiatives in the public sector".

En-route to this overall success, one could judge success through time by asking if a response was initiated to solve a problem, if ideas were generated and tried out, products were being produced in efforts to solve problems, lessons were being learned (and better ideas developed and imitated), intermediate outcomes were in evidence, and if news capabilities were being established (Wieeman, 2011). Legitimacy focuses on how the policy is done and whether the policy is leading to more or less support for the people responsible (politicians and other government officials in particular). Successful public policies tend to address a problem that was well defined and broadly acknowledged at the outset of the policy development process (Wiersema, 2011).

Successful policies rested on conceptually coherent evidence-attending advice which also paid attention to implementation realities (Wieeman, 2011). They were not made on the run but carefully developed, debated and defined over a period of time. Successful endurance is about maintaining high performance and legitimacy over time through embedded learning in program (redesign and delivery (Wieeman, 2011). This includes "determining which policies each employee should read and creating a process for updating policies throughout the year".

Additionally, policies help employees know what is expected of them with respect to standards of behavior and performance and set rules and guidelines for decision-making in routine situations. Moreover, policies help the manager of an organization to manage his or her staffs and other obligations. Furthermore, well-written organizational policies build the learning culture of an organization. It simply refers to creating a learning environment in the organization by encouraging and motivating the employees to learn new concepts in addition to their job knowledge.

The Challenges of Policy Administration in Anambra State in Nigeria

In every government administration, implementation challenges, any major policy such as, healthcare policy, welfare policy, housing policy and pension policy, but

when policy makers learn from experience and adjust their approaches accordingly, it may reap the benefits. The successful program performances of any policies are about designing smart programs that will really have an impact on the issues they are supposed to tackle. The programs ought to be delivered in such a like manner that it produces social outcomes that are valuable to the society. The success of program management relates to how policy designs decision-making and delivery in a manner that is organized and managed. Nonetheless, these processes contribute to not only the policy's effectiveness and efficiency but also to the sense of procedural justice among key stakeholders and the wider public (Patel, 2020, p.2).

The problem that Anambra State government is facing spans from insecurity to kidnapping, poverty, insufficient facilities, and obstacles to industrial development. In addition, in certain locations, gully erosion poses an important environmental concern. Policymakers usually make decisions in a complex environment with limited time for reflection. It is not simply political or policy differences between teams or departments that can be a barrier. Given the account of policy service delivery, the government had to ensure that "each part of the government supply chain is not overwhelmed" To this end, the authors of the institute for government's making policy stick report says, "that staying focused on long term policy goals has been a weakness of government".

Patel (2020) noted that some actions to reduce social risks may be politically opposed by those who regard it as social engineering. The issues of "social mobility, poverty, public health, and climate change, housing, social care and regional disparities are long-term challenges which have to be addressed across parliaments". In a recent survey of civil servants on how they could deliver better public services found that the top issues are cross-team collaboration cited in (Patel, 2020, p.1) "Many social policies can be difficult to formulate and implement well because they depend on a level of knowledge, mobilization, governance and policy control that is rarely possible in real life (Patel, 2020, p.1). Besides, "formulating social policy may not entirely be clear of what is driving a problem and feedback and it becomes difficult to disentangle cause and effect"; Then, "short-term and symbolic policies will be the right approach for particular situations" (Patel, 2020).

Recommendations

In government administrations, the policymakers, decision-makers, practitioners, and stakeholders use policies to direct their decisions or perform out specific actions (Wieeman. 2011). The proposals highlight the importance of policies that help people in general in understanding the broader context and potential consequences of the government's inability to supply essential social services. Although they could be "pensioners in the future" those who currently have jobs would also be affected by the same problems that affect being pensioners (Amagwu, 2025). It has been found that the Anambra State accommodation Development Corporation failed to comply with section 16 (3) of the 1999 Nigeria Constitution, which requires the state to provide everyone with suitable and adequate accommodations.

The recommendation put together here include: The government needs to put together a competent monitoring team for the organization to maintain an eye on how it operates while it moves toward its goal, it is essential to look into whether politicians influence with the firm's operation, in an effort to avoid young individuals from pestering developers, communities wherever the estates are located suppose to get fair compensation, this dimension recognizes that public policies are carried out in public domains that have an impact on the legitimacy and trust of public human beings, because it additionally captures the political and administrative parts of the various points of view conveyed.

Success in this instance would be assessed at different points depending on the viewpoints of different organizations on those who are administering the policies. Do major organizations generally back to the policymakers? Do members of these groups think policymakers behave properly or effectively in light of relevant parties and accountability forums? Lastly, policies assist workers using a consistent and open response all through the organization, which constantly refers to situations involving employee interaction, additionally encouraging equity and fairness alongside established processes for managing issues and misunderstandings to help stop favoritism inside the organization.

Conclusion

Mukheries, I., Cobam, M.K, & Bali, A. S. (2021) stated that "the heart of policy design resides in the act of devising policy alternatives that meet stated government goals; …some policy alternatives are often developed well others are less so. Giving direction on what steps or actions the government should take in light of the available policy issues on the table is the main goal of government decision-making. Decision makers are more focused on taking action, and policymakers collaborate with them. Decision makers use policymakers as a guide to help them focus on the bigger picture and the effects of their choices. The main function of decision makers, who are related to government personnel, is to advise the government on the best course of action based on policy concerns.

An organization with or have well-established policies for these reasons, for instance, policy or policies give an organization a structure or framework, which instructs staff members on what they must accomplish; how to complete a task that has been assigned to them. It acts as a channel for upper management to convey to lower management and other staff members, the organization's behavioral requirement. It supports

compliance, which upholds a certain level of accountability in the eyes of internal and external stakeholders, in addition to organizational policies. Government leadership upholds high standards over time and encourages the prudent and legal use of public power when it successfully contributes to positive social outcomes.

It is critical to realize public service is subject to evolving conditions. This service also includes developing a competent public workforce. "Effective administration is made up of a government program design that is both politically legitimate and efficient, a reliable process management system with a consistently high performance." The "tech-driven leadership style of Governor Soludo's Anambra State Administration, emphasizing efficiency, transparency, and citizen participation, has garnered recognition". In an effort "to unite everyone, the governor emphasized a one state, one people, and one agenda strategy". These achievements are viewed as a component of his larger goal to make the state robust and economically viable.

Creating social policies for "community development initiatives is critical because effective social policies allow community based initiatives to fulfill their goals and handle people's social welfare concerns appropriately" (Edubirdie, 2022). Social policies cannot be disregarded since they are designed to be observed and adhered to. Every social policy must be put into effect in order to fulfill its intended objective for the benefit of all community members. In Nigeria, by extension Anambra state, as soon as the pensioners' accumulated payments are received, all communication and interaction with him or her ends, and they are left to fend for themselves. Amagwu (2025) stated, we should give our senior persons access to their funds. As it is, "Pension Fund Administrators are commercial organizations whose sole goal is to maximize profits at the expense of the welfare of the elderly".

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MICRO-FORGETFULNESS, COGNITIVE LOAD AND JOB PERFORMANCE: A MINDFULNESS-BASED APPROACH

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Abstract

This article examines the impact of micro-forgetfulness-an increasingly visible phenomenon in modern work life-on cognitive processes and its reflections on job performance. Digital notifications, multitasking pressure, role intensity, and time constraints strain working memory and increase cognitive load, paving the way for small but critical errors. The accumulation of micro-forgetfulness reduces task efficiency, weakens decision quality, and leads to delays in workflow. In this context, the study theoretically evaluates the potential effects of mindfulness-based approaches in regulating attention, reducing mental clutter, and balancing cognitive resources. The conceptual model developed through a synthesis of the literature suggests that mindfulness practices may reduce the frequency of micro-forgetfulness and improve performance outcomes. The article provides both theoretical and practical contributions by offering organizational and individual strategies for managing cognitive load.

Keywords: *Attentional processes, cognitive load, digital interruptions, job performance, micro-forgetfulness, mindfulness, multitasking, organizational efficiency, working memory.*

Introduction

Today's work environment is shaped by a cognitive ecosystem characterized by rapid information flow, constantly changing task demands, and pervasive digital stimuli. This intense structure challenges employees' attentional processes, causing mental resources to deplete quickly and leading to an increase in micro-forgetfulness-seemingly small errors that negatively affect workflow. Forgetting a meeting time, leaving an important document on the desktop, failing to attach a file to an email, or overlooking a critical step during task switching are often perceived as "simple mistakes," yet they gradually undermine overall performance integrity. Reason's model of human error highlights that such small lapses typically emerge from disruptions in automated behaviors or sudden interruptions in attention flow, systematically reducing performance (Reason, 1990). At the core of micro-forgetfulness lies cognitive load that exceeds the limited capacity of working memory. Sweller's Cognitive Load Theory demonstrates that the human mind can process only a limited amount of information at once, and as load increases, executive functions weaken (Sweller, 1988). Common characteristics of modern work-digital notifications, overflowing email traffic, multitasking attempts, and time pressure-push mental resources beyond their natural limits. This leads to divided attention, greater difficulty transitioning between tasks, and an increase in forgetful behaviors. Research shows that heightened cognitive load increases error rates, slows performance, and reduces decision quality (Kahneman, 2011; Baumeister & Tierney, 2011). Emotional pressure, role conflicts, and organizational stress factors also play a significant role in the formation of micro-forgetfulness. As workload increases, employees' mental energy declines, decision fatigue rises, and executive control mechanisms become more vulnerable. Under such conditions, the mind often shifts into "autopilot mode," causing critical details to be overlooked.

In recent years, mindfulness-based approaches have emerged as an important tool for regulating attention, enhancing mental clarity, and reducing cognitive load. Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) program has demonstrated that strengthening one's capacity to remain present reduces mental clutter and enhances attentional processes (Kabat-Zinn, 2003). Other studies show that mindfulness practices increase working memory capacity, reduce emotional reactivity, and strengthen cognitive control (Chiesa, Calati & Serretti, 2011; Hölzel et al., 2011). These findings suggest that mindfulness-based approaches have significant potential to reduce micro-forgetfulness. This article aims to examine the cognitive background of micro-forgetfulness within a theoretical framework, discuss the relationships between cognitive load and performance, and evaluate the corrective effects of mindfulness practices. The study presents a conceptual model developed through a synthesis of the literature and proposes a new perspective to support attention management within organizations.

Methodology

This study employs a qualitative content analysis approach to examine the relationships between micro-forgetfulness, cognitive load, and job performance within a theoretical foundation. Quantitative data were not used; instead, empirical findings, theoretical models, and meta-analytical results from national and international literature were systematically evaluated. This methodological choice aims to construct theoretical coherence due to the cognitive and organizational behavior-based nature of the topic. The

research initially examined Reason's human error model, Sweller's Cognitive Load Theory, Kahneman's dual-process model, and Kabat-Zinn's mindfulness-based intervention framework. This created a structure that made it possible to analyze the cognitive mechanisms leading to micro-forgetfulness, the influence of cognitive load on these mechanisms, and the potential moderating effects of mindfulness practices. Literature selection prioritized systematic reviews, empirical research, and theoretical articles published within the last 15 years. Additionally, studies from cognitive psychology, industrial-organizational psychology, neuroscience, and organizational behavior were comparatively analyzed. The content analysis proceeded in three stages. First, themes related to micro-forgetfulness were identified, including divided attention, mental fatigue, autopilot behaviors, and weakened executive functioning. In the second stage, cognitive load literature was matched with these themes, and mechanisms linking workplace load types to micro-forgetfulness were examined. In the final stage, the role of mindfulness-based approaches in regulating attention, supporting working memory, and promoting cognitive flexibility was analyzed, revealing the theoretical moderating function of mindfulness within the micro-forgetfulness cycle.

There are several limitations to the study due to its theoretical nature. Because quantitative data were not used, numerical inferences regarding the frequency of micro-forgetfulness, its impact on performance, or the statistical effects of mindfulness interventions could not be made. However, comparative empirical findings in the literature were integrated into the analysis to strengthen the theoretical grounding. Another limitation relates to variations in organizational contexts; cognitive load levels and types of micro-forgetfulness may differ across sectors. Therefore, the article intentionally avoids generalizing findings and instead presents a conceptual framework. In summary, the methodology aims to establish a coherent theoretical relationship between micro-forgetfulness, cognitive load, and mindfulness-based regulatory mechanisms by situating the topic within a broad scientific context.

Literature Review

In the literature, micro-forgetfulness is associated with brief lapses of attention that emerge during employees' daily task flow. Reason's human error model demonstrates that such small interruptions do not stem from conscious choices but arise from micro-level breakdowns in executive functioning (Reason, 1990). Forgetting steps in automated tasks increases particularly when cognitive control mechanisms weaken. Multitasking behavior is also a significant factor in this process. Experimental findings by Rubinstein, Meyer, and Evans show that rapid switching between tasks slows executive functions and increases error rates (Rubinstein et al., 2001). Cognitive Load Theory offers a more detailed explanation of the cognitive roots of micro-forgetfulness. Sweller argues that working memory has a limited capacity and that cognitive performance deteriorates when the load exceeds this capacity (Sweller, 1988). Digital notifications, fragmented work patterns, and role conflicts increase extraneous load and place additional pressure on working memory, which facilitates the emergence of forgetful behaviors. Ophir, Nass, and Wagner's research on media multitasking demonstrates that as cognitive load increases, sustained attention decreases and errors during task transitions become more frequent (Ophir et al., 2009). Kahneman's dual-process model further explains that under heavy cognitive load, System 2 becomes less efficient, allowing automatic behaviors driven by System 1 to dominate, thus creating fertile ground for micro-forgetfulness (Kahneman, 2011).

Organizational behavior research shows that these micro-level lapses produce significant consequences for performance. Healey and Miyake highlight that forgetting-related behavioral disruptions weaken decision accuracy and increase the need for rework (Healey & Miyake, 2009). Edmondson's research on team psychological safety demonstrates that attention processes deteriorate more easily in environments with low psychological safety, reducing individuals' ability to notice and correct errors (Edmondson, 1999). These findings indicate that micro-forgetfulness affects not only individual but also collective performance. Mindfulness-based approaches provide strong regulatory effects on attention and cognitive processes. Kabat-Zinn emphasizes that mindfulness enhances the capacity to remain present, reduces cognitive clutter, and strengthens attentional control (Kabat-Zinn, 2003). Hölzel and colleagues' meta-analysis shows that mindfulness practices strengthen working memory capacity and executive functions (Hölzel et al., 2011). Similarly, Chiesa, Calati, and Serretti's systematic review indicates that mindfulness improves sustained attention and enhances cognitive flexibility (Chiesa et al., 2011). Therefore, mindfulness practices are considered an important tool for improving performance by influencing the cognitive mechanisms underlying micro-forgetfulness.

Argument

The first argument of this study is that the primary source of micro-forgetfulness is the cognitive load that exceeds the capacity of working memory. Sweller's cognitive load framework shows that executive functions weaken and attentional processes deteriorate when the mind is overwhelmed (Sweller, 1988). High task switching, digital interruptions, and multitasking expectations increase this load and systematically fuel micro-forgetful behaviors. Therefore, reducing micro-forgetfulness requires not only individual attention strategies but also structural adjustments aimed at decreasing cognitive load. The second argument is that the organizational consequences of micro-forgetfulness are deeper than commonly assumed. Reason's human error theory demonstrates that even small behavioral interruptions can create a chain reaction within

workflow and diminish performance (Reason, 1990). Research by Healey and Miyake shows that forgetting-related disruptions reduce decision quality and increase the need for rework (Healey & Miyake, 2009). Thus, micro-forgetfulness extends beyond individual productivity and constitutes a significant risk factor affecting team coordination and organizational safety.

The third argument is that mindfulness-based approaches can provide a powerful intervention in breaking the cycle of micro-forgetfulness. According to Kabat-Zinn's mindfulness model, strengthening one's capacity to remain present reduces mental clutter and enhances attentional control (Kabat-Zinn, 2003). Hölzel and colleagues' findings demonstrate that mindfulness enhances working memory, directly weakening the cognitive foundation of micro-forgetfulness (Hölzel et al., 2011). Therefore, mindfulness offers a dual regulatory mechanism that reduces micro-forgetfulness by addressing both attention control and cognitive load. The fourth argument asserts that micro-forgetfulness cannot be explained solely through individual cognitive processes, as it is also shaped by organizational design and cognitive ergonomics. Digital overload, fragmented work patterns, and task ambiguity create systemic cognitive pressures that cannot be fully compensated through individual efforts. For this reason, reducing micro-forgetfulness requires not only individual mindfulness practices but also a redesign of work structures aligned with cognitive sustainability principles. Task simplification, notification management, and uninterrupted focus periods serve as core elements of this process. Together, these four arguments reveal that micro-forgetfulness is a multilayered phenomenon that begins with cognitive load, manifests as behavioral disruptions, and is reinforced by organizational structures. Mindfulness-based interventions help regulate this cycle, supporting both individual performance and organizational efficiency.

Findings

The theoretical analysis conducted within the scope of this study demonstrates that micro-forgetfulness is shaped by multidimensional relationships among cognitive load, attentional processes, and organizational structure. The first finding derived from the comprehensive literature review indicates that micro-forgetfulness cannot be explained solely by individual inattentiveness or carelessness. Instead, it is directly linked to the accumulation of cognitive load that strains the limited capacity of working memory. Sweller's cognitive load theory suggests that excessive extraneous load disrupts executive functions, rendering mental resources insufficient to meet task demands. In this context, high task demands, digital interruptions, and workplace complexity overload working memory and trigger micro-level forgetting behaviors. The findings reveal that this overload becomes particularly pronounced in jobs requiring frequent attention shifts. The second finding shows that the impact of micro-forgetfulness on performance is more extensive and sequential than commonly assumed. Reason's error model highlights that even small behavioral disruptions can create a domino effect within the workflow. Accordingly, micro-forgetfulness leads to task delays, increased rework, reduced decision accuracy, and diminished operational efficiency. Findings by Healey and Miyake on memory-based error types demonstrate that forgetting-related behavioral deviations not only affect work speed but also weaken functional interdependence among team members. This imposes significant costs on organizations, as increased cognitive load triggers not only individual errors but also systemic disruptions that undermine organizational coherence. The third finding is that, in the formation of micro-forgetfulness, emotional and environmental factors are as influential as cognitive load. Kahneman's dual-process theory explains that mental fatigue and stress place pressure on System 2, increasing reliance on automatic behaviors driven by System 1. Under such circumstances, employees' conscious control mechanisms weaken, attention breaks occur more frequently, and this process creates fertile ground for micro-forgetfulness. Similarly, organizational stressors such as task ambiguity, role conflicts, and excessive time pressure weaken executive functions and increase the risk of forgetting. Therefore, micro-forgetfulness must be evaluated not only cognitively but also emotionally and environmentally. The fourth finding shows that mindfulness-based interventions have a regulatory effect on reducing micro-forgetfulness. Kabat-Zinn's mindfulness model states that maintaining attention in the present moment reduces mental clutter and supports more efficient use of cognitive resources.

Meta-analytical findings by Hölzel and colleagues indicate that mindfulness practices strengthen working memory capacity, improve executive functions, and contribute to more consistent attentional processes. These findings suggest that mindfulness can directly reduce micro-forgetfulness because it offers a regulatory mechanism that stabilizes attention and minimizes cognitive drift. The literature also strongly supports that mindfulness reduces emotional load by lowering stress responses, thereby positively influencing cognitive processes. The fifth finding emphasizes the decisive role of organizational work design in the occurrence of micro-forgetfulness. Research shows that in work environments with low cognitive ergonomics, employees struggle to manage their mental resources, resulting in more frequent episodes of forgetfulness. High notification traffic, fragmented work routines, unclear task definitions, and excessive demand flow increase cognitive load and systematically reinforce forgetful behaviors. Therefore, preventing micro-forgetfulness cannot be limited to individual strategies; organizations must simplify task processes, regulate notification policies, create focused work periods, and develop cultural practices that support cognitive load management. Without institutional interventions, even increased mindfulness levels may not be sufficient to fully break the cycle of

micro-forgetfulness. Finally, the sixth finding demonstrates that micro-forgetfulness can be largely managed through appropriate cognitive strategies and organizational arrangements. Reducing cognitive load, providing employees with protected focus areas, minimizing attention shifts, limiting digital interruptions, and integrating mindfulness practices into organizational transformation processes significantly reduce the frequency of micro-forgetfulness. This finding indicates that micro-forgetfulness is not an inevitable behavioral pattern; rather, it is a manageable phenomenon that can be addressed at both cognitive and organizational levels. Taken together, these findings reveal that micro-forgetfulness is not a single-dimensional issue but emerges from the interaction of cognitive load, attentional mechanisms, emotional processes, and structural characteristics of the work environment. Therefore, reducing micro-forgetfulness requires both individual mental strategies and organizational restructuring.

Conclusion

This study demonstrates that micro-forgetfulness has become an increasingly significant cognitive challenge in modern work life and that the phenomenon is far too complex to be explained solely through individual inattentiveness. The theoretical examination shows that micro-forgetfulness arises from the interplay of cognitive load, attentional processes, working memory limitations, and organizational context. When working memory is strained, digital interruptions intensify, and task switching increases, the efficient use of mental resources becomes difficult, leading to small yet consequential forgetful behaviors. Thus, micro-forgetfulness evolves into a critical behavioral category that extends beyond individual performance and directly affects organizational functioning. The analyses indicate that micro-forgetfulness results in various performance losses, including prolonged task durations, workflow disruptions, increased rework needs, reduced decision accuracy, and weakened team coordination. These effects demonstrate how even small errors can exert systematic pressure on organizational efficiency. The study also reveals that such behaviors arise not only from cognitive processes but also from emotional load, role conflicts, task ambiguity, and the cognitive ergonomics of the work environment. Therefore, micro-forgetfulness is theoretically understood as a multilayered phenomenon.

Mindfulness-based approaches emerge as a strategic area in addressing micro-forgetfulness due to their potential to regulate attention, reduce mental clutter, and strengthen executive functions. Mindfulness practices contribute to reducing forgetful behaviors by helping employees manage cognitive load more effectively while enhancing mental resilience through reduced stress responses. Thus, mindfulness serves as an important tool supporting both individual performance and organizational coherence. However, the study concludes that micro-forgetfulness cannot be fully controlled through individual techniques alone. Organizational structure, task design, notification policies, role clarity, and workplace cognitive ergonomics are decisive factors in the emergence of micro-forgetfulness. Therefore, an effective prevention strategy requires a holistic approach that integrates both individual mindfulness practices and systematic organizational interventions. Without such an approach, employees' attention regulation remains limited by individual effort, and the cycle of micro-forgetfulness cannot be fully disrupted. In conclusion, this study shows that micro-forgetfulness is a multidimensional behavior shaped by cognitive load, deepened by attentional disruptions, and reinforced by organizational structures. When mindfulness-based methods and organizational arrangements grounded in cognitive ergonomics are implemented together, micro-forgetfulness can be significantly reduced, enabling job performance to reach a more sustainable form. These findings highlight the need for organizations to develop new approaches that consider employees' cognitive needs and to redesign performance management strategies with a focus on cognitive processes. By offering a comprehensive theoretical framework, the study contributes to the literature by conceptualizing micro-forgetfulness not merely as an individual behavior but as a manageable organizational phenomenon.

