

RETHINKING BUSINESS FOR SUSTAINABLE FUTURE: INSIGHTS FROM PRACTICE AND RESEARCH

Conference Proceeding



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RETHINKING BUSINESS FOR SUSTAINABLE FUTURE: INSIGHTS FROM PRACTICE AND RESEARCH

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Message from Conference Chair



Research teaches students how to think critically, analyze information, evaluate sources, and draw evidence-based conclusions. These skills are essential for academic success and are transferable to real-world scenarios. The Undergraduate Research Conclave serves as a platform for showcasing the diverse and groundbreaking research endeavours undertaken by our students and academicians. It is an opportunity to not only share your findings with fellow scholars, but also to engage in stimulating discussions, forge new collaborations, and inspire future generations of researchers. Our students gain experience in problem-solving through their participation in research conclave, which requires them to formulate research questions, develop methodologies, and analyse findings. These skills are valuable in a wide range of disciplines and occupations.

This publication will endure as a definitive symbol of our institution's intellectual rigour and commitment to progress. We are delighted that we are publishing the proc subsequent to the Research Conclave and will be distributing the Abstract Book during the conclave.

Best wishes to the Organising, Technical and Publication Committee.

Dr. Sujata Khandai

Dy. Dean Academics & Director (ACCF)

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CHAPTER 1

DEVELOPING INDEX FOR MAPPING CSR WITH SDGS: A TWO SECTOR COMPARISON

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ABSTRACT

The role of corporate sector in achieving the United Nation's Sustainable Goals (SDGs) for the sake of community development and environment protection has gained attention in the past few years. In this view, this study explores the alignment between sustainable business activities performed by Indian companies according to the Corporate Social Responsibility (CSR) mandatory guidelines aligned with the SDGs framework, with the specific focus on the two sector Oil & Gas (O&G) and Information Technology (IT) sectors. The research aims to assess the extent of contribution made by these sectors, considering the top 5 companies of IT and 6 of O&G sector towards SDGs and develop a reproducible methodology for measuring these practices. CSR-SDG Mapping Index is developed by mapping CSR and Business Responsibility and Sustainability Reporting (BRSR) mandatory disclosures with SDGs targets. This index quantifies the mandatory and sustainable business activities for each SDGs target. The analysis is conducted for 11 companies over three consecutive financial years (FY 2021-22 to FY 2023-24). The findings reveal that the O&G sector performs better than the IT sector in achieving SDG 5 (Gender Equality), SDG 7 (Affordable and Clean Energy), and SDG 16 (Peace, Justice,

and Strong Institutions). However, the IT sector demonstrates stronger contributions to SDG 14 (Life Below Water) and SDG 15 (Life on Land). Both sectors excel in SDG 8 (Decent Work and Economic Growth), driven by initiatives promoting workforce participation, skill development, and employee well-being. Despite these successes, companies achieve only 35– 40 mapped targets on average, far below the 82 targets identified under the CSR/BRSR framework. This study contributes to the growing literature on corporate sustainability by providing a systematic approach for measuring SDG contributions. It highlights sector-specific strengths and weaknesses, offering actionable insights for policymakers and industry stakeholders. The proposed methodology can guide companies in enhancing their alignment with SDGs and help regulators optimize CSR and BRSR frameworks to maximize societal impact.

Keywords: CSR, SDG, Sustainability Reporting, CSR-SDG Mapping Index

INTRODUCTION

The United Nations introduced 17 Sustainable Development Goals (SDGs) with 169 associated targets in 2015 to foster inclusive and sustainable economic growth worldwide (United Nations, 2015). These SDGs serve as

a comprehensive framework for promoting human wellbeing, protecting the planet, and ensuring shared prosperity (UN Global Compact, 2016). However, the UN estimates approximately USD 2.5 trillion annual investment gap in achieving these goals World Investment Report (2014) and Kulkarni and Aggarwal (2022) urge collaboration among government, business and community for increasing investment in SDGs resilience. Corporates can promote sustainable development with innovative capacity, strategic partnership and leveraging resources (Le Blanc, 2015; Heras-Saizarbitoria et al., 2021).

