ISSN: 2583-8814 (Online)

HRC

Journal of Economics and Finance

Volume 3, Issue 4
October - December, 2025

Hansraj College
University of Delhi

HRC Journal of Economics and Finance

Volume 3, Issue 4
October - December, 2025

ISSN: 2583 - 8814

Double Blind Peer Reviewed International Journal

ABOUT THE COLLEGE

Hansraj College is one of the largest constituent colleges of the University of Delhi. The college was founded by the D.A.V. College Managing Committee on 26th July, 1948 in the sacred memories of Maharshi Dayanand Saraswati and Mahatma Hansraj who spent their magnificent lives emphasizing the importance of knowledge. It is one of the leading lights in the D.A.V. family of over 700 institutions.

Hansraj College is a premier institution dedicated to teaching and research. It has highly qualified academicians who impart education in Science, Commerce, and Arts at undergraduate and graduate levels to more than 5000 students. The college has consistently demonstrated outstanding performance in academics, sports, and extracurricular activities.

The college has completed 76 years in the realm of imparting higher education. It has made significant and unparalleled contributions in terms of producing scholars, bureaucrats, intellectuals, and sportsperson serving in different domains not only in our own country but even at international levels.

Hansraj College stands at the cusp between the past and the future today. While it retains inspiring facets of its proud history, with an equally sharp gaze it looks ahead, assimilating the exciting world of new knowledge as it unfolds in front of it, holding the promise of an experience seeped with exhilarating learning and holistic growth for all those who enter its portals.

About the Journal

The ***HRC Journal of Economics and Finance*** is a **double-blind peer–reviewed academic journal** for students, researchers, and faculty to showcase their research pertaining to the discipline of economics and business. It is an international journal. Our mission is to provide a platform through which scholars can publish their scholarly findings to showcase them with the research community at large. We invite research papers and articles on topics related to the field of economics, business and management for its quarterly journal publication.

Message from the Principal

The launch of the *HRC Journal of Economics and Finance* is a milestone that marks our dedication towards providing a platform to young researchers in the field of economics and finance. It is even more fortuitous that the launch has been manifested in the Platinum jubilee year of the college, the Centenary year of the University of Delhi and the 75^{th} year of India's independence.

The New Education Policy, 2020 has launched a paradigm shift that encourages research both at the faculty and student level. Accordingly there is a growing need to provide credible platforms to present research outputs at all levels. This journal fills a significant gap and will contribute to fostering a research ecosystem thereby advancing the objectives of the NEP 2020. This journal will provide an opportunity to students, teachers and scholars, around the world to come together and showcase the links between classroom teaching and their practical training.

I congratulate the authors whose papers/articles have been published in the journal and encourage others to contribute to future issues. Appreciation is due to the Editor In-Chief of this journal, Dr. Apoorva Gupta who has worked tirelessly for the successful launch of this issue of the journal. My best wishes for the success of this venture.

Prof. (Dr.) Rama
Principal
Hansraj College

From the Editor's Desk

Dear Readers,

It is my great pleasure and privilege to present the next issue of the Journal of Hansraj College, the *HRC Journal of Economics and Finance*. The journal provides a platform to young researchers in the field of economics, business, social sciences, finance and management to publish their scholarly articles. Our inclusive nature ensures that we cover the wide range of issues in the field. This issue features a diverse range of articles that provide insightful analyses and innovative perspectives on various contemporary economic topics.

We have received around thirty papers relevant to the field of development economics, political economy, macroeconomic policy, financial markets, international trade, and behavioral economics. All the papers went through three rounds of review process, first by the editors and then by the review board. All the papers have gone through double blind peer review process. The authors were communicated with the revisions. The papers were accepted only after the satisfactory revisions were being made. We strictly follow the research ethics and do not tolerate plagiarism. All the selected papers were tested for plagiarism before publication. We have worked tirelessly to bring out the fourth issue of the journal with high quality research work.

Writing quality research papers takes a lot of time and effort, and the authors must be congratulated for writing their research papers for the journal, which is launched in the Platinum Jubilee year of the college, the Centenary year of the University of Delhi and the 75th year of India's independence. We also take this opportunity to congratulate the review board of this issue for their constant academic support for the timely release of the journal. We also thank the support received from the Principal of the college, Prof. (Dr.) Rama, the Advisory Board and the Editorial Board.

We hope that readers find the articles interesting, informative and engaging, and enjoy reading it. We believe that this effort of ours will stimulate further research and discussion in the field of economics and finance, and encourage readers to write for further issues of the journal. We look forward to receiving your feedback and suggestions for future issues.

Disclaimer: The opinions expressed in this journal belong to the contributors and do not necessarily reflect the viewpoints of the college, the editors, the Advisory Board, the Editorial Board, and the Review Board of the *HRC Journal of Economics and Finance*.

Dr. Apoorva Gupta
Editor In-Chief

Email: editor.jef@hrc.du.ac.in
Website: Hansraj College, University of Delhi

Members of the Team

Advisory Board

Editorial Board: National Reviewers

Publisher

Dr. Apoorva Gupta
Assistant Professor
Department of Economics
Hansraj College
Email: editor.jef@hrc.du.ac.in

Issuing Body

Hansraj College
University of Delhi
Mahatma Hansraj Marg
Malka Ganj
New Delhi - 110007

CONTENTS

Women's Access to Higher Education in Bihar: A Socioeconomic Evaluation

Vandana Singh[1]
Department of Sociology,
Magadh University, Bodh Gaya
Bihar

Abstract

This article explores the socio-economic barriers that restrict women's access to higher education in Bihar, revealing how intersecting factors- poverty, patriarchal norms, inadequate infrastructure, and weak foundational education- create a systemic pattern of exclusion. Drawing on reports and analysis based on various all-India level surveys like AISHE, NFHS, and IHDS, it argues that educational disadvantage begins early and compounds over time, especially for marginalized caste groups. Although some government initiatives have increased school participation, the transition to higher education remains precarious. Low Gross Enrolment Ratios (GER), gender disparities, and poor institutional density reflect both policy inertia and structural neglect. The article concludes that meaningful change requires not just targeted schemes, but comprehensive reform in primary education, economic support systems, and the democratization of academic spaces for women.

Keywords: Women's Education, Bihar, Higher Education Access, Gender Inequality, Socioeconomic Barriers

1. Introduction: Between Aspiration and Exclusion

Bihar, a state emblematic of intricate socioeconomic disparities, presents a challenging landscape for women aspiring to access higher education. The journey of women towards college is not simply a question of institutional access- it reflects deeper historical and

[1] Email: vandanaromisingh@gmail.com

structural inequities woven into the state's cultural, economic, and policy architecture. For decades, Bihar has stood at the crossroads of aspiration and deprivation. Its daughters, often raised in households where resources are scarce and male children are prioritized, dream of classrooms and careers, but find their ambitions thwarted by an unforgiving terrain. Poverty remains a persistent adversary, with rural families frequently unable to afford school fees, let alone the costs of college. At the same time, entrenched patriarchal norms continue to govern decisions about girls' mobility, visibility, and purpose within society. These gendered expectations- of early marriage, domestic labour, and social silence- collide directly with the expansive horizon that higher education promises. Moreover, public policy, though not indifferent, has often fallen short of addressing the layered challenges rural and marginalized women face. Gaps in infrastructure, scarcity of female role models, and a lack of sustained, gender-sensitive educational reforms have only widened the chasm between what is imagined and what is attainable.

2. A Statistical Portrait: Numbers That Tell a Story

At the core of Bihar's higher education crisis lies its dismal Gross Enrollment Ratio (GER) - a figure that captures how many young people (ages 18–23) are enrolled in colleges and universities. According to the *All India Survey on Higher Education (AISHE) 2019*, Bihar's GER stood at just 13.6%, the lowest in the country, compared to the national average of 26.3%.[2] For every 100 young adults in Bihar, only around 13 were pursuing tertiary education- a sobering statistic in a state with one of the largest youth populations in India.

More recent AISHE data for 2021–22 paints a marginally improved yet still inadequate picture: Bihar's GER rose from 15.9% in 2020–21 to 17.1% in 2021–22, while the

[2] Ritika Chopra, Higher education in Bihar: Young voters, but under most heads, a poor report, The Indian Express, Oct. 23, (2020) Available at: https://indianexpress.com/elections/higher-education-in-bihar-young-voters-but-under-most-heads-a-poor-report-card-6847241/ (Last access on Feb 24, 2025).
Tamil Nadu Has The Highest Enrollment Rate In Higher Education, Bihar Has The Lowest, In 7 States Girls Outnumber Boys, Jan 06, 2018 https://www.indiatimes.com/news/india/tamil-nadu-has-the-highest-enrollment-rate-in-higher-education-bihar-has-the-lowest-in-seven-states-girls-outnumber-boys-337095.html (Last access on Feb 24, 2025).

national average climbed to 28.4%.[3] Though this progression is heartening, the gap between Bihar and the national average remains significant.

Within this aggregate figure, the participation of women is even more constrained. In 2019, female enrollment was about 12%, compared to 15% for male students, resulting in Bihar's Gender Parity Index (GPI) of 0.79, the lowest among all Indian states.[4] A GPI of 0.79 implies that for every 100 male students engaged in higher education, only 79 women were enrolled- a stark illustration of entrenched gender imbalance.

Longitudinal analysis shows only modest gains as Bihar's GPI rose from 0.77 in 2010 to 0.92 by 2021**,** as per data compiled from AISHE and CEIC Data (CEIC)'s educational statistics.[5] Beyond overall GER and GPI, disaggregated data reveals stark inequalities in social categories. As per AISHE 2021–22, the GER for Scheduled Caste (SC) women in Bihar was 9.7%, markedly lower than the overall female GER of 15.1%, while Scheduled Tribe (ST) women had a GER of 17.4% - all well below male GERs across these groups.[6]

The infrastructure underpinning higher education in Bihar is also worryingly thin. As of AISHE 2021–22, Bihar had just seven colleges per lakh eligible population, compared to a national average of 30 colleges per lakh.[7] Each institution accommodates an average of 2,088 students - the highest student load per institution in India- compared to the national average of 789 students**.**[8]

[3] Gross Enrolment Ratio increased in State, Times of India, Jan 28, 2024 https://timesofindia.indiatimes.com/city/patna/gross-enrolment-ratio-in-state-increases-to-17/articleshow/107196800.cms(Last access on Dec. 28, 2024).

[4] *All India Survey on Higher Education, AISHE, 2019–20 Report (English)* Available at: https://aishe.gov.in/aishe-final-report/ (Last access on Dec. 28, 2024)

[5] CEIC Data, Education Indicators for India, Available at: https://www.ceicdata.com/en/indicator/india/gender-parity-index-in-tertiary-education (Last access on Dec. 21, 2024)

[6] All India Survey on Higher Education (AISHE) Report 2021–22, Department of Higher Education, Ministry of Education, Table 47: Gross Enrolment Ratio (GER) during last 5 years (T-47), Available at: https://aishe.gov.in/

[7] Ritika Chopra, Higher education in Bihar: Young voters, but under most heads, a poor report, The Indian Express, Oct. 23, (2020) Available at: https://indianexpress.com/elections/higher-education-in-bihar-young-voters-but-under-most-heads-a-poor-report-card-6847241/ (Last access on Feb 24, 2025).

[8] Gross enrolment ratio in state increased to 17%, Times of India, Jan 28, (2024) Available at: https://timesofindia.indiatimes.com/city/patna/gross-enrolment-ratio-in-state-increases-to-17/articleshow/107196800.cms(Last access on Feb 24, 2025).

Together, these figures- GER hovering between 15–17%, GPI stuck below parity, weaker access among marginalized categories, and sparse institutional density- compose a statistical narrative of systemic neglect. They betray not only low participation rates but also signify how educational exclusion is gendered and compounded by socioeconomic marginality.

While incremental gains signal hope- such as the slow rise in GPI over the past decade- the persistence of Bihar's low GER and deep gender disparities suggests that policy intentions have yet to translate into equitable outcomes. The numbers are not just dry statistics; they are markers of opportunity foregone, of entire cohorts of young women whose academic potential remains unrealized.

2.1. Early Educational Foundations: A Shaky Ladder

The educational exclusion that plagues women's access to higher learning in Bihar begins far before college- it takes root in childhood and adolescence, when the foundation of basic literacy and schooling remains perilously weak. In the silent alleys of Bihar's rural villages and the congested lanes of its towns, the barriers to women's education do not suddenly arise at the gates of a university- they are laid brick by brick in the early years of a girl's life. Higher education, for most girls in Bihar, is not a destination they choose to forgo- it is a journey they were never allowed to begin.

The denial begins subtly. A girl is often the last to be enrolled in school and the first to be withdrawn. While the boy child is encouraged to dream beyond the classroom, the girl is asked to keep her feet close to the hearth. Her schooling is seen as ornamental at best, dispensable at worst- especially when weighed against domestic chores, care work, and the looming expectation of marriage.

Even when girls are enrolled, the learning environment often discourages continuity. Inadequate infrastructure - schools without boundary walls, functional toilets, or safe commuting options- disproportionately affects adolescent girls.[9] A 12-year-old girl

[9] Amarnath Tewary, Low attendance, lack of toilets for girl students in Bihar government schools, says ASER report, The Hindu, Jan. 19, (2023)

ISSN: 2583-8814 (Online)

walking three kilometers to school each day, facing taunts or threats, soon finds it easier to stay home. The lack of female teachers, menstrual hygiene management, and gender-sensitive pedagogy add to this attrition.[10]

2.2. Stunted Female Literacy in Bihar

The statistics are merely the bones of this story as only around 55% of women aged 15-49 in Bihar are literate, and fewer than 29% of girls above age six have completed 10 or more years of schooling.[11] In comparison, 76% of men in the same age group are literate, illustrating a stark gender divide of over 21 percentage points.[12] This gendered divergence in literacy is not a recent phenomenon; it is the result of a prolonged disregard for girls' education, both by the state and society. Some of research works also affirms that educational inequalities in states like Bihar cannot be addressed unless foundational schooling is radically reformed and made more accessible and inclusive.[13] Without basic education, access to higher education remains a mirage.

Available at: https://www.thehindu.com/news/national/other-states/low-attendance-lack-of-toilets-for-girl-students-in-bihar-government-schools-says-aser-report/article66407818 (Last access on Sept.5th, 2025)
Santosh Singh, Missing buildings, shortage of classrooms, no toilets: Survey throws light on problems plaguing Bihar government schools, Indian Express, Aug. 5. (2023)
https://indianexpress.com/article/cities/patna/missing-buildings-shortage-toilets-survey-problems-plaguing-bihar-government-schools-8876213 (Last access on Sept.5th, 2025)
Satyajeet Kumar, At this Bihar school, girls drink less water so they don't need the toilet, India Today, Nov. 6, (2023)
https://www.indiatoday.in/education-today/news/story/at-this-bihar-school-girls-drink-less-water-so-they-dont-need-the-toilet-2458884-2023-11-06 (Last access on Sept.5th, 2025)

[10] Dev Kumar Pandey, Frame rules to provide toilets, sanitary napkins to girls in schools: Patna HC, Times of India, April 13, (2023).
https://timesofindia.indiatimes.com/city/patna/frame-rules-to-provide-toilets-sanitary-napkins-to-girls-in-schools-patna-hc/articleshow/99447334.cms
Rachna Priyadarshini, In Bihar, menstrual hygiene still an obstacle for girls to attend school, 26 Sep, (2023)
https://101reporters.com/article/education/In_Bihar_menstrual_hygiene_still_an_obstacle_for_girls_to_attend_school (Last access on Sept.5th, 2025)

[11] National Family Health Survey (NFHS-5), 2019-21: Bihar International Institute for Population Sciences (IIPS) and ICF. 2021, pg. 61-62, (2021)

[12] Table 3.4.1 Respondent's level of schooling and literacy by state/union territory: Women, National Family Health Survey (NFHS-5), 2019-21: Bihar International Institute for Population Sciences (IIPS) and ICF. 2021, pg. 93, (2021)

[13] Sharmila Ray and Sakshi Saini, Efficacy of rights-based approach to education: A comparative study of two states of India, Policy Futures in Education, Sage Journals, Vol. 14(2), Dec. (2015).
Available at: https://journals.sagepub.com/doi/10.1177/1478210315618543 (Last access on March 22, 2025).

But the soul of this exclusion lies in a cultural psychology that sees female education not as a right, but as a gamble- one that might delay marriage, 'spoil' daughters, or yield no economic return. By the time these girls reach the age of eligibility for college, most have already fallen off the educational ladder. Their minds, capable of grasping calculus, literature, or law, have been repurposed toward unpaid domestic labor. Their academic curiosity- perhaps sparked once by a compassionate teacher or a borrowed book- is quietly extinguished by the weight of social expectations. They are not pushed out of college; they are never led in.

Thus, the exclusion is not an event, but a process- a slow erosion of possibility that begins with the first missed class, the first illness unattended, and the first insult unchallenged. When higher education is built upon early schooling, and that foundation is compromised by neglect and discrimination, it is little wonder that so few women cross the threshold of universities in Bihar.

2.3. Minimal Completion of 10+ Years of Schooling

The gap in educational attainment between women and men in Bihar is not merely a statistic to be archived in government reports- it is a lived reality that shapes the contours of women's lives and forecloses countless futures before they can begin to take form. Only 28.8% of women in Bihar have completed ten or more years of schooling, while 42.8% of their male counterparts have managed to do so.[14] Only 10% of women in Bihar complete 10–11 years of school, and just 17% reach 12 or more years, compared to 13% and 23% of men, respectively.[15] These numbers, as presented in the National Family Health Survey-5 (2019–21), echo a history of systemic deprivation and entrenched patriarchal norms that have operated over decades to deny women the right to education.[16]

[14] National Family Health Survey (NFHS-5), 2019-21: Bihar, International Institute for Population Sciences (IIPS) and ICF. 2021, pg. 62, (2021)
[15] T.K. Rajalakshmi, NFHS-5 findings: The good, the bad & the ugly, Frontline, May 30 (2022). Available at: https://frontline.thehindu.com/the-nation/public-health/the-good-the-bad-the-ugly-nfhs-5-report-documents-changes-in-india/article65463437.ece (Last access on March 24, 2025).
[16] National Family Health Survey (NFHS-5), 2019-21: Bihar International Institute for Population Sciences (IIPS) and ICF. 2021, pg. 81, (2021)

ISSN: 2583-8814 (Online)

The difference becomes even more unsettling when one looks beyond the borders of Bihar. Nationally, approximately 41% of women and 50.2% of men have completed ten or more years of schooling.[17] The corresponding number for women of Bihar is nearly 12 percentage points lower than the national average - placing it among the worst-performing states in the country.[18] The gap is not a matter of a few percentage points- it is the chasm between possibility and silence, between mobility and immobility, between a future opened and future denied. Many research works have repeatedly emphasized that the early years of schooling serve as a launch-pad for all higher intellectual pursuits. Without this elementary bedrock, one cannot speak of college, much less higher education.[19] In Bihar, where almost three-fourths of girls never cross the Class 10 threshold, the idea of university becomes a fiction sustained only in textbooks and political speeches. The tragedy lies not merely in the failure of the system to support them, but in the societal compact that tolerates and even justifies this neglect. When the educational ladder itself is broken at its base, no amount of incentives at the top can bring equity. Such numbers do not merely map educational achievement- they narrate a cultural story of deprivation, caste-based marginalization, and deep-seated gender asymmetry.

2.4. Severe Urban–Rural Divide

The urban–rural divide further exacerbates the crisis. Literacy among women in urban Bihar is relatively better-nearly 75%- but in rural areas, where the majority of the population resides, it hovers around 54–55%. This disparity in access, as pointed out in a

---

[17] National Family Health Survey (NFHS-5), 2019-21: Bihar International Institute for Population Sciences (IIPS) and ICF. 2021, pg. 81, (2021)

[18] T.K. Rajalakshmi, NFHS-5 findings: The good, the bad & the ugly, Frontline, May 30 (2022). Available at: https://frontline.thehindu.com/the-nation/public-health/the-good-the-bad-the-ugly-nfhs-5-report-documents-changes-in-india/article65463437.ece (Last access on Feb 24, 2025).

[19] B. Bowman, M Donovan and M. Burns, eds. Eager to Learn: Educating Our Preschoolers, Committee on Early Childhood Pedagogy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy Press, Washington, DC pg.7-8, (2001).

W. Barnett, Long-Term Effects of Early Childhood Programs on Cognitive and School Outcomes, The Future of Children, 5:3, pg.25-50 (1995).

comprehensive review by Factly Media and Research in 2022, reflects a complex interplay of infrastructural deficiencies, cultural limitations, and policy failures.[20]

This is not an issue confined to rural or economically backward blocks alone. Even in semi-urban and urban parts of Bihar, the social conditioning that militates against girls' continued schooling is omnipresent. It manifests in the form of early marriage, the burden of household chores, and most of all, in the perception that education is expendable for women.

2.5. Childhood Dropout & Attendance Patterns

NFHS-5 data highlight that while 89% of children aged 6–14 in Bihar attend school, attendance plunges to just 69% among adolescents aged 15–17, with girls disproportionately affected as they transition into puberty and face growing marriage pressures.[21] This steep decline signals a systemic failure to retain girls through the crucial upper-secondary years. Academic literature corroborates this trend. Studies report that adolescent girls often drop out due to the lack of gender-sensitive school infrastructure, such as separate toilets, and safety concerns *en route* to distant schools- compounded by norms that prioritize domestic labor or early marriage over education.[22] Some studies argue that educational discontinuity at these stages creates irreversible loss in schooling trajectories and narrows potential pathways toward higher education. These multifaceted pressures explain why retention sharply diminishes for older girls, reinforcing Bihar's persistent gender gap in educational attainment.[23]

[20] BharathKancharla, NFHS-5: Gender and Urban-Rural divide observed in access to School Education, Factly, Dec. 22, (2020). Available at: https://factly.in/nfhs-5-gender-and-urban-rural-divide-observed-in-access-to-school-education/ (Last access on Feb 22, 2025).
[21] National Family Health Survey (NFHS-5), 2019-21: Bihar, International Institute for Population Sciences (IIPS) and ICF. 2021, pg. 6, (2021)
[22] M. Venkatanarayana**,** Out-of-School Children: Child Labourers or Educationally Deprived? Economic and Political Weekly, Vol. 39, No. 38, Pg. 4219-4221, Sep. 18-24, (2004)
[23] Pandey, N. and Saggurti, N., Great strides and persistent challenges: the evolving story of gender and education in Bihar, India: Findings from UDAYA longitudinal study. Policy Brief, Population Council, New Delhi, (2022)

2.6. Structural Constraints & Early Marriage

Rising school dropout rates among girls are linked not only to infrastructure deficits (e.g., lack of toilets, long distances) but also to gender norms. Only about 28.8 percent of women in Bihar have completed ten or more years of schooling, compared to 42.8 percent of men; however, these numbers only hint at a deeper crisis.[24] The decline in female attendance after puberty is tied not merely to missing classroom seats but to entrenched expectations-household chores, sibling care, long distances to school, and, critically, the pressure to marry early. In places like Supaul and Begusarai, over half of girls are married before turning 18, a reality that often ends their education prematurely and permanently.[25] NFHS-5 data confirm Bihar's prevalence of child marriage at nearly 40.8 percent, one of the highest in India, reinforcing the direct link between early marriage and dropout.[26] These structural constraints extinguish educational aspirations for many girls- once the social decision to marry is made, school becomes irrelevant.

2.7. Progress and Persistent Gaps

Male literacy in Bihar has indeed climbed- from around 71 percent in 2001 to approximately 76 percent by 2011, and further edging upward to 79.7 percent by 2017- yet women's literacy growth, though notable, has lagged significantly. Female literacy rose from a mere 33 percent in 2001 to 51.5 percent in 2011 and then to about 60.5 percent by 2017.[27] According to a 2025 review by Indian PSU, female literacy surged from just 37 percent in 2005 to 57 percent by 2019–20, yet men remained at

---

[24] National Family Health Survey (NFHS-5), 2019-21: Bihar, International Institute for Population Sciences (IIPS) and ICF. 2021, (2021) Schemes help increase women literacy rate in Bihar, Times of India, Oct. 11, (2022). Available at: https://timesofindia.indiatimes.com/city/patna/schemes-help-increase-women-literacy-rate-in-bihar/articleshow/94774199 (Last access on Sept.05, 2025)

[25] Orusa Karim, Status of Secondary Education in Bihar: An Overview, Journal of Humanities and Education Development, Vol. 4(3): 229-236, (May 2022)

[26] According to the National Family Health Survey (NFHS)-5, Bihar has the second-highest rate of child marriage in the country, following West Bengal. - National Family Health Survey (NFHS-5)- 2019-20, Available at: https://dhsprogram.com/pubs/pdf/FR375/FR375.pdf (Last access on Feb 24, 2025)
Bihar govt forms 'task force' to prevent, eradicate child marriages; led by chief secretary, The Telegraph Online, 8th March, 2025,
Available at: https://www.telegraphindia.com/india/bihar-govt-forms-task-force-to-prevent-eradicate-child-marriages-led-by-chief-secretary/cid/2087823 (Last access on Feb 24, 2025)

[27] Census of India, 2011, National Statistical Commission (2017)

roughly 76 percent, preserving a stubborn 20-point gender gap.[28] Various academic voices emphasize that while increased female literacy is commendable, the persistent literacy divide reflects systemic neglect and limited educational access for girls in rural and marginalized communities.[29] These disparities highlight how literacy gains have failed to achieve gender equity, illustrating the depth of Bihar's educational challenge.

3. Infrastructure Deficits and Structural constraints: When Distance Becomes Destiny

The geographical spread and institutional reach of higher education in Bihar further complicate the situation. The geographical terrain of Bihar casts a long shadow over women's higher education aspirations. With just seven colleges per lakh eligible population (age 18–23) - against a national average of thirty- Bihar is the worst performing state in terms of institutional density.[30]For young women in rural and semi urban areas, this scarcity translates into extreme travel distances that are neither safe nor affordable. In many households, especially conservative ones, the very act of commuting to a distant college becomes socially unacceptable or logistically impossible.

Despite this lack of proximity, average enrolment per college in Bihar reaches 2,088 students, almost three times the national average- intensifying overcrowding and straining quality.[31] This compounds other structural hurdles. Such overcrowding often means fewer resources, less individual attention, and increased commute pressure for women, reducing the incentive or feasibility of attending college at all. Policy interventions like Rashtriya Uchchatar Shiksha Abhiyan (RUSA) aimed to improve regional equity in higher education access, but slow institutional roll-out and funding bottlenecks in Bihar have

[28] Indian PSU Desk, A Revolution Through Education — Bihar's Daughters Leading The Change, Indian PSU, 30 April (2025), available at: https://indianpsu.com/a-revolution-through-education-bihars-daughters-leading-the-change/ (Last access on Sept.05, 2025)

[29] Manoj Kumar Tiwary, Unequal Access to Learning in Bihar: Contemporary and Historical Perspectives, The Social Context of Learning in India, *edi*. Manoj Kumar Tiwary et.al, Achievement Gaps and Factors of Poor Learning, (2003)

[30] Ritika Chopra, Higher education in Bihar: Young voters, but under most heads, a poor report card, The Indian Express, Oct. 23, 2020 https://indianexpress.com/elections/higher-education-in-bihar-young-voters-but-under-most-heads-a-poor-report-card-6847241/ (Last access on Feb 24, 2025).

