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Original Article

Integrating Esg Principles in Urban Governace: A Case Study of Bellari City Corporation

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Abstract

Purpose: *This study aims to explore how Environmental, Social, and Governance (ESG) principles can be effectively integrated into the urban governance framework of Ballari City Corporation. The objective is to assess the city's current ESG performance and provide data-driven strategies to enhance sustainability, transparency, and citizen well-being.*

Methodology: *The research employs a case study approach, utilizing primary and secondary data from municipal records, government reports, and stakeholder interviews. A customized ESG metrics framework was developed to evaluate key indicators such as solid waste management, water supply, public health infrastructure, citizen participation, and institutional responsiveness. Each indicator was scored against established benchmarks to derive an overall ESG performance score.*

Findings: *The analysis revealed moderate performance in environmental indicators, particularly in waste management and water supply. Social indicators like public health infrastructure and education access showed relatively strong outcomes, while governance indicators highlighted good citizen participation but pointed to gaps in grievance redressal responsiveness. The study identified specific areas needing policy intervention and community engagement.*

Originality/Value: *This study is among the first to apply ESG principles at the urban local governance level in an Indian Tier-2 city. By contextualizing ESG in a public sector setting, the research offers a novel approach to evaluating sustainability in municipal governance beyond corporate environments.*

Implications: *The findings provide actionable insights for policymakers, urban planners, and municipal authorities. Implementing the recommended ESG-based strategies can enhance service delivery, ensure equitable development, and support long-term sustainability goals. This model may serve as a replicable framework for other mid-sized urban centers in India*

Keywords: *ESG, Ballari Corporation, Sustainable Development, ESG Metrics, Urban Governance*

Introduction

ESG is a growing movement that helps define and assess the impacts of business and companies on Environmental, social, and governance issues. While the concepts of ESG have existed for a long time partly arising from the sustainability movement of the 1989s the term ESG was officially coined in 2005. It was the result of the report "Who cares Wins" which was published by the United Nations and was originally intended to focus on investments. The report demonstrated involves adding ESG considerations to financial assessments and choices making would more quickly lead to sustainable markets and better outcomes for society overall. The Paris Agreement an international treaty on climate changes that seeks to limit the Earth's temperature increase 1.5-degree Celsius above pre-industrial levels has also shaped much of the environmental focus of ESG since. ESG has continued to grow exponentially as government businesses and Customers are now more aware of the need to address how actions and operations affect society and the environment. ESG, it has additionally grown significantly more significant than just a tool for investors. Approximately 90% of ESG regulations are now the responsibility of government agencies other groups such as financial regulators, central

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Banks, industries, and statutory bodies also play a role in regulating ESG the regulations and Regulating practices also vary by country. With the increased focus on climate changes, carbon emissions reduction requirements, and nature-positive development and investments ESG is set to grow even further and become more standardized and transparent in the coming years. Companies, business, and organizations will need to understand and incorporate ESG policies into their operations and business practices, given the rapidly expanding importance and more stringent requirements of ESG worldwide. An Overview of ESG issues policy development, A couple of the and proven benefits, along with links to additional resources for planning, implementing, and reporting ESG.

Industry Profile

The service industry is the fastest- growing and most dynamic sector in the global economy, playing a central role in the daily lives of people and the functioning of businesses and governments. It includes a vast array of services such as healthcare, education, financial service, hospitality, tourism, transport, retail, legal service, and public administration, as well As modern digital services like IT, cloud computing, and e-commerce. Unlike the manufacturing or agriculture sectors, the service industry deals primarily with intangible outputs meaning services are consumed at the point of delivery and cannot be stored or owned this sector is labour intensive and often requires high levels of skills customer interaction, and trust. It supports economic development by creating jobs, increasing productivity improving living standards and generating revenues through domestic use and international trade in urban areas, especially services like a public transport, waste management, water supply, and governance often managed by City Corporation are essential for sustaining modern life. Technological advancement globalization, and changes in consumer behavior are continuously reshaping the service industry making it more innovative, competitive, and integral to sustainable economic growth worldwide

Company Profile

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Ballari City Corporation Established in 2004 it covers an area of approximately 167Km², serving one of Karnataka's larger urban centers. Mayor (Ceremonial head): Currently M. Nandish, elected June 2024. Deputy Mayor is D. Sukum elected on 2024. Deputy Mayor and 39 elected ward councilors representing individual Wards. Municipal Commissioner is Syeda Afreen Banu and deputy commissioner is Mallanagouda B.

Vision of City Corporation

To transform Ballari into a clean, green, sustainable, and digitality empowered urban center that provides reliable civic services such as water, sanitation, waste management, transport, and public safety to enhance the well- being of its residents. The vision is reflected in efforts like Installing CCTV systems for waste monitoring, advancing digital payment systems and planning infrastructure that includes road improvements, solar energy projects, and smart governance.

Mission of City Corporation

Upgrade urban services ensure efficient provision of public facilities such as sanitation and drinking water, street lighting, drainage, and waste disposal. Promote sustainability and innovation implement initiatives such as the 10 MW solar project and promote public awareness campaigns around cleanliness and environment.

Service Profile

E-Aasthi: E- Aasthi means electronic property "Khata" A digital version of the traditional "khata" (local ledger or property account) E-Aasthi provides property ownership records and tax details online. Property owners can search ownership, view details like plot size, usage, and tax history, and apply for new E- Khata.

Vya par- Trade License: In the city corporations like Ballari City Corporation trade license is an official permission issued to individuals or businesses to legally conduct commercial activities within the city limits like shops, hotels, restaurants, bakeries, factories, or workshops, etc.

Nirmana- Building License: Nirman building license refers an official permission for the approval guaranteed by the urban local body to construct modify other re-innovate up building Nirmana means construction in Kannada A Nirmana License is a mandatory document issued by the City Corporation to ensure that any building activities residential commercial or industrial.

Property Tax Calculator: A property tax calculator is an online or digital tool used it streamlines the process of computing tax based on a number of property-related elements in order to estimate the amount of real estate taxes that property owners must pay.

Property tax formula: Annual property tax= (Built-up Area) * (Rate per sq. ft.) * (usage factor) *(zone factor) – depreciation.