As profit-oriented entities, companies are expected to operate responsibly to foster social and environmental development (Schoenherr et al., 2017). Achieving the SDGs is a win-win endeavor for both businesses and society (Fallah Shyan et al., 2022). Regardless of their size, companies are expected to act responsibly toward the environment and society. CSR activities not only yield economic benefits for companies (Richter et al., 2021) but also create positive externalities for society and the environment (Kulkarni et al., 2022). Additionally, non-financial reports provide detailed information about a company's CSR strategies, operations, and process indicators, thereby proving corporate legitimacy and strengthening stakeholder trust (Borges et al., 2017; Moares et al., 2021; Chen et al., 2008).

However, the previous studies suggest that non-financial sustainability reporting is often superficially designed and aimed at enhancing organizational legitimacy rather than improving sustainability (Garcia-Sanchez et al., 2021; Boiral, 2013). Firms are engaging in

SDG reporting not to mitigate negative social and environmental impacts but to console the stakeholder and institutional perceptions towards sustainability (Heras-Saizarbitoria et al., 2022; Lashitew, 2021). On the contrary, some companies adopt a more parental approach of sustainability into their operation and management practices, aligning their long-term strategies and increasing sustainability reporting practices with SDGs goals (Calabrese et al., 2021). Limited empirical research has been done on finding how organizations engage with every 17 SDG goals and 169 targets and most of the previous studies have suggested conducting a comprehensive review to determine to what extent the SDGs have been implemented into their policies and practices (Magliacani, 2023; Mitra, 2021; Poddar & Narula, 2020). This study fulfils this gap in literature and examines the role of CSR and sustainability practices performed by companies, with a primary focus on their impact in contributing to the attainment of SDGs.

Worldwide countries agree on increasing and scaling up investment in addressing SDG issues related to poverty, employment, sanitation, climate change and innovation. An estimated USD 3.9 trillion annual investment is required for developing countries. India, one of the developing countries, has emerged as a global leader by mandating Corporate Social Responsibility (CSR) spending under Section 135 of the Companies Act, 2013. This provision requires at least 2% spending of their average net profit from the preceding three financial year towards CSR initiatives. Realizing the crucial role of the corporate sector, India furthermore introduced the Business Responsibility and Sustainability

Reporting (BRSR) disclosure framework in 2021, mandating the top 1000 listed companies by market capitalization to disclose their sustainability initiatives. These measures aim to enhance corporate accountability and align business operations with sustainable development objectives. In the fiscal year 2022-23 alone, Indian companies contributed approximately INR 30,000 crore to various CSR activities, reflecting their growing commitment to addressing societal and environmental challenges.

With the new CSR and sustainability reporting framework, India has set a benchmark for incorporating business responsibilities with global sustainability goals. These policy frameworks not only drive corporate engagement in achieving the SDGs but also address social and environmental challenges significantly. This study aims to develop a CSR-SDG mapping index to examine the sustainable initiatives of two critical sectors—Oil & Gas and Information Technology (IT) and their alignment with the SDGs. The Oil & Gas sector, characterized by its significant environmental and social impacts, faces immense pressure to integrate SDG goals into its strategies, focusing on reducing greenhouse gas emissions, enhancing renewable energy investments, and adopting clean energy technologies (Peng et al., 2019). In contrast, the IT sector, driven by innovation, holds transformative potential in addressing global environmental challenges through technological advancements (Steward, 2012). Researchers have specifically studied Oil and Gas and IT sectors independently (Mezinova et.al., 2022; Lukin et al., 2022). A comparative analysis of both sectors is missing in the literature. The present study aims to assess the

contribution of the top Indian companies of these two sectors CSR and BRSR initiatives towards addressing all targets of the SDGs. IT and oil& gas are two big sectors contributing more than 25% of the market capitalization as per the national stock exchange (Nifty-50). IT has 14.06% and Oil, Gas & consumable fuels have 14.34% weightage in Nifty-50. Both sectors are highly important for the Indian market growth and sustainability transitions.