[31] Just 7 colleges per 1 L eligible people, The Times of India, Jan 31, (2024)
Available at :
http://timesofindia.indiatimes.com/articleshow/107277097.cms (Last access on Feb 24, 2025).

ISSN: 2583-8814 (Online)

hindered visible progress. Administrative apathy is further illustrated by the fact that many colleges in Bihar remain unreported in AISHE due to delayed data reporting, limiting further educational infrastructure expansion.[32]

When geography meets gender expectations, the result is a system that systematically discourage Bihari girls the chance to pursue higher education. For them, the barriers are not academic but deeply structural- distance[33], safety, overcrowding, and mobility restrictions[34] that make college attendance not a matter of financial aid, but one of physical and social possibility.

4. Cultural Conditioning and Academic Choices

Social norms act as yet another silent architect of exclusion. A recent study Indian Institute of Technology Patna, published in *Language in India* and supported by the ICSSR, reveals that cultural stereotypes significantly influence women's academic trajectories in Bihar and Jharkhand. The curriculum and institutional environments consistently assign technical and scientific disciplines- like engineering and mathematics- as inherently 'masculine', while fields such as teaching, nursing, or humanities are seen as 'feminine', guiding girls away from STEM even when academic aptitude remains equal across genders.[35]

---

[32] Bihar edu institutions slow on uploading AISHE data, minister steps in, The Hindustan Times, Feb 09, (2022), Available at: https://www.hindustantimes.com/cities/patna-news/bihar-edu-institutions-slow-on-uploading-aishe-data-minister-steps-in-101644423706963.html (Last access on April 7, 2025).

[33] Karthik Muralidharan and Nishith Prakash, Cycling to School: Increasing Secondary School Enrollment for Girls in India, American Economic Journal: Applied Economics, vol. 9 (3), pp321- 350, (2017). Available at: https://www.iza.org/en/publications/dp/7585/cycling-to-school-increasing-secondary-school-enrollment-for-girls-in-india (Last access on Feb 20, 2025).

[34] K. G. Santhya, R. Acharya, N. Pandey (et al.), Understanding the lives of adolescents and young adults (UDAYA) in Bihar, India, Population Council (2017)
Available at: https://www.projectudaya.in/wp-content/uploads/2018/08/Bihar-Report-pdf.pdf

[35] Sweta Sinha (et. al), Gender Stereotypes in the Higher Educational Institutions of Bihar and Jharkhand: Impact on Career Choices for Women, Language in India, Vol. 25, (2 Feb. 2025)
Available at: https://www.languageinindia.com/feb2025/debrajstereotypesfinal.pdf (Last access on March 17, 2025).
Gender Bias still influences career paths of women in Bihar, Jharkhand: IIT-P study, Times of India, 7th July (2025).
Available at:
https://timesofindia.indiatimes.com/city/patna/gender-bias-still-influences-career-paths-of-women-in-bihar-jharkhand-iit-p-study/articleshow/122298912.cms (Last access on July 14, 2025).

Sahoo and Klasen (2021), based on the IIM-B longitudinal dataset, demonstrate that girls are about 20 percentage points less likely than boys to select science or commerce streams in higher secondary schooling, regardless of abilities or previous performance.[36]

The ideological roots of such division predate adolescence. Many school textbooks perpetuate these stereotypes through gendered narratives; the *Centre for Global Development* found that Indian textbooks frequently associate leadership and professions with men and domesticity with women, reinforcing biases early on.[37]

These layered cultural conditions- from family attitudes to curriculum biases- shape educational choices long before college. Girls internalize limiting social scripts and often self-select away from aspirational streams. Even when high schools and universities admit female students, the academic and psychological conditioning they bring with them constrains their trajectory- making the fight for educational parity not just about infrastructure or policy, but deeply about dismantling gendered narratives embedded across generations.

5. Missing Women in Academia: The Question of Representation

Even in spaces where women do enter higher education, the experience remains one of marginality. Even when women in Bihar manage to enter higher education institutions, their presence remains marginal compared to their male peers. According to AISHE 2018-19, only 21percent of teaching staff in Bihar's colleges and universities are women, while a staggering 79 percent are men, giving Bihar the worst gender skew among all Indian states.[38] According to an another report, through the Survey of Higher Education

[36] Soham Sahoo and Stephan Klasen, Gender Segregation in Education: Evidence From Higher Secondary Stream Choice in India, Demography, Vol. 58 (3): 987–1010 (2021). Available at: https://read.dukeupress.edu/demography/article/58/3/987/172698/Gender-Segregation-in-Education-Evidence-From (Last access on Feb 24, 2025).

[37] High incidence of gender bias in school textbooks: which Indian state is topping the chart, Times of India, Sept. 24, (2024),
Available at: https://timesofindia.indiatimes.com/education/news/high-incidence-of-gender-bias-in-school-textbooks-which-indian-state-is-topping-the-charts/articleshow/113398209.cms (Last access on Feb 7, 2025).

[38] Telling Numbers: Teachers in higher education - gender skew highest in Bihar, The Indian Express, (Sept. 30, 2019).

(AISHE) it is being claimed that the female-to-male teacher ratio in Bihar is approximately 1 to 4, with male dominance particularly stark in both teaching and non-teaching roles.[39]

The absence of visible female leadership in academia sends a subtle yet powerful message - that scholarly authority belongs to men. This structural invisibility becomes self-perpetuating- female students, encountering few role models in positions of influence, unconsciously internalize the limits placed on their own academic identities. The clustering of women in lower-tier roles- such as demonstrators, adjuncts, or temporary instructors- further entrenches a bifurcated academic hierarchy, where substantive intellectual control remains male-dominated.[40]

This dearth of female faculty matters profoundly. Without role models or mentors who share their gendered experiences, young women often struggle to envision themselves in academic careers or leadership. The imbalance not only affects perceptions but also curriculum, pedagogy, and institutional culture, reinforcing gendered boundaries long before ambition can blossom into possibility. In Bihar, then, representation is not just symbolic- it underpins whether the idea of higher learning feels like an attainable dream or remains a silent, distant echo. This lack of visible female academic leadership perpetuates a subtle but powerful message- that knowledge creation and dissemination is not a woman’s domain. Female students, surrounded by a scarcity of role models, internalize these boundaries.

6. Economic Impediments: Poverty, Priorities, and the Price of Learning

Bihar’s persistently low economic capacity creates a formidable barrier for women aspiring to higher education. With a per capita monthly income of just ₹5,028- among the

---

Available at: https://indianexpress.com/article/explained/telling-numbers-teachers-in-higher-education-gender-skew-highest-in-bihar-6039408/ (Last access on Jan 21, 2025).

[39] Universities, Colleges Have More Male Teachers Than Females, Gap Highest in Bihar: HRD Survey, (Sept. 23, 2019), available at: https://www.news18.com/news/india/universities-colleges-have-more-male-teachers-than-females-gap-highest-in-bihar-hrd-survey-2319209.html (Last access on Feb 22, 2025).

[40] Sai Krishna Muthyanolla, Data: AISHE Report Reveals That Female Faculty More Clustered in Lower Ranks, While Men Dominate Top-Posts of Higher Education, Faculty, Feb 6,(2024). Available at: https://factly.in/data-aishe-report-reveals-that-female-faculty-more-clustered-in-lower-ranks-while-men-dominate-top-posts-of-higher-education/ (Last access on Feb 12, 2025).

lowest in India- families endure severe financial constraints that restrict educational investment, especially for daughters.[41] High dropout rates reflect this reality- while around 9% of children leave school at the primary level, a staggering 26.3% discontinue studies between Classes 9 and 12, where secondary completion is key to college entry.[42]

Poverty exacerbates gendered educational exclusion. Only about 5% of rural women participate in paid employment, rendering girls economically dependent and deprioritized in educational spending[43]; in these households, male siblings' schooling is often prioritized. With over one-third of families earning less than ₹6,000 per month[44], expenditure on daughters' college fees, transport, or accommodation is seen as unaffordable.

Unemployment compounds disillusionment as Bihar's youth unemployment rate is higher and for daily labor work they migrate to other states, whereas the unemployment in women is often even higher, discouraging families from viewing higher education as a viable path. In such a fiscal and labor market landscape, education for girls is not a priority but a luxury, dampening aspirations and limiting access to tertiary studies.

7. Policy Interventions and Their Limits

While Bihar's educational landscape remains difficult, several government initiatives have succeeded in lighting small beacons of hope. The Mukhya Mantri Balika Cycle Yojana, launched in 2006, provided bicycles to secondary school girls in Grade 9- addressing safety and travel distance barriers. In a rigorous evaluation work which was published via the International Growth Centre in American Economic Journal: Applied Economics, revealed a 32% increase in age-appropriate female enrollment, along with a

[41]Bihar Economic Survey Report 2024-25, Available at: https://state.bihar.gov.in/finance/cache/12/07-Mar-25/SHOW_DOCS/Economic%20Survey%20Final%2022.02.2025%20%20English_11zon.pdf (Last access on Feb 24, 2025).

[42] Bihar Economic Survey Report 2024-25, Available at: https://state.bihar.gov.in/finance/cache/12/07-Mar-25/SHOW_DOCS/Economic%20Survey%20Final%2022.02.2025%20%20English_11zon.pdf (Last access on Feb 24, 2025).

[43] Bihar Economic Survey Report 2024-25, Available at: https://state.bihar.gov.in/finance/cache/12/07-Mar-25/SHOW_DOCS/Economic%20Survey%20Final%2022.02.2025%20%20English_11zon.pdf (Last access on Feb 24, 2025).

[44] Bihar caste-based survey report, 2023, Detailed report published by GAD Government of Bihar on 07.11.2023

40% narrowing of the gender gap, and 18% and 12% increases in exam attendance and pass rates respectively.[45]

Complementing this, the Mukhya Mantri Kanya Utthan Yojana provides up to ₹25,000 to unmarried girls passing Class 12 and ₹50,000 for those who complete graduation, disbursed via direct benefit transfer. Over its lifetime, it offers cumulative support of up to approximately ₹54,100 per girl from birth through graduation.[46] More recent funding announcements, backed by the state cabinet in June 2025, allocated ₹281 crore for hostels in engineering and polytechnic institutes, designed explicitly to support female students' access to higher education across districts.[47]

Despite these advances, the transition from school to college remains fraught. Economic insecurity frequently dictates educational trajectories. The India Human Development Survey II (2011–12) exposed how constrained household budgets often prioritize sons' education over daughters', truncating girls' educational paths when finances are tight. Recent NGO field reports underscore that this mindset persists across rural Bihar.

These schemes, while impactful, face structural barriers. The bicycle program targets only secondary-level attendance, not college participation.[48] The Kanya Utthan scholarship assists with direct financial cost of education, yet many rural girls still lack nearby colleges or face logistical obstacles- safety, transport, hostel access- that cash alone cannot remove. Reports of low institutional density and overcrowded campuses further dampen participation.[49]

---

[45] Karthik Muralidharan and Nishith Prakash, Cycling to School: Increasing Secondary School Enrollment for Girls in India, American Economic Journal: Applied Economics, vol. 9 (3), pp321- 350, (2017). Available at: https://www.iza.org/en/publications/dp/7585/cycling-to-school-increasing-secondary-school-enrollment-for-girls-in-india (Last access on Feb 20, 2025).

[46] Bihar Government Increases Scholarship Amount For Class 12 Pass, Graduate Girl Students, NDTV.Com, (Feb. 3, 2021), Available at: https://www.ndtv.com/education/mukhyamantri-kanya-utthan-yojana-bihar-government-increases-scholarship-amount-2362496 (Last access on Feb 24, 2025).

[47] Cabinet OKs key projects, social schemes, Times of India, (June 24, 2025), Available at: https://timesofindia.indiatimes.com/city/patna/cabinet-oks-key-projects-social-schemes/articleshow/122052879.cms (Last access on July 14, 2025).

[48] Uma Vishnu, Two decades ago, Nitish distributed cycles to girls in Class 9. Where are they now?, Indian Express, Nov. 12, (2025). Available at: https://indianexpress.com/article/long-reads/two-decades-ago-nitish-distributed-cycles-to-girls-in-class-9-where-are-they-now-10360460/lite/

[49] 'Just 7 colleges per 1L eligible people', Times of India, Jan 31, (2024) https://timesofindia.indiatimes.com/city/patna/just-7-colleges-per1l-eligible-people/articleshow/107277097.cms

Ultimately, while these policies have demonstrated promise- in raising enrollment, reducing dropouts, and incentivizing girls to pursue education- their reach is constrained by gaps in infrastructure, persistent poverty, and social norms. Without a holistic ecosystem- linking scholarship, transport, local colleges, safe hostels, and cultural change- many girls complete secondary school but struggle to access higher learning, underscoring that policy gains must be buttressed by systemic reform and sustained socio-economic support.

Still, the leap from school to college remains precarious. One cannot ignore the role of economic insecurity in shaping the choices of women and their families. In households where food insecurity persists and male siblings' education is prioritized, investment in a daughter's college tuition is often seen as a luxury. The India Human Development Survey (IHDS-II, 2011–12) captured this dilemma vividly.[50] Though recent district-level data is scarce, reports from non-governmental organizations confirm that this dynamic continues.

8. Stories of Success: When Women Are Given a Chance

Yet, when these barriers are overcome, the academic excellence of Bihar's women shines through undimmed. At the 2024 Patna University convocation, for instance, 30 out of 43 gold medals were bagged by female students- a testament to what is possible when women are simply allowed the opportunity to thrive.[51] This is not an isolated incident. At the newly established Bihar Engineering University, where one-third of all seats have been reserved for women, female students are beginning to reshape the academic

Higher education in Bihar: Young voters, but under most heads, a poor report card, Indian Express, Oct. 23. (2020), Available at: https://indianexpress.com/elections/higher-education-in-bihar-young-voters-but-under-most-heads-a-poor-report-card-6847241

[50] India Human Development Survey-II (IHDS-II), 2011-12 (ICPSR 36151), Available at: https://www.icpsr.umich.edu/web/DSDR/studies/36151/publications (Last access on Feb 24, 2025).

[51] Girls bag 30 gold medals out of 43 at PU convocation, Times of India, Nov. 30, (2024) Available at: https://timesofindia.indiatimes.com/city/patna/patna-university-convocation-girls-win-30-gold-medals-out-of-43/articleshow/115841283.cms (Last access on May 3, 2025).

landscape. The university's recent record of timely result publication and impressive placement outcomes has offered hope for a more inclusive academic future.[52]

9. The Road Ahead: Towards a Gender-Just Higher Education Framework

However, these green shoots cannot compensate for a landscape still marked by systemic neglect. The fundamental challenges remain structural. Until the government prioritizes the building of more colleges in under-served districts, invests in hostels and scholarships for women, and actively promotes female leadership in higher education governance, these successes will remain islands in an ocean of inequality.

In essence, women's access to higher education in Bihar is not just an educational issue- it is a socio-economic and cultural crucible, where the past, present, and future of gender equality converge. It speaks not merely of institutions and enrollments but of dreams deferred and dignity denied. The promise of higher education, particularly for the daughters of Bihar, lies not in policy declarations alone but in ensuring that no girl must choose between her gender and her growth.

10. Conclusion

The story of women's access to higher education in Bihar is a sobering reflection of deeply entrenched social, economic, and institutional inequities. It is not merely a tale of low numbers and skewed ratios but of aspirations stalled at the threshold of opportunity. This article has shown that educational exclusion for women is not the outcome of singular failures, but a culmination of overlapping disadvantages- poverty, patriarchal social norms, early marriage, weak foundational learning, inadequate infrastructure, and policy gaps. The data make clear that these barriers disproportionately affect women from Scheduled Castes, Scheduled Tribes, and other marginalized groups, compounding their educational vulnerability.

---

[52] BEU Declares result for BTech and PhD in record time, Times of India, June 30, (2025) Available at: https://timesofindia.indiatimes.com/city/patna/beu-declares-results-for-btech-and-phd-in-record-time/articleshow/122165217.cms (Last access on July 14, 2025).

While schemes like the Mukhya Mantri Balika Cycle Yojana and Kanya Utthan Yojana offer glimmers of hope, they remain isolated interventions unless supported by broader, systemic reforms. There must be an urgent focus on improving foundational schooling, expanding institutional reach, and addressing cultural constraints on women's mobility and aspirations. Representation of women in academia must also be enhanced- not just in numbers but in leadership and decision-making roles- to create a more inclusive educational environment.

In essence, the challenge is not just to bring more women into colleges, but to reimagine the entire educational ladder- from the first rung to the top- so that it supports, rather than obstructs, their journey. Until then, the dream of higher education for Bihar's daughters will remain distant- real for a few, aspirational for many, and impossible for too many more.

References

- All India Survey on Higher Education (AISHE) 2021–22, Ministry of Education, Government of India. https://aishe.gov.in
- A. Marshal, Organizing Across the Divide: Local Feminist Activism, Everyday Life and the Election of Women to Public Office. Social Science Quarterly, 83(3), pp. 707–725, (2002).
- B. Baruah, Role of Electronic Media in Empowering Rural Women Education of N.E. India. ABHIBYAKTI: Annual Journal, (2013).
- Bihar Economic Survey Report 2024–25, Government of Bihar. https://state.bihar.gov.in/finance/cache/12/07-Mar-25/SHOW_DOCS/Economic%20Survey%20Final%2022.02.2025%20%20English_11zon.pdf
- E. M. King, Educating Girls and Women: Investing in Development. Washington, DC: The World Bank, (1990).
- E. C. Lagemann, A Generation of Women: Education in the Lives of Progressive Reformers. Cambridge, MA: Harvard University Press, (1979).
- Human Development Report 2020 – The Next Frontier: Human Development and the Anthropocene, United Nations Development Programme (UNDP), (2020). http://hdr.undp.org/en/2020-report
- India Human Development Survey (IHDS-II), 2011–12, National Council of Applied Economic Research and University of Maryland. https://ihds.umd.edu
- J. Drèze& A. Sen, An Uncertain Glory: India and Its Contradictions. Princeton University Press, (2013).

- K. G. Santhya, R. Acharya, N. Pandey (et al.), Understanding the lives of adolescents and young adults (UDAYA) in Bihar, India, Population Council (2017) https://www.projectudaya.in/wp-content/uploads/2018/08/Bihar-Report-pdf.pdf
- Karthik Muralidharan & Nishith Prakash, Cycling to School: Increasing Secondary School Enrollment for Girls in India, American Economic Journal: Applied Economics, vol. 9 (3), pp321- 350, (2017).
- L. Goswami, Education for Women Empowerment. ABHIBYAKTI: Annual Journal, 1, pp. 17–18, (2013).
- M. Venkatanarayana, Out of School Children: Child Labourers or Educationally Deprived? Economic and Political Weekly, 39(38), pp. 4219–4221, Sep. 18–24, (2004).
- M. C. Nussbaum, Women and Human Development: The Capabilities Approach. New York, NY: Cambridge University Press, (2000).
- M. Ballara, Women and Literacy. Atlantic Highlands, NJ: Zed Books, (1992).
- M. Chen, Progress of the Worlds' Women 2005: Women, Work and Poverty. UNIFEM, New York, pp. 75–83, (2005).
- N. Rao, & S. Chakraborty, Gendered Barriers to Schooling in Bihar: Beyond the Numbers. Indian Journal of Gender Studies, 27(1), pp. 86–108, (2020).
- National Family Health Survey (NFHS-5), 2019–21: Bihar, International Institute for Population Sciences (IIPS) and ICF, (2021).
- NITI Aayog, School Education Quality Index (SEQI), Government of India, (2021). https://www.niti.gov.in
- R. Govinda, & M. Bandyopadhyay, Changing Framework of Local Governance and Community Participation in Elementary Education in India. CREATE Pathways to Access Research Monograph No. 35, (2010).
- R. N. Kadam, Empowerment of Women in India- An Attempt to Fill the Gender Gap. International Journal of Scientific and Research Publications, 2(6), pp. 11–13, (2012).
- S. Desai, & R. Vanneman, Enhancing Nutrition and Education Outcomes in India: The Role of Women's Agency. Feminist Economics, 21(3), pp. 1–26, (2015).

Does Governance compliance score impact firm performance: Evidence from Public sector of global south economy?

Renu Hooda[1], Assistant Professor, Department of Business Administration, Maharaja Surajmal Institute, C-4 Janakpuri, New Delhi-110058

Abstract

Present study analyzed the compliance level of corporate governance (CG) guidelines issued by Department of Public Enterprises in 2010 and its relationship with various performance indicators for the period of ten years using regression analysis. Board structure, ownership structure and audit committee characteristics were considered as CG attributes. Compliance level was measured by corporate governance index (CGI) that was based on five sub-indices covering various dimensions of corporate governance such as board structure, ownership composition, directors, reporting and reporting reliability. Results of the study stated that sampled companies adhere to 86.18 per cent of variables mentioned in CGI. Companies showed highest compliance for disclosure reliability and least compliance for board structure variables. Regression estimates reveal that governance compliance score has a positive relation with return on assets (ROA) and sales growth, however negative relation with return on capital employed (ROCE) and market capitalization. Results of the present study assist shareholders, law makers and management in analyzing and appraising existing framework of governance in regulation and its sound implementations by corporations.

Keywords: Governance compliance score, ROA, ROCE, sales growth, market capitalization, board structure, ownership structure, audit committee, Central Public Sector Enterprises (CPSEs)

[1] Email id- gurukulamrenu@gmail.com

1. Introduction

Corporate governance has emerged as a controlling mechanism in response to the high profile financial scandals that occurs across the world such as Enron, WorldCom, Adelphia in US, Bank of Credit and Commerce International, Maxwell group, Polly Peck, Barings Bank in UK, HIH Insurance in Australia and Parmalat in Italy (Toms, 2019; Raithatha and Bapat, 2012). Financial crises drawn attention to the significance of good corporate governance practices and structures. It identifies from the previous studies that compliance of corporate governance practices result in improving firm performance and long term sustainability (Bhatt and Bhatt, 2017; Singh and Kansil, 2017; Kahveci and Wolfs, 2019). In developed countries, various studies have been conducted to establish relationship between corporate governance and firm performance. However, in India, moderate researches have been conducted that identified the influence of various corporate governance practices on firm performance (Arora and Bodhanwala, 2018; Kandukuri, Memdani and Babu, 2015; Raithatha and Bapat, 2012; Singh and Kansil, 2017; Garg, 2007; Kaur and Vij, 2018). Corporate governance has become norm in India with the adoption of Clause 49 of the listing agreement by SEBI for all listed companies.

Corporate governance has been identified as "the system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity" (Solomon, 2010). Corporate governance mechanism is an instrument that shareholders exercise in order to direct the actions of professional managers towards maximizing formers' wealth. Board of directors are representative of shareholders and achieve this endeavour by reducing agency cost. Managers' gain private profits and face agency problems in case organisation has weak governance structure. As per agency theory, directors are characterised as someone who work in their self-interest and not to be careful with peoples' money. According to agency theory, corporate governance main function is to provide assurance to shareholders that managers are working in former interests. Another theory, such as, stewardship theory assumes that managers are in role of stewards of company assets who want to do a good job. Here, managers and owners interest are aligned, therefore, managers maximizes shareholders' wealth via enhancing firm performance. Stakeholder theory view various stakeholders as a mean for achieving firm performance and firm must ensure that interest of stakeholders are in balance. According to resource dependency theory, directors holding directorship of other organisation are viewed as resources, as they establish social and business networks through which one can access information that can be utilised for the benefit of firm. Here, disposal of information with a firm indicates its strength (Hillman, Withers and Collins 2014).

In order to expand the understanding on corporate governance, this study focused on examining the compliance level of corporate governance guidelines for a sample of 21 Indian Public Sector Enterprises for the period of ten years i.e. 2009-10 to 2018-19. The study attempts to testify the different theoretical and empirical aspects, establishing relationship between corporate governance parameters and corporate governance compliance level. The paper has been organised in the following section- Section 1 provided an introduction to the concept, Section 2 reviews the literature on the relationship between corporate governance and business performance, Section 3 outlines the research methodology of the study, Section 4 discusses the results and Section 5 presents the conclusion of the study.

2. Review of Literature

The literature propounded that number of studies have been conducted testing corporate governance parameters individually and as an index. Further, studies have tested their relationship with firm performance in developed and developing countries.

Many studies have developed corporate governance index on the basis of questionnaire or considering several parameters of corporate governance and found mixed results. Peni & Vähämaa (2012) used previously developed CGI and found that during crisis, effective governance system was rewarding companies with high profitability but low market return. But, after crisis, good governance system led to high market return for 62 banks in US Siagian, Siregar, & Rahadian (2013) developed a CGI using CG checklists from OECD principles, IICD (Indonesian Institute for Corporate Director), Standard & Poor's and National University of Singapore and revealed that adherence to corporate governance lead to enhanced firm value in Singapore. Achim, Borlea, & Mare (2016) stated that CGI quality has positive relation with Market value for 76 listed companies of Romania. Here, corporate governance index was developed on the basis of variables such as investor relations, governance structure, disclosure, board and management and CSR. Bhatt & Bhatt (2017) found a favourable relation of CGI and performance for 113 companies of Malaysia. Here, CGI was developed on the basis of board characterises. Shahwan & Fathalla (2020) studied 81 companies of Egypt and found that CG score has significant favourable influence on firm performance. Pintea, Pop, Gavriletea, & Sechel (2021) found significant influence of CGI on Tobin's Q, however, no significant relation of CGI was found on return on equity (ROE), economic value added(EVA) and total shareholder return.

Some studies have reported contrasting results such as Mazzotta & Veltri (2014) constructed a CGI based on board characteristics such as board size, board independence, internal committees and board committees' independence and found that CGI inversely related with equity capital cost. Ararat, Black, & Yurtoglu (2017) studied all listed companies and found that CGI has positively influence firm market value and profitability. Mehrabanpour & Chimeh (2018) studied the relation of CGI with capital cost and systematic risk and found negative relation with former and positive relation with latter for 235 listed companies of Iran.