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ORIGINS PART TWO

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In Part One of these articles I presented evidence that the human alimentary tract gave evidence of design in opposition to the proposal that it evolved by natural selection. In this paper I present another common observation that requires explanation with regard to origins: human breast milk[1].

THE HUMAN BREAST

The basic components of the mature human mammary gland are the alveoli, hollow cavities a few millimetres in size. The alveoli are lined with milk secreting cuboidal cells (lactocytes) which synthesize lactoalbumin and casein and extract a host of other things from the mother's blood (see below). The alveoli also have hyoepithelial cells which contract and force the milk into ducts which carry it to the nipple. The nipple is connected to the brain by a nerve to the hypothalamus located at the base of the brain.

The hypothalamus is responsible for keeping the body in a stable state called homeostasis. It does this by **connecting the endocrine system to the nervous system** via a direct connection with the **pituitary gland**. The pituitary gland, a master gland the size and shape of a kidney bean, has two parts: a posterior part that sits in a small cavity in the skull bone and an anterior part which protrudes out of the skull bone.

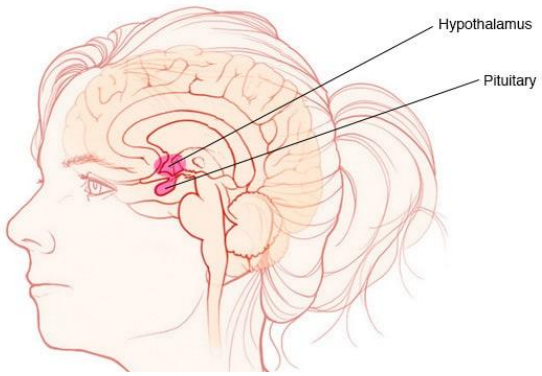


Diagram: Mayo Clinic

MILK SECRETION

Milk secretion is promoted by the hormone **prolactin** produced and stored in the anterior pituitary gland. During pregnancy and other times, the release of prolactin is blocked by the hormones progesterone and oestrogen. The levels of both of these hormones in the blood falls away after the delivery of the placenta and prolactin production commences.

When the baby suckles, a signal passes from the nipple to the hypothalamus via the nerve; the hypothalamus instructs the pituitary gland to release prolactin; the level of prolactin in the blood increases and the cuboidal cells in the breast are stimulated to produce milk.

The other active hormone is oxytocin. This is produced by the hypothalamus and stored in the posterior pituitary gland. It causes the contractions that make the milk flow.

STANDARD FEEDING

Human milk is uniquely suited to the human infant, both in nutritional composition and bioactive factors that promote survival and healthy development. Exclusive breast-milk feeding for the first six months, with partial breast feeding over the first 1 to 2 years of an infant's life is normative.

COLOSTRUM

The primary function of the first fluid produced by the mother's breasts is disease-control, not nutrition. Colostrum is rich in immunologic components: the antibody immunoglobulin, lactoferrin which promotes intestinal health, and leucocytes (white blood cells), together with epidermal growth factors (EGFs). Deficiencies in some components can be met with supplements.

Changes in milk composition occur from the fifth to the fourteenth day from delivery to meet the growing nutritional needs of the infant.

NUTRITIONAL COMPONENTS OF BREAST MILK

Milk is mature at 4-6 weeks. It remains stable in composition after that at 87% water and 124g/L (grammes/Litre) solid components.

Mature milk has three nutritional components: carbohydrates 60-70g/L (7%), protein 8-10g/L (1%) and fat 35-40 g/L (3.8%) [Source: www.nih.gov].

Milk contains the macro nutrients calcium, magnesium, sodium, potassium, and zinc in digestible forms together with a range of micro-nutrients and vitamins. Vitamin K is generally low, and Vitamin D may be low if the mother is not getting enough exposure to sunlight.

BIOACTIVE COMPONENTS

Components in milk that have an impact on body function and health come from a variety of bioactive sources: some are secreted by the mammary epithelium, some come from cells within the milk, and others come from the maternal blood serum. Substances present in human milk, include:

Epidermal Growth Factors: These are critical for the maturation and healing of the intestinal mucosa. They are **immune to acidity and digestive enzymes in the stomach** and pass through to the small intestine where they stimulate the absorption of water, glucose, and proteins.

Neuronal Growth Factors: These are concerned with skin cells, nerve cells, connective tissue, mesenchymal cells, and thrombus-forming cells that line blood vessels.

Insulin-like Growth Factor: High levels of this superfamily are found in colostrum, decreasing over time in mature milk

Vascular Endothelial Growth Factor: This is concerned with the regulation of the vascular system that carries blood and lymph through the body. It is high in colostrum and first term milk.

Erythropoietin: This is responsible for producing red blood cells.

Calcitonin and Somatostatin: These growth-regulating hormones are present in large quantities in milk.

Adiponectin, Leptin, Resistin and Ghrelin: These are responsible for regulating metabolism and body composition.

Immunological Factors: Early milk contains numerous multi-functional immune factors which protect the infant from infection and inflammation. These include various white blood cells (macrophages, T cells and leucocytes) together with stem cells which maintain the level of the white blood cells.

Growth Beneficial Oligosaccharides (HMOS - Complex Sugars): Human milk contains a range of complex sugars that vary in size and composition from those found in the milk of other mammals. They do not contribute to nutrition but encourage the growth in the gut of helpful organisms and act as decoys for pathogens. Mothers vary in their HMOS composition due to ethnic difference (like blood types), but this does not create incompatibility. The quantities of some components in human milk has been shown to vary with geography and ethnicity but all human milk contains all the substances cited above and all human mothers may be considered **universal donors**.

IMPLICATIONS

The presence in milk of a mix of nutrients exactly appropriate to the baby's needs and a comprehensive range of complex bioactive components which are highly appropriate for meeting the survival needs of the infant is quite extra-ordinary. How can its development be explained?

The Creation position is that the fully functioning human body was designed and brought into existence by an agent who could design and plan biological operations far superior to any human capacity and the power to bring it into being by a spoken word. An important characteristic built into human agents was the power for a male and female of the species to reproduce, and for the female to gestate and care for progeny post-delivery, including the provision of milk.

Evolutionary theory argues that biological capacities derive from spontaneous mutations. But the presence of complex bioactive components in milk cannot be attributed to a series of random mutations over a long time-span.

The release of prolactin from the anterior pituitary gland by the infant stimulating the nipple is a case in point. Here we are concerned with four entities: the hypothalamus, the pituitary gland, the nipple and the nerve connecting the nipple to the hypothalamus. The odds of this arrangement manifesting spontaneously are extremely remote; the hypothesis would be discarded in any other branch of science.

Prolactin is a hormone 914 nucleotides long (1 nucleotide is 0.33nm in length = 0.33 of one billionth of a metre). It contains 199 amino acids. It is difficult in the extreme to imagine how such a minute, complex substance could develop by chance with the capacity to simulate lactocytes to produce milk! The production and delivery of prolactin needs to be controlled by the hypothalamus, because low prolactin will cause a woman not to lactate; and high prolactin will produce irregular or absent menstrual periods, infertility, osteoporosis in later life, and milk discharge when the woman is not feeding. The pituitary gland must have come into operation after or at the same time as the hypothalamus; if it came before the hypothalamus then the endocrine system would not be connected to the nervous system and the body would not function at all.

The odds that a nerve could connect the nipple with the hypothalamus by sheer chance are so low as to be fanciful. The evidence supports the view that all participants (the hypothalamus, pituitary gland, the nipple nerve connection, the milk producing cuboidal cells in the breast alveoli, the ducts and nipple, and all of the bioactive components of milk) must have come into existence fully functioning at the same time. This would require that they did not evolve but were designed and created by an intelligence far beyond human thinking.

The provision of colostrum supporting the development of a strong immune system in the infant as a priority over nutrition for a few days is further evidence of design. As is the immunity of the Epidermal Growth Factors required in the duodenum to stomach acid and digestive juices.

Human milk provides evidence that the *Elohim* made the original humans and did it very well!

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[1]*The main reference used is "Human Milk Composition: Nutrients and Bioactive Factors" by Olivia Ballard and Ardythe Morrow, UK National Library of Medicine.*

ABOUT THE AUTHOR



***Dr John Potter** has pursued careers in Agricultural Science, Rural Sociology, Education and Training, Management Consulting, Biblical Hermeneutics and Practical Theology over 65 years of professional life. He may be reached at jonjup1958@gmail.com.*

ANTHROPOGENIC IMPACTS OF URBAN VEGETATION COVER CHANGE ON CLIMATE PARAMETER VARIABILITY IN THE URBAN WEST REGION OF ZANZIBAR

Mr Jaku Abdalla Jaku*, Dr Mary Mtumwa Khatib, Dr Haji Khamis Makame & Dr Omar Juma Ali

Abstract

Urban vegetation plays a critical role in regulating local climate through temperature moderation, rainfall regulation, and enhancement of ecosystem resilience. However, rapid urbanization in coastal cities has increasingly disrupted these ecological functions. This study assessed the anthropogenic impacts of vegetation cover change on climate parameter variability in the Urban West Region of Zanzibar from 2000 to 2024. A cross-sectional research design was employed, integrating remote sensing analysis, climate data assessment, and community-based surveys. Vegetation cover dynamics were analyzed using the Normalized Difference Vegetation Index (NDVI) derived from satellite imagery, while climate variability was examined using long-term temperature and rainfall records obtained from the Tanzania Meteorological Authority. In addition, perceptions of local communities regarding vegetation change and climate variability were collected through structured interviews involving 60 respondents.

The findings revealed a significant decline in vegetation cover, decreasing from approximately 65.02% in 2000 to 48.51% by 2020, largely driven by urban expansion, infrastructure development, agricultural encroachment, and deforestation. Climate analysis indicated a consistent warming trend, with average maximum and minimum temperatures increasing by approximately 1.1°C and 1.0°C respectively. Rainfall exhibited increased variability, characterized by irregular seasonal patterns and higher intensity rainfall events. Correlation analysis demonstrated strong and statistically significant negative relationships between vegetation cover and climate parameters, particularly temperature and rainfall variability. Community perceptions strongly aligned with empirical findings, identifying human activities as the principal drivers of vegetation loss and local climate change. The study concludes that anthropogenic vegetation cover change significantly contributes to climate parameter variability in the Urban West Region and recommends the integration of nature-based solutions into urban planning to enhance climate resilience.

Keywords: *Urban vegetation; Climate variability; NDVI; Anthropogenic activities; Urbanization; Zanzibar.*

Introduction

Urbanization is one of the most transformative human-driven processes affecting natural ecosystems worldwide. As cities expand, vegetation cover is often replaced by impervious surfaces such as buildings, roads, and other infrastructure, leading to profound changes in local climate systems. Urban vegetation plays a vital role in regulating microclimates by reducing surface temperatures, enhancing evapotranspiration, stabilizing rainfall patterns, and mitigating the urban heat island effect. The loss or degradation of vegetation therefore has direct implications for climate variability, ecosystem services, and human well-being.

Globally, climate change has intensified due to increased greenhouse gas emissions driven largely by anthropogenic activities, including land-use change and urban expansion. Rising temperatures altered rainfall patterns, and increased frequency of extreme weather events have been widely documented, particularly in rapidly urbanizing regions. In developing countries, where urban growth often outpaces planning and environmental regulation, vegetation loss has become a major contributor to local climate stress.

In Africa, rapid population growth and unplanned urban development have accelerated vegetation degradation, especially in coastal and peri-urban environments. East Africa has experienced significant land-cover changes over recent decades, with declining vegetation linked to increased surface temperatures, rainfall variability, and heightened vulnerability to flooding and droughts. These impacts are particularly pronounced in coastal cities, where ecological sensitivity intersects with dense human settlement.

Zanzibar, a rapidly growing coastal archipelago, exemplifies these challenges. The Urban West Region of Unguja Island has undergone extensive land-use transformation driven by population growth, settlement expansion, and infrastructure development. Although vegetation in this region has historically provided important ecosystem services including microclimate regulation, flood mitigation, and biodiversity conservation these functions are increasingly threatened by anthropogenic pressures.

Despite ongoing climate adaptation initiatives in Zanzibar, such as drainage infrastructure and coastal protection, limited attention has been given to the role of urban vegetation in regulating local climate parameters. Although previous studies have documented climate variability and urban expansion in the region, limited research has quantitatively examined the relationship between vegetation cover change and climate parameters at a local scale.

This study addresses this gap by integrating satellite-derived vegetation indices, long-term climate data, and community-based insights to provide empirical evidence on the role of anthropogenic activities in shaping urban climate dynamics.

Statement of the Problem

Despite growing recognition of the role of vegetation in regulating urban climate, the Urban West Region of Zanzibar is experiencing rapid vegetation loss driven by anthropogenic activities. Rapid population growth of approximately 2.8% per annum**,** combined with unplanned urban expansion and infrastructure development, has led to widespread conversion of vegetated areas such as Kiembesamaki, Magomeni, Kwararara, Fuoni, Melinne, and Uzi into residential and commercial zones, often with limited provision for green spaces. According to the Zanzibar Coastal Profile (2014), Zanzibar loses an estimated 1.2% of its vegetation cover annually, resulting in shrinking forest patches, habitat fragmentation, and reduced ecological connectivity.

This vegetation decline has occurred alongside rising temperatures, increased rainfall variability, and recurrent urban flooding**.** Records from the Tanzania Meteorological Authority indicate a temperature increase of over 1°C in recent decades, while rainfall has become increasingly erratic, with more intense downpours leading to frequent flooding in low-lying areas such as Magomeni and Fuoni. However, the specific relationship between human-induced vegetation cover change and climate parameter variability in the Urban West Region remains poorly understood. Existing interventions focus mainly on engineering solutions, including drainage systems and seawalls (ZUSP, 2018), with limited integration of ecosystem-based approaches. This study therefore seeks to address this critical knowledge gap to support sustainable urban planning and climate resilience in Zanzibar.

Objectives of the Study

The main objective of this study was to assess the anthropogenic impacts of vegetation cover change on climate parameter variability in the Urban West Region of Zanzibar. To achieve this, the study focused on four specific objectives. First, it aimed to analyze the trends of vegetation cover change in the Urban West Region of Unguja over the period from 2000 to 2024. Second, it sought to examine the trends of key climate parameters, specifically temperature and rainfall, within the same region and time frame. Third, the study aimed to assess the relationship between vegetation cover change and climate parameter variability to understand the extent to which changes in land cover may influence local climate conditions. Finally, the study explored community perceptions regarding anthropogenic activities that influence vegetation cover and local climate variability, providing insights into the human dimensions of environmental change.

Scope of the Study

The study covers 10 selected areas in the West Urban Region, namely Kizimbani, Kiembesamaki, Fuoni Kibondeni and Shangani, Mombasa, Kwarara, Kinuni, Uzi, Fuoni Uwandani and Magomeni. These areas have been selected because they are experiencing the first urban growth and they contain spots such as the Victoria garden represent stabilized area for new settlements, the natural vegetation has disappeared for several of years now. The study focuses on assessing the urban vegetation cover in relation to climate change effect and anthropogenic activities.

Methodology

The study was conducted in the Urban West Region of Unguja Island, Zanzibar, encompassing the Urban, West A, and West B districts. Geographically, the region is situated at approximately 6.22°S latitude and 39.25°E longitude, with an average elevation of 21m above sea level. Covering an area of about 3,802.6 km² and a coastline of roughly 64 km, the region has an estimated population of 881,678, with a density of 2,459 persons per km² and an annual growth rate of 4.2%. The climate is tropical, characterized by average maximum temperatures of 30°C and minimum temperatures of 21°C, and mean annual rainfall of approximately 1,583mm, with long rains from March to May and short rains from November to December. The area experiences periodic influences of El Niño and La Niña events, contributing to rainfall and temperature variability. Vegetation is predominantly fragmented patches of mixed woody vegetation, particularly in peri-urban areas. The study focused on ten shehias: Shangani, Kiembesamaki, Fuoni Kibondeni, Kizimbani, Mombasa, Kwarara, Kinuni, Uzi, Fuoni Uwandani, and Magomeni.

A non-experimental cross-sectional research design was adopted, integrating remote sensing analysis, climate time-series assessment, and socio-economic data collection. Although primary data were collected at a single point in time, long-term trends in vegetation cover and climate parameters were examined using historical datasets spanning 2000–2024. This mixed-methods approach enabled the assessment of both biophysical changes and community perceptions.

Data was obtained from both primary and secondary sources. Primary data were collected through structured

questionnaires and semi-structured interviews to capture community perceptions of vegetation change and climate variability. Secondary data included multi-temporal Landsat satellite imagery (Landsat 5, 8, and 9), rainfall and temperature records from the Tanzania Meteorological Authority, government reports, and peer-reviewed literature.

The study involved 60 key informants selected from the ten shehias and relevant institutions. Shehia Committee members formed the main sampling frame due to their long-term residency, involvement in land-use governance, and recognized role as community representatives. Purposive sampling was used to select key informants with specialized knowledge of environmental and climate issues, while simple random sampling was applied to select Shehia Committee members to reduce selection bias.

Vegetation cover change was analyzed using Land Use/Land Cover (LULC) classification and the Normalized Difference Vegetation Index (NDVI). Landsat images covering 2000–2024 were pre-processed for geometric, radiometric, and atmospheric corrections and resampled to a 30m spatial resolution. Twelve initial land-cover classes were reclassified into two main categories: vegetation and non-vegetation. NDVI values were calculated using the standard formula, and maps were generated at five-year intervals to assess temporal vegetation dynamics. Classification accuracy was evaluated using a confusion matrix based on field observations and high-resolution reference imagery. Overall accuracy, producer's and user's accuracies, and the Kappa coefficient were calculated to ensure reliability and minimize misclassification.

Climate data analysis involved time-series and trend analysis of monthly, seasonal, and annual rainfall and temperature to detect long-term changes, variability, and extreme events. The relationship between vegetation dynamics and climate variability was examined using Pearson's correlation and multiple linear regressions, with NDVI values correlated with rainfall and temperature to determine the strength and direction of associations. The regression model used was $NDVI = \beta_0 + \beta_1 R + \beta_2 T + \varepsilon$, where NDVI represents vegetation cover, R denotes rainfall, T denotes temperature, and ε is the error term.

Community perception was assessed through content and thematic analysis of qualitative data from interviews and questionnaires, with descriptive statistics summarizing respondents' views on vegetation change, anthropogenic drivers, and climate variability. Ethical standards were strictly observed, with informed consent obtained from all participants, confidentiality and anonymity maintained, voluntary participation ensured, and research clearance obtained from relevant authorities. Study results were presented using maps, tables, graphs, and charts to effectively communicate vegetation cover changes, climate trends, and community perceptions.

Results and Discussion

The Trends of Climate Parameters Change (Temperature and Rainfall)

Temperature Trends

Meteorological data obtained from the Tanzania Meteorological Authority (TMA) were analyzed using five-year intervals from 2000 to 2024 to assess long-term temperature trends. Monthly averages were compared across successive periods to identify warming or cooling tendencies and seasonal shifts.

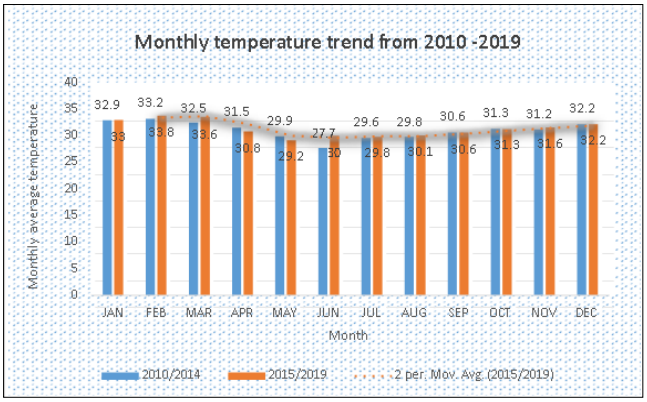
Monthly Temperature Trends from 2000 to 2009

Figure 4.13 compares monthly temperatures for 2000–2004 and 2005–2009. The figure shows consistently higher temperatures in the second period across most months, indicating an emerging warming trend. Peak temperatures occurred in February–March and September–December, with values increasing from approximately 32.4–32.7°C in the first period to 32.7–32.8°C in the second period.

Cooler months (April–August) also experienced slight warming, suggesting reduced seasonal contrast. Figure 4.13 therefore indicates a shift in seasonal temperature patterns**,** with fewer extreme drops and more persistent warmth. This warming trend aligns with earlier findings that Zanzibar experienced record high temperatures in 2007 (Economics of Climate Change, 2012).

The temperature increase observed during this period corresponds with the decline in vegetation cover, supporting the hypothesis that vegetation loss contributes to rising temperatures through reduced evapotranspiration and shading. These findings are summarized in Figure 1.

Figure 1: Temperature trends for 10 year from 2010 to 2019



Source: Temporal Analysis of Temperature Data, 2024

Monthly average Maximum Temperature from 2010 to 2019

Figure 1. illustrates monthly maximum temperature changes between 2010–2014 and 2015–2019. The second period shows consistently higher temperatures, particularly during January–March and October, where values exceeded 33°C.

The average temperature increased from 30.95°C (2010–2014) to 31.5°C (2015–2019), representing an increase of approximately 0.55°C. Although June–August remained relatively cooler, even these months exhibited warming, indicating a reduction in seasonal cooling.

Figure 1. clearly demonstrates an accelerating warming trend in recent years, particularly in urban areas, which aligns with NDVI-based evidence of declining vegetation cover.