LITERATURE REVIEW

Corporate Social Responsibility/ Sustainable Development Goal

Corporate Social Responsibility (CSR), first coined by Bowen 1953, obligates the corporate sectors to embrace societal values into policy and decision making (Hanafin et al., 2017; Cho et al., 2019). In 2000 the World Business Council for Sustainable Development defines CSR as “*the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of the workforce and their families as well as of the local community and society at large*”. In 1987, United Nation Brundtland Commission defined sustainability as “*meeting the need of present without compromising the need of future generations to meet their own needs*”. Initially CSR and sustainability both the terms are understood as separate domains (Szegedi, 2016). While CSR primarily focuses on ensuring profitability along with promoting long-term growth with survival, the sustainability focuses on contributing towards social and environmental goals along with economic development.

In 2015, UN universally and globally introduced United Nation Sustainable

Development Goals with 17 goals, 169 targets and 231 indicators aligning CSR and sustainability. This SDGs framework helps corporates in addressing economic, social, environmental challenges in systematically and integrated manner (KPMG, 2017). Kulkarni and Aggarwal (2022) explore those companies are aligning their CSR initiatives with SDGs framework to get navigation in handling sector-specific challenges participating in global development effectively.

The report given by the World Business Council for Sustainable Development (WBCSD), has shown the alignment of CSR with SDGs and its positive influence on stakeholder engagement, financial performance and business reputation. Gupta et. al. (2025) in their study highlights the importance of CSR expenditure and CSR commitments in creating sustainable value creation. CSR and SDGs together reduce the risk of adverse selection that helps companies to perform better (Park et.al., 2023). Beretta et.al. (2024) emphasis that SDGs framework bridges the gap between sustainability performance and financial outcomes. García-Sánchez et al. (2020) in their study argue that SDGs systematically integrates with CSR policies and helps in creating reputational value and achieving comparative advantage. While Lhutfi et al. (2024) examine that the adoption of SDGs in CSR disclosures improves the sustainable practices of companies, Engert et.al. (2016) and Sudirman (2021) found that mapping CSR to SDGs enhance share value through sustainable innovations, investments and sustainable practices. Moreover, Pizzi et.al. (2021) concludes in their research that stronger focus

on SDGs is highly correlated with research and innovation.

Dyllick and Muff (2019) highlight that companies are facing challenges in addressing SDGs' universal framework due to their complex and indivisible nature. SDGs are not directly designed for corporate policies and standards. This will lead to selective implementation of SDGs that prioritize companies' public image over sincere sustainability practice and meaningful actions. Boiral et al. (2021) and Heras-Saizarbitoria et al. (2021) asserted that companies are reporting only positive contributions and using SDGs as reputational tools instead of mitigating negative impacts. Based on neoclassical theory, Galeazzo et al. (2023) examines how addressing SDGs positively influences financial performance. They also argue that companies are performing selective SDGs such as SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action).

CSR and SDGs in Indian Context

In India, numerous researchers analyze the progress and challenges in the alignment of SDGs with CSR. Poddar and Narula (2020) found that integrating CSR activities with SDGs enhances companies' focus on contributing to various social issues efficiently. Key areas of focus include SDG 4 (Quality Education), SDG 3 (Good Health and Well-being), and SDG 6 (Clean Water and Sanitation). However, they report a relative neglect of environmental goals such as SDG 13 (Climate Action) and SDG 14 (Life Below Water), which points to the importance of a

more balanced and comprehensive approach to SDG alignment.

Gupta (2019) observes that Indian companies struggle to address SDG 12 (Responsible Consumption and Production) and SDG 16 (Peace, Justice, and Strong Institutions), as these are not adequately integrated into existing CSR and reporting frameworks. Corporate sectors mainly concentrate their CSR on SDG 3 (Health and Wellbeing), SDG 4 (Inclusive Education), SDG 6 (Water and Sanitation for all), and SDG 8 (Decent Work and Economic Growth). Similarly, Mishra (2020) highlights a significant gap in the efforts to address critical environmental sustainability goals including SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land). Kulkarni and Aggarwal (2022) in their study, emphasize the importance of aligning CSR policies with various theories such as stakeholder theory, social contract theory, institutional theory, and political theory, significantly contributing towards SDGs.