Some studies have found no relation between CGI and firm performance. Akbar, Poletti-Hughes, El-Faitouri, & Shah (2016) investigated the compliance of corporate governance and its impact on performance for 435 companies listed on London Stock Exchange and found that regulations compliance didn't explain any variation in corporate performance. Mardnly, Mouselli, & Abdulraouf (2018) examined 96 firm year observation from Syria and revealed that overall governance index doesn't significantly explain variation in performance measures, however, one of the sub-indexes, such as ownership structure significantly explain the firm performance. Using data envelopment analysis (DEA) and multiple regression analysis, Kahveci & Wolfs (2019) found there was no relation between corporate rating score and performance for 45 Turkish companies. Furthermore, Al-ahdal, Alsamhi, Tabash, & Farhan (2020) found that board accountability didn't explain any variation in ROE and Tobin's Q and also, audit committee index. Transparency index has inverse relationship with firm performance for 106 companies of India and GCC countries.

Researchers have conducted studies to examine the relation of governance index and various other measures such as, using a sample of 268 companies of UK listed on FTSE-350 index, Mathew, Ibrahim, & Archbold (2017) developed a governance index considering variables related to board such as composition, leadership structure, member's characteristics and process. It revealed from the study that governance index has unfavourable relation with firm risk. Using 21 proxies concerning disclosure, board and ownership structure a CGI was built for textile sector companies of Pakistan, Javaid (2015) propounded that good governance companies have better access to finance compared to poor governance companies. Younas, UdDin, Awan, & Khan (2021) studied 152 non-financial companies of Pakistan for the period 2003-2017 and found that the firm adopting good corporate governance practices reduced their risk of financial distress.

Moreover, various studies have examined the compliance level/score. A study by Hassan (2012) identified that 95 listed companies of UAE disclosed highest information regarding transparency and board structure, however, least information related to auditing in their financial reports. Also, Akinkoye & Olasanmi (2014) studied compliance level of 100 Nigerian companies and concluded that sampled companies complied with average 72.15 per cent of regulations suggested by combined board of CAC and SEC in 2003. CGI was constructed on the basis of annual survey conducted by Korent, Đunđek, & Čalopa(2014) and reported significant relation of CGI with Tobin's Q. Also, Al-Malkawi, Pillai, & Bhatti (2014) stated that companies listed on UAE stock exchange adhere to 69 per cent of corporate governance guidelines for GCC countries companies, especially, compliance related to internal mechanism.

In India, Raithatha & Bapat (2012) found corporate governance compliance score of top 30 companies as satisfactory, however, no relation of compliance score with firm attributes. Kandukuri, Memdani, & Babu (2015) studied 94 mid-cap companies and found significant influence of firm value with corporate governance measured by disclosure index. Presenting similar views, Singh & Kansil (2017) developed a governance score based on Bloomberg ESG score to examine the relationship of foreign shareholding with CG using a set of 201 listed companies. It identified from the study that there was no association between CG and foreign shareholding, in case foreign shareholding has controlling stake, and however, there was impact of CG and foreign shareholding, in case foreign shareholding has no controlling stake. Similarly, Arora & Bodhanwala (2018) documented favourable influence of CGI on financial performance using index that constructed on internal and external measures such as board and ownership structure, external ownership and market competition. The study used a sample of 407 companies and conducted analysis using multivariate regression analysis. Kaur & Vij (2018) identified that higher CGI score enhances firm values significantly and study developed CGI considering 66 attributes of governance via questionnaire method. Al-ahdal, Alsamhi, Tabash, & Farhan (2020) conducted a comparative analysis of corporate governance practices of India and GCC companies. CGI was built on the practices suggested by GCC code of CG and Clause 49 of SEBI. It identified from the analyses that board accountability has no strong effect on performance and similarly of audit committee index. Also, transparency index has unfavourable influence on performance. In terms of CG practices compliance, companies belonging to GCC and India have significant difference. In a more comprehensive study, Mishra, Jain, & Manogna (2021) examined a wide dataset of 500 companies to identify the link of CGI with corporate performance via developing CGI based on various characteristics of board, ownership, directors, external control and market competition. Findings showed that CGI has favourable influence on ROA and RONW, however, unfavourable influence on market return.

Present study made an attempt to fill the gap and expand the existing literature by adding influence of governance compliance score on business performance especially in Central Public Sector Enterprises (CPSEs) in India.

3. Objective of the study

Present study aims to develop corporate governance index based on the guidelines issued by DPE, 2010 and their compliance by Maharatna and Navratna status companies during the period of 10 years. The paper also studies the relationship of governance compliance score and firm performance.

4. Research methodology

Present study conducted a detailed analysis of corporate governance compliance level for Maharatna and Navratna status Central Public Sector Enterprises (CPSEs) of India since the introduction of guidelines by Department of Public Enterprises (DPE) for the period of ten year period, i.e. from 2009-10 to 2018-19. Secondary data is exclusively used in the present study and collected from annual reports, corporate governance reports, websites of respective companies and PROWESS. Initially sample consist of 24 companies, 8 Maharatnas and 16 Navratnas but due to non-availability of governance information 3 companies were dropped and final sample consists of 21 companies.

In order to analyse the relation of various performance parameters with governance compliance score(Arora and Bodhanwala 2018, Javaid 2015), return on assets (ROA)(Mishra, Jain and Manogna 2021), return on capital employed (ROCE), sales growth and market capitalization were used as independent variables. Along with this, firm size, firm age and leverage were used as control variables (Akinkoye and Olasanmi 2014, Hassan 2012, Kaur and Vij 2018).

4.1. Governance compliance score

To identify the abidance status of governance practices by the sampled companies, corporate governance compliance score was calculated. Variables of governance are grounded on the Guidelines of Department of Public Enterprises on Corporate Governance issued in 2010. Governance compliance score consisted of five sub-indices such as board arrangement, committees, directors, reporting and reporting reliability. Dichotomous method has been adopted to construct the score. Assigned score '1' if the required variable is disclosed or '0' otherwise. The compliance score is determined by summing the scores of all variables, dividing by the total number of applicable variables for each company, and multiplying the result by 100.

$$CS_j = \frac{\sum_{i=1} X_i}{R_j} * 100 \qquad (1)$$

4.2. Model specification

The study examines the following model:

$$Performance_{it} = \propto + \beta_1 Governance\ Compliance\ score_{it} + \beta_2 Firm\ age_{it} + \beta_3 Firm\ size_{it} + \beta_4 Leverage_{it} + \varepsilon_{it} \quad (2)$$

Here, $\propto$ = intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = Slope coefficients

i = firm, t = time

ε_{it} = error term for firm i in the year t.

4.3. Data Analysis

Present study conducts a detailed analysis of the compliance of the 21 companies' in respect of board structure, directors, committees, disclosure and disclosure reliability is conducted.

4.3.1. Compliance Level for Board Structure

Board is the highest body that make strategic decisions and perform the functions of monitoring and advising. The board primarily consists of executive and non-executive directors. The need for an effective board has emerged in response to successive corporate scandals worldwide. According to SEBI and DPE guidelines, at least 50% of the board members should be non-executive directors. Additionally, the guidelines stipulate that the board must convene a minimum of four times per year to carry out its functions efficiently.

Table 1 depicts the level of compliance for board structure variables of corporate governance. Board of 20 companies was chaired by executive director and from 2014 onwards all sampled companies board was held by executive director. Government appoint its representative on the board of PSUs and guideline requires it to be maximum 2 nominee directors. During the period under study, all the sampled companies have complied with the requirement. Similarly, 100 per cent companies have followed with the obligation of having at least four board meeting during the year and for code of conduct. In 2010, number of companies that have familiarization programme for its new directors was 11, which was increase to 21 in 2019.

4.3.2. Compliance Level for Committees

Corporate Governance guidelines have mandated the constitution of board committees for all companies. They are audit committee, remuneration committee and stakeholders committee and for their effective functioning, they should be comprised of expert as well as independent directors. Audit committee ensures that there is information symmetry and quality financial information is being provided to various stakeholders. Remuneration committee requires presence of outside directors on committee to avoid benefitting directors over shareholders interest. Shareholders committee is constituted to resolve various security holders' grievances.

Table 2 presents the abidance level for 'Committees' variable of corporate governance for audit, remuneration and shareholders committee regarding the number of meetings, composition of committees, chairman as independent director, etc. According to the table, all 21 companies in the sample maintain an audit committee during the period under study, except for 2016, in that one company didn't have audit committee. All companies have satisfied the requirement of holding at least four meeting of audit committee except for one sampled company in 2016 and 2019. As per the SEBI listing agreement, formation of remuneration committee is non-mandatory requirement while every CPSEs are required to form the committee as per DPE guidelines. In 2010, remuneration committee was setup by 14 companies and which increased to 21 in 2019. Similarly, remuneration committee of 14 companies was headed by independent director in 2010 and the same was increased to 21 companies in 2019.

4.3.3. Compliance Level for Senior Management

Guidelines requires that information regarding remuneration and other financial benefits, their shareholding, stock option issued, qualification, relations and involvement in firm committees are need to be disclosed of directors whether being executive or non-executive.

Table 1: Compliance and Non-Compliance for Board Structure Variables

Board structure	2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA
Executive or NON executive director as chairman	1	20	1	20	1	20	1	20	0	21	0	21	0	21	0	21	0	21	0	21
% of Non-Executive Directors on board	19	2	21	0	21	0	18	3	18	3	7	14	13	8	15	6	20	1	20	1
Nominee Directors on board	20	1	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
At least 4 board meetings	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Membership of more than 10 committees.	20	1	20	1	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0
Chairmanship of more than 5 committees.	20	1	20	1	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0
Familiarization programme for board member	11	10	12	9	12	9	15	6	14	7	17	4	19	2	19	2	21	0	21	0
Code of conduct for directors and senior management	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0

Source: Authors' compilation. Note: A = adherence, depicts the number of companies that have complied with the guidelines on specific variable and NA = non-adherence, depicts the number of companies that have not complied.

Table 2: Compliance and Non-Compliance for Committees Variable

Committees	**2010**		**2011**		**2012**		**2013**		**2014**		**2015**		**2016**		**2017**		**2018**		**2019**	
	A	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**
Audit Committee																				
Exists	21	0	21	0	21	0	21	0	21	0	21	0	20	1	21	0	21	0	21	0
Chairman is Independent Director.	21	0	21	0	21	0	21	0	21	0	19	2	19	2	20	1	21	0	21	0
Two-third of its members as Independent Directors.	21	0	21	0	21	0	20	1	19	2	16	5	17	4	19	2	21	0	20	1
Holds at least 4 meetings	21	0	21	0	21	0	21	0	21	0	21	0	20	1	21	0	21	0	20	1
Presence of invitees for the meetings	15	6	16	5	16	5	16	5	16	5	17	4	17	4	17	4	16	5	14	7
Company secretary acts as the secretary to the committee	18	3	18	3	19	2	19	2	19	2	19	2	18	3	18	3	18	3	18	3
Committee chairman was present in the last AGM.	8	13	8	13	8	13	8	13	8	13	6	15	3	18	3	18	4	17	4	17
Committee includes someone with accounting or finance expertise.	12	9	14	7	14	7	14	7	13	8	12	9	15	6	15	6	16	5	18	3
Remuneration Committee																				
Exists	14	7	17	4	21	0	21	0	21	0	21	0	20	1	21	0	21	0	21	0
Chairman is Independent Director.	14	7	17	4	21	0	20	1	20	1	17	4	19	2	19	2	21	0	21	0
Committee composed of NEDs	5	16	13	8	17	4	17	4	17	4	15	6	16	5	14	7	16	5	15	6
Committee holds meetings	11	10	14	7	15	6	16	5	14	7	19	2	18	3	19	2	19	2	20	1
Shareholders Committee																				
Exists	20	1	21	0	21	0	21	0	21	0	21	0	20	1	21	0	21	0	21	0
Chairman is Independent Director.	19	2	20	1	20	1	20	1	20	1	20	1	19	2	20	1	20	1	21	0
Committee hold meeting	13	8	13	8	16	5	17	4	16	5	20	1	19	2	18	3	19	2	19	2
Compliance officer	20	1	20	1	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0

Source: Authors' compilation. Note: A = adherence, depicts the number of companies that have complied with the guidelines on specific variable and NA = non-adherence, depicts the number of companies that have not complied.

Table 3: Compliance and Non-Compliance for Senior Management

Disclosure regarding directors	2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA
Directors' attendance in the last AGM.	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Directors' remuneration	19	2	20	1	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0
Non-executive Directors' fee	17	4	18	3	19	2	18	3	18	3	20	1	20	1	20	1	20	1	20	1
Pecuniary relationship or transactions of NEDs	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Shareholding of NEDs	17	4	18	3	18	3	18	3	18	3	21	0	21	0	21	0	21	0	21	0
Board composition with details of committees, name, qualifications, number of directorship held in companies, etc.	20	1	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Directors' details	6	15	9	12	10	11	12	9	12	9	13	8	12	9	12	9	11	10	11	10
Details of directors' seeking appointment/re-appointment.	17	4	18	3	18	3	17	4	16	5	16	5	15	6	13	8	14	7	14	7
Relationship between directors	9	12	9	12	9	12	10	11	10	11	10	11	14	7	15	6	15	6	21	0
Details of stock options issued to directors.	13	8	13	8	13	8	14	7	14	7	21	0	21	0	21	0	21	0	21	0

Source: Authors' compilation. Note: A = adherence, depicts the number of companies that have complied with the guidelines on specific variable and NA = non-adherence, depicts the number of companies that have not complied.

Table 3 presents the abidance level for the 'Disclosure regarding directors' variable. It is evident from the table that all sampled companies disclosed directors' attendance at the last AGM and the pecuniary relationships of non-executive directors in their annual reports. Additionally, the companies reported directors' remuneration and fees paid to non-executive directors. The table also shows that companies provided information on board composition, number of directorships, and other relevant details regarding directors in their annual reports. In 2010, 9 companies disclosed the details of relationship between the directors, which was increase to 21 companies in 2019.

4.3.4. Compliance Level concerning Disclosure

Corporate Governance Guidelines requires disclosure concerning various matters such as related party transactions, Annual General Meeting details and resolution passed, penalties imposed, code of conduct, expenses incurred for directors and top management that were of personal nature, subsidiary company information, whistle blower policy, risk management policies, status of shareholders complaints, compliance of mandatory and non-mandatory requirement, company's philosophy, etc.

The information regarding the compliance of corporate governance guidelines issued by DPE and SEBI concerning 'reporting' variable has been presented in the analytical Table 4.All the sampled companies reported the quarterly financial statements and annual reports on the company's website, information in respect of annual general meetings (AGMs) held during the previous three years, about subsidiary companies, accounting policies and standard followed by company while preparing financial statements in their annual reports. It also identified that maximum businesses have disclosed the related party transactions, information regarding current AGM, special resolution passed in preceding three AGMs and general shareholders information. Further, reported the company's philosophy on corporate governance, information about penalties imposed on company, number of shareholders complaints received, resolved and pending during the year and details regarding compliance of compulsory and non-compulsory provisions of SEBI during the year in their annual report.

Table 4: Compliance and Non-Compliance for Reporting Variables

Reporting: others	**2010**		**2011**		**2012**		**2013**		**2014**		**2015**		**2016**		**2017**		**2018**		**2019**	
	A	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**
Company's philosophy on code of governance.	19	2	19	2	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0
Quarterly financial statements on website.	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Corporate governance report on website.	4	17	5	16	7	14	7	14	7	14	9	12	9	12	9	12	10	11	9	12
Annual reports on website.	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Non-compliance by the company and penalties imposed by statutory authority	19	2	20	1	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0
Presidential directives	10	11	15	6	16	5	18	3	19	2	19	2	17	4	17	4	18	3	19	2
Details of administrative and office expenses	5	16	9	12	11	10	12	9	12	9	13	8	13	8	12	9	13	8	13	8
Expenditure debited in books of accounts, which are not for the purposes of the business	6	15	10	11	13	8	14	7	14	7	14	7	14	7	14	7	14	7	14	7
Expenses of personal nature incurred for the BODs and top management	6	15	10	11	13	8	14	7	14	7	14	7	14	7	14	7	14	7	14	7
Related party transactions	20	1	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Code of conduct on website	18	3	18	3	18	3	19	2	19	2	19	2	20	1	20	1	20	1	20	1
Details of the current AGM.	20	1	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Details of the AGMs held in last three years.	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Accounting standard and accounting policies	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Passed special resolution details in the previous three AGMs.	20	1	20	1	20	1	20	1	20	1	21	0	21	0	21	0	21	0	21	0
Management Discussion & Analysis	20	1	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Risk management policies and process	13	8	16	5	19	2	19	2	19	2	20	1	21	0	21	0	21	0	21	0
Shareholders complaints received, resolved and pending during the year	19	2	19	2	19	2	19	2	20	1	21	0	21	0	21	0	21	0	21	0

Whistle Blowing Policy	8	13	10	11	15	6	15	6	16	5	20	1	21	0	21	0	21	0	21	0
Compliance with mandatory and non-mandatory requirements	19	2	19	2	19	2	18	3	18	3	20	1	20	1	19	2	19	2	21	0
Subsidiary company.	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
General shareholders information	20	1	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0

Source: Authors' compilation. Note: A = adherence, depicts the number of companies that have complied with the guidelines on specific variable and NA = non-adherence, depicts the number of companies that have not complied.

Table 5: Compliance and Non-Compliance for Reporting Reliability Variables

Reporting reliability	**2010**		**2011**		**2012**		**2013**		**2014**		**2015**		**2016**		**2017**		**2018**		**2019**	
	A	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**	**A**	**NA**
CEO/CFO certification	15	6	16	5	18	3	18	3	18	3	19	2	19	2	20	1	19	2	20	1
Compliance of Corporate Governance	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Declaration for compliance of code of business conduct and ethics	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0
Certificate of Comptroller and Auditor General of India	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0

Source: Authors' compilation. Note: A = adherencedepicts the number of companies that have complied with the guidelines on specific variable and NA = non-adherence depicts the number of companies that have not complied.

4.3.5. Compliance for Reporting Reliability

Companies are required to provide certain certificates and declaration from the competent authority concerning various compliances. In CEO/CFO certificate concerned authority ensures that all financial information provides true and fair view of company's affairs. Company obtain a certificate from auditor or practicing company secretary concerning their abidance with governance conditions. Here, Chairman & Managing Director ensures that company complied with code of business conduct and ethics in performing business affairs. Being government organisation, every company is required to obtain comments from Comptroller and Auditor General on their financial statements.

Table 5 presents the compliance levels for the 'reporting reliability' variable. The table shows that all sampled companies disclosed the auditor's certificate on corporate governance compliance, declarations by directors and senior management regarding adherence to the code of conduct, and the certificate from the Comptroller and Auditor General.

Table 6: Year-wise Value of Governance compliance score (Maximum=100)

Variables/Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Avg.
Board structure	79.17	81.55	81.55	81.55	80.36	76.79	81.55	82.74	86.9	86.9	81.9
Committees	75.3	81.85	86.9	86.9	85.42	84.82	83.63	85.42	88.1	87.8	84.61
Directors	76.19	80	80.95	81.9	81.43	88.1	89.05	88.57	88.57	91.43	84.62
Disclosure	75.97	82.03	86.36	87.45	88.1	91.13	91.34	90.91	91.56	91.99	87.68
Disclosure reliability	92.86	94.05	96.43	96.43	96.43	97.62	97.62	98.81	97.62	98.81	96.67
Compliance score	77.38	82.38	85.63	86.19	85.79	87.46	88.02	88.49	89.92	90.56	86.18

Source: Authors' compilation

Table 6 depicts the year-wise and variable-wise governance compliance score for all sampled companies. Over the period, the compliance score improved for all variables, as the companies increased their compliance. In 2010, the overall compliance score was 77.38 per cent and enhanced to 90.56 per cent in 2019 with average score of 86.18 per cent.

5. Descriptive Statistics

Table 7 depicts the descriptive statistics of the data. It provides the initial description of the observation of the study. It is revealed from the statistics that all sampled companies' governance disclosure score range from 54 to 98.3 per cent with the mean value of 86 per cent. The average value of ROCE and ROA, as accounting measure is 12 and 8.27, respectively. The average value of sales growth, as operating measure is 8.04 and market capitalization, as market measure is 26.2. Finally, regarding control variables, companies' average leverage is 0.26, average firm size is 10.7 and average firm age is 3.76.

Table 7: Summary Statistics

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Governance compliance score	86	88.3	8.51	54	98.3
ROCE	12	9.43	15.6	-54.1	85.5
ROA	8.27	6.09	14.9	-23.1	136
Sales Growth	8.04	8.44	17.1	-56.6	95.2
Market Capitalization	26.2	26.4	2.31	0	28.9
Firm age	3.76	3.81	0.312	3.04	4.23
Firm size	10.7	10.8	1.17	7.95	12.8
Leverage	0.26	0.203	0.233	0	0.876

Source: Authors' compilation

5.1. Correlation Analysis

Table 8 presents the correlation matrix among the variables. In particular, the results show a positive association between governance compliance score and performance variables. According to Kennedy (2003), correlations above 0.8 typically indicate the presence of multicollinearity. Since the highest observed correlation is 0.62, the relationships among the independent variables remain below this critical level. Hence, the results provide no indication of multicollinearity in the dataset.

Table 8: Correlation Analysis

Governance compliance score	ROCE	ROA	Sales growth	Market capitalization	Firm age	Firm size	Leverage	
1	0.0842	0.0581	0.0975	0.311	0.2613	0.2222	0.0453	Governance compliance score
	1	0.7152	0.183	0.2094	0.1532	-0.1722	-0.4291	ROCE
		1	0.0452	0.1647	0.0717	-0.1941	-0.3284	ROA
			1	-0.0243	-0.1016	0.078	0.0752	Salesgrowth
				1	0.0502	0.4167	0.0189	Market Capitalization
					1	-0.0052	-0.3207	Firm age
						1	0.525	Firm size
							1	Leverage

Source: Authors' compilation

5.2. Appropriate Method of Regression

Poolability test was applied to identify whether the data is poolable or not. The null hypothesis for the test for all groups shall have a common intercept. The outcomes of the tests are depicted through analytical Table 9. The results of the test (p-value) were found to be significant for ROCE, ROA and market capitalization model implying that null hypothesis were rejected or data were not poolable. However, for sales growth model, the p-value of the test was insignificant and therefore, null hypothesis were not rejected and pooled OLS was applied.

Table 9: Poolability Test

Variables	**Test statistic: F**	**P-value**	**Null hypothesis**	**Conclusion**
ROCE	13.6456	8.65E-27	The groups have a common intercept	Data is not poolable
Market capitalization	31.7063	1.02E-47	The groups have a common intercept	Data is not poolable
ROA	9.27179	6.11E-19	The groups have a common intercept	Data is not poolable
Sales growth	1.1426	0.310136	The groups have a common intercept	Data is poolable

Source: Authors' compilation

To identify the individual and time effect in the models, Pesaran CD test and Wald joint test, respectively, were executed. Table 10 outlines the results of the tests. For ROCE model, the Pesaran CD test p-value was found to be significant while Wald joint test p-value was insignificant implying that there was individual effect and not a time effect in the model. For market capitalization model, the Pesaran CD test and Wald joint test p-value were significant implying that there was individual and time effect in the model. For

ROA model, Pesaran CD and Wald joint test p-value were insignificant implying that there was neither individual nor time effect. Therefore, pooled OLS was applied for ROA model.

Table 10: Test for Individual and Time Effect

	Pesaran CD test		Wald joint test		
Variables	**Test statistic**	**P-value**	**Test statistic**	**P-value**	**Conclusion**
ROCE	6.17833	6.48E-10	7.99591	0.534559	There is individual but no time effect
Market capitalization	6.07458	1.24E-09	27.4845	0.001163	There is individual and time effect
ROA	0.553058	0.580224	7.05685	0.6312	There is no individual and time effect
Sales growth	N.A	-	N.A	-	

Source: Authors' compilation

Presence of the individual and time effect in ROCE and market capitalization model further requires the study to check whether the Fixed Effect Model is appropriate for the estimation of the equations or the Random Effect Model. Hausman test was conducted to choose the appropriate model under the null hypothesis that REM is appropriate. Test results were presented in the Table 11. The p-value of the test for ROCE and market capitalization model was significant implying that FEM is appropriate. Therefore, Fixed Time Effect Model was applied to ROCE and market capitalization model.

Table 11: Hausman Test

Variables	**Test statistic: Chi-square**	**P-value**	**Null hypothesis**	**Conclusion**
ROCE	26.246	0.0355149	GLS estimates are consistent	FEM is appropriate
Market capitalization	37.3703	5.05E-07	GLS estimates are consistent	FEM is appropriate
ROA	N.A	-		-
Sales growth	N.A	-		-

Source: Authors' compilation

5.3. Regression Analysis

Based on the above analysis, four models have been estimated. These are:

- Model 1 (ROCE model) – Fixed Effect Regression Model
- Model 2 (Market capitalization model) – Two-way Fixed Effect Regression Model

- Model 3 (ROA model) – Pooled OLS Regression
- Model 4 (Sales growth model) – Pooled OLS Regression

Regression results reveal that governance compliance score negatively impacts ROCE at a 1 per cent level of statistical significance and has a regression coefficient of 4.6. The whole regression model is well fitted as the p-value of the F-test is significant at 0.00000. Moreover, the R-square value of 0.701 shows that the proposed model explains 70 per cent of the variation in ROCE. Leverage and firm age also play a significant negative and positive role, respectively, in improving ROCE but their impact has been controlled for in the regression model of this study. The control variables like firm size has negative impact on ROCE, Next, market capitalization is also found to be significantly adverse relation with compliance score at the 1 per cent level of significance. Firm size and firm age is found to be positively related with market capitalization. Furthermore, control variables like leverage is negatively related with market measure. The market performance improves in case leverage declines. Several time dummies (dt) are significant and indicating that time-specific or macroeconomic factors influence market capitalization beyond firm characteristics. The conclusions align with the views of Arora and Bodhanwala (2018), Bhatt and Bhatt (2017), Kaur and Vij (2018), Mishra, Jain and Manogna (2021), Pintea, et al. (2021), and Raithatha and Bapat (2012).

Table 12: Regression Analysis

	ROCE (Fixed effect)	Market capitalization (Fixed effect)	ROA (Pooled regression)	Sales growth (Pooled regression)
	t-ratio	*t-ratio*	*t-ratio*	*t-ratio*
constant	−1.257	2.471**	0.982	−0.07373
Governance compliance score	−3.851***	−53.49***	0.5799	2.566**
Firm age	1.855*	1.468	−0.8926	−1.725*
Firm size	−1.028	2.469**	−0.4397	0.5292
Leverage	−2.820***	−2.558**	−4.151***	0.1324
dt_2		0.09838		
dt_3		−2.077**		
dt_4		−2.840***		
dt_5		−2.693***		
dt_6		−1.578		
dt_7		−2.378**		
dt_8		−0.9087		
dt_9		−1.664*		
dt_10		−2.116**		
LSDV R-squared	0.70163	0.968374	0.130203	0.057386
Within R-squared	0.117857	0.953863	0.104494	0.034169
LSDV F(34, 175)	16.55127	157.6022	5.064613	2.471732
P-value(F)	2.13E-35	8.30E-114	0.000073	0.033641

Source: Authors' compilation

Furthermore, on the contrary, ROA and sales growth have positive association with governance compliance score, though, the association is notable for latter. Firm size, firm age and leverage have negative relation with ROA, while its relation is significant in case of leverage (Shahwan and Fathalla, 2020; Hassan, 2012). On the other hand, sales growth has negative and significant relation with firm age but positive with firm size and leverage.