Monthly Average Temperature Trends (2000–2019)

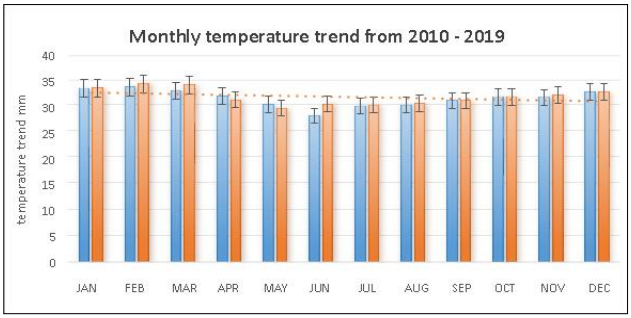
Figure 1. presents long-term monthly temperatures over 25 years. Temperatures range between 27°C and 34°C, reflecting a tropical climate with limited seasonal variability. However, the figure shows a progressive upward shift in temperatures across all months, particularly after 2015.

- January–March consistently records the highest temperatures.
- June–August**,** traditionally cooler months, show reduced cooling in recent periods.
- October–December exhibits a pronounced warming trend, especially in December.

Figure 1. highlights a long-term warming signal, consistent with climate change projections for tropical regions and closely linked to vegetation decline and land-use change.

The dry season lasts from June to October. The area is also periodically affected by major East African climate extremes associated with El Niño and La Niña years, as illustrated in the following Figure 2. below.

Figure 2. Monthly temperature trends from 2010 to 2019



Source: Temporal Analysis of Temperature Data, 2024

Monthly Average Temperature for Twenty-Five Years

Figure 2. summarizes average temperature changes across five periods. Average temperatures increased from approximately 30.2°C (2000–2004) to 31.3°C (2015–2019)**,** indicating a rise of about 1.1°C over two decades.

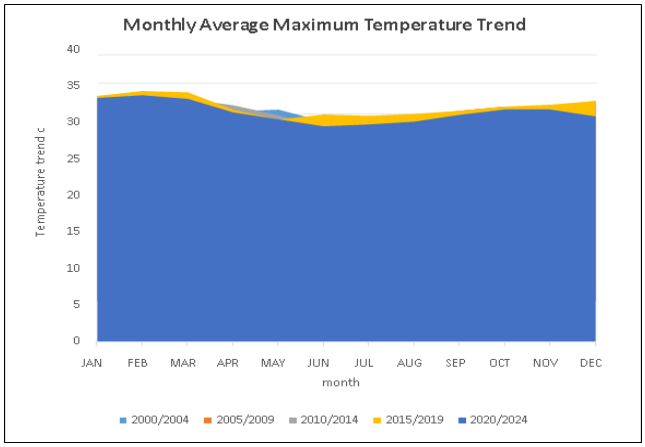
This sustained increase reflects both global climate forcing and local urban effects, particularly vegetation loss. The figure confirms that warming is not confined to peak months but affects the entire annual temperature regime.

Minimum Temperature Trends (2005–2019)

Figure 3. shows a steady rise in minimum (night-time) temperatures from 23.2°C (2005–2009) to 24.2°C (2020–2019). The sharpest increase occurred after 2019, indicating accelerating night-time warming.

Rising minimum temperatures reduces nocturnal cooling, intensify heat stress, and increase evapotranspiration. This trend is strongly associated with urbanization and vegetation loss**,** which enhance the urban heat island effect. Figure 3. therefore provides critical evidence of climate change impacts on thermal comfort, ecosystem health, and human well-being. These findings are summarized in Figure 3. below.

Figure 3: Monthly temperature trends for 25 years



Source: Temporal Analysis of Temperature Data, 2024

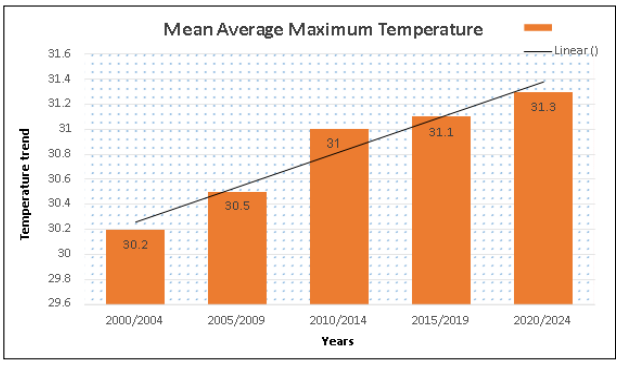
The Average Temperature Trends over Twenty-five Years

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Figure 4. Average maximum temperature over 25-year period



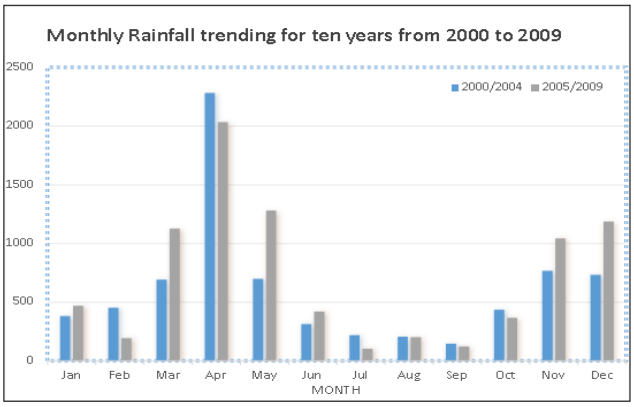
Source: Temporal Analysis of Temperature Data, 2024

Zanzibar rainfall trends from 2000 to 2009

Figure 5. shows rainfall variability between 2000–2004 and 2005–2009. While both periods maintain a clear wet season (March–May), the second period recorded higher total rainfall and more intense peak events**,** particularly in April and May.

The increase in total rainfall from 7,321.4mm to 7,613.2mm suggests growing rainfall intensity and variability, consistent with climate change-driven extreme events. For more illustration, please refer to figure 5. below.

Figure 5: Monthly Average Rainfall from 2000 to 2009



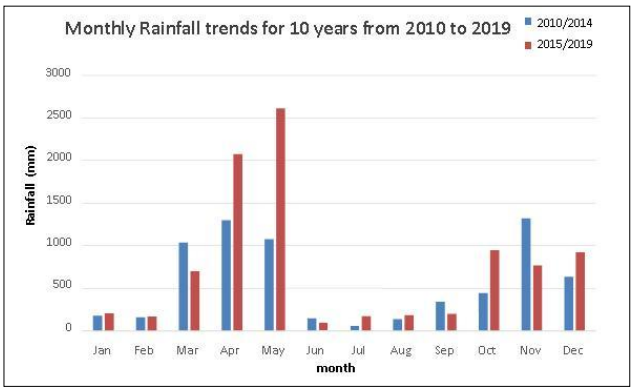
Source: Temporal Analysis of Temperature Data, 2024

Monthly average Rainfall Trends 2010 to 2019

Figure 5. illustrates monthly rainfall variations for two periods, 2010–2014 and 2015–2019. Both periods exhibit a clear bimodal rainfall pattern, with a major wet season from March to May, followed by relatively dry conditions between June and September, and a slight increase toward the end of the year.

This aligns with broader findings that climate change is increasing rainfall variability and intensifying extreme events in tropical regions (IPCC, 2021) as shown in the figure 6. below.

Figure 6: Monthly Rainfall trends for 10 years from 2010 to 2019



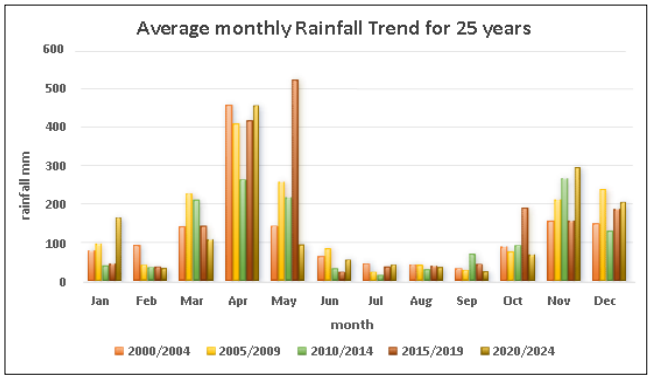
Source: Temporal Analysis of Rainfall Data, 2018

General Monthly Rainfall Generation for Twenty Years

Figure 7. presents long-term rainfall trends across five periods (2000–2004 to 2020–2024). The figure reveals a progressive increase in rainfall intensity and variability, particularly in later periods. Early years (2000–2004) show relatively stable and predictable rainfall, whereas later periods especially 2005–2009, 2015–2019, and 2020–2024 exhibit pronounced extreme rainfall events, mainly during April and May.

The extension of heavy rainfall into months that were traditionally dry further highlights increasing seasonal irregularity. Figure 7. clearly indicates that rainfall patterns are becoming more erratic, increasing community vulnerability to flooding, crop losses, and water management challenges. These trends reinforce the need for climate-resilient infrastructure, improved early warning systems, and adaptive water resource planning.

Figure 7: Monthly Rainfall trends for 25 years



Source: Temporal Analysis of Rainfall Data, 2024

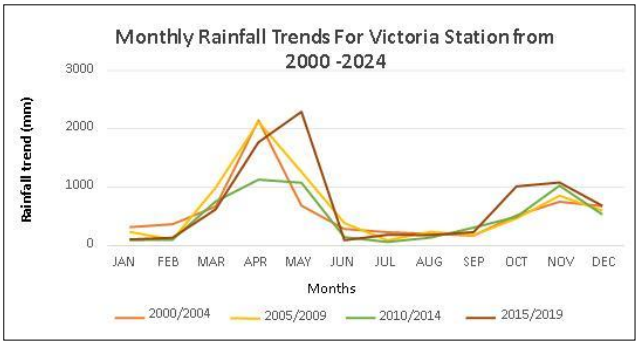
Monthly Rainfall Trends in Victoria 2000 to 2024

Figure 8. illustrates rainfall variability in Victoria over a 24-year period. Rainfall distribution is uneven, with pronounced peaks in April and October, while June–August consistently record the lowest rainfall.

Total rainfall increased from 7013.6mm (2000–2004) to 7521mm (2005–2009), before declining sharply to 5858.1mm (2010–2014) a period associated with dry conditions and intensified agricultural activities. The highest total rainfall (8385.7mm) occurred during 2014–2019, reflecting a rebound characterized by extreme rainfall events.

Figure 8. shows that rainfall trends in Victoria are non-linear, shaped by both natural climate variability and human activities. The sharp fluctuations observed have significant implications for agriculture, water availability, and flood risk, emphasizing the importance of sustainable land-use practices and climate resilience planning. These findings are summarized in the following figure 8. below.

Figure 8: Monthly Rainfall trends Victoria from 2000 to 2024



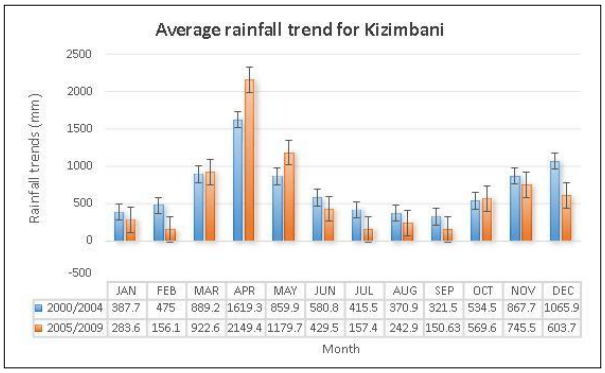
Source: Temporal Analysis of Rainfall Data, 2024

Monthly Rainfall Trends in Kizimbani 2000/2009

Figure 9. shows a decline in total rainfall at Kizimbani from 8265.4mm (2000–2004) to 7590.5mm (2005–2009). Despite this reduction, the area still experienced distinct wet seasons in April and May, with extreme rainfall peaks of 1619.3mm (first period) and 2149.3mm (second period).

Dry months (July–September) recorded the lowest rainfall in both periods, though slightly higher values were observed in the second period. Figure 9. indicates a shortening of wet seasons and lengthening of dry periods, combined with occasional intense rainfall events. This pattern reflects increasing climatic stress and seasonal instability consistent with regional climate change signals. These observations align with global climate change trends, highlighting increased rainfall intensity, variability, and frequency of extreme weather events over time as illustrated in Figure 9.

Figure 9. Average Rainfall Variation at Kizimbani 2000/2009



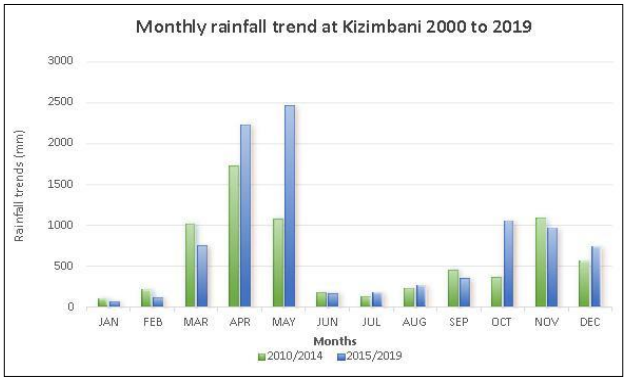
Source: Temporal Analysis of Rainfall Data, 2024

Monthly Rainfall Rainfall at Kizimbani, 2010–2019

Figure 10. compares rainfall trends between 2010–2014 and 2015–2019 in Kizimbani. Rainfall peaks intensified considerably in the second period, particularly in April (2221.3mm) and May (2458.7mm), compared to 1727.5mm and 1083.6mm in the first period.

Dry conditions persisted from June to October, while January recorded the lowest rainfall in both periods. Average rainfall increased to 776.3mm in the later period, indicating a clear upward shift in rainfall magnitude. Figure 10. highlights increasing rainfall intensity and internal variability, raising concerns for flooding and agricultural disruption. The variability between years was about 182.2mm in average.

Figure 10: Monthly Rainfall trend at Kizimbani 2000/2019



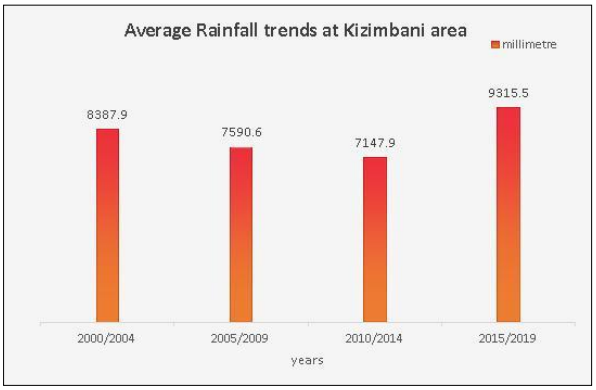
Source: Temporal Analysis of Rainfall Data, 2024

Rainfall Variation for Kizimbani for Twenty Years

Figure 10. summarizes long-term rainfall variation in Kizimbani, showing pronounced fluctuations across the study period. Rainfall declined from 8387.9mm to 7590.6mm and 7147.9mm in subsequent periods, indicating extended dry conditions. However, the final period recorded the highest rainfall peak (9315.1mm) across all years.

This figure demonstrates that Kizimbani is particularly vulnerable to extreme and unpredictable rainfall, increasing the risks of flooding, soil erosion, and agricultural instability. The sharp rise in rainfall in recent years suggests intensifying climate extremes linked to climate change.

Figure 11: Average Rainfall trends at Kizimbani Area.



Source: Temporal Analysis of Rainfall Data, 2024

Zanzibar Average Rainfall Trend 2000 to 2024

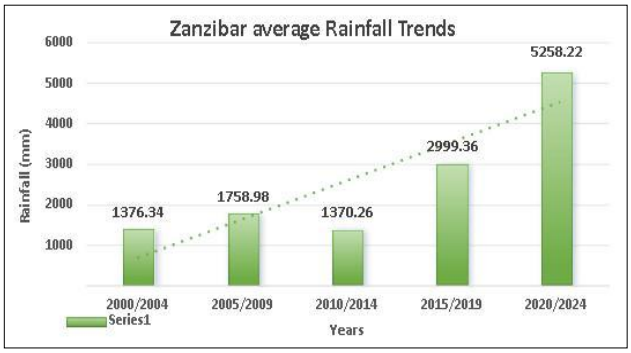
Figure 12. illustrates average rainfall trends for Zanzibar over 25 years. Rainfall increased from 1376.3mm (2000–2004) to 1758.98mm (2005–2009), declined sharply during 2010–2014 (1370.36mm), and then rose dramatically to 2999.38mm (2015–2019) and 5258.22mm (2020–2024).

The figure shows a highly fluctuating pattern (moderate → high → low → very high), indicating growing climatic instability rather than a linear trend. Recent periods exhibit unseasonal and high- intensity rainfall, with some months recording nearly 1000mm. These conditions have contributed to urban flooding, soil erosion, and livelihood disruptions, despite improving water availability.

Figure 12. confirms that rainfall variability in Zanzibar has intensified, consistent with UN-Habitat (2011) observations of alternating extreme wet and dry years. The findings emphasize the importance of vegetation conservation, ecosystem-based adaptation, and integrated water management to reduce climate vulnerability.

The irregular rainfall pattern disrupts agricultural productivity and water availability, increasing vulnerability to floods and droughts as summarized in the figure, 12 below.

Figure 12: Zanzibar Average Rainfall Trends 2000 to 2024



Source: Temporal Analysis of Rainfall Data, 2024

Conclusion

This study examined the anthropogenic impacts of vegetation cover change on climate parameter variability in the Urban West Region of Zanzibar over the period 2000–2024. The findings demonstrate a significant decline in vegetation cover, decreasing from approximately 65.02% in 2000 to 48.51% by 2020, largely driven by urban expansion, infrastructure development, and deforestation. This vegetation loss has coincided with a clear warming trend, with average maximum and minimum temperatures rising by approximately 1.1 °C and 1.0 °C, respectively. Rainfall patterns have become increasingly erratic, with higher intensity events and unpredictable seasonal distribution, reflecting both natural climate variability and anthropogenic influences. Correlation and regression analyses confirmed strong negative relationships between vegetation cover and temperature and rainfall variability, indicating that vegetation degradation contributes significantly to local climate changes. Community perceptions aligned with these empirical findings, identifying human activities as primary drivers of vegetation loss and climate variability. Overall, the study concludes that anthropogenic changes in urban vegetation are a key determinant of climate parameter variability in the Urban West Region of Zanzibar.

Recommendations

Based on the study findings, the following recommendations are proposed:

Urban Planning and Vegetation Conservation: Integrate green spaces, urban forests, and vegetation corridors into city planning to mitigate warming trends and stabilize local rainfall patterns.

Ecosystem-Based Adaptation: Promote ecosystem-based adaptation strategies, such as tree planting programs, rehabilitation of degraded land, and protection of peri-urban forest patches, to enhance resilience to climate variability.

Community Engagement: Strengthen community awareness programs on the importance of vegetation

conservation for climate regulation and livelihoods, encouraging local participation in urban greening initiatives.

Policy and Governance: Formulate and enforce policies addressing uncontrolled urban expansion, deforestation, and conversion of vegetated areas to non-green infrastructure.

Climate Monitoring: Improve long-term climate and vegetation monitoring using satellite imagery and meteorological data to support evidence-based decision-making and adaptive planning.

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Throughout his career, Mr Jaku has played key roles in program implementation and coordination. He has served as a BIG Z focal person representing PORALG–SD and has contributed as a Zanzibar Scale Program Manager, demonstrating leadership in environmental planning and policy execution. His work reflects a commitment to advancing sustainable environmental practices and addressing the challenges of climate change at both institutional and community levels.

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THE HIDDEN LANGUAGE OF SCHOOL WALLS: AN ANALYSIS OF STUDENT GRAFFITI, ITS CAUSES AND SOLUTIONS IN NEPAL

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Abstract

Schools serve as more than just a source of knowledge; they are places where character is forged, curiosity is nurtured, and students learn to integrate into their peer groups and communities. Despite the claim that schools provide a space for students to express themselves, many children struggle to articulate their frustrations, anger, stress, and curiosities openly. Instead, they often turn to school walls, desks, benches, and other surfaces to express themselves through writing and drawing. This act of writing on walls not only detracts from the school's aesthetic appeal but also has a detrimental effect on a child's social and moral development. Graffiti can foster a criminal mindset, shamelessness, and even obscenity in children. At times, innocent children may also face physical and mental punishment, be subjected to financial penalties, or even be forced to leave school due to this issue. Schools annually spend a significant amount of money to repair walls and materials defaced with various words and symbols. This article analyzes why children engage in graffiti within schools, what effects it has, and how it can be controlled.

Keywords: frustration, graffiti, resistance, school, psychology

Introduction

Childhood is generally considered to be up to 16 years of age, a period when foundational habits and values are developed in addition to completing school-level education. Particularly during late childhood, children undergo rapid physical and mental development, which directly impacts their behavior. They may exhibit behaviors such as eagerness to learn, imitation, rebellion, creative thinking, and aggression, often without conscious intent. Among these behaviors is graffiti. It is a common phenomenon that almost all schools in Nepal have walls and desks that are marked by students. This behavior extends from the walls of toilets and classrooms to desks, school buses, trees, and other school structures.

In Europe and America, this type of marking is referred to as graffiti, and it is seen on city walls, large rocks, utility poles, and even on trees and plants. According to *Britannica Encyclopedia*, "graffiti is a form of visual communication, usually illegal, involving the unauthorized marking of a public space by an individual or group. Graffiti can be understood as antisocial behavior performed in order to gain attention or as a form of thrill-seeking, but it can also be understood as an expressive art form."

Graffiti has evolved alongside ancient human civilization. It is commonly observed in schools as a medium for children to express themselves when they are unable to communicate their thoughts directly with others (Mwangi, 2015). Nwoye (1993) argues that graffiti has long been a means of expression for oppressed individuals or groups in every society. He emphasizes that students who are unable to express themselves publicly often resort to creating graffiti.

Many children harbor internal resistance to school policies and behaviors but are unable to express their dissent openly. They often project their anger and frustration onto school toilets, classroom walls, and desks through various words, symbols, or drawings. These markings often convey a message of rebellion against the authorities (Ferrell, 1998).

According to Rothman (2002), as school children reach adolescence, they develop many curiosities about sexuality. Since their curiosities are often misunderstood, and expressing them can lead to being labeled as "bad," students resort to drawing various pictures on school structures to express their half-formed ideas, interests, and desires.

Writing on walls, or graffiti, is a serious psychological issue for children. It can foster a distorted mindset in those who create it, while causing shame and distress for other students. In many countries, creating graffiti is considered a social offense. In Nepal, Section 73 of the *Muluki (National) Criminal Code 2074* criminalizes causing damage to private or public property, and Section 121 deems drawing obscene pictures in public places a crime against morality. It is punishable by a fine of up to NPR 10,000, one year in prison, or both, with the cost of damage to be recovered from the offender. Section 285, Subsection 1(d) of the same act is also relevant to graffiti offenses. Furthermore, Section 11 of the Nepal's *Children's Act 2075* includes a legal provision to protect children from obscenity and immoral content.