E- Sweekruthi- payment gateway: E- sweekruthi is a digital approval and payment systems used

By urban local bodies in Karnataka including Ballari City Corporation the term "Sweekruthi" in Kannada means "Approval" or "Acceptance". E- Sweekruthi is digital approvals for various municipal services. Facilitate online payments for things like property tax, trade licenses, building plan approvals, water charges, and sewerage fees.

IPGRS: IPGRS stands for integrated public grievance redressal systems. IPGRS An online platform developed by the government of Karnataka to allow citizens to lodge, track, and resolve complaints or grievance related to civic services provided by urbanized localities, such as the city corporations, municipal councils, and town panchayats.

Utility management connection: Utility management connection refers to the approval maintenance and regulations of essential public services connections provided to homes, businesses, and institutions, key utility services managed by the city agencies, such as lighting on roads, wastewater, and water distribution, solid waste, trade utilities.

Jalanidh-top UGD connection: The term "Jala Nidhi Top UGD connection" The efforts to a sanctioned underground drainage connection provided to properties through the Jalandhidi scheme or platform specifically under the top model. Jalandhar means "water resource" in Sanskrit with handling the UGD collections, water supply approvals, utility billing and database updates.

Flim shooting And Signage approval: film shooting approval is the official permission granted by the city corporation to use public space, like a streets, parks, markets, or government buildings for shooting films TV shows, documentaries, or advertisements.

Registration of Births and Deaths: Registration of births and deathsrefers to the official recording of a person's birth or death in the municipal records. This process is legally mandated under the registration of births and deaths act 1969 and is carried out by the Registrar of births and deaths in the City Corporation.

Municipal GOs and Circulars: Municipal GOS and circular official government documents used to issue instructions rules and decisions that affect how the urban local body functions and delivers services.

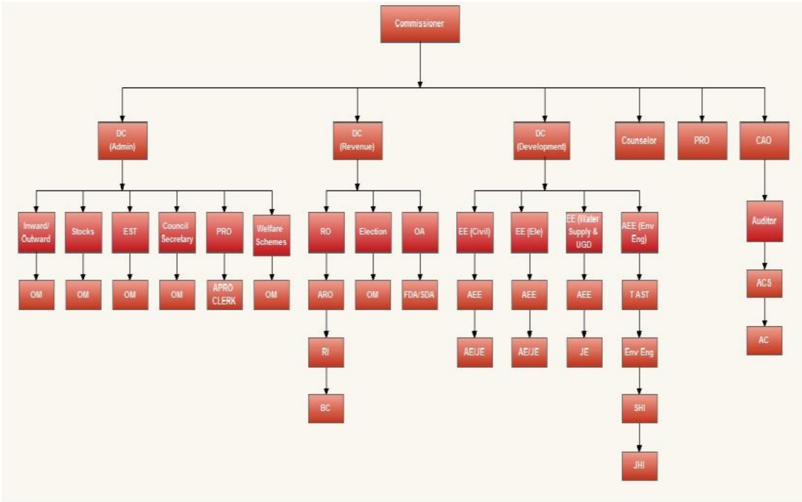
Example: A GO may direct all city corporations to adopt online property tax payment systems or introduce plastic ban enforcement in urban areas.

Nirman 2.0: Likely the second version (2.0) of the online building License and approval system used by Local governments in cities including City Corporation a building permit applications, digital tracking, free payments, and status updates integration with E Sweekruthi or IPGRS Portals.

Infrastuture Facilities

1. **Water supply and sewage systems**: Equipped with dual- source piped water drawn from Alipore and Moka reservoirs, with micro- tunneling under railway tracks to strengthen connectivity. Historically moved toward 24*7 piped water service, supported by state-financed projects and SPML infra contracts. Underground drainage (UGD) lines under tender for Keller colony and other wards, installed via Jala Nidhi/ Top model.
2. **Roads and Transportation:** Maintenance and development of local roads. Major highways like NH- 150A, NH-67, and state roads pass through the city, with the Bidar- Ballari highway planned for widening to improve connectivity. Ballari junction station handles both passenger and city bus stand adjoin the railway hub. A proposed greenfield airport near sirivaram/ chaganur is in development to boost regional connectivity.
3. **Health infrastructure:** District- level hospitals including VIMS (formerly VIMS with 680 beds and nursing facilities) and several CHCs/PHCs across Taluks. Private institutions like Ballari health city hospital offer emergency and specialized services. VIMS established in 1961 VIMS is a government medical college. District hospital in 2016 handles 1,000-1,200 outpatients daily and admits 200-220 inpatients with 310 beds and all major specialties. Ballari health city a private 100- bed facility with 34 bed ICU catheterization lab, trauma unit, and departments like cardiology, and more.
4. **Educational institutions:** Hosts over 1,400 schools, polytechnics, and colleges including VSKUB, VIMS, engineering, medical, pharmacy, and teacher training facilities. Ballari offers well- rounded education and technical- professional training. With a mix of public universities, government colleges, and ambitious private institutions.
5. **Utility and Power infrastructure:** served by Ballari thermal plant (1,700 MW coal based) at kudatini for regional power supply. Electric power infrastructure for domestic and industrial use is well- developed (270+ and 31 + million units respectively) the city also benefits from JSW 860 MW captive thermal plant, serving industrial and open -access power demands. Ballari ranks 3rd in Karnataka for installed solar capacity. Managed by state utilities KPCL (generation) KPTCL (transmission)
6. **Recreation and public amenities:** Ballari stadium offers open-air sports facilities (running track, badminton courts, gym,) though some local calls for renovation persist. Public utilities include banks, parks, and communal spaces under the city corporation. Major parks like Parvathi Nagar Park, Dr. Rajkumar park, EX- servicemen colony public park. Major sports and clubs Ballari stadium, gymkhana club.
7. **Sustainability and renewable projects:** the city launched A 10 MW grid- tied solar plant consultancy tender in 2022 signifying a push for sustainable municipal power use. Ballari is now recognized as one of Karnataka "mega -renewable energy hubs" with plans for transforming into a hybrid renewables zone. Municipal 10 MW solar projects, district- level solar and wind hub, floating solar on reservoirs, wastewater reuse for sustainability, skill development and economic transition and grid and transmission upgrades. Monitor development of the 10 MW solar plant particularly the DPR and commissioning stages. Track the implementation of hybrid solar -wind projects under the mega hub framework.