6. Conclusion

Present study explores the implication of governance compliance on business performance for a sample of Central public sector enterprises having Navratna and Maharatna status for the years from 2009-10 to 2018-19. Board structure, ownership structure and audit committee characteristics were considered as CG attributes. Compliance level was measured by CGI that was based on five sub-indices covering various elements of corporate governance such as board structure, ownership composition, directors, reporting and reporting reliability. Results of the study stated that sampled companies adhere to 86.18 per cent of variables mentioned in CGI. Companies showed highest compliance for disclosure reliability and least compliance for board structure variables. Regression estimates reveals that governance compliance score has a positive relation with ROA and sales growth, however negative relation with ROCE and market capitalization. Results of the present study assist shareholders, law makers and management in analyzing and appraising existing framework of governance in regulation and its sound implementations by corporations.

References

- Achim, Monica-Violeta, Sorin-Nicolae Borlea, and Codruța Mare. 2016. "Corporate Governance and Business Performance: Evidence for the Romanian Economy." *Journal of Business Economics and Management* 17 (3): 458-474.
- Akbar, Saeed, Jannine Poletti-Hughes, Ramadan El-Faitouri, and Syed Ali Zulfiqar Shah. 2016. "More on the relationship between corporate governance and firm performance in the UK: Evidence from the application of generalized method of moments estimation." *Research in International Business and Finance* 38: 417-429.

- Akinkoye, Ebenezer Y, and Omoneye O Olasanmi. 2014. “Corporate governance practice and level of compliance among firms in Nigeria: Industry analysis.” *Journal of Business and Retail Management Research* 9 (1): 13-25.
- Al-ahdal, Waleed M, Mohammed H Alsamhi, Mosab I Tabash, and Najib H S Farhan. 2020. “The impact of corporate governance on financial performance of Indian and GCC listed firms: An empirical investigation.” *Research in International Business and Finance* 51: 1-13.
- Al-Malkawi, Husam-Aldin N, Rekha Pillai, and M I Bhatti. 2014. “Corporate governance practices in emerging markets: The case of GCC countries.” *Economic Modelling* 38: 133-141.
- Ararat, Melsa, Bernard S Black, and Burcin B Yurtoglu. 2017. “The effect of corporate governance on firm value and profitability: Time-series evidence from Turkey.” *Emerging Markets Review* 30: 113-132.
- Arora, Akshita, and Shernaz Bodhanwala. 2018. “Relationship between Corporate Governance Index and Firm Performance: Indian Evidence.” *Global Business Review* 19 (3): 1-15.
- Bhatt, Padmanabha Ramachandra, and Rathish R Bhatt. 2017. “Corporate governance and firm performance in Malaysia.” *Corporate Governance: The International Journal of Business in Society* 17 (5): 896-912.
- Garg, Ajay Kumar. 2007. “Influence of Board Size and Independence on Firm Performance: A Study of Indian Companies.” *Vikalpa* 32 (3): 39-60.
- Hassan, Mostafa Kamal. 2012. “A disclosure index to measure the extent of corporate governance reporting by UAE listed corporations.” *Journal of Financial Reporting & Accounting* 10 (1): 4-33.
- Hillman, Amy J, Michael C Withers, and Brian J Collins. 2014. “Resource Dependence Theory: A Review.” *Journal of Management* 35 (6): 1404-1427.
- Javaid, Faisal. 2015. “IMPACT OF CORPORATE GOVERNANCE INDEX ON FIRM PERFORMANCE: EVIDENCE FROM PAKISTANI MANUFACTURING SECTOR.” *Journal of Governance and Regulation* 4 (3): 163-174.
- Kahveci, Eyup, and Bert Wolfs. 2019. “Family Business, Firm Efficiency and Corporate Governance Relation: The Case of Corporate Governance Index Firms in Turkey.” *Academy of Strategic Management Journal* 18 (1).
- Kandukuri, Rajya Lakshmi, Laila Memdani, and P Raja Babu. 2015. *Effect of Corporate Governance on Firm Performance – A Study of Selected Indian Listed Companies.* Bingley: Emerald Group Publishing Limited.
- Kaur, Manmeet, and Madhu Vij. 2018. “Corporate governance index and firm performance: empirical evidence from India banking.” *Afro-Asian Journal of Finance and Accounting* 8 (2): 190-207.
- Korent, Dina, Ivana Đunđek, and Marina Klačmer Čalopa. 2014. “Corporate governance practices and firm performance measured by Croatian Corporate Governance Index.” *Economic Research-Ekonomska Istraživanja* 27 (1): 221-231.
- Mardnly, Zukaa, Sulaiman Mouselli, and Riad Abdulraouf. 2018. “Corporate governance and firm performance: an empirical evidence from Syria.” *International Journal of Islamic and Middle Eastern Finance and Management* 11 (4): 591-607.

- Mathew, Sudha, Salma Ibrahim, and Stuart Archbold. 2017. "Corporate governance and firm risk." *Corporate Governance: The International Journal of Business in Society* 18 (1): 52-67.
- Mazzotta, Romilda, and Stefania Veltri. 2014. "The relationship between corporate governance and the cost of equity capital. Evidence from the Italian stock exchange." *Journal of Management & Governance volume* 18 (2): 419-448.
- Mehrabanpour, Mohammadreza, and Farzaneh Sadat Miri Chimeh. 2018. "The Impact of Corporate Governance Index on Capital Cost and Systematic Risk." *Journal of Empirical Research in Accounting* 8 (1): 227-245.
- Mishra, Aswini Kumar, Shikhar Jain, and R L Manogna. 2021. "Does corporate governance characteristics influence firm performance in India? Empirical evidence using dynamic panel data analysis." *International Journal of Disclosure and Governance* 18 (1): 71-82.
- Peni, Emilia, and Sami Vähämaa. 2012. "Did Good Corporate Governance Improve Bank Performance during the Financial Crisis?" *Journal of Financial Services Research* 41 (1-2): 19-35.
- Pintea, Mirela Oana, Andreea Mădălina Pop, Marius Dan Gavriletea, and Cristina Ioana Sechel. 2021. "Corporate governance and financial performance: evidence from Romania." *Journal of Economic Studies* 48 (8): 1573-1590.
- Raithatha, Mehul, and Varadraj Bapat. 2012. "Corporate Governance Compliance Practices of Indian Companies." *Research Journal of Finance and Accounting* 3 (8): 19-26.
- Shahwan, Tamer Mohamed, and Mohamed Mahmoud Fathalla. 2020. "The mediating role of intellectual capital in corporate governance and the corporate performance relationship." *International Journal of Ethics and Systems* 36 (4): 531-561.
- Siagian, Ferdinand, Sylvia V Siregar, and Yan Rahadian. 2013. "Corporate governance, reporting quality, and firm value:evidence from Indonesia." *Journal of Accounting in Emerging Economies* 3 (1): 4-20.
- Singh, Archana, and Ruchi Kansil. 2017. "Impact of foreign shareholdings on corporate governance score: evidence from Bombay Stock Exchange, India." *International Journal of Business and Globalisation* 19 (1): 93-110.
- Solomon, J. 2010. *Corporate Governance and Accountability.* Chichester: Wiley.
- Toms, Steven. 2019. "Financial scandals: a historical overview." *Accounting and Business Research* 49 (5): 477-199.
- Younas, Noman, Shahab UdDin, Tahira Awan, and Muhammad Yar Khan. 2021. "Corporate governance and financial distress: Asian emerging market perspective." *Corporate Governance* 21 (4): 702-715

ISSN: 2583-8814 (Online)

The Impact of Corporate Social Performance on Financial Performance: A Comparative Study of Large-size and Mid-size Indian Companies

Bhumika Bhavnani[1], Research Scholar, Sharda School of Business Studies, Sharda University, Plot No. 32-34, Knowledge Park III, Greater Noida, Uttar Pradesh-201310, India

K.R. Gola[2], Associate Professor, Sharda School of Business Studies, Sharda University, Plot No. 32-34, Knowledge Park III, Greater Noida, Uttar Pradesh-201310, India

Abstract

'Corporate Social Performance' (CSP) describes how successfully a company handles its responsibilities towards people and society, including communities, workers, clients, and other stakeholders. CSP – financial performance linkage has been an important area of research in recent years. However, the majority of research in the Indian literature has overlooked the potential influence of firm size on the relationship between social performance and financial performance. A sample of 133 Indian companies from 2019-2024 has been considered in this study. Panel Data Regression has been used to empirically investigate what impact CSP has on the financial performance for Indian companies of varying sizes. The results show that social performance has a significant positive impact on financial performance of Indian companies. Moreover, the positive impact of social performance on financial performance is found to be greater for mid-size firms as compared to large-size firms. This analysis provides insightful information that can assist managers and policymakers in creating plans to boost corporate value through

[1] Email: 2022442686.bhumika@dr.sharda.ac.in
[2] Email: kr.gola@sharda.ac.in

sustainable social practices. Additionally, by analyzing the moderating effect of business size, this study adds empirical depth to the issue of corporate social performance and financial performance.

Keywords: CSP; Financial performance; Firm size; Panel Data Regression

JEL Classification: M14; C23; G30; G32; L25

1. Introduction

Corporate success is increasingly assessed in today's business environment not only by financial performance but also by the contributions that businesses make to society. A change in how stakeholders—investors, consumers, employees, and regulators—view business value is reflected in the increased focus on environmental, social, and governance (ESG) and corporate social responsibility (CSR) policies. Among these factors, social performance has become a crucial sign of a business's dedication to human rights, diversity, ethical labour practices, community development, and employee welfare (Sustainability Directory, n.d.). Particularly in emerging economies like India, where social and economic disparities are still substantial, the relationship between a company's social performance and its profitability has grown in importance in scholarly and management discourse. The term ‘Corporate Social Performance’ describes how successfully a company handles its responsibilities towards people and society, including communities, workers, clients, and other stakeholders. It assesses how much a business contributes to societal welfare in addition to profit.

Although social performance and profitability have been extensively studied in Western economies, there is limited and often inconclusive data from emerging markets. According to some research, socially responsible businesses benefit from improved employee satisfaction, customer loyalty, and brand reputation, all of which eventually result in higher financial returns (Luo & Bhattacharya, 2006; Turban & Greening, 1997; Orlitzky et al., 2003). Some argue that social and corporate social responsibility (CSR) initiatives are an extra expense that could reduce short-term profitability (McWilliams & Siegel, 2001; Barnea & Rubin, 2010). The conflicting results highlight the need for context-specific research, especially in nations like India where market dynamics, regulatory frameworks, and social expectations are very different from those in developed countries.

Moreover, the nature and degree of social involvement are significantly influenced by the size of the company (Udayasankar, 2008). Large businesses can take extensive CSR initiatives and set up specialized sustainability departments because they usually have more administrative and financial resources. Additionally, their visibility subjects them to increased public scrutiny, motivating them to undertake more proactive social activities. Mid-size businesses, on the other hand, could have limited resources that limit their ability to invest in social activities, even though they might take part in community-focused activities to boost employee morale and foster goodwill. Therefore, comparing large and mid-size businesses can provide important insights on how business size affects the relationship between social performance and profitability.

Socially responsible performance is becoming more widely recognized as a strategic instrument for long-term value generation as well as a moral need due to the rapid growth of ESG-focused investment funds. Strong social performance can lead to lower operational risks, stronger stakeholder relations, and easier access to finance for businesses. On the other hand, poor social practices can result in regulatory penalties, a decline in investor confidence, and reputational damage. Therefore, analyzing the relationship between social performance and profitability has consequences for sustainable economic development as well as company strategy.

The majority of research in the Indian literature has overlooked the potential influence of moderating factors, including business size, on the relationship between corporate social performance and financial performance. By seeking to fill this research gap in India, one of the biggest rising economies, this study makes a significant contribution. There are two objectives of this study. First, it seeks to empirically examine how social performance and practices affect financial performance of Indian companies. Secondly, it seeks to investigate the moderating effect of business size empirically. The current analysis provides insightful information that can assist managers and policymakers in creating plans to boost corporate value through sustainable social practices. Additionally, by analyzing the moderating effect of business size, this study adds empirical depth to the issue of corporate social performance and financial performance.

The remainder of this paper is organized as follows: Section 2 discusses the literature review and the development of hypotheses. Section 3 includes a discussion on the data and research methodology adopted for the study. Section 4 presents the data analysis and results. Section 5 discusses the empirical results. Section 6 presents the conclusions of the study.

2. Literature Review

Aydogmus et al. (2022) analyzed how social performance affects profitability for 1720 companies worldwide for the time period between 2013 and 2021. They found that social performance has a significantly positive relationship with financial performance as measured by Return on Assets. Ahmad et al. (2021) analyzed how social performance affects the financial performance of UK companies. It was found that financial performance, as measured by earnings per share, is positively and significantly impacted by social performance. Tahmid et al. (2022) examined the relationship between social performance and financial performance as determined by Tobin's Q by classifying 180 listed companies that operated in 22 countries between 2008 and 2020 into ten economic sectors. They discovered that financial performance is significantly improved by social performance. The impact of ESG scores on the value and financial performance of airline companies was examined by Abdi et al. (2022). The potential moderating effects of firm size and age have also been studied. They discovered that firm size significantly moderates the link between ESG disclosure and financial performance. In the unique context of emerging economies, Akhtar and Kumaran (2023) examined whether firm size affects how a company's ESG scores impact its financial performance. Using a sample of 110 manufacturing small and medium firms (SMEs) from the Federation of Malaysian Manufacturers database, a moderation analysis is performed to investigate the aforementioned association. It was shown that a number of factors, including a lack of funding, a lack of knowledge, and a developing reputation, may make small businesses' ESG attempts ineffective. D'Amato and Falivena (2020) examined whether firm size and age had an impact on the relationship between CSR and firm value using a moderation analysis of panel data on a dataset of listed Western European enterprises. Their findings demonstrate that the size and age of the company have a significant impact on how CSR influences business value. It was discovered that CSR has a negative impact on the market success of young and small enterprises. However, the market value of the other companies is unaffected by CSR. This finding seems to support the idea that younger and smaller companies may not gain from CSR efforts due to a lack of resources, experience, reputation, and other considerations. Using a large sample of environmental, social, and governance (ESG) ratings, Ferrat et al. (2023) examined the corporate social responsibility (CSR) factor premium in the developed stock markets from 2007 to 2019 and showed that its magnitude depends on size effects. In the Middle East and North Africa (MENA) region, Shawat et al. (2024) investigated if firm size affects how a company's ESG performance affects its financial performance. The aforementioned association was examined in the MENA area countries between 2013 and 2022 using a data panel from the Thomson Reuters Eikon database. According to their findings, financial performance is significantly improved by ESG performance. Additionally, the impact of ESG performance on financial performance is strongly influenced by the size of the organization.

A recent study by Agarwala et al. (2024) found a strong positive association between the ESG performance and the financial performance of selected Indian companies listed on the NSE 500. With a focus on the moderating role of business size, Pandya (2024) investigated the relationship between financial performance and ESG performance for Indian enterprises. Using panel data from 95 companies listed on the National Stock Exchange (NSE) between 2018 and 2023, the study used a fixed-effects regression model to examine the impact of ESG scores on financial performance metrics including Return on Assets (ROA) and Tobin's Q. The results demonstrate that ESG performance has a favourable effect on financial performance. However, this association is considerably moderated by the size of the business. Larger businesses exhibit a stronger positive association between ESG performance and financial success since they have greater resources and visibility. The impact of ESG scores on the financial performance of businesses in the Indian metal industry was examined by Patel and Aditya (2024). Moderation analysis has been used to investigate the moderating impact of business size on the financial performance of selected enterprises. The association between the ESG score and financial success was found to be significantly improved by firm size. The considerable positive moderating influence of firm size suggests that larger organizations may benefit even more from their ESG activities in terms of financial success.

We can conclude from the literature review that numerous studies conducted worldwide have examined the moderating effect of firm size in investigating the relationship between social performance and financial performance. However, there is little research on this topic in the Indian setting. The direct association between social performance and financial performance has been examined in most Indian studies. However, the role of moderating factors, including business size, that may impact how social performance affects financial performance has not been taken into account in these research studies in the literature. In India, one of the biggest rising economies, the current study aims to fill this research gap.

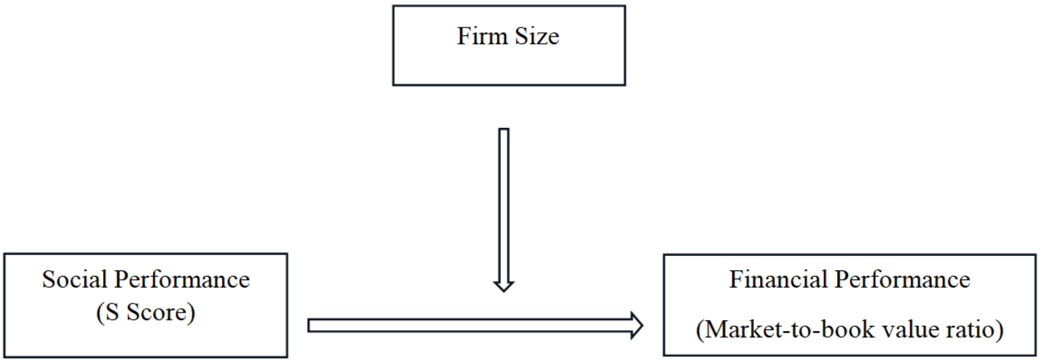
Hence, we present the following hypotheses for our study:

Hypothesis 1: Social performance of Indian companies significantly affects their financial performance.

Hypothesis 2: The impact of social performance on financial performance differs between large-size and mid-size Indian companies.

The conceptual framework shown in Figure 1 represents how firm size moderates the link between social performance and financial performance of companies.

Figure 1: Conceptual Framework



Source: Compiled by the author

3. Research Methodology

3.1. Data

Data on social performance of Indian companies, as measured by SScore in this study has been sourced from S&P Global ESG Scores. S&P was determined to be the most suitable for this study based on the analysis carried out across multiple ESG rating agencies. This is due to its comprehensive approach, data history, and acceptance. This provides a stronger foundation for empirical analysis than other international and Indian ESG rating providers. The financial and other company-specific data used in this study has been sourced from the CMIE Prowess database. The CMIE Prowess database, which is created using audited annual reports, corporate filings, and submissions to the Indian government's Ministry of Corporate Affairs, contains information about Indian businesses.

A sample of 133 Indian companies for which social performance data was provided by S&P Global ESG Scores in public domain for last six years i.e. 2019-2024 is used in this study. Based on a ranking-based methodology issued by the Securities and Exchange Board of India (SEBI), these 133 companies are divided into two categories: mid-size and large-size. This sample and time period was chosen since ESG scores data provided by S&P Global ESG Scores is available in public domain only for these 133 large and mid-sized Indian companies and for this particular time period only. SEBI uses market capitalization to categorize large and mid-sized businesses in India. Large-size businesses are ranked 1–100th in terms of market capitalization, whereas mid-size businesses are ranked 101–250th. In this study, companies are divided into two groups based on their market capitalization in 2024. In our sample, there are 75 companies in the large-size category and 58 in the mid-size category. 19 companies in our sample have moved from mid-size category to large-size category over the study period.14 companies in our sample have moved from large-size category to mid-size category over the study period.

3.2. Dependent variable: Indicator of financial performance

Two types of metrics have been used in the literature to measure a company's financial performance: market-based metrics and accounting-based metrics. Financial performance has been measured in this study using Market-to-book value (MTB) ratio, a widely used market-based metric. It is used to assess the company's current market value to its book value. MTB helps investors in making investment decisions because businesses with higher MTB are less likely to rely on debt (Agarwal et al., 2023).

3.3. Independent variable: Social Score (SScore)

Social Score is used in this study as a measure of social performance of companies. It represents how a company interacts with its staff, clients and the groups in which it operates. Human capital development, labour practices, social reporting, corporate citizenship, and philanthropy are the important criteria covered in this dimension.

3.4. Control Variables

In this study, a few firm-specific characteristics that are often used in the literature have been incorporated as control variables.

3.4.1. Company size

Previous research indicates that larger companies may be more efficient because they are more likely to leverage economies of scale, hire highly qualified management, and standardize processes that may improve performance (Dalal and Thaker, 2019).

3.4.2. Leverage of the company

In this study, the debt-to-equity ratio of companies has been used as a measure for leverage. Since businesses with strong financial performance require fewer loans, there should be an inverse relationship between leverage and financial success (Chelawat and Trivedi, 2016). Table 1 shows the description of all variables used in this study.

ISSN: 2583-8814 (Online)

Table 1: Description of Variables

Dependent variable (Measure of financial performance)	**Description**
MTB: Market-to-book value ratio	Current market value / Book value
Independent variable (Measure of social performance)	**Definition**
Social Score (SScore)	S&P Global Score
Control Variables	**Definition**
Company Size	Natural logarithm of total assets
DE: Debt-to-equity ratio (Measure of Leverage of the company)	Total debt / Shareholders' equity

3.5. Empirical Model

The regression model used in this study aims to examine the effect of SScore (measure of social performance) on MTB ratio (measure of financial performance). It is estimated for both categories of companies in our sample i.e. large-size and mid- size.

$$MTB_{it} = \alpha + \beta_1 SScore_{it} + \beta_2 ControlVariables_{it} + \varepsilon_{it} \quad (1)$$

In this model, $SScore_{it}$ refers to the social performance score of company i at the time t; $ControlVariables_{it}$ refers to control variables i.e size of the company and leverage of the company i at the time t; and ε_{it} refers to the regression model's error term.

4. Results and Analysis

Table 2 provides the descriptive statistics of the variables employed in this study. The stationarity of all the variables used in this study is checked using the Levin-Lin-Chu panel-data unit root test. Table 3 provides the results of this test. The results indicate that the data series can be considered to be stationary at level for all the variables. Panel data regression has been used to estimate the empirical model presented in section 3.5. Table 4 shows the findings of the Hausman test. Fixed effects model was selected for both large-size and mid-size firms on the basis of Hausman test results. The empirical models used in this study have been estimated by applying Generalized Least Squares (GLS) to address heteroscedasticity, serial correlation and cross-sectional dependency in data. The results of the fixed effects panel regression for large-size and mid-size firms are presented in Table 5. Our results show that SScore which measures the social performance of firms has a significant positive effect on MTB for both large-size and mid-size firms.

Moreover, the coefficient of SScore is higher in magnitude for mid-size firms as compared to large-size firms.

Table 2: Descriptive Statistics

Variables	Mean	Median	SD	Minimum	Maximum
MTB	7.76	3.965	36.811	0.24	967.72
SScore	42.807	37	18.831	12	89
SIZE	12.777	12.358	1.655	9.521	17.941
DE	1.393	0.206	16.632	-7.11	459.258

Source: Authors' calculations. Note: SD is standard deviation.

Table 3: Levin-Lin-Chu panel-data unit root test results

Variables	Statistic	p-value
MTB	-84.333	0.000***
SScore	-13.303	0.000***
SIZE	-5.531	0.000***
DE	-95.836	0.000***

Source: Authors' calculations. *** indicates significance at 1 % level.

Table 4: Hausman Test Results

Model	Chi-Square Statistic	p-value	Fixed / Random Effects
For Large-size firms	9.342	0.025**	FixedEffects
For Mid-size firms	7.832	0.049**	Fixed Effects

Source: Authors' calculations. ** indicates significance at 5 % level

Table 5: Results of Fixed effects panel regression for large-size and mid-size firms

	Large-size firms Coefficient	Mid-size firms Coefficient
Constant	2.4223 (0.5205) [0.6432]	16.1713** (0.0381) [2.0835]
SScore	0.0239* (0.000) [4.1782]	0.0525* (0.0021) [3.1076]
SIZE	0.1632 (0.5726) [0.5648]	-0.9863 (0.1391) [-1.4833]
DE	2.0424* (0.000) [33.0726]	0.0519 (0.9117) [0.1109]
Number of observations	448	341
Adjusted R-squared	0.9047	0.8382
Prob (F-statistic)	0.000	0.000

Source: Authors' calculations. Notes:*** shows significance at 1 % level, ** shows significance at 5 % level and *shows significance at 10 % level; p-values are given in parenthesis; t-statistics are given in brackets.

5. Discussion

Our findings show that social performance has a significant positive impact on financial performance of Indian companies. It is also shown that the relationship between social performance and financial performance of a company is moderated by its size. This means that the effect of social performance on financial outcomes varies according to the firm size. Both these results support our hypotheses stated in Section 2.

As seen in Table 5, the coefficient of SScore is higher in magnitude for mid-size firms as compared to large-size firms. This means that the positive impact of corporate social performance on market-to-book value is greater for mid-size firms as compared to large-size firms. This may be due to several interconnected reasons:

5.1. Signaling Effect and Visibility

Big businesses are already highly visible and well-known. For mid-sized businesses, a strong social performance serves as a signal to investors, staff, and clients about quality, stability, and sound governance. This signal raises the MTB ratio by lowering perceived risk (Brammer & Pavelin, 2006; El Ghoul et al., 2011).

5.2. Marginal Reputation Gains

The market may already be aware of large companies' well-established reputations and continuous social initiatives. Therefore incremental social investments may result in diminishing returns in market valuation. However, because they are still developing their brand image and foundation of trust, mid-sized businesses can benefit more from new or enhanced social initiatives in terms of legitimacy and reputation (Servaes & Tamayo, 2013).

5.3. Institutional and Stakeholder Pressure

Large-size firms often engage in social activities out of compliance or legitimacy pressure (e.g., India's Companies Act, 2013 mandates 2% CSR spending for large firms). As a result, the market might consider its good social performance as mandatory rather than strategic. Voluntary participation in social activities shows sincere dedication for mid-sized businesses (which aren't necessarily subject to the same legal mandate), and investors may reward such sincere commitment (Banu & Banerjee, 2025).

6. Conclusion

The majority of research in the Indian literature has overlooked the moderating influence of business size, on the relationship between corporate social performance and financial performance. By seeking to fill this research gap in India, one of the biggest rising economies, this study makes a significant contribution. There are two objectives of this study. First, it seeks to empirically examine how social performance and practices affect financial performance of Indian companies. Secondly, it seeks to investigate the moderating effect of business size empirically. A sample of 133 Indian companies for last six years i.e. 2019-2024 has been used in this study. Market-to-book value (MTB) ratio has been used as the indicator of financial performance. Panel regression technique has been used to estimate the regression models in this study.