Mitra (2021) and Gupta (2019) argue that there is an urgent need to develop a CSR index that incorporates SDGs performance indicators. This index will help companies, investors, and policymakers to assess and improve CSR activities towards sustainability. This index also helps companies to perform better in underperformed SDGs like SDG 17 (Partnership for Goals) and SDG 16 (Peace, Justice, and Strong Institution). Sarkar and Singh (2019) try to map CSR activities with SDGs using a balanced scorecard due to the absence of a valid index. Similarly, Raman et al. (2013) found that strategically mapping CSR with SDGs not only benefited in targeting social and environmental issues but

also enhanced companies' reputation, resilience, and long-term profitability. Companies reporting only positive contributions and using SDGs as reputational tools instead of mitigating negative impacts.

The above existing literature argues the importance of CSR for attaining sustainable development goals and the urgent need of CSR-SDG mapped index for strategic implementation. Though the above studies conclude that the mapping of CSR and SDGs significantly impacts financial performance and firm operational management, the companies are confused with the complex and indivisible SDGs framework. Moreover, most of the previous research focuses on qualitative assessment of CSR contribution towards achieving SDGs due to the absence of indexes and metrics for the quantitative measurement of CSR and sustainability activities mapped with SDGs. The current study aims at filling this gap by creating CSR-SDG mapping index to identify how the corporate sector is contributing to achieving the SDGs. This CSR-SDG mapping index will provide a clearer and more meaningful pathway to efforts created by companies towards sustainability and enhance the performance of underperformed goals.

Oil and Gas (O&G) and IT sector Sustainable Initiatives

A Study by Arena et al. (2022) on the oil and gas sector highlights that a lack of clear guidelines and sector-specific frameworks complicates the process of addressing SDGs through CSR. Inkpen and Ramaswamy (2018) argues that sustainability plays pivotal role in the oil & gas sector due to reliance on fossil fuels for its operations negatively impacting-

air, water and land. On the other hand, IT contributes towards social and economic system (Yoo & Yi, 2022).

Researchers argue that O&G companies contribute to SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) and highlight their significant environmental impact (Titova et al., 2023; Borges et al., 2022). Malaquias et al. (2019) discusses rising demand in O&G sector driven by economic growth, while George et al. (2016) stress on the sector's adverse effects on ecosystems.

In contrast, the IT sector offers solutions to sustainability issues through research and technological innovation. Bachmann et al. (2022) asserted that digital technology enhance societal wellbeing and positively contributing towards SDGs. Petcu et al. (2024) discuss the role of Industry 4.0 technology in improving sustainability practices and reporting. George and Schillebeeckx, (2022) found that digital technology such as the Internet of Thing (IoT), blockchain, artificial intelligence enables sustainability practices more transparent, efficient and accountable across industry. De Souza et al. (2021) discuss importance of cloud computing and smart system in contributing to energy efficiency and cost reduction.

Researchers specifically focus on specific goals and sectors, leaving a gap in understanding corporate contributions to every target defined under each SDG. Mio et al. (2020) and García-Sánchez et al. (2022) highlighting limitation of integrating sustainability into business operations. This study aims to address these challenges by proposing a CSR-SDG mapping index considering all the targets and covering 16 SDGs to evaluate and compare the

contributions of India's OG and IT sectors. This framework will offer a systematic approach to understanding corporate efforts toward sustainable development.

RESEARCH METHODOLOGY

The UN set the targets of SDGs to be achieved by 2030 and both the government and corporate sector have worked hand in hand to achieve these targets. At this juncture, this study tries to assess the extent to which the corporate sector can contribute to the Sustainable Development Goals (SDGs) through Corporate Social Responsibility and Sustainable Initiatives. This study aims at developing an index for mapping CSR with SDG targets and comparing the contribution of Oil and Gas Sector with IT sector. SDG framework has 17 goals and 169 targets that are universal in nature, and are meant to be achieved by government, and related organizations. As stated earlier, the corporate sector can also contribute to achieving these targets and goals but there are many targets which are only government specific. After eliminating these targets, we are considering only 105/169 targets that are business related and can be considered as a base for corporate contribution towards SDGs (Khaled et al., (2021). Further the CSR and BRSR framework is mapped with SDG targets and the targets not mapped are also eliminated. Finally, we can map 82 targets considered under this study. Additionally, in this study we consider only SDG 1 to 16, eliminating SDG 17, as this is an overarching goal that integrates all other goals (Betti, 2018; Pizzi, 2020).