Organization Chart



Swot Analysis

Strengths

- Situated between Bangalore and Hyderabad, Ballari is a local centre for commerce and transportation and mining industries.
- Major players like JSW Steel, cement, granite, and mining industries, contributing to revenue and employment.
- Ranked 3rd in Karnataka for solar capacity with a planned 10MW solar plant and wind-solar hybrid potential.
- Platforms like e-Aasthi, nirmana, e-sweekruthi, and IPGRS have improved service delivery, transparency, and licensing.

Weaknesses

- Infrastructure projects (like 24*7 water supply) often face slow implementation.
- While improving several wards still lack full UGD coverage, and solid waste collection needs modernization.
- Narrow roads, insufficient traffic control, and lack of parking facilities cause congestion, especially near zones.
- Few large public parks or modernized sports complexes compared to city population many facilities require maintaince.

Opportunities

- Proposed Ballari Airport and NH upgrades could boost logistics, trade, and regional integration
- Scope to implement treated wastewater reuse, waste- to- energy, and solar- powered public utilities.
- Proximity to Hampi, Daroji, sanctuary, and heritage, temples offer untapped tourism revenue.
- Can leverage its scale to adopt smart traffic, LED lighting, green buildings, and digital citizen services.

Threats

- Ballari experiences long dry spells followed by intense rainfall, which affects agriculture, drinking water supply, and drainage infrastructure
- Industries pollution has affected air and water quality in certain areas, risking public health.
- Citizens lack awareness or involvement in civic planning, Budgeting, and grievance redressal systems like IPGRS.
- Coordination issues between Ballari Corporation, GESCOM (Electricity) PWD (roads) And KUWSDB (water board) cause project duplication or delays in execution.

Future Growth and Prospects

Ballari city recognized as the second fastest growing city in Karnataka Has promising Future growth and prospects particularly in its industrial and tourism sectors the city's development in supported by the abundance of natural resources and robust infrastructure including upgraded roads and a focus on water resources management. Ballari is known as the "Steel city of south India" and has a strong base of small, medium, and large -scale industries. The presence of over 18000 small- scale industries and 70 large and medium scale industries indicates a thriving industrial environment. Agriculture remains a dominant sector with the majority of the workforce relying on it's for their livelihood. The district administration is prioritizing road construction and upgrades to handle increased traffic. Plans are in place for ring roads and other transportation improvements. The Ballari city municipal corporation is in charge development projects and service delivery. The 74th constitutional amendment act mandates the devolution of 18 contributes to the municipal corporation. Ballari has historical and natural attractions, including the Ballari fort, creating Tourism potential. The development of Tourism infrastructure and promotion can boost the local economy. Addressing challenges like groundwater depletion and improving last-mile connectivity is crucial for sustainable growth. Harnessing the potential of agriculture and horticulture through modern techniques can enhance productivity. Investing in infrastructure and urban planning will be key to managing the cities in conclusion Ballari's future looks bright with a combination of industrial growth, agriculture potential, and infrastructural development. By addressing challenges and capitalizing on opportunities, Ballari can continue its trajectory as a thriving city in Karnataka.

Background of the Study

The potential for financial rewards for a given level of risk is the main factor used to make investment decisions. But there have always been a lot of other factors to take into account when determining where to put money, ranging from heavenly reward to political reasons. One of the most well-known instances of selective disinvestment along moral lines occurred in South Africa during the 1970s as a result of the global apartheid regime. In 1977, the reverend Leon Sullivan, a board member of General Motors in the United States, created a code of conduct for conducting business with South Africa in response to the mounting calls for sanctions on the regime. Much attention was paid to what became known as the Sullivan principles. To find out how many US corporations were breaking the Sullivan code, the government commissioned a number of reports. The US withdrew its massive investment in numerous South African enterprises as a result of the studies' conclusions. The pressure that the South African business community put on the government as a result of this helped significantly to the rising push to abolish the apartheid system.

In reaction to the dominant Philanthropic sentiment of the 1960s and 1970s, economist Milton Friedman contended that social responsibility has a negative impact on a company's financial performance. The macro economy will always suffer from a company's financial performance as well as from "big government" regulation and meddling. For the majority of the 20th century, his belief that a company's or asset's value should be determined almost solely by its financial performance (with the expenditures associated with a social obligation being considered non-essential) was widely accepted (see Friedman doctrine). However, a country hypothesis started to gain traction around the close of the 20th century. James S. Coleman published a paper in the American Journal of Sociology in 1988 that was labelled the Although the concept of selective investment was not a new one with the demand side of the investment market having a long history of those wishing to control the effects of their investment What began to develop at the turn of the 21st century was a response from the supply The paper questioned the idea of social capital's dominance in value measurement by examining its role in the development of human capital. By forming a coalition with environmental organizations and utilizing the combined purchasing power of investors, a new kind of pressure was used to persuade businesses and the capital market to take environmental and social risks and possibilities into account when making decisions.

Side of an equation. This field was commonly known at the time as ethical or socially the investing industry started to recognize the increasing demand for goods designed to Freer Spreckley, the founder of social enterprise, gained notoriety as the responsible investor in 1981. Publicly available social audit He first proposed the idea of a set of internal criteria—financial viability, social wealth creation, organizational governance, and environmental responsibility—that social enterprises and other organizations should use in their annual planning and accounting in a management tool for cooperative working. These criteria later became known as social accounting. Examining subsequently, in 1998, John Elkington, a co-founder of the sustainability consulting firm published by Cannibals with Forks, identified the newly emerging cluster of non-financial considerations that ought to be incorporated into the factors determining the value of a company or equity. He created the term "triple bottom line" to describe the new calculation's inclusion of social and financial aspects. Simultaneously, the rigid separation between the financial and environmental sectors started to dissolve. In 2002, Chirs Yates-Smith, a member of the international panel, was selected in the city of London to supervise the technical development, certification, and dissemination of the organic production standard. One of the first environmental finance research groups was founded by the founder of a branding firm.

Examining the nature of the relationship between environmental and social norms and financial performance was the goal of the virtuous circle, an informal group made up of city lawyers and environmental stewardship NGOs. The increasing interest in the ESG investment sector prompted several of the largest banks and investment houses in the world to start responding.