Despite attempts by schools to discourage wall writing through codes of conduct, the practice has not been eliminated. Punishing students for graffiti appears to have a negative impact on them. Although graffiti is a widespread public and mental health issue in all schools, its extent and impact have not been adequately studied. The state’s policies and programs related to

education and children have remained silent on this issue. This study was conducted in this context.

Methodology

This study is based on direct observation and case studies. The author visited 60 schools across all 12 districts of Lumbini Province of Nepal and analyzed the graffiti on toilets, stairwells, classrooms, and other student-frequented areas. The findings were derived from discussions with current and former students, teachers, school administration, and parents. Additionally, an analysis of newspaper and journal articles, books on child psychology, and policies related to children, crime, and education was conducted.

Analysis and Discussion

This study was conducted to understand what children write on school structures, why they write it, and what its effects are. The analysis is limited to these questions.

Where Children Write

Children tend to write in isolated places where they can be alone. Clean, visible surfaces are preferred by graffiti writers (Wilson & Kelling, 1982). On school stairs, verandas, and in the canteen, they tend to make short words and simple shapes. These are often made in a hurry due to the frequent movement of other people. The toilets of almost all schools are decorated with student graffiti. Longer words, sentences, and drawings are often found here because teachers do not enter these spaces, and students feel supported by their peers (Mabel, 2013).

The writings in toilets are different from other places and are referred to as "latrinalia," a term first used by folklorist Alan Dundes from the University of California. Such graffiti is found in both boys' and girls' toilets. Toilets shared by teachers and students have fewer, shorter words and simpler symbols.

After toilets, the desks and benches are the most common surfaces for graffiti. In classrooms where students are rotated, all desks are marked, while in others, the central desks have more writing. Graffiti can also be found on personal benches, the back of doors, and even on teachers' chairs and tables. In some schools, words and symbols have been found etched on tree trunks. In rural areas, writing is also found on roofs and wooden beams.

Thematic Content of Graffiti

Children use graffiti to communicate their repressed thoughts and curiosities (Rodriguez & Clair, 1999). What they write is determined by the society they grow up in, the discrimination they face, opportunities for expression, and school discipline. The themes of graffiti differ based on geographical and social structures, as well as the age and restrictions placed on children. Commonly, the content includes:

1. **Single Words:** In primary school, students often write a single word, such as a name or a name of a body part. Single-word graffiti is less common in schools with higher grades.
2. **Two Words:** Examples include a name with a verb, such as "Pappu Dada," "Call me," "Kiss me," or "Hemraj + Jashoda."
3. **Short Sentences:** Phrases like "I love you," or simple sentences expressing a sentiment.
4. **Longer Sentences:** These can include insults, questions, accusations, or political slogans.
5. **Drawings:** Drawings of genitals, nude figures, and sexual acts are more common in toilets, while other public spaces feature drawings expressing anger, frustration, rebellion, self-portraits, flowers, leaves, and even images of deities and temples.
6. **Creative Expressions:** On desks, in classrooms, and on doors where students have more time, they often write short poems, gazals, limericks, and jokes.
7. **Rebellion:** School toilets and classroom walls are often places where students express their rebellion (Marine, 2023). Words or images of resistance against teachers and school administration are common.
8. **Frustration and Anxiety:** In girls' toilets, words and short sentences expressing frustration, fear, and anxiety are often found. On desks, students also write about their personal frustrations. Boys use toilet and classroom walls to express their life's frustrations, dark future, societal worries, corrupt politics, and disappointment from failure. This kind of expression is more common in schools with higher grades (Ktena, 2018).
9. **Sexuality:** Sexual desires, sexual accusations, and the display of genitalia are expressed through words and symbols. Such drawings and words are more common in boys' toilets than in girls' toilets (Amevuvor, J., & Hafer, G. 2018). Teachers say that girls do not write about sex in other places except for toilets. In boys' toilets, there are direct sexual propositions, drawings of sexual acts, and names of body parts, while in girls' toilets, names of body parts, indications of sexual acts, and love proposals are written (Fisher, 2014).
10. **Love/Relationships:** To expose someone's relationship or to insult them, children write "So-and-so + So-and-so" or describe their relationship. Some also engrave names on walls,

stones, or tree bark to express affection, believing it strengthens the relationship. This practice is particularly common on bamboo plants and temple stones.

Causes of Graffiti

Manera (2019) suggests three main reasons for children's graffiti: expressing their emotions or self-concept, communicating a message to a person or group, and seeking revenge. My own observations have found that most children write to express anger or to insult someone. Some also use walls to vent sexual curiosity and frustration. Teachers report that with increased access to mobile phones for viewing sexual content, the practice of drawing sexual images on walls has decreased. The custom of etching names on walls or trees to express love has also become less common. However, the practice of writing and drawing with the intent to defame others still continues. Words and symbols in public spaces express rebellion, frustration, and dominance. Interviews with people who have completed school education reveal that they used to write on walls and desks when they felt lonely in their family and school life. With the widespread access to social media and the internet, the subject matter of wall writing has also changed.

Effects of Graffiti

Having spent about three decades in school teaching, I have had the opportunity to repeatedly debate and discuss graffiti with students. During this study, I also spoke with many students, parents, and teachers. Based on this long-term observation and dialogue, I have found the following effects of graffiti:

1. **Development of a Criminal Mindset:** According to the Broken Windows theory, graffiti is a product of a distorted mindset. It not only fills the mind with rebellion but can also lead to violence. When someone's name is associated with graffiti or their picture is drawn, it can create conflict if the person is identified. Schools with high rates of graffiti tend to have a decline in student discipline. According to the teachers in this study, most students who engage in graffiti are repeat offenders who often become involved in various crimes after leaving school.

2. **Shame and Inferiority Complex:** Expressing oneself on walls is a sign of a frustrated mindset, which can make children lonely and irritable. When someone's name is associated with a graffiti drawing, it can cause them to feel embarrassed and ashamed. Particularly, young children cannot ignore it and suffer mentally. They may show behaviors such as not wanting to go to school or being afraid to walk by a place where their name, a symbol, or an obscene picture has been written. Many children cannot share their problems with teachers or parents, which negatively impacts their holistic development (Watson, 1996).

3. **Promotion of Degeneracy:** Children tend to quickly imitate bad behavior. When they see various deviant writings and drawings on toilets, classrooms, and desks, they may develop the idea that wall writing is a valid form of expression and become encouraged to do such things. This can lead to students spending a long time in toilets or outside of class just to write on walls. Sexually explicit graffiti can lead to problems like vulgarity and rudeness in children's speech and an increase in sexual desires. They may also develop a habit of searching for and enjoying such writings and drawings during study time, which badly affects their academics.

4. **Decline in School Aesthetics:** School walls and other structures determine the beauty of a school. When these places are defaced, the school environment becomes ugly. Since it is not always possible to repaint the entire school, schools often just paint or plaster over the defaced areas. While this covers up the distorted words and symbols, it leaves the school walls patchy and unattractive.

5. **Stigmatization and Punishment:** It is difficult to identify who writes on walls. Therefore, it is common for one person to write and another to be blamed. In some cases, students are also financially penalized to cover the cost of repairing the defaced walls and desks. This practice only causes more suffering for children.

6. **Financial Costs:** Stakeholders in the study stated that graffiti has become a headache for all schools. Schools complain that they have to repaint more frequently because of graffiti, which increases their expenses. When students use their pens to write on walls, their pens become unusable, requiring parents to buy new ones. If a school identifies a student and recovers the cost of repair from the parents, it places an unnecessary financial burden on them.

Practices to Control Graffiti

Schools in Lumbini Province have adopted various practices to discourage student graffiti:

1. Before the start of a new academic year, students are informed about the problems, effects, and punishments associated with graffiti to motivate them to be moral citizens.

2. Creating disciplinary monitoring groups in the class to discourage those who try to write on walls and to identify and counsel those who do.
3. As a form of disciplinary action, making students erase or paint over what they have written, or having the school paint over it.
4. Administering physical and financial punishments or expulsion.
5. Providing joint counseling to parents and students, identifying the root cause, and showing a willingness to solve the problem.
6. Conducting inspirational classes on morality and integrity.

Proposed Solutions

The *National Framework for Child-Friendly Schools for Quality Education* (2067) states that schools should ensure freedom from physical conflict, hardship, and abuse. The *Education Vision Paper* (2022) envisions an ideal school as having clean and safe classrooms, toilets, and a clean overall environment. The *School Education Sector Plan* (2022-2032) emphasizes that schools should be free from all forms of violence and be child-friendly. To create a child-friendly, clean, and fear-free school environment, the practice of writing on school walls must be discouraged.

To stop children from writing on walls, they need psychological counseling. Parents and teachers must give them the inspiration and courage to express their frustrations and anger to the relevant person instead of using a wall. Even if not possible elsewhere, school toilets, classrooms, and desks should be regularly monitored to provide timely advice and counseling to children.

Children should be taught not to feel ashamed just because someone has written their name on a wall. It is important to identify those who engage in graffiti, understand their problems, and show a proactive approach to solving them. If those who draw on walls are identified, engaging them in creative work can have a positive effect. Most importantly, children must be made to realize that writing and scratching on walls is an act of incivility. If these measures are taken, the habit of writing on toilets, school walls, and desks, and the unnecessary shame and suffering it causes, can be ended.

Conclusion

The practice of writing and drawing on school walls and other structures is seen in schools in almost every region and community. Children engage in graffiti because they are unable to express their feelings to others, they lack a person to listen to their thoughts, and because of sexual frustration, curiosity, stress, and loneliness. Imitation, habit, and rebellion also act as contributing factors to graffiti. When children write on school property, it not only makes the school look ugly but also forces schools to spend large sums of money annually on repairs.

Graffiti has been shown to cause the development of negative attitudes, fear, shame, lack of concentration in studies, and victimization by violence. Although schools are making some efforts to stop graffiti, it has not been eradicated due to the increasing use of social media, the lack of moral education in families, and schools relying solely on the fear of punishment instead of taking a unique approach to identify and solve the underlying problems. For students to become moral and virtuous, every family and school should not delay in identifying the causes of graffiti and addressing them.

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GREEN SUPPLY CHAIN MANAGEMENT: A STRATEGIC APPROACH TO ENVIRONMENTAL SUSTAINABILITY

Dr Ismail Aslanlar*

This is a summary from the thesis paper written for the St Clements University - Turkish Language Division - Doctor of Business Administration.

This study examines the role of green supply chain management (GTZ) on environmental sustainability and how businesses can integrate green practices into their supply chain processes in line with their sustainability strategies.

Sustainable logistics and supply chain management (GTZ) can be defined as a strategy that ensures the adoption of environmentally friendly practices in supply chain processes by prioritizing environmental sustainability goals. The supply chain covers all stages from raw material supply to the final product, and minimizing the environmental impacts in these processes is the main purpose of the green supply chain (Ahi & Searcy, 2013). GTZ includes not only the production of environmentally friendly products but also practices such as energy efficiency, recycling and waste management (Srivastava, 2007). Today, companies are under increasing pressure to fulfill their environmental responsibilities; Therefore, green supply chain management is of strategic importance for organizations. It is extremely important as a business strategy that combines environmental sustainability and green supply chain management with economic goals. This system takes into account the environmental impacts of each stage in the supply chain, ensuring that businesses are both environmentally friendly and economically efficient (Carter & Rogers, 2008).

In this context, the advantages provided by the green supply chain are:

Reducing Environmental Impacts: Green supply chain management (GTZ) plays an important role as a strategy aimed at reducing environmental impacts. This approach takes environmental responsibility into account at all stages of the supply chain and minimizes negative impacts on nature by implementing various sustainable practices. Reducing environmental impacts is one of the main objectives of GTZ and can be achieved in many different areas. This process occurs through improving activities that directly harm the environment and adopting more sustainable alternatives.

Green supply chains allow for more efficient use of natural resources. For example, economical use of resources such as energy, water and raw materials can significantly reduce environmental impacts. By reducing resource consumption, businesses produce less waste and emissions in their production processes, which alleviates the environmental burden. At the same time, the use of recyclable and renewable resources also helps reduce negative impacts on the environment (Seuring & Müller, 2008). Green supply chain management makes a great contribution to reducing the carbon footprint. Carbon footprint refers to the amount of greenhouse gas released from the production of a product or service to its final consumption. Green supply chain strategies encourage energy-efficient production methods, sustainable transportation options, and the use of more environmentally friendly energy sources to reduce these emissions. For example, increasing the fuel efficiency of transportation vehicles used in the supply chain or using more environmentally friendly vehicles (such as electric vehicles) can significantly reduce carbon emissions (Rao & Holt, 2005). Minimizing waste is a high priority in the green supply chain. Proper management of waste helps use natural resources more efficiently and reduce environmental pollution. Moreover, the integration of recycling and reuse processes can greatly reduce the environmental impacts of the supply chain. For example, reprocessing waste generated in production processes or producing products from recyclable materials reduces the amount of waste and minimizes damage to the environment (Srivastava, 2007).

The green supply chain encourages the use of environmentally friendly materials. This involves choosing raw materials and materials used in production processes, taking into account their environmental impact. For example, choosing recycled materials, biodegradable materials or natural materials with low environmental impact reduces the environmental impacts resulting from production processes. Additionally, the use of environmentally friendly production technologies also serves this purpose (Carter & Rogers, 2008). Transportation and logistics processes are an important factor that increases environmental impacts in the supply chain.

Green logistics develops various strategies to increase energy efficiency in transportation processes and use environmentally friendly transportation methods. These strategies include determining more efficient transportation routes, reducing fuel consumption of transportation vehicles, and turning to alternative transportation methods (such as rail or maritime transportation). Additionally, producing products over shorter distances or working with local suppliers contributes to reducing environmental impacts in transportation processes (Seuring & Müller, 2008).

Efforts to reduce environmental impact in green supply chains become more effective with regular monitoring and reporting. By monitoring their environmental performance, businesses evaluate the environmental impacts of each stage in the supply chain and make the necessary improvements. These monitoring processes can be supported by both internal audits and independent environmental certifications and reporting. Thus, environmental impacts in the supply chain are constantly monitored and areas that need improvement are identified (Gimenez & Tachizawa, 2012).

Cost Savings: Green supply chain management enables businesses to achieve their environmental sustainability goals as well as be economically efficient. GTZ's applications offer businesses many opportunities to save costs. These savings can occur in a variety of areas, from energy efficiency to waste management to optimizing resource use. Cost savings enable businesses to become more efficient and competitive while fulfilling their environmental responsibilities. Green supply chain management aims to reduce energy consumption. Investments made to ensure energy efficiency mean cost savings for businesses in the long run. Using energy efficient machines and systems reduces the amount of energy used in production processes. For example, energy-efficient lighting systems ensure less energy use in production facilities, which reduces the electricity bill. Additionally, energy costs of businesses can be further reduced by using renewable energy sources (such as solar energy, wind energy) (Srivastava, 2007). Managing waste is an important component of the green supply chain. Proper processing and recycling of waste provides cost savings to businesses. For example, reprocessing or separating waste generated during the production process for recycling reduces the need for raw materials.

Additionally, it reduces costs by reducing the storage and disposal costs of waste. Correct management and recycling of waste not only contributes to the environment but also provides economic benefits to the business (Seuring & Müller, 2008). Inventory management has an important place in the green supply chain. High inventory levels increase storage costs and can also lead to waste and inefficiency in production processes. Green supply chain management promotes not only optimizing production and distribution processes on demand, but also the effective management of raw materials and products. This means that stocks are not kept excessive and production processes become more efficient. More efficient management of raw materials and products prevents unnecessary costs (Rao & Holt, 2005).

Choosing environmentally friendly materials and suppliers in the green supply chain is important to achieve cost savings. Using sustainable materials helps make production processes more efficient. At the same time, contracts with environmentally friendly suppliers can lead to lower costs and better supplier relationships in the long run. When choosing raw materials and materials, environmentally friendly alternatives can sometimes be a little more expensive initially, but savings can be achieved in the long run thanks to advantages such as lower energy costs and recycling (Carter & Rogers, 2008). Transportation and logistics are one of the largest cost items in the supply chain. Green logistics strategies provide significant cost savings by optimizing transportation processes. For example, determining more efficient transportation routes, increasing the fuel efficiency of transportation vehicles, and using alternative transportation methods (such as rail or sea) reduces transportation costs.

Additionally, producing products over shorter distances or working with local suppliers can reduce transportation and storage costs (Srivastava, 2007). Green supply chain management encourages continuous monitoring of environmental and economic performance. In this way, inefficiencies in processes can be identified and improved. Continuous improvement enables supply chain processes to become more efficient and thus contributes to lower costs. Performance monitoring and analyzes help businesses make better decisions, for example, steps such as reducing energy consumption or minimizing waste production yield huge cost savings in the long run (Gimenez & Tachizawa, 2012). Improving the technology can deliver significant cost savings in the green supply chain. In particular, digitalization can increase efficiency in the supply chain. Technologies such as big data analytics, artificial intelligence and the internet of things (IoT) enable processes to be better monitored, optimized and managed. In addition to reducing costs, these technologies also help reduce environmental impacts throughout the supply chain (Carter & Rogers, 2008).

Competitive Advantage: Green supply chain management (GTZ) stands out as a powerful strategy that enables companies to achieve competitive advantage while fulfilling their environmental responsibilities. This approach enables companies to differentiate themselves through sustainability and environmentally friendly practices, strengthening their market position and reducing their costs in the long run. The competitive advantage provided by GTZ is not limited to environmental benefits, but also helps businesses gain advantages in areas such as customer loyalty, brand image, operational efficiency and supplier relations. Consumers are increasingly turning to environmentally responsible and sustainable products. The demand for environmentally friendly products and services is increasing in many industries. Green supply chain management enables businesses to offer products and services that meet this demand. Offering sustainable products helps companies create an environmentally conscious image and can increase brand loyalty. In this way, the rate of preference by customers increases, thus gaining a competitive advantage (Carter & Rogers, 2008). Sustainability practices can improve companies' brand image.

Adopting environmentally friendly practices and green supply chains gives businesses a strong reputation. This reputation is especially highly valued among environmentally conscious consumers. Additionally, documenting its sustainability efforts through reporting and certifications contributes to the company's recognition as an environmentally sensitive and responsible institution. A strong environmental image can be an important factor that distinguishes a business from its competitors (Seuring & Müller, 2008). Environmental regulations and laws are becoming increasingly stringent. Green supply chain management makes it easier for businesses to comply with these regulations and helps them avoid potential penalties. Compliance with regulations not only helps avoid legal issues, it also provides a competitive advantage because companies that adopt environmentally friendly practices run fewer risks than competitors who do not comply with these regulations. Additionally, environmentally friendly businesses face fewer environmental risks and ensure business continuity in the long term (Srivastava, 2007). Green supply chain practices can help reduce costs by improving process efficiency. Efficient resource use, energy saving and waste management significantly reduce companies' operational costs. Such savings give companies a cost advantage and make them stronger in price competition.

Additionally, more efficient operations reduce delays and disruptions in the supply chain, improving the company's service quality and customer satisfaction. This creates a competitive advantage (Gimenez & Tachizawa, 2012). Green supply chain management can also help improve relationships with suppliers. Working with suppliers that comply with environmental sustainability criteria offers businesses the opportunity to establish long-term relationships with reliable and responsible suppliers. This increases the security of the supply chain and optimizes supplier performance. Strong relationships with suppliers help businesses build more flexible and effective supply chains, which supports competitive advantage (Carter & Rogers, 2008). Investments in the green supply chain contribute to the development of innovative products and solutions. Adopting sustainable technologies and environmentally friendly production methods can strengthen companies' competitive positions in the industry. Additionally, a green supply chain can enable businesses to explore new markets.

Offering environmentally friendly and sustainable products allows businesses to reach different consumer segments. This puts them in a stronger position in the market and creates a competitive advantage (Rao & Holt, 2005). Sustainable supply chain management ensures that the supply chain is more resilient. Environmental risks and resource shortages can lead to disruptions in the supply chain. However, green supply chain management helps reduce such risks. More efficient use of resources and sustainable supplier choices contribute to making the supply chain less fragile. This provides businesses with a more resilient and competitive structure against disruptions in the supply chain (Gimenez & Tachizawa, 2012).

Investor Confidence and Company Reputation: Green supply chain management not only ensures environmental sustainability and operational efficiency, but also directly contributes to the financial performance of the company. Investor confidence and company reputation are critical in this context. Adopting green practices increases confidence in the financial health of the business, while also strengthening the company's reputation in society.

These two factors support sustainable growth of the business, improve access to capital and resources and generally strengthen the company's position in the market. Investors carefully evaluate the financial performance, risk management and long-term sustainability of companies in which they consider investing. In recent years, sensitivity to environmental and social factors plays an increasingly important role in investment decisions. In this context, green supply chain management offers a significant advantage to businesses. Companies developing strategies to minimize their environmental impacts and improving their processes with green practices are seen by investors as a positive sign in terms of the company's future profit potential and sustainability (Carter & Rogers, 2008). Environmentally friendly practices enable companies to comply with environmental regulations and avoid possible penalties. This reduces the risks of the business and is an indication to investors that the company has the potential to grow steadily.

The green supply chain encourages the company to adhere to the principles of social responsibility and transparency. This is a confidence-increasing factor for investors, because investors prefer to invest in companies that are sensitive to society and the environment and do business in a sustainable manner (Srivastava, 2007). Sustainable business models and the adoption of a green supply chain offer strategies for long-term growth and value creation rather than the pursuit of short-term profit. Investors have more confidence in companies that adopt such long-term strategies, which increases their investment attractiveness (Seuring & Müller, 2008). Company reputation refers to the general perception of a company in society. This reputation depends on how it is perceived by customers, investors, employees, suppliers and other stakeholders. Green supply chain management is a factor that strengthens company reputation as it shows that the company has adopted an environmentally friendly, ethical and sustainable business model.

Environmental responsibility can help companies build a stronger image with consumers, investors and other stakeholders. The green supply chain encourages the production of environmentally friendly products. Selling such products and services shows that the company is environmentally friendly and is preferred

by environmentally conscious consumers. This increases the company's reputation and expands its market share. Companies' green supply chain strategies are often supported by social responsibility projects. These projects make significant contributions in areas such as environmental protection, energy efficiency and social benefit. Such projects strengthen the company's reputation in society and build trust in the eyes of consumers, investors, and other stakeholders (Gimenez & Tachizawa, 2012). Companies can obtain various certifications and green labels to document their green supply chain management practices. Such certificates are concrete evidence that shows that the company fulfills its environmental responsibilities and is among the important elements that increase the company's reputation. For example, certifications such as the ISO 14001 environmental management standard or LEED (Leadership in Energy and Environmental Design) concretely demonstrate the company's environmental responsibility and sustainability efforts (Srivastava, 2007). Investors evaluate the companies they will invest in not only with financial indicators but also with the reputation of the company. When a company has a strong reputation, it means low risk for investors. A good reputation helps the company find capital and receive investments more easily.