Our findings show that social performance has a significant positive impact on financial performance of Indian companies. It is also shown that the relationship between social performance and financial performance of a company is moderated by its size. The positive impact of corporate social performance on market-to-book value is found to be greater for mid-size firms as compared to large-size firms. Since mid-sized firms experience stronger market valuation benefits from social performance, policymakers could design targeted incentives like tax rebates to encourage social initiatives and sustainability practices in this segment. Many mid-sized businesses are unable to adequately report their CSR or ESG performance. To make sustainability reporting easier, the government might create digital reporting platforms or simplified ESG disclosure templates. Improved disclosure would increase investor visibility, lessen knowledge asymmetry, and facilitate more effective capital market rewards for socially responsible businesses (Afolabi et al., 2025; Ortiz-Martinez & Marin-Hernandez, 2020).

There are certain limitations of the current study that may open up new research directions. First, this study only used data spanning six years (2019–24) since ESG scores data provided by S&P Global ESG Scores is available in public domain only for this particular time period. It may not be possible to accurately measure how corporate social performance affects financial performance over a six-year timeframe. A longer time period for analysis might be considered in future studies. Second, the current study did not look into the moderating factors—aside from business size—that might influence the relationship between social performance and financial performance. Future studies can examine how factors like competitiveness, board composition, financial slack, etc. affect the relationship between social performance and financial performance.

References

- Agarwal, B., Gautam, R. S., Jain, P., Rastogi, S., Bhimavarapu, V. M., & Singh, S. (2023). Impact of environmental, social, and governance activities on the financial performance of Indian health care sector firms: Using competition as a moderator. Journal of Risk and Financial Management, 16(2), 109. https://doi.org/10.3390/jrfm16020109
- Agarwala, N., Jana, S., & Sahu, T. N. (2024). ESG disclosures and corporate performance: A non-linear and disaggregated approach. Journal of Cleaner Production, 437, 140517. https://doi.org/10.1016/j.jclepro.2023.140517
- Abdi, Y., Li, X. and Camara-Turull, X. (2022). Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: the moderating role of size and age. Environment, Development and Sustainability, 24(4), 5052-5079. https://doi.org/10.1007/s10668-021-01649-w
- Afolabi, O., Ogunleye, O., & Adewale, O. (2025). Sustainability reporting challenges among small and medium-sized enterprises: Evidence from emerging markets. Journal of Sustainable Finance & Investment, 15(2), 210–232. https://doi.org/10.1080/20430795.2025.000530
- Ahmad, N., Mobarek, A., & Roni, N. N. (2021). Revisiting the impact of ESG on financial performance of FTSE350 UK firms: Static and dynamic panel data analysis. Cogent Business & Management, 8(1), 1900500. https://doi.org/10.1080/23311975.2021.1900500
- Akhtar, F., Senadjki, A., & Kumaran, V. V. (2023). Unearthing the Nexus between ESG and Financial Performance: Does Company Size and Age Matter?

In Advances in economics, business and management research/Advances in Economics, Business and Management Research, 410–435. https://doi.org/10.2991/978-94-6463-342-9_30

- Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. Borsa Istanbul Review, 22, S119-S127. https://doi.org/10.1016/j.bir.2022.11.006
- Banu R., A., & Banerjee, J. (2025). Exploring the legal debate on corporate social responsibility: Mandatory vs voluntary CSR approach. Indian Journal of Integrated Research in Law, 4 (6), 1058-1068.
- Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. Journal of Business Ethics, 97(1), 71–86. https://doi.org/10.1007/s10551-010-0496-z
- Brammer, S., &Pavelin, S. (2006). Corporate reputation and social performance: The importance of fit. Journal of Management Studies, 43(3), 435–455. https://doi.org/10.1111/j.1467-6486.2006.00598.x
- Chelawat, H., & Trivedi, I. V. (2016). The business value of ESG performance: The Indian context. Asian journal of business ethics, 5(1), 195-210. https://doi.org/10.1007/s13520-016-0064-4
- Dalal, K. K., & Thaker, N. (2019). ESG and corporate financial performance: A panel study of Indian companies. IUP Journal of Corporate Governance, 18(1), 44-59. https://www.researchgate.net/publication/371177996
- D'Amato, A., &Falivena, C. (2020). Corporate social responsibility and firm value: Do firm size and age matter? Empirical evidence from European listed companies. Corporate Social Responsibility and Environmental Management, 27(2), 909–924. https://doi.org/10.1002/csr.1855
- El Ghoul, S., Guedhami, O., Kwok, C. C. Y., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? Journal of Banking & Finance, 35(9), 2388–2406. https://doi.org/10.1016/j.jbankfin.2011.02.007
- Ferrat, Y., Daty, F., & Burlacu, R. (2023). The role of size effects in moderating the benefits of sustainable investing. BRQ Business Research Quarterly. https://doi.org/10.1177/23409444231162872
- Luo, X., & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. Journal of Marketing, 70(4), 1–18. https://doi.org/10.1509/jmkg.70.4.1
- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. Academy of Management Review, *26*(1), 117–127. https://doi.org/10.5465/amr.2001.4011987
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. Organization Studies, 24(3), 403–441. https://doi.org/10.1177/0170840603024003910
- Ortiz-Martinez, A., & Marin-Hernandez, D. (2020). Barriers to ESG disclosure in SMEs: Resource, knowledge, and institutional perspectives. Sustainability Accounting, Management and Policy Journal, 11(3), 495–520. https://doi.org/10.1108/SAMPJ-09-2019-0263
- Pandya, P.R. (2024). Sustainable Investing in India: The Moderating Role of Firm Size on Financial Performance. AEIDA: Journal of Multidisciplinary Studies, 1(1), 35-42. https://aeidajournal.org/index.php/AEIDA/article/view/4

ISSN: 2583-8814 (Online)

- Patel, V. & Aditya, K. (2024). ESG And its Impact on Performance: A Study of Metal Industry in India. OPJU Business Review, 1-10. https://www.researchgate.net/publication/392496474_ESG_And_its_Impact_on_Performance_A_Study_of_Metal_Industry_in_India
- Servaes, H., & Tamayo, A. (2013). The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness. Management Science, 59(5), 1045–1061.
- Shawat, R. S., Zamel, A., Otake, O., Sabry, S., & Badawy, H. (2024). How Firm Size Shapes the ESG and Financial Performance Nexus: Insights from The MENA Region. Journal of Accounting and Auditing Research & Practice, 1–15. https://doi.org/10.5171/2024.145355
- Shukla, A., & Geetika. (2022). Impact of corporate social responsibility on financial performance of energy firms in India. International Journal of Business Governance and Ethics, 16(1), 88–105. https://doi.org/10.1504/IJBGE.2022.121846
- Sustainability Directory. (n.d.). *ESG social performance*. https://esg.sustainability-directory.com/term/esg-social-performance/
- Tahmid, T., Hoque, M. N., Said, J., Saona, P., & Azad, M. A. K. (2022). Do ESG initiatives yield greater firm value and performance? New evidence from European firms. Cogent Business & Management, 9(1), 2144098. https://doi.org/10.1080/23311975.2022.2144098
- Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organizational attractiveness to prospective employees. Academy of Management Journal, 40(3), 658–672. https://doi.org/10.2307/257057
- Udayasankar, K. (2008). Corporate social responsibility and firm size. Journal of Business Ethics, 83(2), 167–175. https://doi.org/10.1007/s10551-007-9609-8

A Conceptual Framework for Systemic Risk and Regulatory Asymmetry in the Global Stablecoin Ecosystem

Meera Nangia[1], Associate Professor, Department of Commerce, College of Vocational Studies, University of Delhi

Abstract

The rapid ascent of stablecoins presents a paradox: they offer transformative digital payments while introducing profound, interconnected risks to global financial stability. This paper moves beyond a descriptive account of stablecoin failures to construct a conceptual framework for analyzing their systemic vulnerabilities. Stablecoins are conceptualized not as isolated instruments but as complex, hybrid entities that sit at the nexus of traditional finance (TradFi) and decentralized finance (DeFi), inheriting risks from both domains. Employing a mixed-methodology of qualitative case study analysis and comparative regulatory policy assessment, the paper dissects incidents like TerraUSD's collapse, USDC's de-pegging and the recent black Friday collapse to illustrate the channels of contagion. The original contribution made by the paper is the identification of a critical regulatory asymmetry: while major jurisdictions are developing oversight frameworks, their effectiveness is undermined by the extraterritorial nature of dominant stablecoins (e.g., Tether), gaps in coverage (e.g., algorithmic coins), and the lagging integration of DeFi-specific risks like governance centralization. The paper concludes that without coordinated international action that addresses this asymmetry, stablecoins will remain a potent vector for systemic disruption, especially in developing economies.

Keywords: Global stablecoins, Systemic risk, Crypto-native risks, TradFi risks, Stablecoin run, algorithmic blind spot, governance concentration, Regulatory Asymmetry

JEL: G20, G21, G23, F40, E40, E58, E60

[1] Email: meera.nangia@cvs.du.ac.in

1. Introduction

The stablecoin[2], a digital blockchain-based currency, was initially conceived to mitigate the extreme price volatility inherent in cryptocurrencies like Bitcoin, thereby facilitating their trading on crypto exchanges. The Financial Stability Board (2023) delineates a 'Global Stablecoin (GSC) by three distinguishing characteristics: (i) the existence of a stabilization mechanism, (ii) its usability as a means of payment and/or store of value, and (iii) its potential for widespread adoption across multiple jurisdictions.' This innovation is revolutionizing digital payment and financial systems globally by providing an opportunity to directly access digital currencies, potentially bypassing traditional financial institutions operating within sovereign boundaries. The market significance of stablecoins is substantial and growing rapidly. According to DeFiLlama (2025), the total stablecoin market capitalization exceeds $253 billion, dominated by dollar-collateralized variants. Tether (USDT), with a market capitalization of $158.5 billion, commands a 62.5% share, followed by USD Coin (USDC) with $61.4 billion and a 24.2% share. Other prominent stablecoins are Ethena USDe which is a crypto backed synthetic dollar stablecoin with a market capitalization of $5.298bn and algorithmic stablecoins, DAI ($4.292bn market cap) and Sky Dollar USDS ($4.247bn market cap).There is not much choice but to rely on these figures due to the absence of public blockchain data and related off-chain data (Financial Stability Board, 2024). This growth underscores their entrenched role as a foundational pillar of the crypto asset ecosystem.

Despite their rapid adoption and promised stability, the stablecoin ecosystem is characterized by a paradox: significant growth coexists with a remarkably high failure rate and profound systemic vulnerabilities. Since 2016, more than 60% of stablecoins have failed (Mizrach, 2023). This fragility has manifested in catastrophic failures, such as the collapse of the algorithmic stablecoin TerraUSD (UST) in 2022, which erased a $50 billion market capitalization in a few days and acute stress events, such as the transient decline in USDC's market price in 2023 notwithstanding its full collateralization. These incidents are not isolated but symptomatic of deeper, interconnected risks. The functioning of stablecoins on crypto trading platforms has the potential of compounding

[2] Price stability is achieved through mechanisms of collateralization (against fiat, commodities like gold or other crypto assets) or algorithmic stabilization. Popular stablecoins are Tether, USDC, Ethena, DAI. Tether (USDT) is the largest stablecoin presently operated by Tether International from El Salvador

risks in event of a disruption of the trading platform.These risks are multifaceted, stemming from the stablecoin's unique position at the intersection of traditional finance, crypto-native challenges, and structural governance issues that are discussed in detail in the subsequent sections. The complexity of distributed ledger technology and the global, borderless nature of stablecoins have further allowed regulation to lag behind innovation, resulting in significant financial losses and escalating concerns over consumer protection, monetary sovereignty, and broader financial stability.

This paper seeks to move beyond a descriptive account of stablecoin failures to address a critical analytical question: What are the multifaceted risks inherent in the stablecoin ecosystem, and to what extent do emerging regulatory frameworks address the critical challenge of cross-jurisdictional regulatory asymmetry? This research question probes whether the current fragmented regulatory response, led by jurisdictions like the EU and the U.S. is sufficient to mitigate the complex web of risks or if it creates dangerous gaps due to the extra-territorial operation of dominant stablecoins and the exclusion of certain risk categories.

The paper is structured to answer this question, as follows: Section 2 establishes a conceptual framework, categorizing stablecoin risks into three interconnected layers. Section 3 outlines the methodology, combining qualitative case study analysis with comparative policy assessment. Section 4 applies this framework to analyze key risk events, that include the collapse of TerraUSD, the Futures Exchange (FTX) trading platform and the USDC de-pegging. Section 5 discusses the findings, evaluating major regulatory responses like the EU's MiCA and the U.S. GENIUS Act against the identified risks to argue that a significant regulatory asymmetry persists. Finally, Section 6 concludes by summarizing the findings, stating the paper's original contribution, and offering policy recommendations for a more coherent and effective global regulatory approach.

2. Literature Review & Conceptual Framework

2.1. Existing Scholarship:

The academic and policy discourse on stablecoins has rapidly evolved, identifying a spectrum of risks that threaten their stability and the broader financial system. Existing scholarship is grouped into several key themes.

Risks akin to traditional finance (TradFi): A significant body of literature draws parallels between stablecoins and traditional financial instruments. Scholars like Gorton and Zhang (2021) frame stablecoins as a modern form of "wildcat banking," highlighting their susceptibility to runs due to the fundamental mismatch between their short-term liabilities (instant redemptions) and their long-term assets. This vulnerability is frequently compared to Money Market Funds (MMFs), which are also prone to breaking the buck during periods of stress (Wang, 2025). Research on the USDC de-pegging event (Catalini and Wu, 2024) underscores the counterparty risk inherent when stablecoin reserves are held within the traditional banking system, demonstrating how a bank run can directly trigger a stablecoin run.

Market Integrity and Crypto-Native Risks: Another strand of research focuses on risks endemic to the crypto ecosystem. Griffin and Shams (2020) provided seminal evidence that stablecoins, particularly Tether, could be used as a vehicle for price manipulation in Bitcoin markets. Furthermore, news reports and scholarly works capture the extreme fragility of centralized exchanges and custodians (as seen with FTX and Coin DCX), which act as critical, yet vulnerable, on- and off-ramps for the entire ecosystem (Mishra, 2025; Prentice et al., 2022; Lee et al. 2023). The mechanics of de-pegging and the factors driving investor flight have also been quantitatively analyzed, showing that even minor deviations from the peg can trigger significant outflows (Anadu et al., 2023).

Governance and Structural Illusions: A more recent area of inquiry critiques the foundational governance models of stablecoins and decentralized financial applications. Aramonte et al. (2021) coined the concept of the "decentralisation illusion", arguing that despite the rhetoric, most protocols are controlled by a small number of large holders of governance tokens, creating risks of collusion and centralized decision-making. The catastrophic failure of TerraUSD (Briola et al., 2022; Liu et al., 2023) serves as a prime case study in the inherent risks of algorithmic design, where stability mechanisms reliant purely on market incentives and speculation can fail spectacularly.

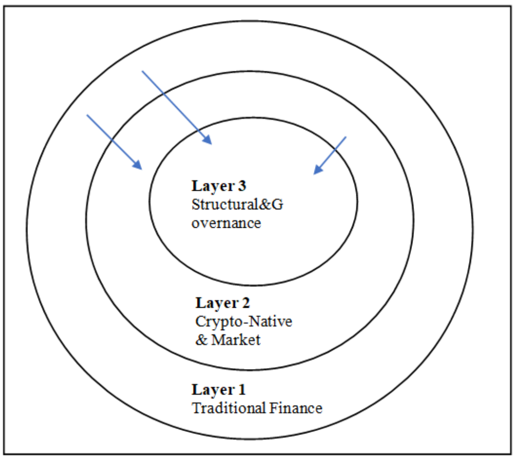
While this existing scholarship provides a robust, albeit a developing understanding of individual risk categories, a critical gap remains. The prevailing approach tends to analyze these risks in isolation - examining collateralization separately from exchange risk, or governance separately from TradFi linkages. This siloed perspective fails to capture the interconnected and synergistic nature of these vulnerabilities. For instance, the literature does not fully model how a TradFi shock such as a bank failure can be instantly transmitted and amplified by crypto-native dynamics causing panic on social media, leading to mass electronic redemptions, exacerbated by structural flaws arising out of opaque governance that delays an effective response. A holistic framework is needed to analyze how these risks interact to create systemic tipping points.

2.2. Proposed Conceptual Framework: A Three-Layer Taxonomy of Risk

To address this gap, this paper proposes a novel conceptual framework that categorizes stablecoin risks into three interconnected layers. This proposed taxonomy presents a more sophisticated analysis of how vulnerabilities in one layer can cascade into others, providing a comprehensive map for regulators and researchers. Figure 1 below explains this taxonomy.

Layer 1 comprises of the traditional finance (TradFi) risks that are inherited from the conventional financial system where stablecoins are ultimately anchored. This includes counterparty risk such as the risk of failure of a bank or institution where the reserve assets of the stablecoin are held as was seen in SVB's collapse that threatened USDC's reserves. There is liquidity and maturity mismatch risk that involves the inherent conflict between instantly redeemable stablecoins and the potentially less-liquid assets backing them such as commercial paper, or treasuries. The collateral quality and transparency risk can arise when reserve assets are not of high quality, are overvalued, or stablecoins are not fully backed. This risk can be exacerbated by a lack of real-time, audited disclosure that is seen in the ongoing concerns over Tether's reserves.

Figure 1: Three-Layer Taxonomy of Risk



Source: Compiled by the Author

Layer 2 comprises crypto-native risks that are risks inherent to the cryptocurrency and blockchain ecosystem itself. The exchange and custodial risks arise from the vulnerability of centralized platforms (that keep custody of user assets) stemming from poor governance, operational failures, or cybersecurity breaches (e.g., FTX, Mt. Gox, Coin DCX hacks). There is price manipulation and market integrity risk when stablecoins are used to artificially inflate trading volumes or manipulate the prices of other crypto assets. There is risk of de-peg that can hit specific blockchain-accelerated dynamics - of how a loss of confidence triggers mass redemption events, often facilitated by smart contracts and transparent on-chain panic.

Layer 3 comprises governance and structural risks arising from the architectural and governance design of the stablecoin arrangement itself. There is risk of failure from centralization of infrastructure that places reliance on centralized, single points for critical services like node hosting (e.g., the Infura outage that crippled Binance and MetaMask). The algorithmic design risk that was considered infallible but the fundamental fragility of stabilization mechanisms relies on code and market incentives and is not backed by off-chain assets (e.g., the death spiral of Terra-Luna).The "Illusion of Decentralization" refers to the centralization of power and control over decision-making among a few- be it developers, venture capital firms, or governance token holders, undermining the purported resilience of decentralization (Aramonte, et al, 2021).

This three-layer framework will be applied in subsequent sections to analyze major stablecoin failures and evaluate the scope and limitations of the current regulatory landscape.

3. Methodology

This research employs a mixed-methods approach to comprehensively analyze the risks of the stablecoin ecosystem and the regulatory response. This design allows for a deep, qualitative understanding of failure mechanisms and a systematic evaluation of policy frameworks.

3.1. Qualitative Case Study Analysis

To move from abstract risk categories to concrete understanding, this paper employs a qualitative multiple case study method. Three critical failure/stress events were selected for their paradigmatic value in illustrating distinct yet interconnected vulnerabilities.

The TerraUSD (UST) collapse (May 2022) was selected as the quintessential example of a Layer 3 (Governance and Structural) risk materializing. It serves to analyze the inherent fragility of algorithmic design and the dynamics of a pure crypto-native bank run. The second event is the FTX collapse in November 2022. This case is analyzed as a prime manifestation of Layer 2 (Crypto-Native) risk. It demonstrates the profound systemic risk posed by the failure of a centralized, correlated node within the ecosystem, encompassing custodial, operational, and governance failures. The third event is the USDC de-pegging that took place in March 2023. This case was chosen since it exemplifies the Layer 1 (TradFi) risk contagion. It provides a clear study of how a traditional bank run (Silicon Valley Bank) directly triggered a crisis for a fully-collateralized stablecoin, highlighting the critical linkage between the crypto and traditional financial systems. Each case is dissected to reconstruct the timeline of the event, identify the primary risk triggers, and analyze how vulnerabilities potentially cascaded across the proposed three-layer framework.

3.2. Comparative Policy Analysis

Regulation aligned with the Financial Stability Board (FSB) guidance is emerging across jurisdictions depending on sovereign openness to stablecoins. To evaluate the regulatory response, this paper conducts a comparative analysis of the foremost regulatory frameworks enacted post these crises.

Japan passed stablecoin regulation in 2022 subsequent to the collapse of the then most capitalized stablecoin Terra USD (The Strait Times, 2022). The European Union in 2023 legislated Markets in Crypto-Assets Regulation (MiCA) that was rolled out in stages and is fully effective from 2025 (Reuters, 2023). Singapore issued a stablecoin regulatory framework on 15August2023, South Korea enacted the Virtual Asset User Protection Act (VAUPA) in 2023 that was implemented in July 2024 (Jon et al, 2025) and Hongkong passed a stablecoin bill on 21 May2025 (Hong Kong monetary Authority, 2025). Most recently, in July 2025, ‘the Guiding and Establishing National Innovation for U.S. Stablecoins Act' (Genius Act 2025) by USA has brought stablecoins into global limelight (Watson, 2025). China has banned private stablecoins (Reuters, 2025) and India treats them similar to gambling chargeable to 30% tax as a deterrent. United Kingdom and Canada are the G7 countries that have not yet come out with stablecoin regulatory oversight. The European Union, America and other countries in the Asia pacific where stablecoin legislation has been enacted have additional stakes with domestic currency denominated stablecoins inducted into the crypto eco-system.

The analysis evaluates each regime against the three-layer risk taxonomy. This comparison aims to identify strengths, overlaps, and, most importantly, critical gaps and asymmetries in the global regulatory landscape.

3.3. Data Sources

The analysis draws upon a convergence of diverse data sources to ensure robustness. The paper relies on academic literature such as peer-reviewed journals and working papers from economics, finance, and law that provide theoretical and empirical analysis. A rich source of information and conceptual clarity are primary regulatory documents that include official texts of legislation, consultation papers, and final reports from regulators (e.g., FSB, Financial Action Task Force (FATF), EU, U.S. Congress). The primary source of industry and market information comes from analytics platforms (DeFiLlama) and other data application programming interfaces that continuously measure market capitalization, trading volumes, and on-chain flows. Document analysis of news reports from major financial publications (e.g., Reuters, The Economist, Financial Times) which were triangulated with primary regulatory documents and market data to ensure accuracy.

4. Analysis: A Taxonomy of Risks in the Stablecoin Ecosystem

This section applies the three-layer conceptual framework to the evidence, using the selected case studies to illustrate the manifestation and interaction of risks.

4.1. Layer 1: Linkage to Traditional Finance (TradFi) Risks

Counterparty Risk and Bank Run Contagion-The USDC-SVB Case Study: The fully reserved stablecoin USDC (issued by Circle) lost its peg in the face of the Silicon Valley bank run. This was the result of its Layer 1 TradFi linkage. It is naïve to assume that fully backed and duly audited reserves consisting of high-quality liquid assets (HQLA) are a sufficient cover for the riskiness of stablecoins when the traditional financial system has suffered many instances of bank failures. For an insured depository institution, a part of the liability is insured but a substantial part may be unsecured liabilities particularly towards large retail or corporate depositors of the bank (who deposit more than the insured amounts).

In March 2023, the failure of the Silicon Valley Bank (SVB) triggered a bank run on the Signature Bank and simultaneously exerted selling pressure on the USD Coin (USDC), the second-largest stablecoin at the time because of the likelihood of loss of its backing reserve deposits ($3.3 billion) held at SVB. Circle's USDC had about 8% of its reserve at risk, it rapidly de pegged and withdrew $3 billion from the struggling bank (Catalini and Wu 2024).Similarly, the collapse of Signature Bank and Silvergate Bank (owned by Silvergate Capital Corporation) resulted in losses to their crypto clients. These banks were intricately connected to the Signet platform and the Silvergate Exchange Network (SEN) respectively and were among the pioneers in converting dollars to crypto currencies and vice versa (Larsen, 2023). However, the crisis was halted by the extraordinary, discretionary layer1 government intervention that compelled the Federal Deposit Insurance (FDIC) to offer protection to depositors in addition to the usual insured funds and the contagion was stopped (Egan, 2023). This event proves that the stability of a "fully-backed" stablecoin is only as sound as the soundness of the traditional financial institutions where its reserves are held.

Liquidity Mismatch and the Money Market Fund Parallel: Like a Money Market Fund, a stablecoin promises immediate liquidity at par value. However, its reserves, even if composed of High-Quality Liquid Assets (HQLA) like treasury bonds may not be instantly saleable without incurring losses in a stressed market. A mass redemption event could force a fire sale of these assets, potentially causing the stablecoin to "break the buck" and triggering a wider contagion within the traditional financial system from which the assets are drawn (Gorton and Zhang, 2021).

*Safety of Collateral:*Any de-pegging of the price of stablecoins can trigger a fire sale of collateral reserves by the stablecoin issuer to deliver on their commitment of redemption at par. The stress on collateral comprising of high-quality liquid assets and government treasuries being an essential part of the traditional financial system exponentially increases the risk to systemic banking. Stablecoin issuers can also be motivated by higher profits to engage in riskier behavior, to the extent of lending out the very assets backing the stablecoin (Frost et al., 2020).

The Opacity of Collateral - The Tether case study: Tether (USDT) has long faced scrutiny over the transparency and quality of its reserves.Tether reserves composed of Bitcoin, gold and other HQLA beyond cash and treasuries are not fully disclosed but it continues to be the largest stablecoin by trading volume (Bains, et al 2022). While it claims to be fully backed, its disclosures are periodic and not real-time. This opacity creates a persistent systemic risk; the entire ecosystem's reliance on USDT is based on public perception of stability that cannot be continuously and independently verified. A revelation of a significant collateral shortfall could trigger a catastrophic run with no traditional lender of last resort springing to its protection.

4.2. Layer 2: Crypto-Native and Market Integrity Risks

The Fragility of Centralized Exchanges: The FTX platform collapse is the archetypal Layer 2 risk event. Holders on this cryptocurrency exchange panicked after hearing unfavorable news reportage and the selling pressure created a liquidity crisis. As the information about the founders' relationship with a market maker hedge fund became public, it raised concerns about poor ethics and management practices at FTX, eventually leading to its demise. FTX proclaimed itself to be the 'most regulated' exchange and always open to scrutiny from the government authorities but was actually blatantly misusing its powers (Prentice 2022). It was not a stablecoin failure per se, but FTX exemplified custodial risk (misuse of customer funds),operational risk(poor governance), and counterparty risk(exposure for its users and partnered entities).

The largest centralized crypto exchange, Binance, with $149.616bn assets (DefiLlama. 2025 June30) was also subject to scrutiny. The US SEC served lawsuits on the Binance crypto exchange and founder Changpeng Zhao for manipulating trading on the exchange, siphoning off funds and deceiving its customers that were dismissed in May, 2025 (Stempel, 2025). The Indian exchange, Coin DCX reported a theft of $44 million on 19 July2025. The forensic expert, Ciccomascolo attributed the theft to disproportionate use of hot wallets that compromised back-end servers (Mishra 2025). These incidents reveal that the promised disintermediation of finance has often been replaced by re-intermediation through less-regulated, opaque, and correlated centralized entities, creating massive single points of failure.