The Brazilian bank Unibanco and the London-based Mike Tyrells Jupiter fund were among the first to offer sell-side services. In 2001, they employed ESG-based research to offer Citicorp and HSBC selective investment services. The majority of investment in the early years of the new millennium the market continued to adhere to the long-held belief that morally sound investments would inevitably reduce profits. Friedman had established a generally acknowledged scholarly foundation for the claim that acting morally would have more costs than rewards, and philanthropy was not seen to support successful businesse The Moskowitz List's success in the early 2000s, along with its impact on hiring practices and brand reputation, started to cast doubt on long-held beliefs about the financial impact. According to the Journal of Financial Economics, the top 100 companies to work for outperformed their peers in terms of stock returns by 2-3% annually between 1984 and 2009, and they consistently In 2005, the United Nations Environment Programme Finance Initiative commissioned a paper on the legal interpretation of investors and ESG issues. The international legal firm Freshfields Bruckhaus Deringer wrote the document. According to the findings of the Freshfields inquiry, investment firms may have a fiduciary duty to include ESG factors while also incorporating them into investing analysis. In 2014, the Law Commission upheld the freedom of pension trustees and others to take ESG factors into account when making investment decisions.

Several publications started to surface where Friedman had offered scholarly backing for the claim that incorporating ESG-type factors into financial operations would result in lower financial performance. Early in the century, research was conducted to support opposing views. In 2006, Michael Barnett of Oxford University and Robert Salomon of New York University produced a significant study that came to the conclusion that the two sides of the debate might even be complementary. They proposed a connection between financial success and social responsibility. The financial performance could be maximized by both selective and non-selective investing strategies. Served as a conduit for banks and carefully chosen investment firms to express interest in issues. ESG A variety of investment firms that focus on ESG and responsible investing a proliferation of based portfolios emerged in the financial industry. The development of ESG factors as considerations in investment analysis is seen by many in the investment industry as inevitable. The evidence linking consideration of ESG issues to financial performance is growing, and the combination of fiduciary duty and a broad understanding of the need for long-term investment sustainability has led to an increase in the importance of environmental, social, and corporate governance concerns in the investment market. Furthermore, polls conducted among eventual beneficiaries often reveal high levels of support for taking into account social and environmental issues in addition to long-term risk-adjusted returns. As a result, ESG has evolved from a philanthropic issue to a practical one.

Literature Review

1. Ria Kapoor (2025) "A MASTER PLAN FOR SUSTAINABLE DEVELPOMENT AND GREEN INVSETMENT IN RAMNAGAR UTTARAKHAND" environmental, social, and Governance frame work helps has to measure how well an organization or industry is are Taking care of people in an organization while industry is mostly used in business ESG is currently growing in significance. For Indian cities. City Ramnagar is facing the problems like Environmental damages they must examine social and environmental issues. Some of the tools include Swachh Survekshan this paper suggests a new master plan for ramnagar that uses an ESG based approach. Ramnagar become a cleaner, safer, and more liveable place for investors.
2. Nastaran Esmaeilpour Zanjani (2022) "THE MODEL OF GOOD SUSTAINABLE URBAN GOVERNANCE BASED ON ESG CONCEPT" In the last few years ESG index become a tool for evaluate companies. The environment, sociable about, and government are what ESG stands for. They have to check hoe companies are following in these areas. Good urban governance which means they to managing the cities in a fair and efficient way people are focused on gaining attention in worldwide. In the end they have created the model shows that how cities can use ESG to improve and how they are managed this new idea can helps cities to grow in a smart and sustainable way. And also create more jobs.
3. Ms Aditi Dwivedi and Mr Dhruv Bhavsar (2021) "POSSIBILITIES OF USING ENVIROMENTAL, SOCIAL, AND GOVERNANACE FRAMEWORK FOR company will treat people and follows rules. Since the 1960 people are avoiding industries like tobacco. The housing urban affairs has encouraged to rise their own funds many cities are being measured in living index and Swachh Survekshan and good governance. Both these tools include rating systems to show how well cities are doing. Cities with more Funding and assistance are more probable to come from scores that are higher.
4. Saravanan Sagadevan and Aliyah Assegaf (2025) "FROM RISKS TO RESILIENCE HOW ESG IS SHAPING COASTAL CITY URBAN PLANNING" Due to increasing sea levels and more powerful storms brought on by climate change, these coastal cities are dealing with a lot of issues. They must deal with these issues. ESG stands for governance, society, and the environment. And governance ESG gives the city planners a useful way to think about and these problems. ESG ideas in city planning cities can better deals with environmental problems take care of their people this ESG can helps make coastal cities are stronger and safer, and shares NEW ideas that are helping cities grow and a smart way.
5. Maria Cristina (2023) "INTEGRATION OF ENVIROMNETAL, SOCIAL, AND GOVERNANCE THEIR IMPACTS ON CORPORATE SUSTAINABILITY PERFORMANCE" Many researchers are studied how companies use ESG the most researchers are emphasized the consequence of environmental, social, and on the inside company. this paper will study the how ESG impact on corporate sustainability. It follows a method called PRISMA to collect and reviews past research the result show that using ESG helps improve sustainability performance.
6. Zalfa Fadilla Anjani (2023) "THE SIGNIFICANCE FOR EXTERNAL, CULTURAL OR GOVERNANCE, PRINCIPLES IN PUBLIC WORKS AND HOUSING INFRASTURUCTURE" between 2020 and 2024 Indonesia needs IDR 2,058 trillion for public works and the housing projects the government will give the 30% of public private collaboration, while the remainder must be covered by them. For this reason, investors help the government by adhering to ESG, or environmental, social, and governance. Of finance launched an ESG guide for PPP projects.
7. Shaeera Banu and Vimala (2024) "INTEGRATION OF ESG PRINCIPLES AN INITATIVE FOR TRANSFORMATION FROM LINEAR ECONOMY TO CIRRCULAR ECONOMY" The present research analyses how environmental, social, and governance it looks and studies real life data to show how ESG encourages companies reuse material, reduce waste, and use eco-friendly methods. ESG and the circular economy gives the useful ideas the article says that using ESG can help create a stronger, fairer, and greener world.
8. Chemosphere (2024) "DEVELOPING ENVIROMENTAL, SOCIAL, AND GOVERNANCE STRATEGIES ON EVALUATION OF MUNICIPLE WASTE DISPOSAL CENTERS A CASE OF MEXCIO" waste disposal Institutions serve as essentials to success environment and also support the economy well-being this study is measured by 32 WDCs to develop the ESG strategies in that 32 WDCs 9 centres are efficient and remaining 23 are still they are in the improvement. The study suggests a four-plan step that are Ground work, structuring, development and growth and smart maturity.
9. 5.Yinuo Jiang (2023) "INTEGRATING ESG PRATICES AND MAINTENANCE OF THE ENVIRONMENT FOR GOOD DEVELOPMENT IN SMEs UNDER THE DUBLE-CARBON TARGET OF CHINA" small and medium- sized business Help to grow the economy in China they are being asked to follow the Double-carbon goal to cut the emissionthis study suggests using the ESG for the better resource use to help. It found that using the eco-friendly packaging, green transport, and setting carbon goals are the best ways for SMEs to be more sustainable.
10. Phi- Dinh Hoang (2024) "ASSESSING ENVIRONMENTSL, SOCIAL, AND GOVERNANCE, (ESG) PERFORMANCE OF GLOBAL ELECTRONIC INDUSTRY AN INTEGARTED MCDM APPROACH BASED SPHERICAL FUZZY SETS" The research presented here emphasizes the significance of reliable ESG data for investors. It uses the new method to measure the ESG performance in the global electronic companies. It can be guiding the better investment decisions and to attract the more investors.
11. Abdularahman Alhazemi (2025) "INTEGRATING ESG FRAMEWORK WITH SOCIAL SUSTAINABILITY METRICS A DUAL SEM- PLS FORMATIVE- REFLECTIVE MODEL PERSPECTIVE" Environmental, social, and governance techniques are becoming more crucial in helping businesses become more environmentally friendly and healthy. This study looks at how ESG an ethical can improve employee's well-being. ESG practices improve health, fairness, and community support at work.