Additionally, a strong company reputation increases revenues by increasing customer loyalty, which means higher returns for investors. In short, the environmental and social responsibility practices that green supply chain management provides to businesses both increase investor confidence and strengthen the company's overall reputation (Rao & Holt, 2005).

Implementing a green supply chain involves a wide range of strategies. These strategies include activities to reduce environmental impact at every stage of the supply chain:

Sustainable Supplier Selection: Sustainable supplier selection within the scope of green supply chain management (GTZ) is a critical strategy to minimize environmental, social and economic impacts in the supply chain. This strategy aims to cooperate with suppliers that meet sustainability goals by evaluating not only traditional quality and cost criteria, but also the environmental and social responsibilities of suppliers. This process helps improve the overall sustainability performance of businesses by selecting suppliers with environmentally friendly and social ethical standards. There are some factors taken into consideration in the sustainable supplier selection process. Suppliers are expected to develop strategies for environmental impacts such as energy efficiency, waste management, water use and carbon emissions in their production processes.

Environmentally friendly production techniques, efficient use of resources and reduction of environmental pollution are important criteria (Carter & Rogers, 2008). Choosing suppliers that fulfill social responsibilities such as labor conditions, worker rights, and fair wage policies contributes to ensuring social equality and justice. In addition, the steps taken by suppliers to improve working conditions are also an important evaluation criterion (Seuring & Müller, 2008). Whether suppliers have international certificates (such as ISO 14001, Fair Trade, GOTS) and sustainability standards documenting their environmental and social responsibilities is also an important selection criterion (Gimenez & Tachizawa, 2012). The supplier's transparency in production processes and ensuring traceability of the products it provides allows businesses to track every stage of the supply chain. This is an important step in achieving sustainability goals (Srivastava, 2007). Sustainable supplier selection not only offers businesses the opportunity to fulfill environmental and social responsibilities, but also helps them comply with legal regulations, strengthen the reputation of their brands and achieve operational efficiency. This approach is a strategic step to achieve cost savings in the long term and create environmentally friendly supply chains (Rao & Holt, 2005).

Energy Efficiency and Carbon Footprint Monitoring: Energy efficiency and carbon footprint monitoring are important elements of green supply chain management (GTZ) practices (Gimenez & Tachizawa, 2012). These strategies aim to take steps to reduce environmental impacts in the supply chain. Both optimizing energy consumption and monitoring carbon emissions enable businesses to achieve their environmental sustainability goals. Energy efficiency means using energy resources more efficiently and minimizing energy consumption in processes in the supply chain. This includes various practices such as the use of renewable energy sources, integration of energy-saving technologies, reducing energy consumption in production processes. Energy efficiency helps both reduce environmental impacts and reduce costs for businesses (Srivastava, 2007).

Carbon footprint refers to the total greenhouse gas emissions released into the atmosphere during the production, transportation and consumption of a business or product. Carbon footprint monitoring is the process of regularly tracking and recording these emissions. By analyzing each stage in the supply chain, businesses can develop strategies to reduce carbon emissions. This process is a critical step in complying with environmental regulations and reducing greenhouse gas emissions (Carter & Rogers, 2008). Energy efficiency and carbon footprint monitoring provide essential tools for businesses to understand their environmental impact and take concrete steps to reduce these impacts. These practices make it possible not only to be environmentally friendly, but also to develop a sustainable business strategy.

Green Logistics and Transportation: Green logistics is an approach developed to manage transportation and logistics processes in the supply chain in a environmentally friendly way. This concept aims to protect the environment and use natural resources

efficiently in logistics processes. Green logistics applications aim to increase not only environmental responsibilities but also operational efficiency. In green logistics, energy efficiency of transportation vehicles is an important element. Using energy efficient tools, less fuel is spent. For example, lower emission release vehicles (such as electric vehicles or hybrid vehicles) may be preferred. These tools minimize energy consumption during transportation, as well as reduce carbon footprint. Transportation is often known as a sector that causes high carbon emissions. Green logistics strategies include various methods to reduce these emissions. These include the use of technologies that will reduce fuel consumption (eg efficient motors and aerodynamic designs), carbon dioxide (CO2) and other greenhouse gases. In this way, logistics activities become environmentally friendly. Green logistics encourages renewable energy sources in transportation processes. This means the use of renewable energy sources such as sun, wind or biofuel instead of fossil fuels in the transport sector. Thus, transportation processes become more sustainable and the environmental effects caused by fossil fuel consumption are reduced. Green logistics aims to shorten distances and reduce fuel consumption by enabling the transport routes to be optimized. Logistics companies can identify the most efficient routes using software systems and thus reduce both transport time and environmental effects. Efficient use of carrying capacity is also within the scope of green logistics. Increasing the load capacity of the vehicles allows more load to be carried by fewer vehicles. This enables transportation to become more efficient, and at the same time, environmental effects are reduced by using less vehicles and less fuel (Srivastava, 2007).

Waste Management and Recycling: Waste management refers to the management of waste caused by production, storage, distribution and consumption processes in the supply chain without damaging the environment. This means that the waste is reduced, reusing and recycling at the source. Waste management is important not only for reducing environmental effects, but also for resource efficiency. Businesses adopt sustainable production methods to minimize waste and save costs using the waste (Carter & Rogers, 2008). Recycling is the process of converting waste into new products by reusing. This process provides the protection of natural resources, saves energy and reduces the amount of waste. Recycling reduces environmental effects, especially by re -processing materials such as plastic, paper, metal and glass. Businesses can create an environmentally friendly production and distribution process by integrating recycling applications in supply chains (Ahi & Searcy, 2013). In addition, these processes provide economic benefits to businesses because the use of recycled materials reduces the need for new raw material purchase (Searing & Müller, 2008).

The adoption of the green supply chain can also cause many difficulties for businesses. Among them:

High Initial Costs: Applications such as the use of environmentally friendly materials and the adoption of energy efficient technologies may initially require high costs (Sarkis, 2003).

Supplier Compliance: In order to succeed in the green supply chain, a co-operation with suppliers is compatible with environmentally friendly applications. This process may be time -consuming and sometimes coordination with suppliers (Searing & Müller, 2008).

Green Certificates and Regulations: The continuous change of environmental standards and the receipt of green certificates can make the strategies of enterprises in this field challenging (Carter & Rogers, 2008).

Cultural and Organizational Change: Environmental sustainability requires not only a technological change, but also the transformation of organizational culture. It may take time to develop an environmentally sensitive approach between employees and managers (Rao & Holt, 2005).

The future of green supply chain management will be shaped by technology and digitalization. Especially:

Digitalization and Use of Technology: The future of green supply chain management will undergo a great transformation with technology and digitalization. Digitalization offers tools to help the supply chains more efficient, transparent and environmentally friendly (Gimenez & Tachizawa, 2012). The use of technology plays an important role in achieving sustainability goals. The Internet of Things (IoT) and the major data analytics of objects allows to monitor and optimize each stage in the supply chain. Thanks to sensors and connected devices, it becomes possible to monitor where the products are, under which conditions and produced are produced. This enables to determine the most efficient transport routes, monitor energy consumption and use resources more effectively (Chien et al., 2012). Artificial intelligence (AI) and machine learning are used to optimize supply chain processes. AI can make demand forecasts more accurately, make more conscious decisions in the selection of suppliers, and offer suggestions for energy efficiency in logistics processes. These technologies facilitate the implementation of strategies aimed at sustainable resource use and low environmental impact (Kamble et al., 2020).

The block chain provides transparency in supply chains. Operations at every stage of the supply chain become unchanged and monitorable. This increases the accuracy and reliability of sustainable applications in the supply chain, and also makes it easier to control whether the suppliers comply with environmental standards (Sundarakani et al., 2020). Digital twins make it possible to simulate the processes in the supply chain by creating digital copies of physical assets.

Using this technology, it can test whether the supply chain processes can be made more sustainable and changes can be made to minimize environmental effects.

Circular Economy: Unlike the traditional linear economy, it is an economic model that aims to use resources more efficiently by extending the life cycles of products and materials. In this model, waste production is minimized and recycling, reuse and repair of resources are encouraged (Ahi & Searcy, 2013). The circular economy directly serves environmental sustainability goals and also provides solutions to increase economic efficiency. Circular economy advocates that resources should be used in the most efficient way. During the design phase of the products, attention is paid to making them longer-lasting, repairable and recyclable. This helps prevent the depletion of natural resources and reduces the amount of waste in production processes (Geissdoerfer et al., 2017). The circular economy encourages viewing waste as a valuable resource, not a cost. Used products and materials are recycled to produce new products or be used in another way. This approach reduces energy and raw material consumption while minimizing environmental impacts (Bocken et al., 2016). Reuse and repair of products are fundamental elements of the circular economy. Manufacturers design products to extend their lifespan so they can be used for longer. At the same time, repair and reuse services are also encouraged.

Consumer Demands and Green Products: It is an important component of green supply chain management strategies to increase environmental sustainability. Nowadays, consumers increasingly prefer environmentally responsible products. This situation encourages businesses to make their production processes more sustainable and offer environmentally friendly products (Carter & Rogers, 2008). Consumers' demands for environmentally responsible, healthy and ethical products are increasing.

These demands enable companies to turn to sustainable production processes. Elements such as environmentally friendly packaging, organic materials or low carbon emission production processes are factors that influence consumers' preferences. Consumers make purchasing decisions by considering not only price and quality but also the environmental impact of products (Ottman, 2017). Green products are products that have a low environmental impact, are made from sustainable materials and go through environmentally friendly production processes. These products offer consumers a choice that aims to protect the environment. Green products often have recyclable, biodegradable or energy-efficient features. Additionally, production processes include sustainability elements such as saving water or reducing the carbon footprint (Peattie, 2010).

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PORTS, POWER AND POLITICS: THE HORN OF AFRICA IN THE AGE OF RED SEA RIVALRY

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Abstract

The Red Sea corridor has re-emerged as one of the most intensely contested maritime spaces in contemporary international politics, and the Horn of Africa's coastline has become the principal theatre in which that contest is staged. Since 2015, competitive investments in Djibouti, Berbera, Mogadishu, Bosaso, Assab, Massawa, Port Sudan, and Mombasa—frequently bundled with military basing arrangements—have transformed coastal access into a currency of great-power and middle-power competition. This article examines how Red Sea rivalry has restructured Horn of Africa port politics, identifies the patron and sub-state configurations that have emerged, and assesses the implications for national sovereignty and socio-economic development. Drawing on qualitative document analysis of concession agreements, ministerial gazettes, United Nations reports, think-tank briefings, and secondary scholarship across the 2015–2025 period, the study uses comparative case analysis across five focal ports and two cross-cutting themes. The findings show that port concessions now function as a patronage regime rather than as discrete bilateral transactions, that sub-state actors have acquired disproportionate bargaining leverage, and that fiscal extraversion has widened the security-development gap in coastal states. The article contributes to the literature by reframing Horn of Africa port politics as an integrated geoeconomic regime and by proposing a Red Sea compact that re-embeds concessions within sovereign fiscal and legal frameworks rather than leaving them as standalone agreements.

Keywords: *Red Sea geopolitics; Horn of Africa; port concessions; geoeconomics; Somaliland; maritime security*.

1. Introduction

The signing of a memorandum of understanding between Ethiopia and Somaliland on 1 January 2024, reportedly granting Addis Ababa commercial and naval access to the coastline near Berbera in exchange for eventual recognition, brought into sharp relief a transformation that had been unfolding across the Horn of Africa for nearly a decade (International Crisis Group, 2024). Coupled with the protracted disruption of commercial shipping caused by Houthi attacks on vessels transiting the Bab-el-Mandeb from late 2023 onward, and with an unprecedented concentration of foreign military infrastructure across Djibouti, Eritrea, and northern Somalia, the episode illustrated how the Red Sea has returned to the centre of global strategic calculation. The coastline that once defined the periphery of African politics is now the axis along which external rivalries are negotiated, and the port has emerged as the principal instrument through which those rivalries are expressed.

In the period immediately before the Houthi Red Sea campaign, approximately ten to twelve per cent of global seaborne trade transited the Bab-el-Mandeb, and an estimated thirty per cent of global container traffic passed through the broader Red Sea corridor; the attacks that began in November 2023 subsequently reduced transits through the strait by approximately half as shipping lines rerouted around the Cape of Good Hope (Vertin, 2023). Horn of Africa governments, most of which rely on narrow fiscal bases and external rents, are simultaneously courted by Gulf capital, Chinese infrastructure financing, Turkish port operators, and Western security actors whose basing commitments span decades. This convergence has produced a dense transactional environment in which coastal access, basing rights, trade routing, and political recognition are bundled into concessions that frequently blur the line between commerce and security (Verhoeven, 2018; Melvin, 2019). The resulting architecture has reconfigured not only regional foreign policy but also the domestic political settlements of the states that host these facilities.

The transformation has been especially pronounced since 2015, when the escalation of the Yemen war drew Gulf States into the African side of the corridor in an operational capacity, and when the formal inauguration of the People's Liberation Army Support Base in Djibouti extended a Chinese military presence to the continent for the first time (Meester et al., 2018). These developments coincided with a parallel reorientation of Turkish and Qatari policy toward Somalia, with the completion of the Emirati concession at Berbera, and with the gradual return of Russian strategic interest in Port Sudan. Each of these moves would have registered as significant in isolation; taken together, they have produced a qualitative change in the way the Horn's coastline is governed, financed, and contested. The contemporary port is therefore best understood as a political-economic institution that carries within it the priorities of multiple external patrons and the contested sovereignty claims of multiple domestic actors.

Despite a growing body of work on individual port deals, scholarly treatment has tended to approach each case in isolation (Cannon & Rossiter, 2018; Styan, 2016). Bilateral studies illuminate the economics of

particular concessions but obscure the system-level patronage regime that links them. As a result, the cumulative effect of Red Sea rivalry on Horn of Africa governance has been insufficiently theorised, and the sub-state leverage that these concessions generate has been treated as an incidental consequence rather than as a structural feature. This fragmentation in the literature matters because it has produced policy responses that negotiate bilaterally where the underlying dynamics are multilateral and systemic. African regional institutions, including the African Union and the Intergovernmental Authority on Development, have tended to engage with port politics through the idiom of infrastructure investment rather than through the idiom of political settlement, an approach that has left significant blind spots in continental policy development.

This article asks three questions. First, how have external Red Sea rivals restructured Horn of Africa port politics since 2015? Second, what patron and sub-state configurations have emerged from this restructuring? Third, what are the implications of these configurations for the sovereignty and socio-economic development of coastal states? The study draws on qualitative document analysis of concession agreements, constitutional and statutory provisions, United Nations Panel of Experts reports, policy briefings from Chatham House, the International Crisis Group, the Clingendael Institute, and the Stockholm International Peace Research Institute, together with secondary literature spanning 2015–2025. It analyses five focal ports—Djibouti, Berbera, Mogadishu, Assab and Massawa, and Port Sudan—before turning to two cross-cutting themes that cut across the cases.

The contribution of the article is threefold. It offers a systemic reading of Horn of Africa port politics that treats bilateral concessions as components of a wider geoeconomic regime, extending the literature on regional security complexes by identifying infrastructure concessions as the material substrate on which external rivalries congeal (Buzan & Wæver, 2003; Wigell, 2016). It documents the emergence of sub-state leverage as a structural feature of Red Sea rivalry rather than as a secondary effect of central government bargaining. Finally, it proposes a negotiated Red Sea compact designed to re-embed port concessions within sovereign fiscal and legal frameworks, a prescription that speaks directly to the governance debates surrounding federalism, revenue sharing, and maritime strategy in the Horn.

The remainder of the article is organised as follows. Section 2 reviews the literature on Red Sea regionalism, port concessions as instruments of geoeconomic power, external actors in the Horn, and the connection between port politics and sub-state state-building. Section 3 sets out the methodology. Section 4 presents the comparative case analysis and cross-cutting themes. Section 5 discusses the theoretical and policy implications, and Section 6 concludes.

2. Literature Review

Red Sea regionalism and the securitisation of maritime space

Scholarship on the Red Sea has moved from treating the corridor as a logistical artery to framing it as a distinct security region. Verhoeven (2018) argues that the Red Sea now operates as a subsystem in which Gulf, African, and extra-regional actors share overlapping threat perceptions, competing order visions, and intersecting economic interests. Vertin (2019, 2023) traces the securitisation of the corridor to the Yemen war, the Saudi–Emirati blockade of Qatar, and the rise of maritime piracy and Houthi missile capabilities, each of which expanded the rivalry calculus from diplomatic posture to militarised presence. Cannon and Donelli (2020) extend Buzan and Wæver's (2003) regional security complex theory to show that the Horn and the Gulf now constitute an asymmetric, high-polarity security architecture in which smaller states derive bargaining power from the competitive concern of larger patrons. Meester, van den Berg, and Verhoeven (2018) further document how the Gulf states' political economy of the Red Sea has been characterised by a repeated cycle of investment pledges, securitisation shocks, and crisis management, in which each iteration deepens the corridor's strategic salience without generating the coordinated framework that a durable order would require. However, much of this literature remains oriented toward state-to-state competition and has yet to theorise the port concession itself as a durable feature of the regional order.

Port concessions and geoeconomics

A parallel body of work in international political economy has developed the concept of geoeconomics as the systematic use of economic instruments to achieve strategic ends (Blackwill & Harris, 2016; Wigell, 2016). Infrastructure assets, and maritime infrastructure in particular, occupy a central place in this framework because they combine long time horizons, sunk costs, and dual commercial-military functionality. Blanchard and Flint (2017) show how China's Maritime Silk Road Initiative has integrated port financing, construction, and long-term concession operation into a coherent statecraft project spanning the Indian Ocean rim. Mogielnicki (2021) and Ulrichsen (2020) describe the emergence of an Emirati "port empire" in which DP World has functioned simultaneously as a commercial actor and as an instrument of federal foreign policy. Babić (2023) situates these developments within a broader rise of state capital, in which sovereign wealth and state-linked operators blur the boundary between private investment and strategic positioning. The analytical weight that this literature assigns to concessions is particularly useful because it treats port agreements not as discrete commercial contracts but as political settlements with embedded distributional, security, and regulatory consequences. This literature has clarified the logic of individual concessions but has devoted comparatively little attention to the cumulative regional effects that arise when multiple patrons pursue parallel

geoeconomic strategies along a single coastline. The Horn of Africa, where five or more patron clusters compete across fewer than a dozen significant ports, constitutes a particularly stringent test of the geoeconomic framework's capacity to capture system-level outcomes.

External actors in the Horn

A third strand of scholarship maps the external actors most active in the Horn of Africa. Meester, van den Berg, and Verhoeven (2018) and Meester and van den Berg (2019) document the accelerating Gulf footprint after 2015, driven by the Saudi-led coalition's need for logistical depth in Yemen, the Emirati pursuit of commercial maritime dominance, and the parallel Qatari and Turkish efforts to counterbalance Riyadh and Abu Dhabi. De Waal (2015) anchors the political economy of the region in a broader account of transactional patronage, in which foreign rents, arms, and diplomatic cover are traded for access and alignment. Turkish engagement has received sustained attention from Donelli (2018, 2021) and Sucuoğlu and Stearns (2020), who emphasise the bundled character of Ankara's presence, in which port operation, military training, education, and healthcare are pursued in combination rather than in sequence. Chinese engagement is charted by Alden and Large (2019) and Brautigam, Hwang, and Wang (2020), whose work clarifies both the scale of lending and the contested evidence on debt sustainability. Western security actors, particularly France, the United States, Japan, and Italy, maintain longstanding basing commitments that predate the Gulf and Asian expansion but now operate alongside them (Melvin, 2019). The International Crisis Group (2018, 2023, 2024) has documented how each of these actor categories has adjusted its posture in response to specific crises, producing a pattern of layered engagement in which older security commitments coexist with newer commercial and political priorities. This layering helps explain why the Horn's external patronage landscape has become more crowded without becoming more coordinated, and why competition among patrons has often produced counterproductive outcomes for the host states caught between them.

Port politics, sub-state leverage, and state formation in the Horn

A fourth and particularly important literature examines how port politics intersects with domestic state formation. Styan (2013, 2016) shows how Djibouti has pursued a small-state strategy in which competitive basing is used to maximise rents, stabilise the ruling coalition, and buy strategic autonomy. Menkhaus (2018), Ingiriis (2018), and Malito (2020) trace the Somali experience, in which port revenues and federal-regional bargaining over coastal assets have been central to political settlements since 2012. Hoehne (2015) and the International Crisis Group (2024) analyse the Somaliland case, where recognition-for-access bargaining has extended sub-state leverage well beyond what formal diplomatic status would suggest. Woldemariam (2018) and Bereketeab (2020) situate the Ethiopian and Eritrean trajectories in this wider coastal economy. The persistent critique developed by Professor Ahmed Samatar, that governance in the Horn has been hollowed out by elite transactions and external rents rather than by sustainable institution-building, provides a useful anchor for evaluating the long-term effects of externalised port politics on national cohesion (Samatar, 2016; Samatar & Samatar, 2022). Dahir and Sheikh Ali (2024) extend this critique to the Somali federal system, noting that port-adjacent revenue disputes are among the most consistent drivers of federal-regional friction.

Malito (2020) offers a particularly relevant contribution to this literature by tracing the relationship between state fragmentation and external intervention in Somalia, arguing that stabilisation strategies have consistently under-estimated the political costs of relying on foreign partners for core institutional functions. Ylönen (2022) complements this argument by mapping the escalating Gulf presence across the entire Horn region, noting that the concentration of external actors has shifted the locus of political contestation from domestic constitutional negotiation to foreign-mediated bargaining. Taken together, these four literatures illuminate particular dimensions of the Horn-Red Sea nexus but leave an integrated analytical frame under-developed. The regional security complex scholarship theorises the system but underspecifies the concession; the geoeconomics scholarship theorises the concession but underspecifies the regional system; the external-actors literature inventories patrons case by case; and the Horn state-formation literature illuminates domestic politics in individual countries. The gap addressed by this article is the absence of a cross-case reading in which port concessions are treated as the material substrate of a patronage regime that shapes sovereignty, fiscal politics, and sub-state leverage across the Horn as a whole.