Price variation: Theoretically, the fully collateralized stablecoin should be able to maintain real time price parity with the underlying currency but in practice intra-day variation is commonly observed. Doubts have been expressed about the maintenance of price stability and sustainability of fully collateralized stablecoins (Eichengreen, 2019). Stablecoins command a premium for offering safe haven protection to the crypto economy as observed during the crashes in 2018 and 2019, while discounts derive from liquidity effects and collateral concerns (Lyons and Natraj, 2020). An examination of intraday price changes suggests that stablecoins act as a secure refuge in crypto currency markets as they support increased trading of volatile crypto currencies. It is seen that high fluctuation in the price of Bitcoins is accompanied by higher volume turnover that matches the gains for stablecoin holders (Baur and Hoang, 2020).

Price Manipulation and Market Dominance: Research by Griffin and Shams (2020) suggests Tether was used to manipulate Bitcoin prices during the 2017-18 Bull Run. This market integrity risk stems from the concentration of stablecoin supply and the lack of surveillance that characterizes traditional exchanges. The dominance of a few stablecoins creates a vector through which bad actors can influence the entire digital asset market, undermining its credibility and stability.

Mechanics of a Stablecoin Run: Unlike traditional bank runs, stablecoin runs occur at blockchain speed. When the stablecoin price drops below $1, redemption by holders begins preferably on the same blockchain and to safer stablecoins similar to a money market fund ‘breaking the buck’. If price de-pegs to $99.1 cents, the stablecoin experiences 3.4% greater daily outflow (Anadu, et al 2023). Information impacts the perception of safety and a natural ‘herd’ response to the uncertainty created by the event may precipitate the mass redemption of the stablecoin, causing it to de-peg further towards decline. The digital nature of redemptions allows fear to spread globally in minutes via social media and on-chain analytics, enabling a "flash run" that can drain reserves before an issuer can react, as seen in the death spiral of TerraUSD stablecoin.

Redemption risks: Stablecoins are promoted as crypto currency that is price-stable and convenient to ‘on and off ramp’. Stablecoin issuers promise redemption but this is often subject to certain conditions, such as issuers may allow redemption only on business days or once a week, full value in cash may not be guaranteed, there may be limits on redemptions, making them impractical for everyday users. Further, there is also risk of loss on account of online fraud or stealing of stablecoins.

A combination of risks: A crypto shock was experienced on 10–11 October 2025 when over US$19 billion in open positions were squared off within 24 hours, triggering a cascade of sell-offs across major exchanges. The likely trigger was the dumping of USDe (stablecoin not backed by real assets) in the Binance centralized exchange. Major coins such as Bitcoin and Ethereum prices fell substantially as users experienced difficulty in liquidating their assets and covering positions (Reuters, 2025). The event exposed the fragility in leverage-driven systems (defi) in terms of transparency, resilience, risk controls of exchanges and have fuelled debate over whether the crash was purely market panic or a coordinated attack.

4.3. Layer 3: Structural and Governance Risks

The Algorithmic Illusion is evidenced by the Terra-Luna collapse case study and is the purest expression of Layer 3 risk. In May 2022 the debacle of the TerraUSD (UST) dollar denominated stablecoin, the tenth-largest cryptocurrency at the time (John, et al, 2022) focused attention on the risks associated with the algorithmic stablecoins. TerraUSD (UST) was a complex lending and borrowing framework that offered high yields to stablecoin depositors. 'It had a combined market capitalization of $50 billion, with an average daily trading volume of $1 billion', that was destroyed within three days, with smaller losses for sophisticated investors (Liu, 2023). Its stability mechanism was purely algorithmic, relying on a mint-and-burn arbitrage mechanism with its sister token, LUNA also used for governance. This design was critically flawed, as it was reflexive, its stability depended on perpetual market growth and confidence to mint. The price of UST declined from 98 cents to around 15 cents within a span of a week on panic selling as UST disappeared from multiple platforms similar to a run on money market funds (Ledbetter, 2022). It was unable to maintain its value against the US dollar despite the Luna token as the counterweight. When a large withdrawal overwhelmed the mechanism, the ensuing death spiral destroyed its full value in days, demonstrating that code-based incentives are no substitute for real-world asset backing in a crisis (Briola et al., 2022).

The "Illusion of Decentralization" is in practice a concentration of power. Many DeFi protocols and stablecoin arrangements assert that they do not depend on any outside control. The decisions taken by governance tokens are without human intervention. As noted by Aramonte et al. (2021), governance tokens are often highly concentrated, allowing a small cohort of "whales" to control protocol decisions. For instance, Mizrach (2023) notes the high Herfindahl indices for stablecoins like Binance USD that indicate concentrated holdings. This creates a governance risk where the interests of a few can override those of the many, and decisions can be made that jeopardize the system's stability for private gain. Allen (2023) argues about the absence of information in the public domain about the powers of the core developers, compensation received by them and the identity of the payer, the possibility of native digital assets becoming stranded on loss of interest by the developer.

Centralization of Infrastructure: In the November 2022 incident, when Ethereum blockchain was in the process of splitting its chain to a faster more efficient Ethereum2.0, an outage at the centralized infrastructure provider Infura crippled access to the Ethereum blockchain is an example of the critical Layer 3 risk. Infura was unable to provide accurate price data for Ethereum and ERC20 tokens such that crypto exchanges like Binance and wallets like MetaMask were forced to temporarily suspend operations much to the distress of the ETH and ERC20 token holders. On the other hand, the Bitfinex exchange that runs its own Ethereum nodes did not face this crisis (Vermaak, 2022). The stablecoin eco-system requires firms such as Infura[3], BlockCypher and Alchemy (crypto service providers) that allow developers with quick and easy access to nodes of blockchains such as Ethereum to live test their application instead of building and maintaining their own independent nodes, similar to Netflix using the Amazon Web services. Events like this bring to fore the reality of the supposedly decentralized ecosystem that relies on a handful of centralized service providers for core functions like node hosting. This creates a critical single point of failure, undermining the resilience promised by blockchain technology and defeating the core premise of decentralization.

Dis-intermediation of traditional finance: The technology enables the transfer of money sidestepping banking systems and government controls. Stablecoins can fuel money laundering and finance terrorist activities because of bank disintermediation. The fears of unregulated stablecoins like Tether fueling a global shadow economy are not exaggerated (Bullough Economist 2025).

5. Discussion: The Regulatory Response and the Challenge of Asymmetry

Stablecoins are often dismissed as possessing no inherent value since they are piggybacking on the traditional financial system in a bid to gain legitimacy. Sceptics

[3]owned by ConsenSys, founded and managed by Ethereum co-founder Joe Lubin

critique certain crypto assets as a form of gambling and demand they be subject to rigorous regulation (Panetta 2023). A stablecoin backed by liquid assets such as government bonds or bank deposits, operates more like a money market fund or a 'narrow bank' that is not engaged in credit creation. Hence, issuers of stablecoins require less oversight in comparison with commercial banks but stablecoins are required to reflect the same purchasing power as fiat currency (Bank of England, 2023). Sovereign governments are rightly concerned with price deviations in the stablecoin that create friction in transactions through discount calculations or risk premiums that challenge the interchangeability with sovereign currency, i.e. the singleness of money. Stablecoins can impact payments, settlements and trade besides threaten financial stability (Bidder, et al, 2025).

A distinction is drawn between "global stablecoins" such as Facebook's Libra and other stablecoins in terms of the challenge for financial authorities around the world (Arner, et, al. 2020). The crypto industry and its advocates argue in favor of clear-cut regulation along a continuum of stringency corresponding to the riskiness in the structure of the stablecoins and the principle of regulatory parity with traditional finance. Blockchain technology is viewed by many as a symbol of economic freedom that should have minimalistic regulation in order to promote a culture of innovation unlike the regulation of traditional finance that is premised on restricting the public from making bad decisions with their own money (Schwarcz, 2023).

International financial bodies[4] are focused on deciphering the impact of stablecoins and providing inputs for regulation of this emerging industry. The final report of the Financial Stability Board has 09 recommendations to take care of financial stability risks arising out of the implementation of the global stablecoin framework in each jurisdiction (Financial Stability Board, 2023). There are ten elements to be considered for a stablecoin to qualify as a global stablecoin (GSC) (Financial Stability Board, 2023).[5]The recommendations

[4] The Financial Stability Board (FSB), The Bank of International Settlements (BIS), Financial Action Task Force (FATF)

[5] Number and type of stablecoin users ■ Number and value of transactions ■ Size of reserve assets ■ Value of stablecoins in circulation ■ Market share in cross-border use in payments and remittances ■ Number of jurisdictions with stablecoin users ■ Market share in payments in each jurisdiction ■ Redemption linked to a foreign currency or multiple currencies ■ Interconnectedness with financial institutions and the broader economy, ■ Interconnectedness with the wider crypto-assets ecosystem, other crypto-asset services and decentralised finance ■ Integration with digital services or platforms (e.g. social networks, messaging applications)

range from scrutiny of stablecoin issuers and supporting infrastructure firms to safeguarding customer interests. The stablecoin issuer is expected to implement a risk management framework to protects its reserve assets from loss of value, and secure its data storage facilities. The stablecoin issuer is responsible for informing users about the working of the stablecoin, its associated risks and repurchase of the stablecoin at the price of the referenced currency. It is suggested that redemption costs to the user be reasonable with no conditions or restrictions imposed and the stablecoin issuer clearly disseminate rules about the same. The recommendations focus on setting up of a process for the orderly resolution of insolvency of the stablecoin issuer to minimize adverse impacts on financial stability that give primacy to the stablecoin holder in the order of claimants. Given the trans-national character of stablecoins, jurisdictions are advised to be legally empowered for collaborating with each other on sharing of information. Further, recommendation 9 excludes an algorithmic GSC on grounds of its stabilization method (Financial Stability board, 2023) and these are subsequently not regulated in the European Union and America. With rapidly growing usage in cross border payments outside of crypto exchanges, governments are starting to accept the 'stablecoin' subset of the crypto assets industry and acknowledge that stablecoin risks require oversight.

5.1. Mapping Regulatory Responses to the Risk Framework

As regulatory oversight evolves, the MiCA framework and the GENIUS Act have emerged as prominent examples representing a significant step towards mitigating stablecoin risks. However, their effectiveness is uneven across the proposed three-layer taxonomy.

Layer 1 that covers traditional finance risks has the most robust and effective regulation. Regulation on asset segregation, collateral, disclosure norms and market surveillance covers risks emanating out of improper custody or utilization and under-collateralization (Arner et al, 2020). Both MiCA and the GENIUS Act impose stringent requirements on asset-backed stablecoins issuers that include mandatory reserve backing with HQLA, strict custody rules regarding segregation, frequent independent audits, and clear low-cost redemption rights for holders. These rules directly address the counterparty, liquidity, and transparency risks exposed by the USDC de-pegging event.

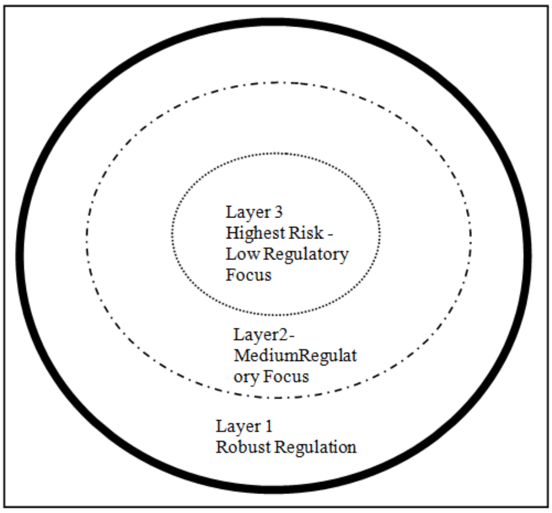
Layer 2 that covers crypto-native risks is developing but not complete. The frameworks extensively regulate Crypto-Asset Service Providers (CASPs), exchanges, wallets, custodians by targeting liquidity mismatches through prudential requirements, promptness in redeemability, transparency through white papers, and fixing accountability of service providers including custodians of reserve assets and wallets in order to ensure consumer protection. This addresses defaults such as the FTX collapse. In view of the run mechanisms, 'safe harbour' clauses that buy the issuer time to explore other options to avert or minimize financial stability risks due to insufficiency in reserve assets can be considered (Digital Pound Foundation, 2025). However, enforcement against market manipulation remains a challenge, dependent on traditional market surveillance tools applied to a 24/7 global market.

Layer 3 focused on governance and structural risks contains the most significant regulatory gaps. While governance requirements for issuers exist, they do not fully address deep protocol-level issues. The Financial Action Task Force (2025) has issued anti-money laundering and counter-terrorist financing guidance for stablecoins and crypto asset providers and recommends application of the Travel Rule that requires crypto service providers to collect and share transaction (originator and beneficiary) data above a threshold. The treatment of algorithmic stablecoins is yet to become operational.

5.2. The Emergence of Regulatory Asymmetry

Regulators are not in an enviable position when tasked with a 'moving target', a continuously evolving digital innovation that is providing stability with a reasonable degree of success. However, the challenges thrown up by stablecoins are too dangerous to ignore. The analysis reveals a critical regulatory asymmetry since the concerted effort to tame Layer 1 risks is creating a dangerous displacement of risk into less-regulated areas of Layers 2 and 3, particularly when combined with jurisdictional arbitrage.

Figure 2: Regulatory Asymmetry and the Three-Layers of Risk



Source: Compiled by the Author

The first gap: the extra-territoriality challenge: The most pressing asymmetry lies between onshore regulation and offshore operation. A prime example is Tether (USDT), espousing the principles of economic and regulatory freedom. The crypto ecosystem's dominant liquidity pair is domiciled in jurisdictions with less stringent oversight (first the British Virgin Islands, now El Salvador); it operates extra-territorially, serving global markets while potentially evading the stringent reserve and audit requirements of MiCA or the GENIUS Act. This creates a two-tier system - regulated, transparent stablecoins (USDC) for on-chain compliance, and a vast, opaque, and systemically critical shadow system (USDT) that remains a latent risk to the entire crypto and traditional financial system.

As Bains et al. (2022) noted, Tether's significant purchases of U.S. Treasuries make it a systemic entity, yet it operates outside the direct reach of U.S. regulatory oversight.There is urgency in developing surveillance and extra-territorial oversight since many entities operate from offshore centers. The public blockchain makes it possible to use fictitious identities and conceal the real jurisdictions that make detection of the actual user challenging (Financial Stability Board, 2024).

The second gap: the Algorithmic blind spot: In explicitly excluding or severely restricting non-asset-referenced tokens, both MiCA and the Genius Act create a dangerous blind spot. By declaring algorithmic stablecoins outside the scope of regulatory oversight, despite the algorithmic stablecoins continuing to be traded on crypto exchanges, does not eliminate the risk; it is merely pushed into unregulated wilderness. The Terra-Luna collapse proved the catastrophic potential of this model. It is essential to understand and develop specific containment strategies for its unique failure modes, such that the next iteration of algorithmic experiments does not threaten financial stability.

The third gap: the DeFi Governance loophole: Current regulations focus on the legal issuer but fail to adequately address the decentralized façade and infrastructure centralization. The concentration of governance token power, identified by Aramonte et al. (2021) and Mizrach (2023) is not effectively mitigated. Furthermore, the reliance on centralized infrastructure providers like Infura, Alchemy, and BlockCypher creates a critical systemic vulnerability. These entities, essential for the ecosystem's operation, function as utilities thatrequire continuous supervision. The Infura incident demonstrated how a failure at one Tech Company can cripple access to entire blockchains, a risk that requires greater attention.

The fourth gap: lack of regulatory oversight in majority of the countries: A stablecoin pegged against the dollar or euro is being used across jurisdictions with a promise of conversion into the sovereign US dollar or Euro, operating like a synthetic foreign currency. Further, it can easily be acquired and transferred across national boundaries. This presents a problem specific to citizens of nations who are users of global stablecoins but without currency-pegged stablecoins of their own and no stablecoin regulation in their jurisdiction.

A study on the costs of networking and verification in blockchains argues that this technology has the potential to reduce the market power of intermediaries but not eliminate them since ‘last mile’ connectivity cannot be on blockchain (Catalini & Gans, 2016). If sovereign countries allow citizens to access stablecoins, the platforms offering these digital assets and firms responsible for providing last mile connectivity must be regulated.

5.3. Implications for Financial Stability

This regulatory asymmetry has profound implications. It means that the most significant and interconnected risks are precisely the ones least controlled.

For Advanced Economies: Tether was the seventh largest buyer with $33.1 billion of U.S. government debt in 2024 (Lang and Howcroft, 2025). The failure of an offshore behemoth like Tether could trigger a fire sale of its vast U.S. Treasury holdings, disrupting bond markets. Simultaneously, it would vaporize the primary trading pair for the entire crypto market, causing a liquidity crisis that would instantly transmit shockwaves to regulated onshore entities and their traditional banking partners.

For Emerging Markets and Developing Economies (EMDEs): The threat is even more acute across jurisdictions since the dollar is the world reserve currency and the dollar denominated stablecoins backed with US Treasury reserves happen to dominate the global stablecoin market. Citizens in countries with capital controls or weak currencies are increasingly using dollar-pegged GSCs like USDT. This leads to currency substitution (dollarization), which erodes the effectiveness of domestic monetary policy and threatens monetary sovereignty. The regulatory asymmetry means their citizens are exposed to the risks of an offshore, under-regulated financial instrument without any recourse to consumer protection or lender-of-last-resort functions from their own or the issuing jurisdiction's authorities.

6. Conclusion and Policy Implications

6.1. Summary of Findings

This paper argued that stablecoin risks are multifaceted and interconnected, operating across three layers: traditional finance (TradFi), crypto-native, and governance/structural. Through case studies and policy analysis, the paper demonstrated that while the nascent regulatory response is effectively targeting Layer 1 risks, it suffers from a critical regulatory asymmetry characterized by the extraterritoriality challenge, the algorithmic blind spot, and the DeFi governance loophole. This leaves the most systemic vulnerabilities in layers 2 and 3 exposed and actively displaced into regulatory shadows.

6.2. Original Contribution to Knowledge

This paper's original contribution is twofold. It provides a novel three-layer risk taxonomy conceptual framework that moves beyond siloed risk analysis to offer a holistic model for understanding how risks in the stablecoin ecosystem interact and cascade. Secondly, it identifies theregulatory asymmetry**.** It is the first to systematically argue that the current regulatory project, while well-intentioned, is creating a dangerous asymmetry by solving the easiest problems classified as Layer 1 while failing to address the more complex, cross-jurisdictional structural risks of Layers 2 and 3, thereby potentially increasing systemic fragility.

6.3. Recommendations for Policymakers

The following suggestions emerge from the findings and preceding discussion:

Enhanced Cross-Border Supervisory Cooperation: Regulators must establish formal frameworks for overseeing global stablecoin issuers, regardless of their domicile. This includes mandatory information-sharing agreements and collaborative examinations for entities of systemic size, akin to the supervision of 'Global Systemically Important Banks' (FSB, 2023; IMF, 2023).

Developing Principles for Critical Crypto Infrastructure: Policymakers must expand their scope to designate and oversee essential blockchain infrastructure providers (e.g., major node service providers, cross-chain bridges) as critical financial market utilities, imposing standards for resilience, redundancy, and cybersecurity (FSB, 2023; Aramonte et al., 2021).

Proactive Strategies for EMDEs: EMDEs require tools to manage the threat of currency substitution. MiCA demands compliance from all crypto asset service providers servicing within the EU region regardless of where they are registered. The Genius Act has a provision to allow sale of stablecoins in America that are issued elsewhere if the place of domicile is subject to similar legislation besides not being on the American sanctions list. Emerging economies that are not considering issue of domestic currency pegged stablecoins need similar regulation to protect their monetary operations and its citizens from foreign currency stablecoins. They can additionally develop their own central bank digital currencies (CBDCs) for digital payment sovereignty, but engage with international standard-setting bodies to ensure their concerns are represented.

6.4. Limitations

The paper provides a purely conceptual framework that requires further rigorous empirical testing to confirm the likelihood and intensity of risk involved. The focus on major failure cases can also be indicative of slight selection bias. The stablecoin space is rapidly changing; hence the conclusions drawn may become less significant because of future advancements in the stablecoin structure itself.

6.5. Avenues for Future Research

Quantitative modeling of contagion: Future research should develop network models that can simulate the failure of a major offshore stablecoin and quantify the contagion effects on both crypto markets and traditional treasury markets.

Deep analysis of DeFi governance: Empirical studies are needed to map the ownership and decision-making power within major "decentralized" protocols to better understand and measure governance centralization risk.

Effectiveness of Regulatory Enforcement: As MiCA and the GENIUS Act are implemented, research should track their effectiveness in practice, particularly their ability to enforce rules against extraterritorial entities and adapt to new algorithmic designs.

6.6. Conclusion

The conclusion is stark; the stablecoin ecosystem remains a significant source of potential systemic risk. The collapse of a major stablecoin like Tether, with its vast holdings of U.S. Treasuries, could trigger contagion in both crypto and traditional markets. EMDEs are especially vulnerable to currency substitution and monetary policy erosion from foreign-denominated GSCs. This paper provides a conceptual map and a critical lens through which to evaluate its future development, arguing that without closing the identified asymmetry, the financial system remains exposed to the peril within the promise. Risk may continue due to gaps in implementation, regulation as well as disputes with the regulator in interpretation of the nascent technology and its implications. The evolution of stablecoin regulation is indeed a work-in-progress. Legal, regulatory and technological differentials between jurisdictions make it difficult for governments to regulate stablecoin operations given the global, borderless characteristic of stablecoins.

Disclosure Statement

This is to certify that the author has no involvement in any organization or entity with respect to financial or non-financial interest in the subject matter discussed in this manuscript.

The author reports there are no competing interests to declare.

The author reports no funding/sponsorship was received for this paper.

Acknowledgements

The author is grateful to both the Reviewers for their thorough review and helpful suggestions.

References

- Allen, J. H. 2023. *Future of Crypto.* In *Central Banks, Macro-Financial Stability and the Future of the Financial System*, BIS Paper No. 140. Basel: Bank for International Settlements.
- Anadu, K., P. D. Azar, M. Cipriani, T. M. Eisenbach, C. Huang, M. Landoni, G. La Spada, M. Macchiavelli, A. Malfroy-Camine, and J. C. Wang. 2023. *Runs and Flights to Safety: Are Stablecoins the New Money Market Funds?* Federal Reserve

Bank of Boston Research Department Working Paper No. 23-11. https://doi.org/10.29412/res.wp.2023.11.

- Aramonte, S., W. Huang, and A. Schrimpf. 2021. "DeFi Risks and the Decentralisation Illusion." *BIS Quarterly Review*, December, 21–36. https://www.bis.org/publ/qtrpdf/r_qt2112b.pdf.
- Arner, D., R. Auer, and J. Frost. 2020. *Stablecoins: Risks, Potential and Regulation.* BIS Working Paper No. 905. Basel: Bank for International Settlements.
- Bank of England. 2023. "Regulatory Regime for Systemic Payment Systems Using Stablecoins and Related Service Providers." Discussion Paper, November 6. https://www.bankofengland.co.uk.
- Bidder, R., K. Ezeji-Okoye, M. Osborne, J. Patchay, V. Paul, T. Rhodes, E. Soucie Watts, and A. Whitworth. 2025. *Single Minded? Stablecoins and the Singleness of Money.* Qatar Centre for Global Banking and Finance, Qatar Central Bank & King's Business School.
- Briola, A., D. Vidal-Tomás, Y. Wang, and T. Aste. 2022. "Anatomy of a Stablecoin's Failure: The Terra-Luna Case." *Finance Research Letters* 49: 103358. https://doi.org/10.1016/j.frl.2022.103358.
- Bullough, O. 2025. "How Tether Became Money-Launderers' Dream Currency." *The Economist*, July 4. https://www.economist.com/1843/2025/07/04/how-tether-became-money-launderers-dream-currency.
- Catalini, C., and J. Wu. 2024. "The Race to Dominate Stablecoins." *Harvard Business Review*, August 6.
- Catalini, C., and J. S. Gans. 2019. "Some Simple Economics of the Blockchain." MIT Sloan Research Paper No. 5191-16. https://doi.org/10.2139/ssrn.2874598.
- Digital Pound Foundation. 2025. "Response to DP24/4: Regulating Cryptoassets: Admissions, Disclosures and Market Abuse Regime." https://digitalpoundfoundation.com/response-to-dp24-4-regulating-cryptoassets-admissions-disclosures-and-market-abuse-regime-the-discussion-paper/.
- Egan, M. 2023. "FDIC Accidentally Reveals Details about Silicon Valley Bank's Biggest Customers." CNN, June 23. https://edition.cnn.com/2023/06/23/investing/svb-bank-fdic.
- Eichengreen, B. 2019. *From Commodity to Fiat and Now to Crypto: What Does History Tell Us?* NBER Working Paper No. 25426. Cambridge, MA: National Bureau of Economic Research.
- Financial Action Task Force. 2025. *Targeted Update on Implementation of the FATF Standards on Virtual Assets and Virtual Asset Service Providers.* Paris: FATF, June. https://www.fatf-gafi.org/content/dam/fatf-gafi/recommendations/2025-Targeted-Upate-VA-VASPs.
- Financial Stability Board. 2023. *High-Level Recommendations for the Regulation, Supervision and Oversight of Global Stablecoin Arrangements: Final Report.* July 17. https://www.fsb.org/2023/07/high-level-recommendations-for-the-regulation-supervision-and-oversight-of-global-stablecoin-arrangements-final-report/.
- ———. 2024. *Cross-Border Regulatory and Supervisory Issues of Global Stablecoin Arrangements in EMDEs.* July 23. https://www.fsb.org/2024/07/cross-border-regulatory-and-supervisory-issues-of-global-stablecoin-arrangements-in-emdes/.