12. Qin Lingda tan (2025) "ENVIRONMENTAL SOCIAL GOVERNANCE IN DIGITALIZATION RESEARCH A BIBLIMERTIC ANALYSIS" In the past 10 years ESG and digital technology Have come together to from digital ESG this study reviewed 455 papers to understand current trends. Most research is in business with China, Malaysia and the U.S leading the study shows DESG affects consumer behaviour and helps guide future research.
13. David Baxter (2022) "A STRONG ENABLING ENVIRONMENT CAN INCORPORATE ENVIRONMENTALLY FRIENDLY FACTORS INTO INVESTMENTS IN INFRASTRUCTURE. As the problem of global warming develops, private businesses are increasingly concerned about how the infrastructure is affect the environment and society
14. ESG factors to these projects, investors can lower risks and support greener, stronger, and more innovative infrastructure ESG not just Promises or fake effort Eco-friendly (also known as greenwashing).
15. Hermiyetti (2024) "INTEGARTION OF ESG PRINCIPLES IN CORPORATE GOVERNANCE A REVIEW OF THE LATEST LITERATURE" this study explores how ESG principles have grown from just a rule- following tool to a key part of business strategy ESG helps to improve company performance, reputation, and access to green funding. It alsorecommends using digital tools and the circular economy to support long-term business sustainability.
16. Carmen Pennanen- arias (2024) "INTEGARTION OF ESG CRITERIA IN FINANCIAL EDUCATION" This paper demonstrates how ESG considerations are frequently overlooked when considering financial education. It may result in hazards in the future. It suggests adding ESG into how we measure profits like changing discount rates and corporate rules that include long-term ESG impacts.
17. Leogrande (2024) "APPLYING Digital TRANSPORTATION TO ECO THE FOUNDATIONS FOR SUFFICIENT SERVICES CHAINS" smart logistics helps h\to companies become more sustainable by using the technologies AI and blockchain. These tools make delivery route more efficient cut down fuel use and reduce pollution. Electronic vehicles and smart warehouses overall using ESG in logistics makes supply chains cleaner, fairer, and more responsible.
18. N. Esmaeilpour Zanjani (2021) "THE MODEL OF GOOD SUSTAINABLE URBAN GOVERNANCE BASED ON ESG CONCEPTS" The ESG index measures how companies perform in environmental, social, and governance, areas. it covers things not usually found in financial reports. Data analysis the objective is to enhance urban development and generate employment in order to establish a model for improved municipal management based on ESG.
19. Murithi Antony (2024) "INTEGRATING ENVIRONMENTAL, SOCIAL, AND GOVERNANACE PRINCIPALES INTO CORPORATE GOVERNANCE IN KENYA TRENDS, CHALLENGES, AND BEST PRACTICES" Adding ESG to corporate governance is changing how business work. Companies face challenges like unclear rules and low awareness. Stronger enforcement and improved regulations to assist companies in becoming environmentally friendly, particularly in Kenya.
20. Nathan Owen (2024) "SUSTAINBILITY STRATGIES IN UK FINACIAL SERVICES INTEGRATING ESG PRINCIPLES FOR LONG-TERM GROWTH" the study how UK financial service are using ESG principles. It found that pressure from rules and stakeholders is driving ESG adoption. The study suggests better reporting, training, and the use of technology to support sustainable finance.
21. Pankaj Prasad Dwivedi (2023) "ROLE OF ENVIRONMENTAL, SOCIAL, AND GOVERNACE (ESG) IN THE ACHIVING SUSTAINABLE DEVELOPMENT GOALS A BRIEF REVIEW" ESG helps businesses support the UNs sustainable development goals but challenges like unclear standards and limited data make it hard to measure impact. Companies also face tough choices between profit and sustainability. This study shows how ESG connects social, environmental, and governance goals to achieve long- term development.

Research Gap

1. **Lack of Localized ESG frameworks for small and medium Indian cities.**

Most studies focus on large cities a general ESG applications in business. Theres limited research on now ESG principles can be effectively l ocalized and customized for smaller Indian cities like Ballari.

2. **Limited empirical implementation at the municipal level.**

Write theoretical Frameworks and benefits of ESG in urban planning are discussed (E.g. Ramnagar coastal cities) there's little documentation on actual implementation, monitoring, and results within municipal corporation.

3. **Insufficient integration of ESG with local governance tools (E.g. Swachh Survekshan)** ESG is not yet systematically aligned with existing urban performance metrics used by municipalities in India.