3. Methodology

This study adopts a qualitative comparative case-study design oriented toward theory-building across a regional system. The unit of analysis is the port concession considered in its political context, and the cases are selected to cover the range of patron configurations, host-state conditions, and sub-state dynamics observable along the Horn of Africa coastline. Five focal cases are analysed in depth: Djibouti; Berbera under the Somaliland authorities; Mogadishu and the Somali federal government; Assab and Massawa under Eritrean jurisdiction; and Port Sudan under the Sudanese Armed Forces and during the ongoing civil war. Two cross-cutting themes, patron-client clustering with sub-state bargaining and fiscal extraversion with security-development trade-offs, are then developed to synthesise the cases.

Three bodies of evidence were consulted. The first consists of primary documents, including the texts of concession agreements that have been placed in the public domain, constitutional and statutory provisions governing coastal access and revenue, ministerial

gazettes, official communiqués from port operators such as DP World, China Merchants, Albayrak, and Bolloré-MSC, and reports of the United Nations Security Council Panel of Experts on Somalia (United Nations Security Council, 2023). The second consists of policy briefings and analytical reports from the Chatham House, the International Crisis Group, the Clingendael Institute, the Stockholm International Peace Research Institute, and the Institute for Security Studies. The third consists of peer-reviewed scholarship published between 2015 and 2025, covering regional security complexes, geoeconomics, and Horn of Africa state-formation debates.

The analytic strategy proceeded in three steps. A structured case profile was compiled for each focal port, documenting the host authority, principal foreign operator or financier, basing arrangements, reported financial parameters, and relevant political context. The profiles were then coded thematically along three axes: patron configuration, meaning the identity and motivations of the external actors involved; local political settlement, meaning the domestic political arrangement into which the concession is embedded; and fiscal and security externality, meaning the distributional and security consequences generated by the concession. Cross-case comparison then identified patterns that cut across specific patrons or hosts, producing the two themes that structure the latter part of the analysis.

Several limitations require acknowledgement. Concession terms are frequently confidential, which means that figures reported in this article are drawn from credible secondary sources rather than from primary contractual texts. Events in the Horn have moved rapidly during the research period, with the outbreak of the Sudanese civil war in April 2023, the 2024 Ethiopia–Somaliland memorandum, and the Houthi Red Sea campaign all altering the empirical landscape. To manage this volatility, the analytical cutoff is set at April 2025. The study relies exclusively on open-source material and does not include primary interviews, which constrains claims about intent on the part of specific policymakers. No human subjects were engaged, and the research presents no ethical complications beyond the ordinary standards of source attribution and fair representation.

The validity of the comparative approach rests on careful case selection. The five focal cases cover the principal patron configurations present in the Horn, represent the range of host-state conditions from consolidated small-state to fragmented civil-war administration, and include both recognised sovereign and contested sub-state hosts. Secondary cases referenced throughout the analysis, such as Bosaso on the Somali northern coast and Lamu on the Kenyan northern coast, are treated as illustrative rather than as focal because their concession structures either track one of the focal patterns or remain in early stages of implementation. The resulting case mix is therefore sufficient to support claims about regional patterns while recognising that further cases would strengthen particular sub-claims.

4. Analysis and Findings

Djibouti: the condensed basing archipelago

Djibouti exemplifies the extreme case of the Red Sea concession regime, in which a small coastal state has converted its geography into a portfolio of parallel basing relationships. The Doraleh Container Terminal, operated between 2006 and 2018 by DP World and subsequently transferred to management linked to China Merchants, anchors a cluster that includes the United States Camp Lemonnier, the French forces permanent base, Japan's only overseas military facility, an Italian support element, and the Chinese People's Liberation Army Support Base inaugurated in 2017 (Styan, 2016; Melvin, 2019). The density of actors within a single state, and often within a radius of fewer than thirty kilometres, is without parallel on the African continent.

The political economy of this archipelago has centred on rent extraction and ruling-coalition maintenance. Basing fees, port revenues, and concession-linked infrastructure financing have underwritten the fiscal position of the Guelleh administration and have provided a measure of strategic autonomy that a country of roughly one million inhabitants would not otherwise command (Styan, 2013). However, the diversification of patrons has generated its own fragilities. The dispute between the Djiboutian government and DP World over the cancellation of the Doraleh concession in 2018, and the subsequent rulings against Djibouti in international arbitration, illustrated the legal and reputational exposure that arises when competitive infrastructure diplomacy outruns domestic institutional capacity (Meester et al., 2018). This has led subsequent concession negotiations to be structured with greater attention to legal framing, although opacity remains a persistent feature.

Djibouti's experience establishes a baseline pattern. The state has captured substantial rents and has avoided overt capture by any single patron, yet the very multiplicity of foreign installations has narrowed the space for genuine policy pluralism. The political settlement has become structurally dependent on the continuation of rivalry; any normalisation among the external patrons would compress the bargaining leverage that sustains the current fiscal equilibrium. In this respect, Djibouti resembles less a neutral logistical hub than a carefully managed arena in which the ruling elite derives legitimacy from the competitive attention of outside powers. The socio-economic consequences have been mixed. Port-adjacent infrastructure, including the Addis Ababa–Djibouti standard-gauge railway, has generated employment and transit revenue, yet broader human development indicators remain below the level that the scale of external investment would suggest (Melvin, 2019). This gap between infrastructure density and developmental outcome anticipates a pattern that recurs in the other cases.

Berbera and the Somaliland opening

Berbera illustrates how port concessions can convert contested sub-state authority into diplomatic capital. The 2016 agreement between DP World and the Somaliland administration, which granted a thirty-year concession over the port, was followed in 2017 by the inclusion of Ethiopia as a nineteen per cent stakeholder, and subsequently by the construction of a new container terminal and a parallel Emirati military facility that was later reconfigured as a civilian asset (Cannon & Rossiter, 2018). The Ethiopian stake was subsequently rescinded in 2022 after Addis Ababa failed to meet the deal's conditions, with the shares redistributed between DP World, which now holds approximately sixty-five per cent, and the Somaliland Port Authority, which retains the remainder. The concession nonetheless bundled commercial operation, landlocked access for Ethiopia, and a security footprint for the United Arab Emirates into a single transaction whose components are not easily separable.

The political consequences have been far-reaching. The Somaliland authorities have used the concession as a diplomatic credential, arguing that their capacity to deliver a complex infrastructure partnership demonstrates the governance maturity that underpins their recognition claim (Hoehne, 2015). The Somali federal government has repeatedly contested the agreement on constitutional grounds, arguing that only a recognised sovereign may alienate coastal assets or host foreign forces (United Nations Security Council, 2023). However, the federal objection has been largely symbolic. Berbera continues to operate under the 2016 terms, and the January 2024 memorandum of understanding between Ethiopia and Somaliland, under which Ethiopia would lease a twenty-kilometre stretch of coastline near Saylac in the Awdal region for a prospective naval facility, with continued commercial use of Berbera for imports and exports and the prospect of Ethiopian recognition of Somaliland, has escalated the dispute into an inter-state crisis in which the African Union, the Intergovernmental Authority on Development, and the Arab League have become active interlocutors (International Crisis Group, 2024).

The Berbera case illustrates the structural effect that port concessions can exert on questions of sovereignty. By substituting commercial partnership for diplomatic recognition, Somaliland has extracted the practical benefits of statehood without triggering the diplomatic backlash that a formal declaration would generate. For external patrons, the arrangement has delivered access at a fraction of the political cost that a sovereign-to-sovereign agreement would entail. The arrangement nonetheless remains structurally unstable, because it depends on the continuing willingness of the Somali federal government to tolerate an arrangement that a coherent application of the 2012 Provisional Federal Constitution would prohibit. Professor Samatar's analysis of Somali governance warns that such de facto accommodation, sustained by foreign commercial interest rather than by domestic constitutional agreement, erodes the legitimacy of federal institutions and entrenches the clan-based political culture that federalism was designed to transcend (Samatar & Samatar, 2022). The Berbera case therefore serves as a cautionary illustration for any Horn state seeking to monetise its coastline in the absence of a settled internal political order.

Mogadishu and the Turkish model

The Mogadishu case presents a contrasting model of patronage, in which a single external actor has bundled infrastructure operation, security training, and social service provision into a comprehensive partnership with the federal government. Since 2014, the Turkish firm Albayrak has operated the Port of Mogadishu under a twenty-year concession, and a parallel arrangement covers operation of Aden Adde International Airport (Donelli, 2018; Sucuoğlu & Stearns, 2020). The Turkish Armed Forces' Somalia Task Force base, known as TURKSOM, inaugurated in 2017, constitutes the largest Turkish overseas military training facility and has delivered instruction to successive cohorts of Somali National Army personnel. Turkish hospitals, schools, and development projects operate alongside these hard-power instruments and together generate a dense, politically visible bilateral relationship.

The Mogadishu partnership has strengthened the bargaining position of successive federal administrations vis-à-vis competing patrons and sub-state authorities. Because Turkey has supplied both port revenues and trained security personnel without demanding federal-regional fiscal reform, Turkish engagement has reduced the urgency of constitutional negotiations between Villa Somalia and the federal member states (Ingiriis, 2018; Dahir & Sheikh Ali, 2024). However, this convenience has come at a cost. Critics, among whom Professor Ahmed Samatar is prominent, have argued that a governance model sustained by a single external patron reproduces the patterns of dependency that have historically weakened Somali state institutions, and that the absence of diversified partnerships limits the political learning that stronger governance requires (Samatar & Samatar, 2022).

Mogadishu therefore occupies a middle position between Djibouti's portfolio strategy and Somaliland's recognition-for-access bargain. The federal government has secured a patron capable of delivering across commercial, security, and social dimensions, yet it has done so by accepting a degree of bilateral entanglement that constrains the autonomy it seeks to project. The long-term viability of the model depends on whether the federal institutional framework can absorb the political economy generated by Turkish engagement without becoming structurally dependent on its continuation. The absence of transparent revenue-sharing between Villa Somalia and the federal member states, a concern repeatedly flagged by the United Nations Panel of Experts, adds a further complication, because federal-regional friction over Mogadishu port and airport revenues has been among the most consistent drivers of political instability during the

federal period (United Nations Security Council, 2023; Dahir & Sheikh Ali, 2024).

Assab and Massawa: Eritrea between isolation and lease

The Eritrean cases complicate the portfolio and single-patron models by introducing a pattern of episodic leasing interspersed with diplomatic isolation. From 2015 onward, the Emirati armed forces operated from Assab in support of the Saudi-led coalition in Yemen, reconstructing the port, runway, and adjacent facilities under a reported thirty-year lease arrangement (Meester et al., 2018; International Crisis Group, 2018). The Emirati drawdown was announced in mid-2019 alongside the broader Emirati withdrawal from Yemen, and the dismantling of the principal installations continued through early 2021, leaving behind a modernised infrastructure and an Eritrean state with intensified claims on Red Sea strategic relevance. Massawa, Eritrea's historic principal port, has attracted a more tentative pattern of overtures from Egyptian, Russian, and Chinese interlocutors in the wake of the 2018 rapprochement with Ethiopia, although no single concession has yet matched the Emirati intensity at Assab.

The Eritrean experience illustrates how a state with constrained diplomatic relationships can nonetheless extract strategic rents through targeted leasing. The Assab arrangement monetised Eritrea's geography without requiring the institutional reform that a more conventional investment partnership would demand (Bereketeab, 2020). However, the 2020–2022 Tigray conflict, in which the Eritrean Defence Forces operated alongside the Ethiopian National Defence Force, recast the strategic meaning of the Eritrean coastline and reintroduced political risk for any external actor considering a long-term presence (Woldemariam, 2018; International Crisis Group, 2023). This has led subsequent outreach to remain cautious, with Egyptian security engagement and intermittent Russian interest articulated more through consultations than through contractual commitment.

The Eritrean pattern demonstrates that the absence of a durable concession need not preclude participation in the Red Sea regime. A state that can host, withdraw, and re-host external forces on short timescales has its own form of leverage, although this leverage is predicated on a degree of isolation and authoritarian concentration that few other Horn states can replicate or would wish to. The resulting equilibrium is fragile, contingent on continued regional instability, and unlikely to deliver the long-horizon infrastructure benefits that a more institutionalised concession would provide. Eritrea's coastline, stretching approximately 1,200 kilometres along the southern Red Sea, retains latent strategic value that has attracted renewed Egyptian and Russian attention since the Tigray conflict, although the political conditions for converting that attention into durable agreements remain uncertain. The Eritrean case thus represents a distinctive equilibrium within the Horn regime rather than an anomaly, and the intermittent nature of its participation is itself an instructive variation that other Horn states, particularly those with stronger civil societies and more demanding parliamentary politics, would struggle to emulate.

Port Sudan under fragmentation

The Port Sudan case exemplifies how rapidly Red Sea concessions can become hostage to internal political rupture. Prior to April 2023, Port Sudan was the subject of converging interest from Russia, which negotiated a naval logistics facility agreement in 2020 that was subsequently ratified but repeatedly delayed; from the United Arab Emirates, whose DAL Group partnership with the Sudanese Ports Corporation envisaged a major capacity expansion at Abu Amama; and from Saudi Arabia and Egypt, whose security concerns centred on the corridor's role in Red Sea patrol and in Gulf-to-Mediterranean logistics (International Crisis Group, 2023; Melvin, 2019). The outbreak of war between the Sudanese Armed Forces and the Rapid Support Forces suspended these arrangements and transformed Port Sudan into the de facto seat of the Sudanese Armed Forces administration.

The wartime political economy has reconfigured the patronage landscape. The Sudanese Armed Forces have drawn closer to Egypt and Saudi Arabia, whose security preferences align with the integrity of the Sudanese state. The Rapid Support Forces have drawn sustenance from Emirati channels documented in United Nations reports and in investigative journalism, although the precise modalities remain disputed (International Crisis Group, 2023). The Russian naval agreement, although technically still on the table, has been de facto suspended by the inability of either party to deliver the administrative and security conditions that the agreement presupposed.

The Sudanese experience underscores the fragility of the concession regime under conditions of internal fragmentation. Concessions that appeared commercially bounded prior to 2023 have become entangled in a civil war whose external patronage patterns now cut across the very Red Sea rivalries that originally generated the concessions. Addressing this volatility requires a nuanced approach that recognises the interdependence of concession stability and internal political settlement, rather than treating port agreements as autonomous economic instruments. The case also demonstrates that the patron-clustering pattern observable elsewhere in the Horn can invert under conditions of internal collapse, with external actors that were previously engaged with a central government now supporting rival factions whose relative strength will determine the shape of the post-war concession regime.

Patron-client clustering and sub-state bargaining

The case evidence supports a finding that patron-client clustering has become a structural feature of the Horn port regime, rather than a contingent artefact of particular deals. Four configurations recur across the cases. A Gulf-Emirati cluster combines DP World

commercial operation with basing and security training, visible at Berbera, previously at Assab, and in an attenuated form at Port Sudan. A Gulf-Saudi-Egyptian cluster prioritises state integrity and Red Sea patrol, visible in Sudan and in the diplomatic engagement with Djibouti and Eritrea. A Turkey-Qatar cluster bundles commercial operation with soft power and military training, visible primarily at Mogadishu. A China cluster concentrates on long-horizon commercial concessions paired with a single strategic base, visible at Djibouti. A Western cluster, centred on the United States, France, Japan, and Italy, maintains Djibouti-anchored security operations with limited commercial exposure.

This clustering has produced a new form of sub-state bargaining. Somaliland has extracted a commercial partnership, Ethiopian naval access, and an Emirati security footprint through a single coastal concession, converting contested authority into diplomatic leverage (Hoehne, 2015; International Crisis Group, 2024). Puntland has used port revenues at Bosaso to negotiate its fiscal position with the federal government and has hosted episodic foreign counterterrorism cooperation without waiting for federal authorisation (Menkhaus, 2018; United Nations Security Council, 2023). Professor Samatar has argued that such sub-state bargaining undermines the meritocratic and constitutional foundations of Somali governance, substituting clan-based and regional patronage for national institutional development (Samatar & Samatar, 2022). The comparative cases bear out this concern in a regional setting. The more intensively patrons compete over coastal access, the stronger the bargaining position of sub-state authorities becomes, and the weaker the federal or central state's capacity to articulate a coherent national policy. The pattern is not confined to Somalia; comparable dynamics are observable in the Sudanese periphery, where the Rapid Support Forces have leveraged external patronage ties to destabilise the central state, and in the Ethiopian periphery, where Tigrayan and Afar authorities have used Red Sea access debates to press their respective claims against Addis Ababa (Woldemariam, 2018; International Crisis Group, 2023). The generalisable finding is that concession-led patronage consistently empowers the political units closest to the coast, regardless of their formal constitutional standing, and consistently complicates the efforts of central governments to assemble a unified foreign policy.

Fiscal extraversion and security-development trade-offs

The second cross-cutting finding concerns the fiscal and security economy of the concession regime. Port revenues, basing fees, and concession-linked infrastructure have become central to the fiscal positions of Djibouti, the Somaliland authorities, the Somali federal government, and the Sudanese Armed Forces administration, accounting in several cases for a large share of non-aid public revenue (Vertin, 2019; Dahir & Sheikh Ali, 2024). This extraversion has reduced the political pressure for domestic fiscal reform and has enabled ruling coalitions to sustain themselves without the broader institutional consolidation that a domestically financed state would require. However, the same arrangements have imported security infrastructure, surveillance capabilities, and basing requirements whose development externalities are difficult to quantify. Roads, electricity generation, and housing associated with port expansion have generated tangible localised benefits, yet the concessions have rarely delivered the broader service coverage or employment diversification that coastal populations need.

The result is a widening gap between the security and trade dimensions of the concession regime and the socio-economic development outcomes that national political discourse continues to foreground. This disjunction is consequential because it reshapes the incentives facing ruling coalitions. When the core fiscal base is sourced from external concessions, the political return on broad-based service delivery diminishes relative to the return on securing the next patron agreement. Parliamentary scrutiny of concession terms has been uneven across the cases; oversight institutions such as auditors-general and public accounts committees have rarely had access to the documents they would need to perform their function. Addressing this trade-off requires that concession design incorporate explicit development obligations, transparent revenue-sharing, and oversight mechanisms that have, to date, been largely absent from Horn port agreements.

(Figure 1 and Table 1 appear below.)

Figure 1. Concession-patron map of the Horn of Africa coastline (2015-2025)

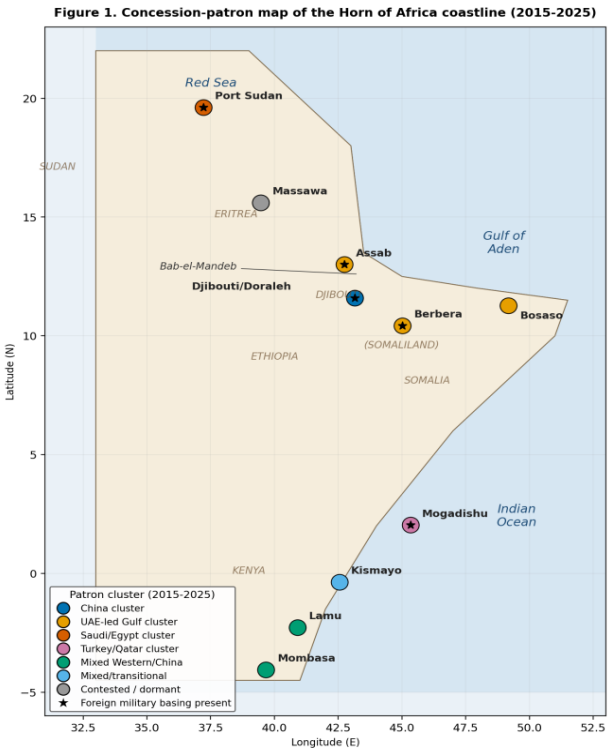


Figure 1. Concession-patron map of the Horn of Africa coastline (2015-2025). Colour-coded markers indicate dominant patron cluster; star icons denote ports with current or former foreign military basing. Compiled by the author.

Table 1. Horn of Africa port concessions and external patrons, 2015-2025.

Port	Host authority	Lead operator / financier	Military base linkage	Concession year	Patron cluster
Djibouti (Doraleh)	Djibouti	China Merchants (post-2018)	USA, France, Japan, Italy, China PLA	2006 / 2018	China + Western
Berbera	Somaliland (contested)	DP World ~65% / Somaliland PA ~35%	Former UAE facility, reconfigured	2016 (Ethiopia stake 2017, rescinded 2022)	UAE-Gulf
Mogadishu	Somali federal government	Albayrak (Turkey)	TURKSOM (Turkey)	2014	Turkey-Qatar
Bosaso	Puntland (federal member state)	P&O / DP World legacy	Intermittent foreign CT cooperation	2017 (renegotiated)	UAE-Gulf
Assab	Eritrea	UAE armed forces (lease)	UAE base 2015-, drawdown 2019, dismantling through 2021	2015	UAE-Gulf (dormant)
Massawa	Eritrea	Prospective (EG/RU/CN outreach)	None confirmed	Pending	Contested
Port Sudan	Sudan (SAF administration)	Sudanese Ports Corp. + DAL	Russia naval logistics (stalled)	2020 (Russia agreement)	Saudi/Egypt vs UAE
Lamu (LAPSSET)	Kenya	Kenya Ports Authority + mixed	None	2021 (first berths)	Mixed Western/China
Mombasa	Kenya	Kenya Ports Authority (with China loans)	None	Ongoing	Mixed Western/China

Note. Compiled by the author from sources cited in Section 4. "Patron cluster" denotes the dominant external actor configuration; several ports feature secondary actors not shown.

5. Discussion

The comparative analysis supports the argument that Horn of Africa port politics now operates as an integrated patronage regime rather than as a set of discrete bilateral transactions. The regime is sustained by a combination of rivalry among external patrons, geographic indivisibility of the coastline, and fiscal dependency on the part of Horn states, each of which reinforces the others. External rivals are compelled to pursue competitive access because the alternatives would cede strategic ground to a competitor. The coastline's geography means that access for one patron has implications for the security posture of its rivals, producing a system in which bilateral deals generate multilateral consequences. Host states, operating on narrow fiscal bases, find the bargaining leverage provided by competition attractive in the short term even as it constrains their institutional development in the longer term (de Waal, 2015; Verhoeven, 2018).