- Frost, J., H. S. Shin, and P. Wierts. 2020. *An Early Stablecoin? The Bank of Amsterdam and the Governance of Money*. BIS Working Paper No. 902. Basel: Bank for International Settlements.
- Gorton, G. B., and J. Y. Zhang. 2023. "Taming Wildcat Stablecoins." *University of Chicago Law Review* 90: 909. https://doi.org/10.2139/ssrn.3888752.
- Griffin, J. M., and A. Shams. 2020. "Is Bitcoin Really Untethered?" *The Journal of Finance*. https://doi.org/10.1111/jofi.12903.
- Hoang, L. T., and D. G. Baur. 2020. "How Stable Are Stablecoins?" *The European Journal of Finance*. https://doi.org/10.2139/ssrn.3519225.
- Hong Kong Monetary Authority. 2025. https://www.hkma.gov.hk/eng/news-and-media/press-releases/2025/05/20250521-3.
- John, A., E. Howcroft, and H. Lang. 2022. "Collapsed Stablecoin TerraUSD Announces Recovery Plan as Token Flounders." *Reuters*, May 11. https://www.reuters.com/technology/dollar-pegged-stablecoin-terrausd-falls-30-cents-2022-05-11/.
- Jon, Woo Jung, and Wonsuk Yang. 2025. "Mapping South Korea's Digital Asset Regulatory Landscape: From Criminal Code to the Recently Implemented Virtual Asset User Protection Act." *Computer Law & Security Review* 57. https://www.sciencedirect.com/science/article/pii/S2212473X25000136.
- International Monetary Fund. 2023. *Elements of Effective Policies for Crypto Assets*. Policy Paper. Washington, DC: IMF. https://www.imf.org/en/Publications/Policy-Papers/Issues/2023/02/08/.
- Lang, H., and E. Howcroft. 2025. "Tether Is in Talks with 'Big Four' Firm about Reserve Audit, CEO Says." *Reuters*, March 21. https://www.reuters.com/technology/tether-is-talks-with-big-four-firm-about-reserve-audit-ceo-says-2025-03-21.
- Larson, N. 2023. "What the Collapse of Signature Bank and Silvergate Capital Mean for Crypto." *International Banker*, June 7. https://internationalbanker.com/technology/what-the-collapses-of-signature-bank-and-silvergate-capital-mean-for-crypto/.
- Lee, Seungju, Jaewook Lee, and Yunyoung Lee. 2023. "Dissecting the Terra-LUNA Crash: Evidence from the Spillover Effect and Information Flow." *Finance Research Letters* 53: 103590. https://doi.org/10.1016/j.frl.2022.103590.
- Ledbetter, J. 2022. "The Crazy Crypto Meltdown of Terra and Luna Explained." *Observer*, May. https://observer.com/2022/05/the-crazy-crypto-meltdown-of-terra-and-luna-explained/.
- Liu, J., I. Makarov, and A. Schoar. 2023. *Anatomy of a Run: The Terra Luna Crash*. NBER Working Paper No. 31160. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/papers/w31160.
- Lyons, R. K., and G. Viswanath-Natraj. 2020. *What Keeps Stablecoins Stable?* NBER Working Paper No. 27136. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w27136.
- Mishra, P. 2025. "Coinbase in Talks to Acquire CoinDCX." *Mint*, July 29. https://www.livemint.com/companies/news/coinbase-coindcx-44-million-crypto-heist-us-cryptocurrency-coinswitch-11753706315291.html.
- Mizrach, B. 2023. "Stablecoins: Survivorship, Transactions Costs and Exchange Microstructure." February 17. https://doi.org/10.2139/ssrn.3835219.

- Panetta, F. 2023. "Paradise Lost? How Crypto Failed to Deliver on Its Promises and What to Do about It." In *Central Banks, Macro-Financial Stability and the Future of the Financial System*, BIS Paper No. 140, 25–36. Basel: Bank for International Settlements.
- Parma Bains, P., A. Ismail, F. Melo, and N. Sugimoto. 2022. *Regulating the Crypto Ecosystem: The Case of Stablecoins and Arrangements.* IMF Fintech Note No. 2022/08, September.
- Prentice, C., A. Berwick, and H. Lang. 2022. "How FTX Bought Its Way to Become the 'Most Regulated' Crypto Exchange." *Reuters*, November 18. https://www.reuters.com/technology/exclusive-how-ftx-bought-its-way-become-most-regulated-crypto-exchange-2022-11-18/.
- Reuters. 2023. "EU Council Adopts First Legal Framework to Regulate Crypto Sector." May 16. https://www.reuters.com.
- ———. 2025. "Bitcoin Extends Decline to $104,782 as Trump Escalates US-China Trade War." October 10. https://www.reuters.com/business/bitcoin-down-55-114505-2025-10-10/.
- ———. 2025. "China Tells Brokers to Stop Endorsing Stablecoins in Bid to Avoid Instability: Bloomberg News Reports." August 8. https://www.reuters.com/sustainability/boards-policy-regulation/china-tells-brokers-stop-endorsing-stablecoins-bid-avoid-instability-bloomberg-2025-08-08/.
- Schwarcz, Steven L. 2023. *Regulating Financial Innovation: FinTech, Crypto-assets, DeFi, and Beyond.* Duke Law School Public Law & Legal Theory Series No. 2024-05. http://dx.doi.org/10.2139/ssrn.4679360.
- Stempel, J. 2025. "US SEC Dismisses Lawsuit against Binance Crypto Exchange." *Reuters*, May 30. https://www.reuters.com/sustainability/boards-policy-regulation/us-sec-voluntarily-dismisses-lawsuit-against-binance-2025-05-29/.
- The Straits Times. 2022, June 3. "Japan Passes Stablecoin Bill that Enshrines Investor Protection." https://www.straittimes.com/banking/japan-passes-stablecoin-bill-that-enshrines-investor-protection
- Vermaak, W. 2022. "Ethereum's Infura-iating Outage Revives Decentralization Concerns." *Coin Market Cap Academy*. https://coinmarketcap.com/academy/article/ethereums-infura-iating-outage-revives-decentralization-concerns.
- Wang, Y. 2025. "Did You Know Payment Stablecoins Have Similar Run Risks as Money Market Funds?" *Banking Journal*, May 27. https://bankingjournal.aba.com/2025/05/did-you-know-payment-stablecoins-have-similar-run-risks-as-money-market-funds/.
- Watson, K. 2025. "Trump Signs Landmark GENIUS Act, Hailing 'Exciting New Frontier' for Crypto." *CBS News*, July 18. https://www.cbsnews.com/news/trump-signs-genius-act-crypto-bill/.
- Alchemy. n.d. *Alchemy Blockchain Developer Platform.* https://www.alchemy.com/.
- Bitfinex. n.d. *About Bitfinex.* https://www.bitfinex.com/about/. Accessed April 3, 2025.
- Blockcypher. n.d. https://www.blockcypher.com/.

- DefiLlama. 2025. *DeFiLlama Analytics Platform.*https://defillama.com/cex. Accessed May 12, 2025; https://defillama.com/. Accessed June 30, 2025.
- Infura. n.d. https://www.infura.io/.
- Metamask. n.d. https://metamask.io/en-GB.
- Tether Operations Limited. n.d. *Tether Transparency.* https://tether.to/ru/transparency/?tab=reports. Accessed April 3, 2025

ISSN: 2583-8814 (Online)

Book Review

No Other Planet: Utopian Visions for a Climate-Changed World

Author: Mathias Thaler

Publisher: Cambridge University Press

Year: 2022, ISBN: 978-1-009-01565-3 (Paperback), Pages: 352

&

The Great Derangement: Climate Change and the Unthinkable

Author: Amitav Ghosh

Publisher: Penguin Random House India

Year: 2017, ISBN: 9780143429067, Pages: 275

Annavajhula J C Bose[1], Former Professor, Department of Economics,
Shri Ram College of Commerce, University of Delhi, Delhi

These two books exemplify supreme efforts at intellectual engagement with climate crisis and ecological grief, on the part of Thaler as a political theorist and Ghosh as a celebrated novelist, respectively.

Economics students and teachers need to read these books to check out anew on their reflexivity in relation to "an uncertain and risky future". The refreshing reward of doing so is the realization that "the climate crisis is also a crisis of culture, and thus of the imagination" as Ghosh underlines; and that as such as Thaler insists, we need to explore "social dreaming" or "education of the desire". It is about "alternative ways of being and living" on planet earth. It "can cater to a multiplicity of goals, from the offering of consolation to the drafting of concrete plans for alternative worlds." It entails interdisciplinarity in our outlook by our acquaintance with findings from political theory, utopian studies and the environmental humanities. To put it differently, both the writers call for creative nonfiction to "provide guidance to our being in the world: the sense of

[1] Email: bose.ajc@gmail.com

reality and the sense of possibility"—a creative nonfiction that carefully penetrates three fault lines of utopianism: indeterminacy, wishful thinking and defeatism. Socio-economic-political theories will not suffice. Speculative fiction is also invariably and most importantly required to find light to dispel the darkness of the climate-changed world.

Amitav Ghosh is among the very best writers in the world. Reading him is a wonderful joy to be felt while conjuring alternative scenarios of hope and fear, of what is yet to come. It amounts to a weird or eerie excitement of simultaneously navigating what is to be ingested and what is to be excreted in seeking alternatives for the better, so to say. The point of departure for him is Great Acceleration in human activity since the mid-20th century resulting in acceleration of carbon emissions, and the associated derangement in terms of collective inability to set right the climate-changed world.

Part I of his book constitutes stories on living in the time of global warming or climate-changed world. Some hard-hitting realizations are as follows. The uncanny weather events of this time—flash floods, hundred-year storms, persistent droughts, spells of unprecedented head, sudden landslides, raging torrents pouring down from breached glacial lakes, tsunamis, storm surges and freakish tornadoes—have apparently a very high degree of improbability in that "they are not easily accommodated in the deliberately prosaic world of serious prose fiction…Poetry on the other hand, has long had an intimate relationship with (such) climatic events." Also, the weather events that occur in surrealist and magical realist novels are actually happening on this earth, at this time. They are overwhelmingly, urgently and astoundingly real. Their uncanniness "lies precisely in the fact that in these encounters we recognize something we had turned away from: that is to say, the presence and proximity of non-human interlocutors."There is no point in still clinging to the belief that "highly improbable events belong not in the real world but in fantasy." Even if we do not hold such beliefs, there is a serious problem. Our lives are not ruled by reason. Inertia of habitual motion rules the roost: "This is indeed the condition of the vast majority of human beings, which is why very few of us will be able to adapt to global warming if it is left to us, as individuals, to make the necessary changes; those who will uproot themselves and make the right preparations are precisely those obsessed monomaniacs who appear to be on the borderline of lunacy…(also)…there exist few polities or public institutions that are capable of implementing, or even contemplating, a managed retreat from vulnerable locations. For most governments and politicians, as for most of us as individuals, to leave the places that are linked to our memories and attachments, to abandon the homes that have given our lives roots, stability and meaning, is nothing short of unthinkable." Also to be noted is the habit of mind integral to the gradualist bourgeois life (with predilection for settlements near water bodies) that spread through imperialism and colonialism. This mindset breaks "problems into smaller and smaller puzzles until a solution presented itself. This is a way of thinking that deliberately excludes things and forces ('externalities') that lie beyond the horizon of the matter at hand: it is a perspective that renders the interconnectedness of Gaia unthinkable." So, the deathly consequences of climate change would be too much to bear despite the warnings and forebodings of the Cassandras of climate science. Furthermore, now that "global warming is in every sense a collective predicament, humanity finds itself in the thrall of a dominant culture in which the idea of the collective has been exiled from politics, economics and literature alike."

Part II of Ghosh's book is the best reading, to me. It is the history of carbon economy that I have not fully known. The takeaways are as follows. The discourse on global warming is largely Eurocentric. Modernities engendered in Asia (e.g. in China, India and Burma) too are responsible for global warming. Of course, these modernities were scuttled by the forces of imperialism and colonialism.

In light of this, it is now apt and accurate to consider global warming as the unintended consequence of the totality of human actions everywhere on the planet—"common but differentiated responsibilities" a la Paris climate change negotiations of 2015. Having said this, there are two undisputable realisations. First, Asia's population is so large as to vastly amplify the devastation of global warming. Secondly, "the patterns of life that modernity engenders can only be practised by a small minority of the world's population. Asia's historical experience demonstrates that our planet will not allow these patterns of living to be adopted by every human being. Every family in the world cannot have two cars, a washing machine and a refrigerator—not because of technical or economic limitations but because humanity would asphyxiate in the process."

In Part III, Ghosh meditates on climate politics by bemoaning the literary mainstream's and intelligentsia's unawareness of the climate crisis on our doorstep. "Today everybody with a computer and a web connection is an activist… (but) politicization has not translated into a wider engagement with the crisis of climate change." In South Asia, for example, climate change has not resulted in an outpouring of resisting passion. "Instead, political energy has increasingly come to be focussed on issues that relate, in one way or another, to questions of identity: religion, caste, ethnicity, language, gender rights and so on." Moreover, the scale of climate change is such that individual ethical choices will make little difference unless certain collective decisions are taken and acted upon—"Climate change is a wicked problem. One of its wickedest aspects is that it may require us to abandon some of our most treasured ideas about political virtue: for example, 'be the change you want to see'. What we need instead is to find a way out of the individualizing imaginary in which we are trapped."

Ghosh proceeds further to deal with intriguing and cunning political moves on the part of governments, corporations and military establishments and other dramatis personae in the Global North (esp. Anglo sphere led by the US) that militate in favour of the continuance of the status quo. And he arrives at this conclusion: "…we live in a world that has been profoundly shaped by empire and its disparities. Differentials of power between and within nations are probably greater today than they have ever been. These differentials are, in turn, closely related to carbon emissions. The distribution of power in the world therefore lies at the core of the climate crisis. This is indeed one of the greatest obstacles to mitigatory action, and all the more so because it remains largely unacknowledged." In the Global South, by contrast, because the poor and the disempowered and not the middle classes and political elites who will bear the brunt of the suffering, it may be able "to force rich countries to make greater concessions merely by absorbing the impacts of climate change, at no matter what cost."

International negotiations for climate adaptation are sabotaged by corporations, entrepreneurs and public officials. They are only concerned about enriching themselves. They have also become extraordinarily skilled in surveilling and thwarting environmental activists.

All this sounds very bleak and cynical. Hope lies in the growing involvement of religious groups and leaders (e.g. Pope Francis) along with popular movements in the politics of climate change, as the formal political structures of our time are incapable of confronting the crisis on their own. Authentic hope lies in universally discarding the unending enchantment with modernity and the irrational confidence in progress and human abilities through the ever-shrinking time horizon of the climate crisis. A vision, at once new and ancient, of rediscovering human kinship with other beings is required.

It is in this backdrop, especially of political stalemate to effectively deal with climate change, that Mathias Thaler's contribution is valuable. Thaler should, therefore, be read after reading Ghosh. He reinforces the idea that it is we humans who need to be undone and remade in order to reinvent reality to be different from what the climate disaster portends it to be. Thaler's book, based on close to 1000 references, is tougher to grasp than Ghosh's.

Mathias Thaler reckons with utopianism as "the education of a desire for being and living otherwise" and argues that "anti-perfectionist utopias embody forms of social dreaming that can educate our desire for things to be otherwise." Utopias prompt us to the world anew by disrupting habitual patterns of lived experience that hold sway over our normal modes of existence. They kick-start emancipatory action by outlining viable pathways into a future freed from the limitations of the past and present but they are entailed by the risk of collapsing into wishful thinking, downplaying or neglecting the obstacles that systemic transformations always have to surpass. Dystopias, by contrast, can issue warnings about existential perils so much so as to trap us in fatalism.

All utopias are Janus-faced. Remodelling our planetary existence is accompanied by the shadow of failure. So, we need to investigate what the specific pitfalls of utopian projects are. We also need to investigate what exactly it means to fail in educating our desire for alternative ways of being and living.

Suppose we take the Gaia hypothesis of planet earth as a living agent and describe it as a raging entity that enacts brutal retaliation for the harm done to it, then it may have the unintended consequence of leaving the reader in the dark about what should concretely be done about our climate-changed world, here and now.

On the other hand, if we are attracted to eco-modernism based on the notion that science and technology can be harnessed to elevate humanity beyond the current impasse, then we celebrate actual discoveries and inventions, from carbon capture to geo-engineering, that simply need to be optimised to overcome global warming. This is the 'decoupling' idea of emancipating humanity from its resource reliance on ecological processes. We need to investigate if this is wishful thinking.

Exploring the intricacies of social dreaming exposes us to the uncertainty, contingency and complexity of human action given that humanity is internally too diverse and too conflicted to be considered a homogeneous actor. All theories and stories of utopianism can be analysed and will have to be accepted as a mixture of hopes and wishes as also fear and despair. In the process, we become adept at "perceiving both the successes and failures of utopian projects as temporary stations on a continuous, yet rocky journey". Our endeavour is nothing but experimental full of promises and disappointments.

In this realm between fatalism and wishful thinking, the task of political theory is to fuse together a sober realism with the radical imagination and enhance understanding, evaluation and orientation. And we can judge specific expressions of social dreaming in light of their suitability to a specific moment in time.

Thus, Thaler's argumentation is based on the assumption that "utopianism is pervaded by a fundamental tension: the education of our desire for better ways of being and living is torn between the push to negate and dissolve reality and the magnetic pull of the world as we know it…only if we devote ourselves to keeping the tension between these two poles alive, will we be prepared to properly face up to the enormity of the challenges awaiting us" of reinventing reality of" thriving together with all other beings on this planet that is like no other"!

Now, the problem with Thaler's argumentation is that the experimental endeavour on the above lines may not materialise and save us during the ever-shrinking time horizon of the climate crisis. It is better for us, as Ghosh emphasises, to be with the late Pope Francis' critique of the Anthropocene era and eventually pray. Human freedom is not limitless. And culture and nature should not be separate. This is the pellucid understanding that should guide us in reinventing reality, not the 2015 Paris Agreement's absolutely useless rhetoric.

Reference

- Pope Francis. 2015. On Care for Our Common Home. https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

The influence of collateral security on SMEs' access to bank finance in Zimbabwe

Clever Dhewa[1], Commerce Division, Harare Polytechnic, Zimbabwe

Shepard Makurumidze[2], Department of Finance and Accounting, University of Zimbabwe, Zimbabwe

Kumbirai Patrick Mukapiku[3], Commerce Division, Harare Polytechnic, Zimbabwe

Paul Chavhunduka, Department of Finance and Accounting, University of Zimbabwe

Abstract

Small enterprises are engines for economic development of many successfully developed nations. However Zimbabwean small enterprises encounter constraints and impediments which hinder them from growth. This research sought to assess the impediments that hinder small to medium enterprises from accessing bank finance. Studies have shown that absence of collateral security constrains small enterprises access to bank finance. This research sought to establish if Banks' demand for collateral security affects small business financing. Results from a sample of twenty beneficiaries showed that banks are not effectively enhancing small enterprises financing. Primary data was obtained from both small enterprises and local financial institutions through interviews and questionnaires to determine what hinders small to medium enterprises from accessing loans and other considerations being placed by banks when deciding who to lend to. This research established that most financial institutions fear default risk which is associated with extending financial credit to small enterprises. The recommendations were made to the government to develop and adopt a favorable policy framework; Small to Medium Enterprises to be innovative, engage in fair business practices and utilize the facilities in

[1] Email: cleverdhewa@gmail.com /cdhewa@hrepoly.ac.zw
[2] Email: smakurumidze@bmse.uz.ac.zw
[3] Email: kumbimukapiku@gmail.com /kmukapku@hrepoly.ac.zw

place and, Banks and SME promotion bodies to propose and lobby for the formation of supportive policies to enhance financing of SMEs to accelerate national growth.

Keywords: Collateral security, finance, SMEs, collateral substitutes

1. Introduction

Small to Medium Enterprises (SMEs) are pillars for national development of many successfully developed nations and they are critical for employment creation, and contribute to the Gross Domestic Product (Kelvin Ndofor & Cynthia Lum, 2024; Municipal, 2024; Rahman et al., 2017). Much information has been publicized on daily basis in local information bodies about the potential capabilities armed by these SMEs towards fostering accelerated national development of Zimbabwe, so this triggered the researchers to establish the obstacles which affect the progression of these SMEs. The success of any business organization, either big or small is anchored on the availability of finance to effectively carry out the business activities (Cole et al., 2024). SMEs are the key to any country's economic recovery and development if they have access to capital to finance their operations (Rahman et al., 2017). However, they have serious challenges in accessing bank finance, thereby affecting capitalisation. In most cases, banks consider the managerial skills and level of technology being used by the potential borrower; hence it becomes a vicious cycle for the small enterprises to seek bank finance. The acknowledgement of the usefulness of SMEs in accelerating national development by various government departments has stirred the researchers to develop a passion in researching into the constraints encountered by SMEs when looking for bank finance. This research examines the major causes triggering failure on small to medium enterprises (SMEs) to access formal finance, ascertain the information small to medium enterprises are required to provide when applying for a loan, establish lending alternatives available for banks when lending to SMEs, and lobby for policy formulation which can enable SMEs to effectively access bank finance. The study adopted the theoretical definition of Small to Medium Enterprises (SMEs) which was agreed upon in Parliament of Zimbabwe in 1998, though it has continued to steer debate even within the academic fraternity on how to define SMEs. The study adopted SMEs as those enterprises that employ one to seventy-five (1-75) people. The criterion of value of assets and number of employees was relevant for this study because they deal with important aspects or elements of the government expectations in terms of development of SMEs in Zimbabwe as outlined in the Government of Zimbabwe Investment Policy Guideline of 1994.

2. Literature review

This research leveraged on the five canons of lending with focus on collateral security towards SMEs' access to bank finance as discussed below:

2.1. The canons of lending

The study was anchored on one of the 5Cs of credit where bank's lending process emphasizes due diligence and rigorous scrutiny of the borrower as a way of eliminating default risk (Onkundi et al., 2023). Below is the brief explanation of each of the 5Cs of lending:

- **Character:** This refers to a person's inner quality of reliability constancy, and decency and the personality of a pledger which is ascertained through a long relationship (Widiatmika, 2015). With first – time borrowers, commercial lenders do not have the luxury of time even with established borrowers, they generally require more assessments to accurately establish the character of a loan applicant and character is the most important factor in credit management (Rahman et al., 2017). Character signifies the clients' preparedness and fortitude to repay a financial debt Thein et al. (2024). Character is commonly revealed through interviews and inquiries into the clients' payment behaviors on how they manage their businesses and how they cope with harsh conditions (Onkundi et al., 2023). Furthermore, character is considered to be the most significant factor because it covers the people that pay the loan (Mukete et al., 2021).
- **Capacity:** This covers the willingness of the debtor to payback financial debts and properly manage the working capital of the business, and with the emphasis on cash,

some commercial lenders refer to capacity as cash flow (Kelvin Ndofor & Cynthia Lum, 2024). Some companies and individuals might have adequate money to repay financial debts, some may choose to divert the money and commit it to other capital expenditure, like acquiring immovable properties rather than payment of obligations (Thein et al., 2024). To the financier, capacity denotes the main basis of reimbursement of a debt and is important among the canons of lending. Banks never consider collateral a primary source of repayment but rather a borrower's cash flow (Onkundi et al., 2023). Capacity is a quantitative financial analysis to determine whether the customer has the ability to repay the credit extended (Lokopu et al., 2023). This refers to the borrower's capability to have adequate cash flow from operations to cover forthcoming obligations. To the financier, this denotes the major basis of reimbursement of a financial obligation and is an important consideration for lending (World Bank, 2018). Capacity is the quantifiable determinant of the borrower's capability to service a debt. For consumer lending, the two most important issues are the borrower's ability to make the debt service after meeting food, shelter, and other fixed payment and the dependency of that capability on such factors as employment and normal conversion of current assets to repay borrowings (Githinji et al., 2019). For long-term commercial lending, the key issue is the capability of the normal conversion of assets to repay borrowings. For long-term commercial lending, the key issue is the ability of cash flow to meet loan amortization (Mukete et al., 2021).

- **Capital**: This embodies the monies reserved in the business to offer a cushion against unforeseen fatalities (Lokopu et al., 2023). A robust capital base will offer financial strength to help a borrower to endure during times of harsh operating conditions. Minimal or nonexistent capital makes an organisation vulnerable to inaccurate calculations which increase the chances of default risk (Brassell & Boschmans, 2022). A strong capital base is believed to ensure that the owners of the enterprise will continue to be dedicated to the corporate's goals and help to alleviate risks (Rahman et al., 2017). It is generally an undesirable position for the owner's capital base to be less than the capital provided by creditors though the adequacy of capital varies by industry and nature of business (Thein et al., 2024). Another important consideration for commercial lenders is the amount of capital reserves owners would be able to inject into a new business, if necessary (World Bank, 2018). Capital signifies reserves a business has to provide working capital to finance the operations. The financier put effort to scrutinize the capital levels of the business and also indicate the level of dedication by investors of the business to alleviate business failures (Kelvin Ndofor & Cynthia Lum, 2024).

- **Conditions:** These are the external variables that can affect credit and credit quality. This refers to national, international and local economy, the industry and the bank itself. In assessing conditions, the lender determines whether the prevailing conditions are conducive for not only lending but also for borrower's ability to repay the loan (Town & County, 2019). Conditions are hard to measure but the financier should be knowledgeable about the changes in macro-economic conditions like interest and exchange rates, employment, GDP, among others, changes affecting the specific industry of the Borrower-Technology and Competition, The local economy, Trends within Borrowers industry as they are critical elements which hinders the lending decisions. Conditions refer not only to the borrower, but the lender as well. To the borrower, it is the conditions the borrower is operating under. The conditions the borrower is operating under can have a major influence on credit quality. Part of the credit analysis must be an assessment of the borrower's vulnerability to changing conditions. Some examples of the changes are in demand, supply, prevailing technology, suppliers, customers, workforce, labor standards and local employment conditions (Hamdan et al., 2019). For a Lender, the conditions are market related and he or she has to deal with lending rules put out by its regulators and the ever present operational risks especially in these times of terrorism (Onkundi et al., 2023).