Statement of the Problem

Ballari City Corporation is facing significant urban challenges that underscore the urgent need to integrate Environmental, Social, and Governance (ESG) principles into its planning and administration. Issues such as pollution, poor waste management, and shrinking green spaces are worsening due to rapid industrialization and unplanned urban growth. Social challenges, including limited access to quality healthcare, education, sanitation, and housing—especially for marginalized groups—further impact residents' well-being. Governance gaps such as low transparency, limited citizen participation, and lack of data-driven decision-making weaken the effectiveness of municipal services. Despite the global push for ESG standards, Ballari lacks a formal ESG framework, resulting in fragmented development. Integrating ESG is essential for achieving sustainable, inclusive, and balanced urban growth.

Need For the Study

Ballari, a rapidly developing city with both industrial and rural characteristics, faces growing environmental issues such as industrial pollution, unmanaged waste, water scarcity, and loss of green spaces. Social challenges like limited access to clean water, affordable housing, healthcare, and education also demand urgent attention. Governance concerns, including low transparency and limited citizen participation, further hinder sustainable development. A focused study on ESG (Environmental, Social, and Governance) aspects in Ballari City Corporation is essential to assess current responses, identify policy and service gaps, and support sustainable and inclusive growth. As Ballari evolves into a textile and renewable energy hub, integrating ESG practices can strengthen resilience, attract green investments, and improve citizens' quality of life.

Objectives

1. To evaluate the current performance of Ballari City Corporation using ESG indicators (Environment, Social, and Governance) based on available secondary data.
2. To compare the city's ESG indicator values against national or state-level benchmarks and identify gaps in performance.
3. To suggest data-driven recommendations for enhancing ESG integration in Ballari's urban governance framework using the insights from the calculated scores.

Scope of Esg in Ballari City Corporation

1. Environmental Scope

- **Solid Waste Management**: Ballari produces about 315 grams of garbage each individual every single day, which is within the permissible range set by the CPCB. However, scientific processing of waste and improving recycling infrastructure remains an area for development.
- **Water Supply**: With an average supply of 130 LPCD (against the CPHEEO norm of 135 LPCD), the city performs well but still requires consistent upgrades to ensure 24/7 water availability and wastewater reuse.

2. Social Scope

- **Healthcare Access**: Ballari has over 150 health facilities. ESG evaluation highlights opportunities to further improve doctor-patient ratios, emergency response systems, and digital health record systems.
- **Education Infrastructure**: With 243 schools, and colleges Ballari exceeds minimum education access requirements. ESG can help improve quality education, digital literacy, and dropout reduction.

3. Governance Scope

- **Citizen Participation**: Currently, around 60% of wards have active citizen participation mechanisms. ESG encourages transparent ward-level planning, participatory budgeting, and local engagement platforms.
- **Grievance Redressal (IPGRS)**: With 80% complaint resolution rate, the system is functioning well. ESG tools can improve data-driven decision-making and transparency.
- **Digital Governance**: Ballari provides 100% of key services online. ESG allows for continued innovation in smart services, cybersecurity, and digital inclusion for all.

Research Methodology

1. Research Design

- **Type:** Descriptive and Evaluative.
- **Approach:** Quantitative (based on secondary data calculations)
- **Scope:** Limited to ESG metrics in Ballari City Corporation.

2. Data Collection Method:

Secondary Data Sources:

- Solid Waste Management data (grams per person/day) from Ballari city corporation website.
- Water supply LPCD from Jal Jeevan Mission or local urban water board data
- Health and Education data from:
- Census of India
- District Statistical Handbooks
- Health Department reports
- Governance indicators (Citizen participation %, IPGRS, e-Governance implementation)
- Ballari City Corporation performance dashboards
- MoHUA service level benchmarks
- Karnataka Municipal Reforms Project (KMRP) reports

3. Data Analysis:

- **Scoring:** Each ESG indicator rated on a scale of 0–5 using comparison to government benchmarks
- **Tabulation:** Scorecard creation for all indicators with remarks (as you've already done)

Limitations:

However, this research offers insightful information about how ESG concepts are incorporated into Ballari City Corporation's governance structure. The study only considers a small portion of the ESG pillars and mostly depends on secondary data, official publications, and available metrics that may not adequately reflect current events or ground-level realities. The usage of ESG indicators may differ by region, and the quality and comparability of the results may be constrained by the absence of municipally-level established benchmarks. Extensive field surveys and stakeholder examinations, who might have offered a more thorough grasp of citizen opinions and institutional difficulties, were limited by time constraints.

Chapter Scheme

Chapters	Name
1	Introduction
2	Conceptual Background and literature review
3	Research Design
4	Analysis and Interpretation
5	Findings, Conclusion, And Suggestions

4.1 ESG Performance Evaluation of Ballari City Corporation

To evaluate the ESG (Environmental, Social, and Governance) performance of Ballari City Corporation, secondary data was collected and assessed using benchmark standards from national and state-level guidelines. Each indicator was scored on a 0–5 scale based on its deviation from the ideal benchmark. The following table summarizes the results

ESG Pillar	Indicator	Data Source	Benchmark	Score (0-5 or %)	Remarks
Environment	Solid Waste Management	315 grams person per day	300-500	3/5	Moderate performance
	Water Supply	149 LPCD	135 LPCD	5/5	Excellence
Social	Public health Infrastructure	153	1 doctor/ 1000 people	4/5	Good
	Education Access	243	Ideal ≤ 1,500	4/5	Good
Governance	Citizen Participation	60%	100%	4/5	Good
	IPGRS	80%	90%	4/5	Good
	E- Governance	100%	100%	5/5	Excellence

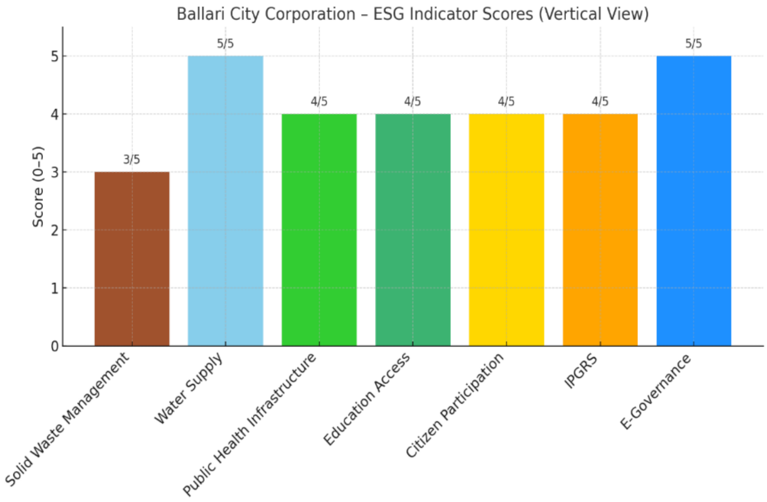
Final ESG Summary (Average Score by Pillar):