This framing generates a theoretical contribution to the regional security complex literature. Buzan and Wæver (2003) conceived of regional security complexes primarily in relational terms, emphasising the interaction patterns among states in a given geographic cluster. The Horn-Red Sea evidence suggests that infrastructure concessions can function as the material substrate of such complexes, anchoring patterns of cooperation and conflict in durable physical assets that outlast particular governments or crises. Wigell's (2016) taxonomy of geoeconomic strategies—neo-imperialism, neo-mercantilism, hegemony, liberal institutionalism—can be observed simultaneously in the Horn, with the Emirati pattern closest to neo-mercantilism, the Chinese pattern closer to hegemonic infrastructure provision, and the Western pattern closer to liberal institutionalism in security form. The coexistence of these strategies in a single regional system, rather than their alternation across systems, is a feature that the existing literature has not fully captured. The implication is that geoeconomic theory may need to accommodate a model of layered strategies, in which distinct patrons operate according to different logics within a shared regional space, producing outcomes that none of the individual logics would predict in isolation.

The findings also extend the literature on African state-formation and political settlements. Where earlier accounts have emphasised the role of aid conditionality and donor-driven governance reform, the Horn evidence highlights a distinct dynamic in which commercial concessions and basing arrangements

substitute for the fiscal and institutional functions that aid and taxation performed in earlier periods. Professor Samatar's critique of dependency and elite transaction applies with renewed force to this configuration (Samatar, 2016; Samatar & Samatar, 2022). The coastal concession has become a mechanism through which ruling coalitions can secure revenue without the political costs of taxation and through which sub-state authorities can secure diplomatic recognition without the costs of conventional state-building. Both outcomes weaken the incentives for the inclusive, meritocratic institution-building that the Horn's development trajectory ultimately requires.

Several policy implications follow. A negotiated Red Sea compact, in which major patrons accept disclosure norms for concession terms, explicit safeguards for host-state fiscal transparency, and coordination with African regional bodies, would reduce the most destabilising features of the current regime without requiring patrons to abandon their commercial or security interests. The African Union Maritime Strategy and the Intergovernmental Authority on Development offer institutional platforms through which such norms could be articulated, although their operationalisation has thus far lagged the pace of concession activity (Melvin, 2019; Vertin, 2023). Somali federal-regional reform of port revenue arrangements, a subject on which the 2012 Provisional Federal Constitution remains ambiguous, would address a central source of domestic instability that external concessions have tended to amplify (Dahir & Sheikh Ali, 2024). Recognition of Somaliland, by contrast, would require a separate diplomatic process whose dimensions lie beyond the scope of this article.

Within the Somali federal context specifically, the findings imply three priorities that align with the governance agenda developed by Professor Ahmed Samatar over successive decades. The first is the establishment of a transparent fiscal federalism framework that delineates federal and regional revenue entitlements over coastal infrastructure, reducing the discretionary space in which external patrons have been able to operate. The second is the institutionalisation of a national maritime strategy that coordinates port development across federal member states, so that concessions are negotiated from a position of collective national interest rather than of competitive regional initiative. The third is the creation of a federal-regional dispute-resolution mechanism with binding authority over coastal access, a reform that would address the constitutional ambiguity that currently enables the Berbera-type bargain to proliferate (Samatar & Samatar, 2022; Dahir & Sheikh Ali, 2024). Each of these reforms would narrow the fiscal extraversion that the current regime encourages and would re-centre political authority in the constitutional institutions that federalism was intended to establish.

The findings must be read alongside the limitations noted in Section 3. The opacity of concession terms constrains the precision with which fiscal claims can be made. The rapid evolution of events during the research period means that some of the empirical material may shift before publication, particularly with respect to Sudan and the Red Sea shipping corridor. However, the analytical framework developed here is robust to such shifts because it emphasises the structural features of the regime rather than the details of particular deals. The identification of patron clusters, the elevation of sub-state leverage, and the fiscal-security trade-off are features that persist across the case evidence and would survive significant changes in specific concessions.

A further implication concerns the intersection of the Horn-Red Sea regime with broader global trends. The rise of state capital, the weaponisation of commercial infrastructure, and the renewed interest of major powers in African coastal access suggest that the patterns observed in the Horn are likely to recur along other African coastlines (Babić, 2023; Ulrichsen, 2020). Comparative work on the Gulf of Guinea, the Swahili coast, and the Mediterranean-African interface would help clarify whether the Horn represents a distinctive case or an early instance of a wider trajectory. In either reading, the Horn-Red Sea evidence underscores the need for an analytical vocabulary that treats concessions as political settlements, rather than as commercial transactions, and for a policy framework that recognises the cumulative regional consequences of bilateral deals.

6. Conclusion

This article has examined how Red Sea rivalry has restructured Horn of Africa port politics, identified the patron and sub-state configurations that have emerged, and assessed the consequences for sovereignty and socio-economic development. Drawing on qualitative document analysis across five focal ports between 2015 and 2025, the study has argued that port concessions now function as an integrated patronage regime rather than as a set of bilateral transactions. The regime is sustained by external rivalry, coastal indivisibility, and fiscal extraversion, and it produces three durable effects that cut across the case evidence. First, patron-client clustering has taken hold, with Emirati, Saudi-Egyptian, Turkish-Qatari, Chinese, and Western configurations now structuring the foreign policy option sets of Horn states. Second, sub-state bargaining has become a structural feature of the regime, with Somaliland and Puntland extracting leverage that would have been unavailable in a more conventional sovereign-to-sovereign order. Third, fiscal extraversion has widened the security-development gap, enabling ruling coalitions to sustain themselves without the institutional consolidation that socio-economic progress ultimately requires.

The contribution of the study is to reframe Horn of Africa port politics as a geoeconomic regime, to extend regional security complex theory by identifying infrastructure concessions as its material substrate, and to propose a negotiated Red Sea compact that would re-embed concessions within sovereign fiscal and legal

frameworks. The study also complements the literature on Somali federalism and governance by situating the federal-regional revenue debate within the wider political economy of coastal access. For Professor Ahmed Samatar's long-standing concern that Somali governance risks hollowing out under the weight of external rents and elite transactions, the Red Sea regime confirms both the diagnosis and the urgency of the prescription (Samatar & Samatar, 2022).

The findings should be read with due acknowledgment of the study's limitations. The evidence base is open-source, the analytical cutoff is April 2025, and several of the cases remain in rapid motion. Two avenues for future research follow. The first is comparative work that examines whether similar patterns obtain along the Gulf of Guinea, the Swahili coast, and other African littorals where foreign port investment has accelerated. The second is micro-empirical research on port revenue flows, ideally drawing on customs data, parliamentary records, and freedom-of-information disclosures, that would test the fiscal-extraversion argument with greater precision. Addressing these questions will require a nuanced approach that combines regional political economy, fiscal analysis, and the study of sub-state politics, and that recognises the coastline not as a residual category but as the central arena in which Horn of Africa governance is now being renegotiated. The stakes are consequential. If the concession regime documented here continues to evolve without corrective intervention, the Horn risks entering a prolonged period in which externally funded infrastructure coexists with domestically enfeebled institutions, producing a configuration that neither external partners nor Horn populations would choose if the cumulative costs were fully visible to them.

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ASSESSING THE IMPACT OF OIL AND GAS EXPLORATION ON ENVIRONMENT AND COMMUNITY LIVELIHOOD IN ZANZIBAR

Maryam Seif Juma*, Abdul A. J. Mohamed, Miza A. Kombo & Dr Omar Juma Ali

Abstract

The study assessed the environmental and socio-economic impacts of oil and gas exploration on communities in Zanzibar Fifty participants from six stakeholder groups including Ministry responsible for Water, Energy and Minerals, the Department of Environment, Zanzibar Petroleum Regulatory Authority (ZPRA), Local Oil Companies, Local Government and Local Communities were purposively selected. Data were collected through interviews, field observations and structured questionnaires and analyzed using SPSS software for descriptive statistics and thematic qualitative analysis. Findings indicate that exploration activities, particularly seismic surveys and drilling, can cause coastal terrestrial ecosystem degradation, loss of aquatic species, air and water pollution, soil disturbance and disruption of fishing and agricultural livelihood. Local communities were disproportional affected, highlighting the need for structural community engagement, environmental Impact Assessment (EIA) monitoring and benefit sharing mechanisms to mitigate negative impacts. Thus, the analysis observed that local communities are more affected by oil and gas exploration activities.

Keywords: *Oil and Gas Exploration, environmental impacts, Community Livelihoods, Zanzibar.*

Introduction

Oil and gas exploration is increasingly considered a strategic for economic diversification and energy security in many countries, including Zanzibar. The sector has potential to contribute significantly to national revenue, employment and economic resilience. In Zanzibar the oil and gas is still in its exploration stage, making it an important focus for both policy and development planning particularly in the context of the Blue Economy strategy (Khatib, 2022).

While oil and gas development can drive economic growth, it is also poses substantial environmental and social challenges. Exploration activities are the exploration seismic surveys, drilling and appraisal can disrupt costal and terrestrial ecosystem, damage biodiversity and impact livelihoods, particularly for communities dependent on fishing, agriculture and tourism (Mukmin, 2021, Maro, 2008, Elum et al., 20216). Environmental pressure associated with exploration include habitat loss, water and air pollution, noise and light disturbance and increased risk to health and local infrastructure (Kamara et al, 2019, Amoasah, 2016).

Zanzibar oil and gas sector is governed by upstream and downstream activities. Upstream operations include licensing, exploration, appraisal and extraction, while downstream involves processing, storage and distribution of petroleum products (Union, 2010, Mukmin, 2021). Many potential exploration areas are marine based, intersecting with fisheries, tourism and other costal livelihoods, necessitating careful regulation and stakeholder engagement to minimize negative impacts (Khatib, 2022).

Given the infancy of the sector, there is a pressing need to assess the environmental and socio- economic of a oil and gas exploration on Zanzibar communities. This study aims to provide evidence to inform policy, planning and community engagement strategies that balance economic opportunist with sustainable development and environmental protection.

Research Methodology

Research Design

A mixed methods research design was employed to comprehensively assess the environmental and social impacts of oil and gas exploration on Zanzibar communities. The qualitative approach used open-ended interviews and field observation to explore perceptions, experiences and environmental impacts of oil and gas exploration in depth. Thematic analysis was applied to identify recurring patterns and key themes from qualitative data. The quantitative technique collected structured survey data on community livelihood, which were analyzed using descriptive statistics in SPSS (Version 20), to quantify the prevalence and magnitude of observed impacts. Integration both approaches allowed for triangulation of findings enhancing the reliability and validity of the results.

Area of the Study

The study was conducted on Zanzibar (from January to March, 2024) focusing on West Urban Region, Kama in Unguja and Tundauwa in Pemba Island. These areas were selected due to the presence of oil and gas related institutions and the significance of local livelihoods including agriculture, fishing and tourism which potentially affected by exploration activities.

Study Population and Sampling

The target population for the study was categorized into six key stakeholders. Ministry Responsible for Oil and Gas, Zanzibar Petroleum Regulatory Authority, Department of Environment, Local Oil Company (GAPCO, UP, PETRO), local government and the Community of Kama for Unguja and Tunauwa at Pemba Island). To ensure representativeness across stakeholders, purposive sampling was used to select participants with direct knowledge or experience related to oil and gas exploration. Snowball sampling was further employed to identify additional participants recommended by initial respondents. A total of 50 participants were included, providing diverse perspectives from institutional, corporate and community stakeholders. The sample size was deemed sufficient for exploratory analysis and qualitative depth, as the study aimed to capture experiences and perceptions rather than to generate statistically to the entire population.

Data Collection

Data for this study were gathered through three complementary methods. Structured questionnaires were administered to quantify the socio-economic impacts of oil and gas exploration on community livelihood. In addition, open ended interviews were conducted to gain deeper insights into environmental impacts and community perceptions of exploration activities. Field observations were also carried out to document visible ecological disturbance and infrastructure changes occurring in the study area. Together, these methods provided a comprehensive understanding of both the measureable and experimental dimensions of the impacts on local communities.

Data Analysis

Qualitative data were analyzed using SPSS version 20, applying descriptive statistics (Frequencies, percentages) summarized patterns in livelihood impacts. Qualitative data were analyzed using thematic analysis in Microsoft Excel 2016, coding responses into key themes such as ecosystem degradation, livelihood disruption and community perception of exploration activities. Findings from both datasets were integrated to provide a holistic understanding of the socio-ecological and economic effects of oil and gas exploration. The results of the data were presented using tables and narrative descriptions, linking quantitative prevalence with qualitative insights to contextualize the impacts on Zanzibar Communities.

Results and Discussion

Impacts on Community Livelihoods

Across all stakeholder groups, respondents reported that seismic surveys (airgun shots), drilling activities, and associated ground vibrations negatively affected livelihood activities. These impacts included damage to residential houses, disruption of fishing and seaweed farming, damage to fishing nets, loss of vegetation and crops, and stress-related health effects.

The physical impacts observed during exploration translated into tangible socio-economic consequences for households. House damage required families to divert scarce financial resources toward repairs, thereby reducing spending on food, health, and education. This weakened household economic resilience and heightened vulnerability to future shocks. “Net damage” emerged as a critical pathway affecting fishing households. Fishermen reported losing 2–7 working days to repair or replace damaged nets, representing immediate income loss. Replacement nets are costly relative to local earnings, further straining household budgets. Additionally, the temporary decline in fish availability during seismic operations reduced catch volumes, intensifying income instability and food insecurity.

Exclusion from productive fishing grounds during seismic surveys increased operational costs because fishermen were forced to travel longer distances, consuming more fuel. Clearing vegetation for access trails disrupted soil fertility and reduced crop yields, limiting agricultural productivity and affecting food security. Residents also reported stress and “shock” from seismic noise, which corresponded with reduced work productivity, especially among older individuals. These interconnected impacts illustrate how exploration activities affect both immediate income and long-term livelihood sustainability.

Table 1. Impacts of Oil and Gas Exploration on Communities

Group of Respondents	Yes	No	Percentage (%)
MWEM	5	0	100
ZPRA	5	0	100
DE	5	0	100
Local Oil Companies	5	2	71.4
Local Government	5	3	62.5
Local Communities	16	4	80

These findings align with studies in coastal Africa demonstrating that seismic survey noise, habitat disturbance, and restricted access zones disrupt fishing productivity and household well-being (Amoasah, 2010; Elum et al., 2016). The mechanisms identified income loss, reduced ecological productivity, health impacts, and increased expenditure demonstrate clear causal linkages between exploration activities and socio-economic vulnerability in Zanzibar’s coastal communities.

Environmental Impacts

Respondents reported significant environmental effects associated with exploration activities, including marine ecosystem disturbance, pollution, and land degradation. Marine impacts included the loss of fish species, coral reef damage, and temporary cessation of diving activities. Pollution comprised increased carbon emissions, water contamination from drilling fluids, and accidental spills. Land degradation involved vegetation removal, soil erosion, and coastal disturbance.

Table 2. Environmental Impacts of Oil and Gas Exploration

Group of Respondents	Yes	No	Percentage (%)
MWEM	5	0	100
ZPRA	5	0	100
DE	5	0	100
Local Oil Companies	4	3	57
Local Government	5	3	62.5
Local Communities	13	7	65

Environmental impacts were primarily linked to seismic noise, drilling, chemical use, and land clearing. Disturbance to marine habitats, especially coral reefs, threatens long-term fish productivity, directly affecting household income stability. These results are consistent with other African studies demonstrating that seismic surveys reduce marine biodiversity and alter ecosystem functioning (Kamara et al., 2019).

Conclusion

Oil and gas exploration in Zanzibar has significant socio-environmental impacts, particularly affecting communities dependent on fishing, agriculture, and coastal resources. Physical disturbances, including seismic surveys, drilling operations, and land clearance, have resulted in damage to houses, loss of fishing nets, disruption of fishing and seaweed farming, reduced agricultural productivity, and stress-related health effects. These impacts reduce household income and food security in the short term while threatening long-term livelihood sustainability. Environmental consequences, such as marine ecosystem disturbance, pollution, and land degradation, further exacerbate community vulnerability and compromise the resilience of coastal ecosystems. Therefore, mitigating these socio-environmental impacts requires active community involvement and structured interventions.

Recommendations

To enhance community engagement and ensure sustainable oil and gas exploration, several mechanisms are recommended. Communities should have formal representation in Environmental Impact Assessment (EIA) monitoring through membership on environmental committees, which would enable joint inspections of exploration sites and access to publicly disclosed data, such as seismic schedules, and water and soil quality information. Legally binding benefit-sharing agreements should be established to compensate households for damage to fishing nets, boats, crops, and houses, with a portion of exploration revenues allocated to community development initiatives. Community members should actively participate in designing and monitoring these compensation schemes to ensure fairness and transparency.

A transparent and accessible grievance redress mechanism (GRM) should be developed and jointly managed by government agencies, oil companies, and community leaders. This system would include clear timelines and documentation procedures to ensure accountability for any concerns related to exploration activities. Livelihood restoration and safety programs are also essential, including training in alternative fishing gear, temporary income diversification during exploration operations, and awareness campaigns addressing seismic operations, health and safety risks, and protective measures. Finally, periodic community consultations, such as regular town-hall meetings before, during, and after exploration phases, should be conducted to give residents decision-making roles in site selection, operational planning, and monitoring, thereby ensuring their voices actively influence project implementation.

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SOCIO-POLITICAL ANALYSIS OF INDIVIDUAL AND COLLECTIVE ARMAMENT IN TÜRKIYE

Dr Serhat Akincioglu*

ABSTRACT

This study examines the phenomenon of individual and collective armament in Türkiye through socio-political, cultural, and psychological dimensions. Drawing on Max Weber's concept of the "monopoly on the legitimate use of violence," it analyzes the erosive effects of the rise in civilian armament on the modern state structure. Utilizing theoretical frameworks such as the "Security Dilemma," "Hegemonic Masculinity," and "Cultivation Theory," the study argues that armament is not merely a security requirement but also a status symbol and an expression of cultural identity. Data indicates that there are approximately 25 million firearms in Türkiye, 90% of which are estimated to be unlicensed. By investigating triggering factors such as distrust in the judicial system, representations of violence in the media, and the digitalized illegal arms market, the article concludes with a proposal for a holistic national disarmament strategy and fundamental legal reforms to ensure social peace.

Keywords: *Individual Armament, Hegemonic Masculinity, Security Dilemma, Türkiye, Social Contract.*

INTRODUCTION

Individual armament is a complex social phenomenon that emerges at the point where the principle of the **"monopoly on the legitimate use of violence"**—which forms the foundation of the modern nation-state—undergoes erosion. Max Weber (1919) defines the state as a community that successfully claims the monopoly of the legitimate use of physical force within a given territory. However, in contemporary Türkiye, the massive increase in the tendency of civilian citizens to acquire weapons indicates that this monopoly is being questioned by individuals and that the need for security has become personalized.

In Türkiye, a weapon is not merely a tool for self-defense; it appears as a **cultural symbol**, a **political stance**, and an expression of **hegemonic masculinity**. According to data from the Umut Foundation (2023), it is estimated that there are approximately 25 million firearms in Türkiye, with only about **10%** being licensed. This situation poses a serious risk to the sustainability of social peace.

1. Conceptual Framework and Literature Review

1.1. The Security Dilemma and Ontological Security

One of the most frequently referenced theories in the literature on individual armament is the **"Security Dilemma."** Developed by Jervis (1978) for international relations, this theory, when applied to the individual level, explains the process by which a person arming themselves for defensive purposes makes others around them feel threatened, thereby driving them to arm themselves as well. In the case of Türkiye, an individual who believes their neighbor or another driver in traffic possesses a weapon tends to acquire one in order to establish a **"balance of power."**

1.2. Hegemonic Masculinity and Weapons

The concept of **"Hegemonic Masculinity,"** developed by Connell (2005), plays a key role in understanding the sociological roots of armament in Türkiye. In the traditional Turkish social structure, weapons are associated with protection, authority, and dignity. Although the "Horse, Woman, Weapon" (At, Avrat, Silah) triad has transformed during the transition from an agrarian to a modern society, the perception of the weapon as an inseparable part of manhood persists.

2. Fundamental Reasons Triggering Armament in Türkiye

2.1. Historical and Militaristic Heritage

Altınay (2004), while analyzing the effects of the **"army-nation" myth** on civilian life in Türkiye, emphasizes that military discipline and familiarity with weapons are legitimized within the civilian sphere. An individual who is introduced to weapons during compulsory military service and identifies them with **"honor"** and **"protection of the homeland"** continues to perceive this object as a substitute for power upon returning to civilian life.

2.2. Trust in the Justice System and the Tendency for "Self-Help" Justice

The most seemingly rational, yet most dangerous, justification for individual armament is the lack of trust in the legal system. Studies conducted by Akdemir (2019) have determined that when individuals cease to believe in the deterrence of punishments, they arm themselves with the impulse of **"self-help"** (establishing their own justice). In particular, changes

in execution laws and the public perception that crimes causing outrage go unpunished trigger the thought of **vigilantism**: "The State cannot protect me; I must protect myself."

2.3. Media and the Normalization of Violence: The "Valley of the Wolves" Effect

According to Gerbner's (1976) **"Cultivation Theory,"** the media (especially television) instills a perception in the audience that the world is a more dangerous place than it actually is. In Türkiye, mafia and "deep state" themed TV series that have appeared in mainstream media since the 2000s have presented the use of weapons as a rational method for problem-solving. In these productions, the law is often depicted as a cumbersome and ineffective structure, while armed protagonists are glorified as figures who deliver **"swift and absolute justice."**

2.4. Unlicensed Armament and Ease of Access

Although the purchase of licensed firearms in Türkiye is subject to strict regulations (medical reports, criminal record checks, etc.), access to **unlicensed weapons** has reached record levels due to digitalization. The trade of "converted blank guns" or smuggled weapons via social media platforms and closed messaging groups renders monitoring mechanisms ineffective.

3. Socio-Demographic and Regional Analysis of Armament in Türkiye

3.1. Rural and Urban Differences: From Tradition to Modern Threat

The dynamics of individual armament in Türkiye vary according to geographical regions. In the Black Sea and Eastern Anatolia regions, weapons are a rural reality, serving as part of traditional conflict resolution methods such as **"land disputes"** and **"blood feuds."** However, the intensive internal migration of the last two decades has carried this rural weapon culture into the metropolises.

In urban areas, the motivation for arming oneself has evolved from "tradition" toward **"prestige"** and **"public order concerns."** Armament in major cities often emerges as a tool for establishing dominance in moments of instant rage, such as "road rage" incidents or a lack of trust in the security of luxury housing complexes. This situation proves that, contrary to Elias's (1939) **"The Civilizing Process"** theory, modernization has forced violence to merely change form rather than restraining it.

3.2. Gender and Weapons: The Role of Firearms in Femicide

One of the most tragic consequences of individual armament in Türkiye is femicide. Within the patriarchal system, the weapon is a tool for **"disciplining"** and **"establishing domination."** Statistical analysis of femicides reveals that the rate of firearm use has surpassed that of cutting tools (We Will Stop Femicide Platform, 2024).