We assess the CSR practices adopted by the companies as per the Schedule VII of the

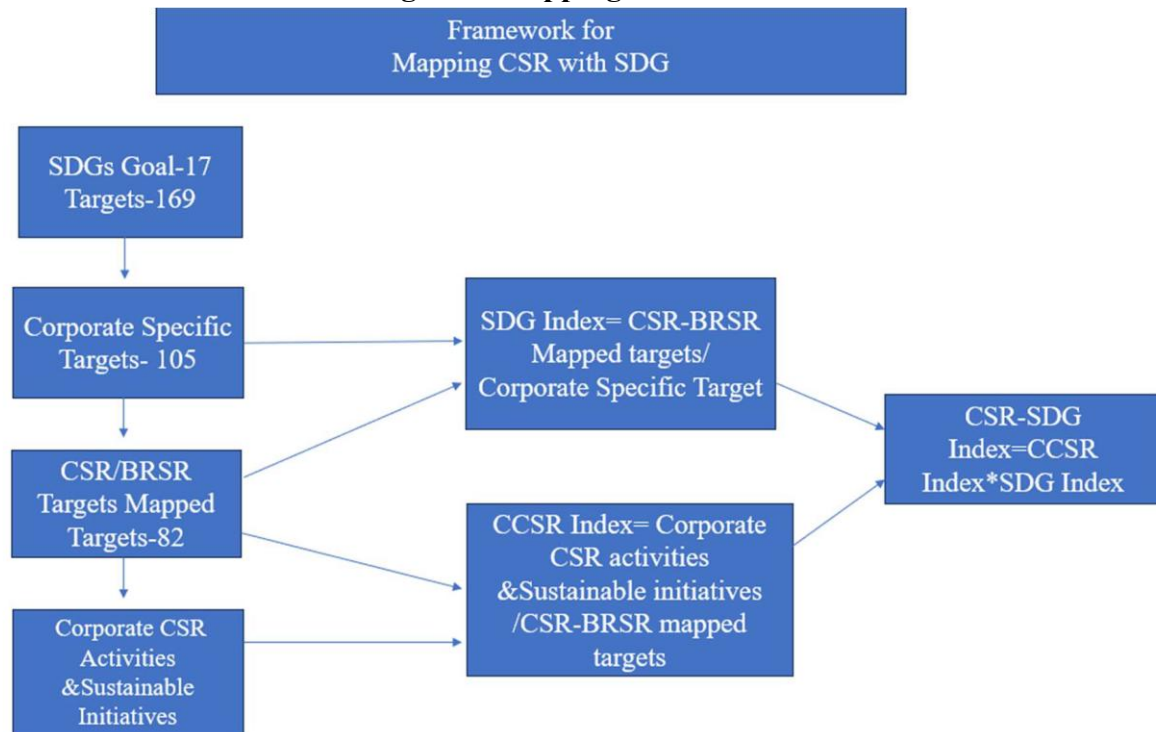
Indian Companies Act, 2013, and the sustainable practices reported by the companies under the Business Responsibility and Sustainability Reporting framework standards given by SEBI. Corporate activities performed under these standards are mapped to the SDGs. This mapping helps us to evaluate how companies contribute towards SDGs through their corporate policies and operations (Betti, 2018; Pizzi, 2020). Content analysis is used to intensively examine the integrated reports covering CSR initiatives and sustainable business practices. Content analysis is a well-known method for evaluating qualitative data. The information in CSR/ sustainability reports, evaluated with content analysis, discloses companies' potential contribution to SDGs (Gunawan et al., 2020; Pizzi et al., 2021). Content analysis is a widely used technique that enables researchers to extract structured text from unstructured text (Calabrese et al., 2021)

To map CSR with SDG in this study we follow the methodology proposed by Betti et al. (2018), who have developed a SDGs mapping index by aligning ESG issues identified by the Sustainability Accounting Standard Board. On similar lines we have systematically mapped

the CSR and BRSR framework to corresponding SDGs target. A CSR-SDGs mapped index is developed using a similar methodology to Betti et al.'s framework. This methodology helps us to assess and quantify corporate contributions to the SDGs goal and targets.