Pillar	**Average Score**
Environment	(3 + 5) ÷ 2 = **4 / 5**
Social	(4 + 4) ÷ 2 = **4 / 5**
Governance	(4 + 4 + 5) ÷ 3 = **4.33 ≈ 4 / 5**

Overall ESG Score for Ballari City Corporation: 4 / 5

Ballari shows good ESG performance across all pillars, with:

- Strong digital governance
- Good education and health infrastructure
- Acceptable environmental metrics with room to improve solid waste management



Interpretation of Results

- Ballari City Corporation performance demonstrates strong in Governance, especially in e-Governance implementation.
- Social indicators such as access to education and public healthcare are within acceptable and good standards.
- Environmental indicators are satisfactory, though solid waste management needs further improvement to meet sustainability goals.
- Overall, the ESG performance is consistent across all three pillars, suggesting a strong foundation for further integration of ESG principles into city-level planning.

4.2 To compare the city's ESG indicator values against national or state-level Benchmarks and identify gaps in performance.

ESG Pillar	Indicator	Ballari value	Bench mark	GAP (benchmark - actual	Remarks
Environmental	Solid Waste per Capita	315 g/person/day	300–500 g/day (CPCB)	Within range	Moderate (Middle of range)
	Water Supply	149LPCD	135LPCD (MoHUA)	14	Excellence
Social	Public Health Infrastructure	1 doctor per 153 people	1per1000 (WHO standard)	None	Very good (exceeds benchmark)
	Education Access	243 school/ College	≤1500 students/school	None	Well within limit
Governance	Citizen Participation	60% wards consulted	100%	-40%	Needs improvement
	IPGRS Resolution Rate	80%	≥90%	≥90%	Needs improvement
	E-Governance	100%	100%	0	Excellent

Interpretation
Environment:

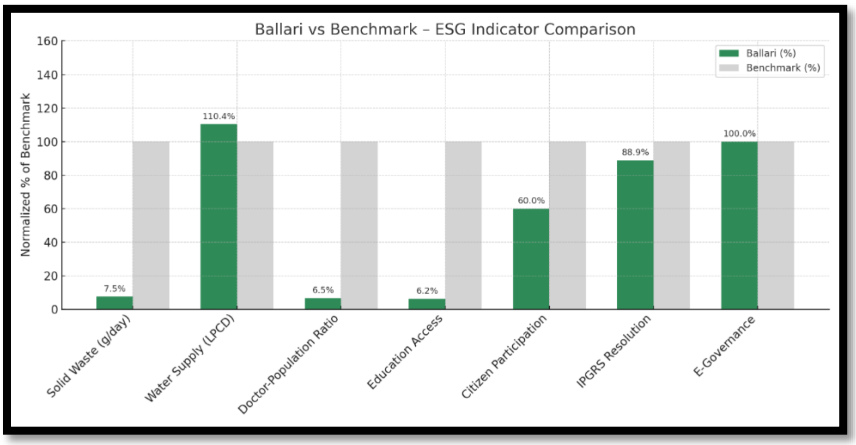
- Solid Waste generation of 315g is within CPCB standards, but still indicates room for improvement in segregation and recycling.
- Water supply is excellence

Social:

- The doctor-population ratio is excellent, showing strong healthcare access.
- Education access is also strong, with schools well below the student cap — indicating adequacy in education facilities.

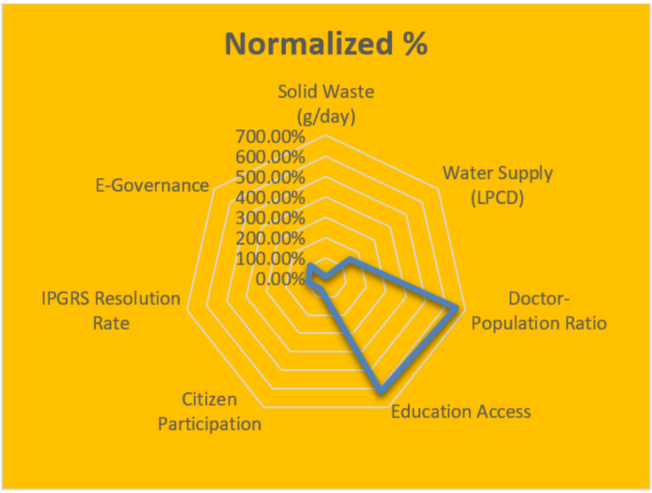
Governance:

- Citizen participation at 60% is significantly below the target, suggesting a need for improved outreach and inclusive urban planning.
- IPGRS resolution rate at 80% is fairly good but falls short of the 90% standard, highlighting issues in grievance redressal responsiveness.
- E-Governance has reached the full 100%, indicating excellent performance in digital service delivery



Here's the bar chart comparing Ballari's ESG indicator values with benchmark standards. It visually highlights where Ballari meets or falls short of national/state benchmarks:

- Solid waste is within acceptable range
- Water supply is Excellence
- Health and education indicators perform well
- Citizen participation and IPGRS show noticeable gaps