When viewed within the framework of Bourdieu's (2001) **"Masculine Domination"** theory, the weapon is a means of forcing women into a spiral of absolute obedience by combining male physical strength with technological superiority. The presence of licensed or unlicensed firearms in the home increases the risk of an ordinary argument turning into an irreversible murder by **500%**.

4. Economic Dimension and the Sociology of the "Weapon Market"

4.1. The Transformation of Weapons into an Object of "Status Consumption"

Within the context of Veblen's (1899) **"Theory of the Leisure Class,"** high-priced and custom-made weapons (engraved, gold-plated, etc.) serve as objects of **"conspicuous consumption"** in Türkiye. The brand and technical specifications of a weapon have become part of the competition between social classes. This causes the weapon to be detached from its defensive function and instead displayed as an element of **"social capital."**

4.2. The Internet and Accessibility: The Dark Side of E-Commerce

Technological developments have facilitated the "democratization" (!) of armament. Weapons that were once procured from the dark corridors of the underworld are now offered via social media advertisements with "cash on delivery" options. In particular, apparatuses sold under the guise of "hunting rifles" but modified into assault weapons constitute the **gray areas** of legal regulation.

5. Normalization of Violence and Collective Psychology

5.1. Loss of Deterrence and Critique of Criminal Justice

According to Beccaria's (1764) classical criminological theory, what prevents a crime from being committed is not the severity of the punishment, but its **inevitability**. In the case of Türkiye, "discretionary mitigation" (good conduct discounts) or "probation" measures following crimes committed with individual weapons weaken the perception of deterrence in society. This drives the rational individual to the following conclusion: "If I use a weapon, I will get away with it somehow; but if I don't have a weapon, I will die."

5.2. Social Traumas and Defense Mechanisms

The terrorist attacks, coup attempts, and social polarization that Türkiye has experienced in the last decade have created a constant sense of **"being under**

threat" in individuals. From a Freudian perspective, the act of acquiring a weapon is a defense mechanism developed against a type of **"castration anxiety."** By owning a weapon, the individual assumes they have expanded their physical boundaries and gained control over the chaotic nature of the world.

6. Sectoral Data and Future Projection (Table and Analysis)

The following data represents the vertical increase in the trend of armament in Türkiye over the last 5 years:

Year	Estimated Number of Unlicensed Weapons	Crime Rate Involving Firearms
2020	18,000,000	62%
2022	22,000,000	71%
2024	25,000,000+	79%

(Note: Data compiled from Umut Foundation and Ministry of Interior strategic reports.)

7. Legal Control Models and International Comparisons

7.1. The US Model: Individual Liberty or Social Chaos?

The **Second Amendment** of the United States Constitution defines gun ownership as a fundamental right. However, contrary to the arguments of "armament advocates" in Türkiye, uncontrolled armament in the US produces the highest rates of mass shootings in the world on an annual basis. For Türkiye, the US model serves as a warning of how the **"illusion of individual defense"** can destroy collective security.

7.2. The Japan Model: "Zero Tolerance" and Cultural Disarmament

Japan stands as an example where individual armament is at its lowest and crimes committed with firearms are nearly non-existent. Acquiring a firearm in Japan is subject to an extremely rigorous process, ranging from psychological tests and police interviews with neighbors to family history screenings and annually renewed shooting exams. While the applicability of Japan-style strict control models in regions like the Black Sea—where weapons are considered **"folkloric"**—might face local resistance, it is of critical importance for establishing state authority.

7.3. Legal Reform Proposals for Türkiye

- **Blank Firing and Hunting Rifle Law:** The sale of apparatuses that are sold unregulated online and can be converted into lethal weapons should be subject to heavy prison sentences.
- **Deterrent Law:** The offense of carrying an unlicensed weapon should be excluded from the scope of "deferred execution" and "conversion to fines" and should be categorized as a direct custodial sentence.

8. Psychological Dimension: The Impact of Weapons on Cognitive and Decision-Making Processes

8.1. The Weapons Effect

The **"Weapons Effect,"** proposed by Berkowitz and LePage (1967) in social psychology, proves that the mere presence of a weapon in an environment increases the level of aggression in individuals. An individual who owns a weapon is more likely to subconsciously activate the tendency to resort to their source of power (the weapon) rather than "negotiation" or "flight" during a crisis. This represents the bypassing of rational decision-making mechanisms.

8.2. Power Intoxication and the Illusory Sense of Security

From a psychoanalytic perspective, the weapon serves as a **"prosthesis"** for the individual's deficient ego. The individual equipped with a weapon feels they have transcended their physical limits. However, this creates an **"illusory sense of security."** Research indicates that people carrying weapons are more inclined to enter dangerous situations (fights, risky neighborhoods, etc.) than those who do not. This can be explained by the phenomenon of **"risk compensation"** in psychology.

CONCLUSION, DISCUSSION AND POLICY RECOMMENDATIONS

1. General Assessment: The Security Paradox

The data and theoretical approaches analyzed throughout this study demonstrate that while individual armament in Türkiye begins as a **"quest for security,"** it ultimately transforms into a **"Security Paradox."** Every new weapon acquired by individuals for self-protection increases the potential for violence in the social sphere, creating a vicious cycle where other individuals feel even more insecure and are driven to arm themselves.

In the Turkish context, armament manifests not merely as a technical regulatory issue but as a **socio-cultural identity crisis**. The historical bond between weapons and concepts of **"honor," "power," and "masculinity"** acts as a barrier against rational legal frameworks. However, in a modern constitutional state, the delegation of the authority to use violence to civilians or the uncontrolled armament of the civil sphere fundamentally undermines the state's sovereign rights and the **"social contract."**

2. Synthesis of Key Findings

The fundamental findings obtained during the research process can be categorized into three main axes:

- **Legal and Regulatory Vulnerability:** Although the licensed armament process appears strict on paper, it has been observed that the **"unlicensed weapon"** market has reached an uncontrollable level due to digitalization. Non-deterrent penalties and execution regulations fuel the motivation to commit armed crimes.

- **Psycho-Social Impact:** The **"false sense of security"** created by owning a weapon dulls an individual's capacity for rational decision-making during crises and transforms even the simplest social conflicts into fatal incidents.

- **Cultural Normalization:** The portrayal of weapons as a **"tool for delivering justice"** through popular culture and media normalizes violence, particularly among Gen Z and young adults, turning firearm access into a **"status symbol"** of success.

3. Policy Recommendations: A Holistic Disarmament Strategy

To prevent social armament in Türkiye, a **"National Disarmament Strategy"** involving all state institutions should be implemented instead of fragmented solutions:

- **Legal Reforms:** Law No. 6136 should be updated, and the offenses of carrying or possessing unlicensed weapons should be handled with a severity close to "counter-terrorism" standards. The conversion of sentences into fines or the deferment of sentences should be entirely abolished.

- **"Zero Weapon" Zones:** Bans on carrying weapons in civil areas such as public buildings, entertainment venues, wedding halls, and public transport should be enforced with a **"zero tolerance"** principle; the licenses of violators should be permanently revoked.

- **Cultural and Educational Transformation:** In partnership with the Ministry of National Education and the Ministry of Family and Social Services, programs on **"Hegemonic Masculinity and Combating Violence"** should be provided, particularly for young males. Awareness must be raised that a weapon is a social threat, not a display of power.

- **Digital Tracking and Cyber-Audit:** AI-based tracking systems should be established for illegal weapon sales conducted via e-commerce platforms and social media, and heavy responsibilities should be imposed on logistics/cargo firms regarding the transport of weapon components.

4. Final Note: Future Projection

If the current rate of armament and lack of control continues, Türkiye faces a high risk of drifting into a state of **"social anomie"** (normlessness) within the next decade. Armament is not an individual right; it is a violation of collective responsibility. The state's delegation of its monopoly on violence to the civil sphere can only occur in a landscape where society is polarized and faith in justice is shaken.

In conclusion, the peace of Türkiye will be ensured not by keeping a weapon behind every door, but by equipping the streets with the law, homes with education, and public squares with safety. Real security lies in the tranquility brought by disarmament.

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CORPORATE CRISIS MANAGEMENT AND PSYCHOLOGICAL DYNAMICS DURING THE CONCORDAT PROCESS

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Abstract

The concordat process is generally addressed as a legal and financial instrument aimed at protecting companies' financial structures and restructuring their debts. However, this approach largely overlooks the profound managerial and psychological impacts that concordat processes create within organizations. This study conceptualizes the concordat not merely as a mechanism of financial restructuring, but as a multidimensional crisis process that tests organizational resilience. By adopting an interdisciplinary approach integrating business administration and industrial and organizational psychology perspectives, the study examines how uncertainty, risk perception, and financial pressure emerging during the concordat process transform organizational behaviors. In this context, the effects of uncertainty on employee performance, risk-avoidance tendencies, and the relationship between organizational stress and business outcomes are discussed. Additionally, decision fatigue observed among top management during crisis periods, changes in leadership styles, and the strategic role of managerial communication are addressed. The study draws attention to the weakening of psychological contracts, erosion of organizational trust, and declines in employee commitment under financial crisis conditions, while analyzing behavioral outcomes such as silent withdrawal and organizational alienation. Furthermore, psychological safety and organizational climate are emphasized as critical yet fragile elements for learning capacity, innovation, and sustainability during crisis periods. The discussion, framed within the Job Demands-Resources (JD-R) Model and Conservation of Resources (COR) Theory, theoretically explains resource loss spirals and organizational resilience mechanisms experienced during the concordat process. The study demonstrates that neglecting the human and psychological dimensions in crisis management can weaken strategic recovery efforts and offers psychologically grounded crisis management recommendations for managers and human resources professionals, while proposing an interdisciplinary framework for future research.

Keywords: *Concordat, corporate crisis management, organizational resilience, psychological contract, psychological safety, leadership and decision-making, industrial and organizational psychology.*

Introduction

Although the concordat is a legal framework that enables companies to continue their operations by restructuring their debts, in practice it is not merely a financial regulation process. The declaration of a concordat generates a multilayered crisis experience within the organization, in which "normal functioning" is tested, stakeholder relationships are redefined, uncertainty permeates the organizational climate, and decision-making processes are shaped under intense pressure. Therefore, while the concordat constitutes a financial recovery instrument from a business administration perspective, it should also be considered a powerful psychosocial stressor affecting individual-organization relationships, trust, motivation, and performance from an industrial and organizational psychology perspective. The crisis management literature offers significant insights into strategic adaptability, stakeholder management, and organizational continuity. However, the "human dimension" of financial crises and concordat-like processes is often positioned as a secondary concern. Yet, during crisis periods, employees' perceived uncertainty can directly affect not only psychological well-being but also the sustainability of organizational outcomes. In particular, increased risk-avoidance behaviors under uncertainty, reduced organizational learning speed, and the evolution of decision-making processes toward a defensive tone can weaken recovery and restructuring efforts. Accordingly, the success of the concordat depends not only on the technical accuracy of financial plans but also on maintaining trust within the organization, managing communication effectively, and possessing managerial capacity that prevents the depletion of psychological resources. Core approaches in industrial and organizational psychology provide a strong theoretical foundation for explaining these vulnerabilities. For instance, Conservation of Resources (COR) Theory emphasizes that individuals and groups strive to protect valued resources-such as job security, status, social support, and predictability-and that resource loss constitutes the primary determinant of stress (Hobfoll, 1989). Within the concordat context, this framework explains why perceived threats of resource loss (income, career, belonging, prestige) lead to heightened anxiety and defensive behaviors within the organizational climate. Similarly, the Job Demands-Resources (JD-R) Model posits that when job demands (uncertainty, workload, role conflict, emotional labor) increase while job resources (support, clarity, control, feedback) weaken,

burnout and performance decline systematically increase (Bakker & Demerouti, 2007). During concordat periods, the intensification of job demands combined with disruptions in managerial communication or loss of leadership capacity may generate an accumulation of "psychological load" that erodes organizational resilience. One of the most critical fractures created by the concordat process in employee-organization relations emerges at the level of the psychological contract. The psychological contract represents the unwritten set of expectations between employees and organizations, with trust and reciprocity forming its backbone (Rousseau, 1995). Under conditions of financial distress, uncertainties regarding wages, benefits, career opportunities, and job security intensify employees' questioning of whether the organization is fulfilling its implicit promises. As this questioning deepens, organizational commitment may weaken, and employee behaviors may transform into "surface compliance with internal withdrawal." The phenomenon of silent withdrawal, increasingly discussed in contemporary working life, should be interpreted not merely as an individual preference but as a behavioral outcome of psychological contract erosion within crisis contexts. Moreover, one of the fastest eroding organizational assets during concordat periods is psychological safety. Psychological safety refers to an organizational climate in which individuals can express ideas, report errors, and take interpersonal risks without fear of punishment or humiliation (Edmondson, 1999). Under crisis conditions, concerns about layoffs, rumor cultures, information hoarding, and managerial ambiguity rapidly undermine psychological safety. This erosion constrains learning processes and innovation-precisely the adaptive capacities organizations most need for recovery. Accordingly, when discussing the organizational outcomes of concordat processes, maintaining psychological safety should be regarded not only as an ethical imperative but also as a strategic necessity. This article integrates business administration (crisis management, strategic decision-making, stakeholder management, organizational continuity) and industrial and organizational psychology (stress, uncertainty, psychological contract, psychological safety, resource loss) perspectives. The study aims to conceptually elucidate how uncertainty and risk perception transform organizational behavior during concordat periods, how leadership and decision-making processes are pressured, and how psychosocial fractures emerge along the trust-commitment-performance axis. The article argues that addressing the concordat solely through a "financial recovery" lens is insufficient and that crisis management practices neglecting the human factor risk undermining strategic recovery efforts. Subsequent sections discuss the concordat process within the context of corporate crisis management, the effects of uncertainty and risk perception on organizational behavior, leadership and managerial decision-making during crisis periods, the psychological contract-trust-commitment relationship, and psychological safety and organizational climate. The final section presents an integrated evaluation based on the JD-R and COR frameworks and offers managerial recommendations.

Methodology

This study is designed as a conceptual and theoretical investigation integrating business administration and industrial and organizational psychology perspectives on the concordat process. No quantitative or qualitative empirical data were collected. Instead, the managerial and psychological impacts of the concordat process on organizations were analytically examined through selected theoretical approaches and relevant literature. The methodological foundation of the study is based on literature-driven conceptual analysis. Core studies on crisis management, organizational stress, leadership, psychological contract, and psychological safety were reviewed, and an interdisciplinary framework was developed based on the observation that the human and behavioral dimensions of concordat processes are underrepresented in the literature. The Job Demands-Resources (JD-R) Model and Conservation of Resources (COR) Theory were employed as explanatory theoretical foundations. Through these models, the study discusses how increased job demands and perceived resource losses during concordat periods affect organizational behavior, leadership decisions, and employee commitment. The study aims to demonstrate the necessity of conceptualizing the concordat process not only as a financial but also as an organizational and psychological crisis.

Literature Review

Concordat and similar financial restructuring processes are predominantly addressed in the literature within the frameworks of legal regulations, financial performance, and corporate survival strategies. Business administration literature typically examines these processes in terms of crisis management, strategic restructuring, and stakeholder relations, focusing on the role of concordat in ensuring financial continuity. However, this approach tends to position behavioral and psychological transformations within organizations during crisis periods as secondary concerns. Crisis management literature extensively discusses the impact of managerial decisions made under uncertainty, time pressure, and resource constraints on organizational performance. While rapid decision-making, cost control, and stakeholder confidence are emphasized, the manner in which organizational stress, perceived threats, and changes in employee behavior influence the effectiveness of strategic decisions remains insufficiently explored-particularly in financial crisis contexts. Industrial and organizational psychology literature provides a robust theoretical infrastructure for explaining the individual and organizational consequences of uncertainty, stress, and perceived resource loss. Research demonstrates that job insecurity, role ambiguity, and emotional demands negatively affect employee performance,

motivation, and commitment. During periods of financial uncertainty, risk-avoidance behaviors intensify, initiative-taking weakens, and organizational withdrawal becomes more prevalent. However, comprehensive analyses contextualizing these findings within concordat processes remain limited. Psychological contract literature offers a critical framework for understanding the fragility of employee-organization relationships during crisis periods. Financial distress increases uncertainty surrounding wages, career opportunities, and job security, undermining perceptions of fairness and trust. This erosion contributes to declining organizational commitment and the emergence of silent withdrawal behaviors. Although the negative effects of psychological contract breaches on performance and loyalty are well documented, their articulation within concordat-specific organizational crises remains underdeveloped. Similarly, psychological safety literature highlights its importance for learning and adaptation in environments characterized by uncertainty and high error risk. In contexts where psychological safety deteriorates, employees avoid idea-sharing, error reporting declines, and innovative behaviors diminish-conditions that can directly hinder organizational recovery and restructuring. Nevertheless, psychological safety is rarely treated as a strategic variable in financial crisis and concordat literature. Overall, existing literature addresses the concordat process either predominantly through financial and legal lenses or via fragmented psychological constructs. There is a notable lack of integrative studies that comprehensively examine concordat processes through both managerial and psychosocial dimensions. This study seeks to address this gap by presenting a holistic framework that conceptualizes the concordat process along axes of uncertainty, leadership, psychological contract, and psychological safety, offering a multidisciplinary contribution to the literature.

Argument

Argument 1: *The concordat is not merely a financial restructuring process but an organizational and psychological crisis.* This study challenges the dominant framing of the concordat as primarily a legal and financial instrument, asserting that it generates a multidimensional crisis experience within organizations. Financial uncertainty affects not only balance sheets and cash flows but also employee perceptions, leadership behaviors, and organizational climate. Accordingly, the concordat should be considered both a strategic restructuring process in business administration and a psychosocial crisis characterized by stress, uncertainty, and perceived resource loss in industrial and organizational psychology.

Argument 2: Uncertainty and risk perception transform organizational behaviors in performance-reducing directions. The study argues that heightened uncertainty and risk perception during concordat periods trigger risk-avoidance, reluctance to take initiative, and organizational withdrawal behaviors. While these dynamics increase stress and anxiety at the individual level, they weaken decision-making speed, learning capacity, and performance at the organizational level. Thus, uncertainty constitutes not only a psychological issue but also a managerial variable that constrains recovery capacity.

Argument 3: Leadership capacity during crisis periods is tested through decision fatigue and communication quality. The concordat process transforms leadership behaviors by imposing intense decision loads and time pressure on top management, often leading to decision fatigue. This fatigue may reduce transparency in communication and foster defensive leadership styles. Yet, leadership communication during crises serves as a strategic tool for reducing uncertainty and sustaining psychological safety. Therefore, leadership effectiveness should be evaluated not only in financial terms but also in psychological impact.

Argument 4: The concordat process weakens the psychological contract and erodes organizational trust. The study contends that psychological contracts become particularly fragile during concordat periods. Uncertainty regarding job security, compensation, career progression, and fairness undermines trust in the organization, resulting in decreased commitment and increased silent withdrawal behaviors-an invisible but costly organizational loss.

Argument 5: The loss of psychological safety complicates crisis recovery. Finally, the study asserts that diminished psychological safety during concordat periods restricts learning and innovation capacities. Fear of errors, information hoarding, and blame cultures reduce organizational flexibility precisely when adaptive capacity is most needed. Psychological safety should therefore be regarded as a strategic component of crisis recovery rather than merely an ethical ideal.

Integrative Argument: The study argues that the success of the concordat process depends not only on the technical accuracy of financial plans but also on the management of uncertainty, preservation of psychological resources, and maintenance of organizational trust. Crisis management approaches that neglect the human dimension risk undermining strategic recovery efforts.

Findings

Based on a literature-driven analysis, the study identifies five core themes characterizing the organizational impacts of the concordat process.

Increased Uncertainty and Perceived Threat: The concordat process generates persistent uncertainty across organizations, perceived by employees as a continuous threat. Uncertainty regarding job security, wage continuity, and organizational future increases

stress and depletes cognitive resources, indirectly but significantly constraining performance.

Proliferation of Risk-Avoidance Behaviors: Financial crisis and concordat periods are associated with reduced risk-taking among employees and managers. Hesitation in sharing innovative ideas, avoidance of initiative, and rigid adherence to existing practices become widespread. While these behaviors may appear to reduce short-term error risk, they ultimately limit learning and recovery capacity.

Psychological Strain in Leadership and Decision-Making: The literature indicates that concordat processes impose substantial decision loads and psychological pressure on top management, often resulting in decision fatigue. This fatigue contributes to reduced communication, defensive leadership styles, and diminished transparency, accelerating trust erosion.

Erosion of Psychological Contract and Organizational Trust: Expectations regarding compensation, promotion, job security, and fairness often remain unmet or become ambiguous during concordat periods, undermining psychological contracts. This erosion is associated with declining commitment and increased silent withdrawal behaviors.

Deterioration of Psychological Safety and Organizational Climate: Psychological safety deteriorates rapidly during concordat processes, as fear of mistakes, blame, and rumor cultures intensify. Employees limit idea-sharing and innovation, weakening the adaptability required for crisis recovery.

Overall Assessment: The findings demonstrate that the concordat process constitutes a multidimensional psychosocial crisis characterized by uncertainty, perceived resource loss, and trust erosion. Neglecting the human and psychological dimensions of crisis management risks undermining strategic recovery efforts.

Conclusion

This study extends beyond the conventional legal and financial framing of the concordat process to examine its managerial and psychological impacts through an interdisciplinary lens. The findings demonstrate that the concordat represents not merely a financial restructuring tool but a multidimensional crisis that tests organizational resilience, leadership capacity, and employee-organization relationships. Heightened uncertainty and risk perception transform organizational behaviors, increasing risk avoidance while weakening innovation and initiative. Leadership capacity during crises must therefore be evaluated not only through strategic decisions but also through psychological effects mediated by communication quality and decision fatigue. The erosion of psychological contracts and organizational trust contributes to declining commitment and silent withdrawal, generating long-term organizational costs. Analyses based on the JD-R Model and Conservation of Resources Theory indicate that concordat processes produce intense perceptions of resource loss, fueling stress and burnout spirals if unmanaged. Consequently, neglecting psychological dimensions in crisis management can undermine financial recovery efforts. In conclusion, the success of the concordat process depends not only on technical financial planning but also on effective uncertainty management, preservation of psychological safety, and sustained organizational trust. The concordat represents a critical threshold at which leadership, communication, and human management capacities are tested. Psychologically informed crisis management approaches are therefore essential for enhancing organizational resilience and supporting long-term recovery.

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