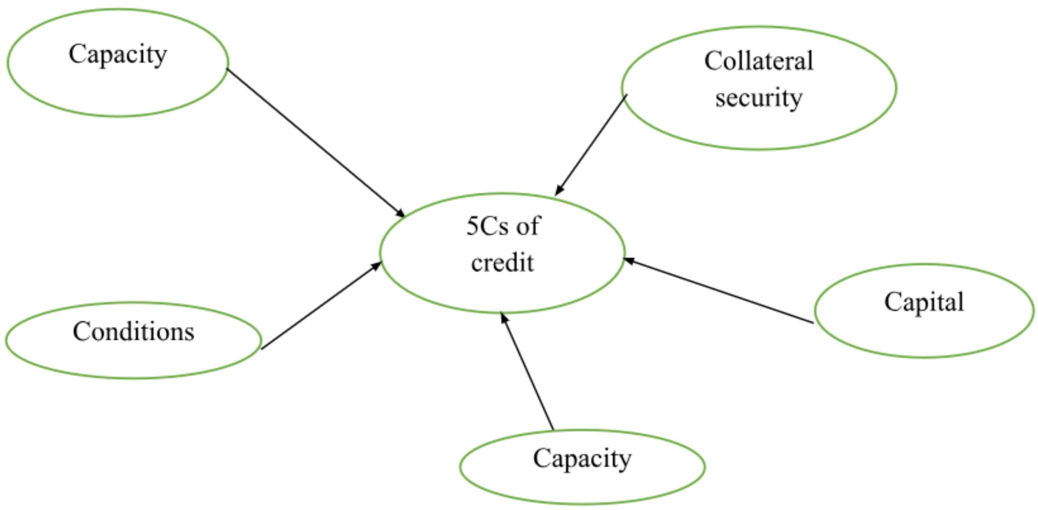
- **Collateral security:** can also be defined as the acquisition of rights in support of a debtor's undertaking to settle up a debt (World Bank, 2018). The bank obtains the right to convert the specific assets into cash and to settle the applicable debt with the proceeds from the sale of assets (Onkundi et al., 2023). These rights can also be acquired against a third party or surety in support of the defaulter's undertaking to repay the borrowed funds and would enable the financier to ask third parties to mandatorily settle the financial obligations of the borrower should he/she fail to honour the obligation and effect timely payments (Hamdan et al., 2019; Mukete et al., 2021). Collateral security refers to the resources used to secure a financial debt and can be in form of movable or non-movable property that the borrower is obliged to provide as security before accessing any line of credit (Rahman et al., 2016). Before extending a loan facility, banks and other financiers take into account a number of factors from the economic environment to the specific loan applicant for example, the industry economic performance indicators which span from the general performance of the business venture with emphasis on the level of sales, liquidity, profitability, and the market share of a business in order to ascertain the probability of recovering the borrowed funds (Cole et al., 2024). Collateral security gives the lender a secured form of debt recoupment in the event the borrower fails to settle the financial obligations (Municipal, 2024). When repaying an obligation, the collateralized asset should be monetized by following the required legal due processes (Lokopu et al., 2023).

Collateral acts as a guarantee for the lender where in situations of failing to settle the borrowed funds, the lender will take the collateral to recover their monies (Kelvin & Cynthia, 2024). Furthermore, banks ask for collateral in order to reduce credit risk among other risks associated with lending. However, it also has some advantages to the borrower for example; it enables the borrower to easily access a line of credit and can contribute to lower interest rates charged on the loan facility as well as increases the chances of loan approval (Mukete et al., 2021). The conceptual framework for the study was derived from the 5Cs of credit in which the focus was on collateral security as one of the 5Cs which are critical for lending by banks as illustrated in Figure 1.

3. Methodology

The study adopted a case study research design. The research was quantitative in nature and for convenience purposes only twenty (20) SMEs were accessed from Harare and these were deemed representative of the entire SME sector as their experiences are uniform. Interview guides were used for collection of data to get insights from the SME owners about the influence of collateral security on access to bank finance. Open ended-questionnaires were used to ascertain some hidden issues which the SME owners would have failed to express on face to face interviews. To improve the appropriateness of the structured questionnaires, the researchers established the relevance of the instrument in addressing the research topic through a pilot study as indicated on the attached research instruments for financial institutions and SMEs in Appendix A and B, respectively.

Figure 1: Conceptual Framework



Source: Author's compilation

4. Research findings

The study established the source of startup finance for SMEs, frequency of preparing financial statements by SMEs, loan application success rate, reasons for failure to access credit finance from banks by SMEs, banks' lending preference by sector, attitude of SMEs towards borrowing, types of collateral security and their preference by lenders, and the factors limiting credit availability to SMEs.

4.1. Source of Startup Finance for SMEs

The SME owners indicated a variety of sources of finance they used in to starting up their business ventures which ranges from bank loans to individual sources as illustrated in Table 1 below.

The study revealed that 75% of SMEs were not able to access bank finance in starting their entrepreneurial ventures and start-ups they ended up relying on personal finance, pension, close family members and colleagues, Small to Medium Development Corporation (SMEDCO) finance, and grants from NGOs. Most SMEs cited that they were denied access to bank finance due to lack of collateral security. Those firms that managed to get loans mainly did so by virtue of them already holding accounts with their respective banks hence the banks had their full business records in their databases. All the twenty small enterprises in the survey indicated that they prepared and kept financial records for their business operations; however, there were variances on the frequency of preparing the financial statements. Most firms prepared financial statements to meet Zimbabwe Revenue Authority (ZIMRA) taxation requirements.

Table 1: Financing options used by SMEs in Zimbabwe

Source of finance	Number of firms
Bank	5
Personal finance	10
Close family members and colleagues	1
SMEDCO finance	2
NGO grants	2

Source: Primary data

Table 2: Frequency of preparing financial statements by SMEs

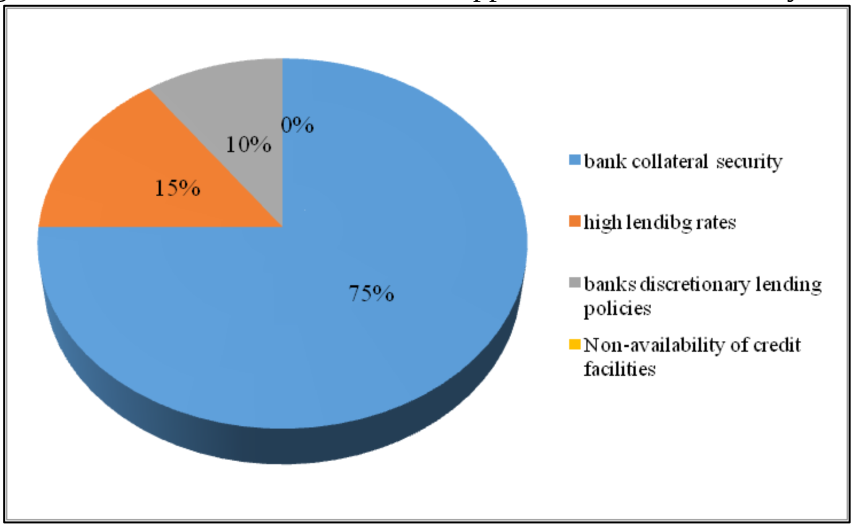
Frequency	Number of firms	Percentage
Monthly	7	35
Quarterly	6	30
Semi-annually	2	10
Annually	4	20
Not at all	1	5
TOTAL	**20**	**100%**

Source: Primary data

4.2. Bank finance application success rate

All the small enterprises conducted for the study indicated their awareness of bank finance, and 45% once benefitted from funding by Non-governmental organisations and micro finance institutions. However, 40% of the applicants who applied to banks had their applications turned down. The SME owners indicated that absence of collateral; poor business plans; lack of proof of operating premises; lack of credit references; lack of trade and operating references; too small to provide title deeds; and lack of managerial and technical skills. Figure 2 below illustrates some of the reasons for failure to access bank finance.

Figure 2: Causes of low bank finance application success rate by SMEs

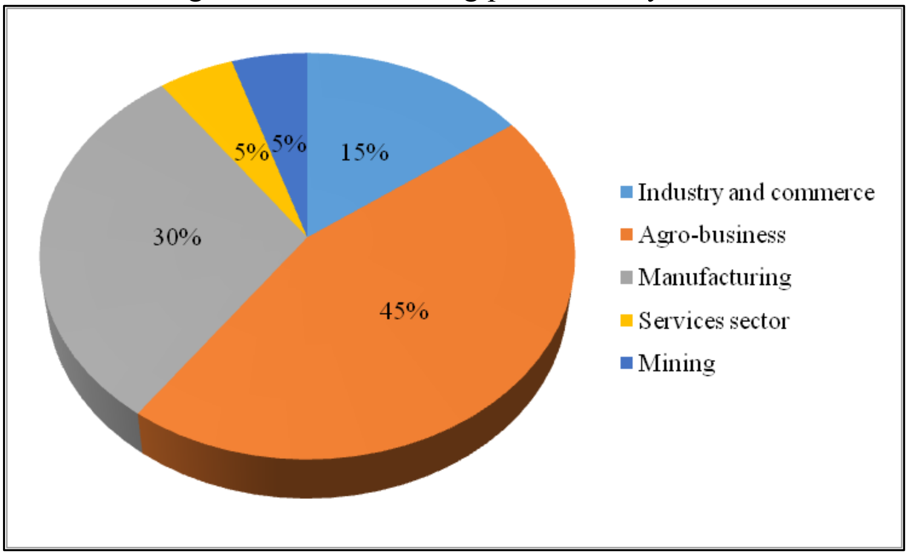


Source: Primary data

From the supply side, banks indicated that they had specific lending facilities/products targeted to meet financial needs of entrepreneurs. The question sought to establish the sectors that were most favoured by banks in terms of credit finance provision. Figure 3 shows the sectors that financial institutions mainly lend to.

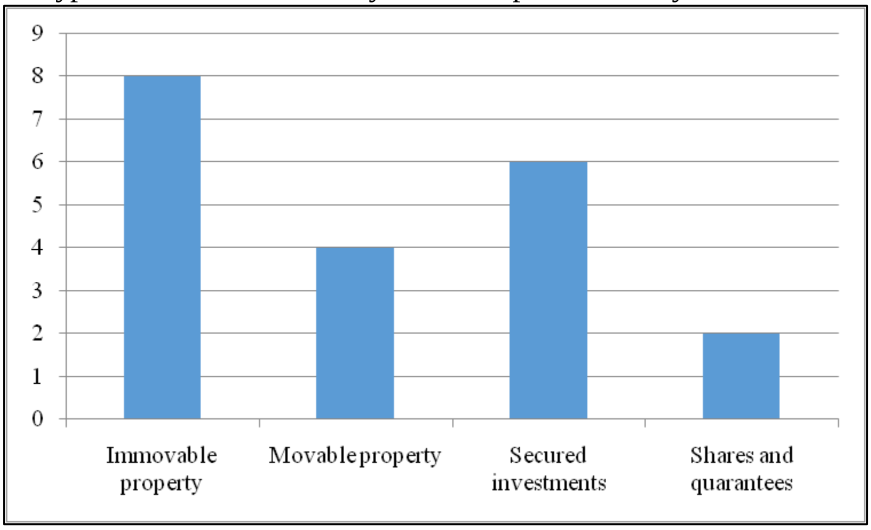
Most banks had lending facilities in place for the agro-based sector in line with the government directives to revitalize the agricultural sector with the quest to restore Zimbabwe to be the bread basket of Africa. This might be due to direct and indirect controls by the RBZ where loans are disbursed to key sectors of the economy like agriculture, mining and tourism. Lending to various sectors was qualified according to bank lending policy which varied from one institution to another.

Figure 3: Banks' lending preference by sector



Source: Primary data

Figure 4: Types of collateral security and their preference by financial institutions



Source: Primary data

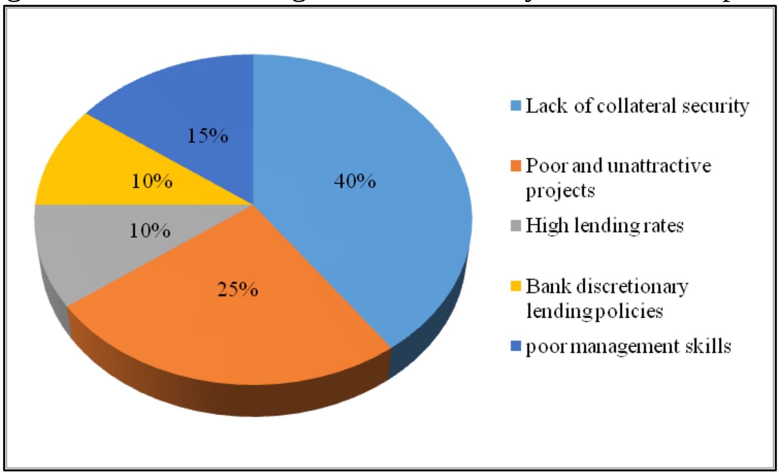
4.3. Preferences of collateral required by banks

It was established from the study that all banks give special preference to collateral security over conditions, character, capacity, and capital as the 5 Cs of lending. Immovable property has shown to be the most popular form of collateral followed by secured investments. Shares and guarantees was the least attractive form of collateral security as illustrated in Figure 4.

4.3.1. Factors limiting credit availability to SMEs

The study revealed that lack of collateral security, absence of proof of operating licenses; lack of good credit reference provided by the credit clearance bureau; non- availability of funds in banks, degree of default risk and low rate of return were among the major factors affecting SMEs' access to bank finance. Lack of collateral security scored 45%, followed by poor and unattractive projects with 25%, and the least being bank's discretionary lending policies which scored 8% as illustrated in figure 5 below:

Figure 5: Factors limiting credit availability to small enterprises



Source: Primary data

5. Conclusion and Recommendations

Basing on the study's objectives, lack of collateral security, absence of proof of operating licenses; lack of good credit reference provided by the credit clearance bureau; non-availability of funds in banks, degree of default risk and low rate of return were among the major factors affecting SMEs' access to bank finance. This section will present recommendations aimed to improve SMEs' access to bank finance and the overall development of the sector in Zimbabwe. The recommendations will be directed to the three stakeholders concerned, that is, the Government, banks and small enterprises themselves.

5.1. To the Government

There is need for government to relax the regulatory framework concerning the stringent registration and licensing requirements that SMEs are faced with. The Government should also come up with an up to date SME database which will help the responsible ministry to have a clear picture of the SME activities and to know the SMEs it is actually dealing with. There is also need for government protection against large Corporates which enjoy economies of scale so as to incubate these SMEs since they are engines for economic growth for many less developed economies.

5.2. To the SMEs

Besides relying on long term financing from banks, SMEs can also make use of trade credit, angel investors, structured financing models, venture capital and various forms of PPPs which are important short-term financing methods that can be used as alternative sources of financing. Furthermore, where collateral security is a challenge, SMEs can engage in syndicate borrowing where they can pool their assets and present them to the potential financier. This will help SMEs to raise the minimum collateral requirements. They should also practice sound accounting principles and cash management techniques. Payment delays are quite usual with small enterprises; this is further exacerbated by absence of financial records in SMEs. SMEs should also attend conferences and seminars which cover project proposal writing, book keeping and financial management so as to enhance their business growth as suggested in a study by Rahman et al. (2016).

5.3. To the Banks and SME supporting bodies

Enough information should be disseminated to SMEs on the credit rating requirements for successful loan applications. SME training and development conferences and workshops should be conducted by banks covering basic financial literacy, business proposal writing, loan application, and basic accounting and business management issues so as to improve SMEs' managerial skills for accelerated national development. Banks were recommended to educate SMEs about other available financing products like syndicated borrowing, build operate and transfer, build own operate and transfer, build and transfer models, purchase order financing and other structured financing initiatives that SMEs can make use of to enhance access to working capital towards an accelerated growth of the SME sector in Zimbabwe.

References

- Brassell, M., & Boschmans, K. (2022). Secured lending for SMEs: Making effective use of registries and intangibles-A case study approach. 33. https://dx.doi.org/10.1787/cf451ee7-en
- Cole, R. A., Cowling, M., & Liu, W. (2024). The effect of collateral on small business rationing of term loans and lines of credit. Journal of Financial Stability, 74, 1–35. https://doi.org/10.1016/j.jfs.2024.101320
- Githinji, C. W., Kiragu, D., & Kiai, R. M. (2019). Effect of Collateral Requirement on Financial Performance of Agribusiness Small and Micro Enterprises in Nyeri Central Sub County Kenya. International Journal of Economics, Business and Management Research, 3(1), 28–40.
- Hamdan, L., Al-Abbadi, M., Zuhier, R., Almomani, Q., Rajab, A., Alhaleem, A., Rumman, A., Mohammad, A., & Khraisat, I. (2019). Impact of Human Capital Development and Human Capital Isolation Mechanisms on Innovative Performance: Evidence from Industrial Companies in Jordan. 11(15), 21–30. https://doi.org/10.7176/EJBM
- Kelvin Ndofor, A., & Cynthia Lum, N. (2024). International Journal of Economics, Commerce and Management United Kingdom The effects of access to credit on financial performance of small and medium-sized enterprises in bamenda, cameroon. 12(2). https://ijecm.co.uk/

- Lokopu, J. E., Cherono, I., & Simiyu, R. (2023). Effect of Bank Loan Financing Policies on Performance of Small and Medium Enterprises in Turkana County, Kenya. European Journal of Economic and Financial Research, 7(3), 162–184. https://doi.org/10.46827/ejefr.v7i3.1556
- Mukete, N., Li, Z., Mukete, B., Irene, N., Terence, A., Abdoulaye, C., Fandjinou, K., Ekoungoulou, R., Folega, F., Saeed, S., Amah, P., & Zama, E. (2021). Determinants of Small and Medium Size Enterprises Access to Credit Schemes in the Mezam Division of Cameroon. OALib, 08(02), 1–12. https://doi.org/10.4236/oalib.1107079
- Municipal, A. (2024). Does Collateral Security Still Determine Performance of SMEs ? An empirical Study from Arua Municipal Council, Uganda Rashid Onzima Dr. Wilfred Kokas Aupal (PhD) James Patrick. November.
- Onkundi, G., Munene, H. N., & Walubuka, E. (2023). The Influence of Collateral Availability on Access to Credit by Small and Medium Enterprises (SMEs) in Meru County. American Journal of Finance, 8(1), 10–20. https://doi.org/10.47672/ajf.1357
- Rahman, A., Belas, J., Kliestik, T., & Tyll, L. (2017). Collateral requirements for SME loans: empirical evidence from the Visegrad countries. Journal of Business Economics and Management, 18(4), 650–675. https://doi.org/10.3846/16111699.2017.1357050
- Rahman, A., Rahman, M. T., & Ključnikov, A. (2016). Collateral and SME financing in bangladesh: An analysis across bank size and bank ownership types. Journal of International Studies, 9(2), 112–126. https://doi.org/10.14254/2071-8330.2016/9-2/8
- Thein, E. E., Niigata, A., & Inaba, K. (2024). Concentrated bank market and SMEs' collateral issues: a study of the firms of developing Asian countries. Journal of Economic Structures, 13(1). https://doi.org/10.1186/s40008-024-00338-x
- Town, M., & County, M. (2019). Effects of Banks " Loan Collateral Requirement on Performance of Small and Medium Enterprises in. 1, 90–95.
- Widiatmika, K. P. (2015). Etika Jurnalisme Pada Koran Kuning : Sebuah Studi Mengenai Koran Lampu Hijau, 16(2), 39–55.
- World Bank. (2018). Improving Access to Finance for SMES Opportunities. World Bank, May, 1–63.

Appendix A: Questionnaire used for data collection from financial institutions

Introductory letter

The research is titled: ***The influence of collateral security on access to bank finance by Small to Medium Enterprises in Zimbabwe*** and aims to examine the influence of collateral security on Small to Medium Enterprises' access bank finance with the aim of enhancing their access to bank finance through policy reforms after exploring the influence that collateral security has on SMEs' request for bank finance. Kindly help respond to the questions below and for any inquiries in answering the questionnaires, kindly contact me on +263 773 287 767 or at cleverdhewa@gmail.com

1. Which sectors does your bank mainly lend to? (you may tick more than one if appropriate)
   a. Agro business
   b. Commerce
   c. Manufacturing
   d. Service sector
   e. Other (specify)………………………………………………

2. When processing loan applications, do you require collateral security?
   a. Yes
   b. No

3. If the answer to the above question is yes, then what type of collateral security do you require?
   a. Immovable property
   b. Movable property
   c. Secured investments
   d. Other (specify) ……………………………………………

4. Are there exceptions for lending without collateral security?
   a. Yes
   b. No

5. If **yes**, can you indicate such circumstances?

…………………………………………………………………………….
…………………………………………………………………………….

6. Other than collateral security, what else is critical for the successful processing of a loan?

…………………………………………………………………………….
……………………………………………………….. ………………….

7. What factors affect SMEs' access to bank finance? ***(You may tick more than one if appropriate)***

   a. Lack of collateral security
   b. Poor managerial skills
   c. High interest rates
   d. High transaction costs associated with SME lending
   e. Poor and unattractive business proposals
   f. Other (specify) ……………………………
8. How can access to bank finance by SMEs be improved?

……………………………………………………………………………...
……………………………………………………………………………...

End of the questionnaire

APPENDIX B: Questionnaire used for data collection from SMEs.

1. What form of business are you into?
    a. Retailer
    b. Engineer
    c. Manufacturer
    d. Sewing
    e. Horticulture
    f. Other (specify)

2. Are you aware of the existence of bank loans available to SMEs such as yours?
    a. Yes
    b. No

3. Have you ever attempted to apply for a corporate bank loan for your business?
    a. Yes
    b. No

4. If yes, did you succeed?
    a. Yes
    b. No

5. If the answer to 4 above is NO, what was the reason for the loan application rejection?

………………………………………………………………………………………
………………………………………………………………………………………

6. What factors do you think have contributed failure to accessing of loans by small enterprises? ***(Tick more than one box where appropriate)***
    a. Banks asking for collateral security
    b. High lending rates
    c. Banks being discriminatory against SMEs in their lending
    d. Non availability of credit facilities
    e. Other (specify)

7. What do you think should banks do to enhance SMEs access to bank finance?
………………………………………………………………………………………
………………………………………………………………………………………
………………………………………………………………………………………

8. What should the government do to help SMEs to access bank finance and other lines of credit?

……………………………………………………………………………………….
………………………………………………………………………………………

End of questionnaire

Hansraj College
University of Delhi

HRC JOURNAL OF ECONOMICS AND FINANCE

ISSN: 2583-8814 (Online)

CALL FOR PAPERS

Hansraj College, one of the premier institutions of University of Delhi, brings an opportunity for researchers around the globe to publish their research work in the journal of the college: HRC Journal of Economics and Finance

The ***HRC Journal of Economics and Finance*** is a **double-blind peer–reviewed academic journal** for students, researchers, and faculty, to showcase their research pertaining to the discipline of economics and business. It is an **International Journal**. Our mission is to provide a platform through which scholars can publish their scholarly findings to showcase them with the research community at large. We invite research papers and articles on topics related to the field of economics, business and management for its quarterly journal publication. The guidelines for the same are as follows:

Guidelines:

1. Authors can submit research papers, review articles, commentary, and book reviews
2. Papers can be related to the fields of economics, development, finance, management, law, health, education, gender, patents, trade, environment, and other related fields. These are indicative fields, and authors can submit any paper other than above mentioned fields.
3. The author will submit the paper in both word and pdf format. If the author is writing the paper in LaTeX, kindly submit the LaTeX file as well.
4. **Word Limit**: The maximum word count is up to 10000 words.
5. **Format**: The font size and style to be followed is 16 point for heading, 14 point for subheadings, 12 point for text and 10 for footnotes and Times New Roman respectively.

Line spacing should be 1.5 for the text and 1 for the footnotes and endnotes. The name of the file should be in the format "FirstNameLastName- PaperTitle."

6. All figures and tables should be embedded within the text. They should be labeled properly along with the source. Equations should be numbered.
7. The cover page should include the name of the author, name of institution, title, department, year of study (for students), contact number and email-id.
8. **Citation**: For the purpose of citations follow Chicago style referencing.
9. The Acknowledgements and Declarations section will be after the text of the manuscript and before the References section. The Declaration as applicable, on funding, conflict of interest, authors' contribution, data source, ethics approval etc. must be provided.
10. **Plagiarism**: Plagiarism of any kind is strictly prohibited and will lead to rejection of the entry. Limit of up to 10 percent is acceptable.
11. **Copyright**: Authors whose paper gets selected will be required to fill a copyright form to be sent separately to them.
12. Only original and unpublished entries will be considered for publication.
13. **Abstract**: Submissions must include an abstract of maximum 300 words, comprising of a brief description of the hypothesis, structure of the paper, research methodology and tools.
14. Citation of references in the text shall follow name and year in parentheses format. For eg. (Abbott 1991; Barakat et al. 1995; Kelso and Smith 1998; Medvec et al. 1999).
15. Different sections in the paper should be numbered in serial order. These include:
    a. **Introduction**: A general overview of the research topic, its background and the question of the need for research in this field, are to be addressed in this section.
    b. **Literature Review**: Aspects such as the evolution of theory/thought/responses to a topic and personal reaction or thoughts on the same are to be covered in this section. Additionally, critical analysis of existing literature on the research topic, with relevant references wherever applicable is expected to be included.
    c. **Methodology**: Research methodology, techniques used, sampling methods, data sources and related aspects are to be included here.
    d. **Results and Analysis**: The results of the paper, their analysis and interpretation are expected in this section.

e. **Conclusion**: This section should include the conclusion drawn from the research, together with relevant charts and tables. Topics such as limitations and scope for further research in the area too should find a mention here.

f. **References**: A list of all works cited in the paper. Chicago style referencing format is to be followed.

g. Reference list entries should be in alphabetic order by the last names of the first author of each work. Journal names and book titles should be italicized. For example:

   i. **Journal article**: Battaglini, M., & Patacchini, E. (2018). Influencing Connected Legislators. *Journal of Political Economy*, 126(6), 2277–2322.

   ii. **Article by DOI**: Duarte, A.A., Waechter, S.R., Pedrotti, M.F., et al., (2020) Microwave-Induced Combustion in Disposable Vessels: A Novel Perspective for Sample Digestion. *Analytical Chemistry*, https://doi.org/10.1021/acs.analchem.0c01017

   iii. **Book**: Smith, T.M., & Smith, R.L. (2015). *Elements of Ecology*. Virginia: Pearson Press.

   iv. **Book chapter**: Grainger, J., & Konkel, J. (2018). Flow Cytometry. In A. Hoffman and S. Clokie (Ed.), *Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology* (pp. 287-312). Cambridge: Cambridge University Press.

   v. **Online document**: Utkina, I. (2020). Traditional bamboo cultivation system in the Republic of Korea earns place on global agricultural heritage sites list. News. Food and Agriculture Organization of United Nations. http://www.fao.org/news/story/en/item/1295510/icode/ (accessed 26 June 2020).

The deadline for submission of articles and papers is 15th of every month.

All the submissions will be done by emailing the paper to editor.jef@hrc.du.ac.in

Website: Hansraj College, University of Delhi

We expect the authors to wait at least one month from their submission to hear from the editors.

All the submissions have to be in English. However, submissions in other official Indian languages are also accepted. Once accepted, these submissions will be published in a special issue of the journal.

In case of any queries, please send an email to editor.jef@hrc.du.ac.in

Ethic Policy:

HRC Journal of Economics and Finance team aims to bring high quality content with the utmost transparency and clearest ethical behavior as possible. Nearly each attribute of this process involves important ethical principles and decisions, which are seldom explicitly stated and even less often shared with the readership. Journal's reputations depend on the trust of readers, authors, researchers, reviewers, editors, research subjects, funding agencies, regulatory agencies & administrators. This trust is enhanced by describing as explicitly as possible the journal's policies to ensure the ethical treatment of all participants in the publication process. For authors, the journal has the policy that the submitted work has not been published before (except in the form of an abstract or as part of a published lecture, review or thesis). The work is not under consideration elsewhere. The copyright has not been breached in seeking its publication. The publication has been approved by all co-authors and responsible authorities at the institute or organization where the work has been carried out.

No Publication/ Processing Fee

HRC Journal of Economics and Finance, being a non-profit Journal, does NOT charge publication/ processing fees from Author(s).