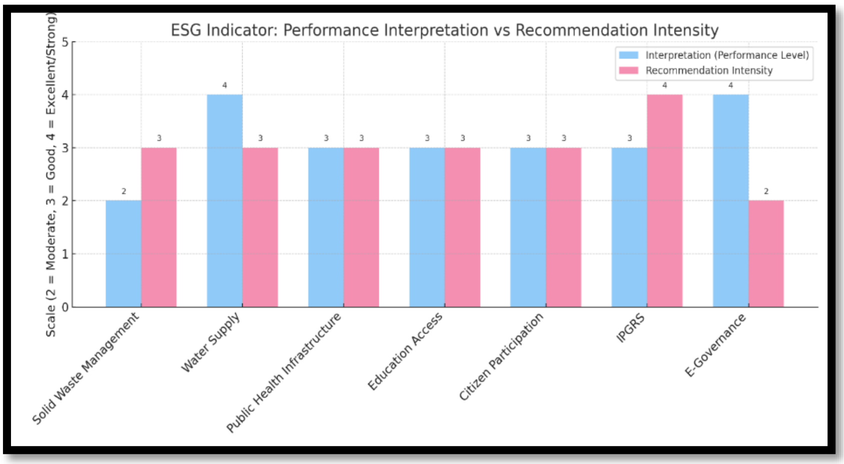
Indicator	Calculation	Normalized %
Solid Waste (g/day)	(315–300)/ (500–300) × 100	7.5%
Water Supply (LPCD)	(149 / 135) × 100	110.3%
Doctor-Population Ratio	(1000 / 153) × 100	654.2%
Education Access	(1500 / 243) × 100	617.3%
Citizen Participation	(60 / 100) × 100	60%
IPGRS Resolution Rate	(80 / 90) × 100	88.9%
E-Governance	(100 / 100) × 100	100%

Final Interpretation Statement

Ballari City Corporation demonstrates strong performance in health, education, and digital governance, aligning well with national benchmarks. However, moderate gaps exist in water supply and grievance redressal, while citizen engagement shows the most significant shortfall. These findings emphasize the need for targeted improvements in public participation mechanisms and service responsiveness to ensure holistic ESG integration in the city's governance.

4.3 To suggest data-driven recommendations for enhancing ESG integration in Ballari's urban governance framework using the insights from the calculated scores.

ESG Pillar	Indicator	Ballari Score	Benchmark	Performance gap	Interpretation	Recommendation
Environment	Solid Waste Management	4/5	300-500	Moderate performance	Needs improved collection efficiency & recycling	Start decentralized composting centers in wards; enforce segregation at source
	Water Supply		135 LPCD	Excellence	Strong performance in a core environmental metric	Promote conservation and upgrade infrastructure to sustain water supply excellence
Social	Public health Infrastructure	4/5	1 doctor/1000 people	Good	Satisfactory availability of medical professionals	Recruit more doctors and improve health access in underserved areas.
	Education Access		Ideal ≤ 1,500	Good	Good institutional density enough schools to serve the population	Upgrade school / colleges infrastructure and ensure equal access in all areas.
Governance	Citizen Participation	4/5	100%	Good	Ballari has likely implemented some citizen feedback mechanisms such as surveys, apps, or public hearings.	Enhance outreach through ward meetings and digital platforms to boost participation.
	IPGRS		90%	Good	Ballari has an operational and moderately responsive IPGRS system	Strengthen the grievance system with real-time tracking and faster response protocols.
	E- Governance		100%	Excellence	Citizens have easy and transparent access to government	-Governance is 100%, ensuring easy and transparent public access.



Interpretation

Solid Waste Management: Ballari's score of 3/5 indicates moderate performance, possibly due to inefficient segregation or limited composting units. Compared to Indore (score 5/5), Ballari lacks integrated waste-to-energy or recycling policies.

Water supply: At 149 meters for each person each daily (LPCD), Ballari's water supply exceeds the standard of 135 LPCD. This shows that there is good coverage of water services, guaranteeing that a large number of individuals have consistent and sufficient access to drinking water. It reflects good infrastructure, consistent supply, and effective management by the city corporation.

Public Health Infrastructure: Ballari has 153 doctors per 1,00,000 people, meeting the standard of 1 doctor per 1,000 people, scoring 4/5. This indicates good public health infrastructure, with sufficient medical personnel to serve the population. However, further improvement in healthcare facilities and rural coverage can enhance service quality.

Education Access: The education access score of 4/5 indicates good performance, with a value of 243 students per institution, which is well within the ideal benchmark of ≤ 1,500This implies that educational materials in the region are comparatively easily available and widely distributed. reflecting a favorable student-to-institution ratio and supporting equitable learning opportunities.

Citizen participation: The citizen participation rate of 60% compared to the ideal benchmark of 100% has been rated 4 out of 5, indicating good performance. While there is room for improvement, a 60% engagement level reflects a strong foundation of community involvement in civic processes. This suggests that a majority of citizens are actively participating in governance or public initiatives, contributing positively to transparent and inclusive urban development.

IPGRS (Integrated Public Grievance Redressal System): score of 80% against a benchmark of 90% is rated 4/5, indicating good performance. This suggests that a significant majority of public grievances are being addressed effectively and in a timely manner. An 80% resolution rate is marginally below the desired goal, but it shows that the structure is sensitive to citizen concerns and works well, encouraging accountability and trust in the provision of public services.

E-Governance: score of 100%, matching the ideal benchmark of 100%, is rated 5/5, reflecting excellent performance .this demonstrates that any key government services are fully digitized and accessible online, ensuring transparency, efficiency, and convenience for citizens. Such full implementation of e-governance demonstrates a strong commitment to digital transformation and good urban governance.

Findings

Ballari City Corporation shows the balanced performance in ESG indicator. Environmentally while water supply is excellent 149 LPCD it is above the bench mark. Solid waste management is moderate due to weak segregation. Socially city meets public health and education is good and governance indicators are strong citizen participation is active and 100 % E- governance 90% responsive grievance redressal system. However, need to improve solid waste management.

Suggestions

To improve ESG in Ballari City Corporation, solid waste segregation, decentralized composting, and smart water management should be prioritized. Promoting electric vehicles and increasing green cover will enhance environmental health. Socially, better healthcare access through mobile units and improved education with digital tools are key. Citizen participation can be strengthened through feedback apps and public meetings. Governance improvements include transparent data sharing, efficient grievance redressal, and training for officials. These steps will help Ballari become more sustainable and inclusive.

Conclusion

Promoting sustainable urban development requires Ballari City Corporation to include ESG principles. Although public health and water supply have advanced, solid waste management, community participation, and governance transparency can yet be improved. By adopting environment-friendly practices, strengthening social infrastructure, and ensuring accountable governance, Ballari can build a more resilient, inclusive, and future-ready city. A focused and data-driven ESG approach will enable better decision-making, improved quality of life, and long-term sustainability for all residents.

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Home | Ballari City Corporation

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Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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