For this study we take Nifty50 as our sample frame as this is the most traded stock market index in India and represents 50 largest and well-established companies. In this study, we assess only two major sectors covering the top 6 companies for Oil & Gas and 5 for IT sector listed in Nifty-50. We do the qualitative and quantitative analysis of the annual reports, integrated reports, CSR reports and BRSR reports of these 11 companies for a period of three financial years (FY 2021-FY2024). Since our sample size is small, to compare CSR-SDG index score of both sectors, a t-test is conducted. A t-test is a statistical test used to compare the mean score of two groups and determine whether they are statistically different from each other. It is commonly used in hypothesis testing when the sample size is small and the population standard deviation is unknown.

Figure 1-Mapping Framework



Source-Author Contribution Compilation

The SDGs are intrinsically inclusive, interconnected and indivisible. An action towards one goal often generates spillover effects to other goals and targets. For instance, when companies undertake CSR projects aligned with Clause-10 of schedule VII related to rural development directly impact multiple SDGs: SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Wellbeing), SDG 4 (Quality Education) and SDG 9 (Industry, Innovation and Infrastructure). This has been taken care of by mapping such activities with the goals as per the explanation given by the companies in their reports.

Development of Index

To simplify our analysis, first we mapped listed CSR activities and BRSR initiatives

directly to specific SDG targets. This approach allowed us to calculate an SDG Index for each goal and quantify the extent of alignment between corporate actions and the SDG framework.

$$\text{SDG Index} = \frac{\sum(C_i)}{T}$$
Where C refers to the CSR activities and i ranges from 1 to the number of CSR activities and sustainability initiatives covered under the mandatory guidelines, and T is the total number of Corporate Specific targets for each SDG. This SDG index remains same for all companies for each SDG. Finally, The CSR-SDG Mapping Index is computed to study the extent to which CSR sustainable activities contribute to each SDGs. This is achieved by multiplying the SDG Index with the Corporate CSR Index.
$$\text{CSR-SDG Mapping Index} = \text{SDG Index} \times \text{Corporate CSR Index}$$
For Example: SDG1-

Eradication of Poverty, 5 targets are corporate specific out of 7 listed targets in UNDP framework. Out of these 5 corporate specific targets 4 targets are mandated by CSR/BRSR framework. The SDGs index value comes to $[4/5=0.8]$. This will remain constant for each company. When these 4 targets are mapped by sustainable initiatives of BPCL companies. 3 targets out of 4 targets are performed by the company operation. The CSR index value is $[3/4=0.75]$. The CSR index is the performance score of an individual company and thus it varies with the company's sustainable initiatives.

Now CSR-SDG index for BPCL for SDG1 is $[0.08*0.75=0.6]$, which refers that the company

can contribute 60% towards achieving SDG1. CSR-SDG index is the achievement score for companies. Similarly, we calculate CSR-SDG mapped score of each SDGs and of all 16 SDGs. CSR INDEX and CSR-SDGs mapping score of all 11 companies under study is obtained by taking the average company disclosures in non-financial reporting for consecutive three FY2021-22 to 23-24.

DATA ANALYSIS

Table-1: Accumulative CSR-SDG mapping score of 11 companies from FY-2021-22 to 2023-24

Serial No.	Companies Name	CCSRI	CSR-SDG MAPPED SCORE OF OG
1.	NTPC	0.42	0.33
2.	Reliance	0.77	0.64
3.	ONGC	0.38	0.34
4.	Coal India	0.28	0.21
5.	PwC	0.35	0.29
6.	BPCL	0.65	0.52
7.	HCL	0.39	0.30
8.	Tech Mahindra	0.47	0.28
9.	WIPRO	0.40	0.24
10.	INFOSYS	0.42	0.35
11.	TCS	0.47	0.38

Source: Author Contribution Compliance

Table 1 shows the aggregate CSR-SDG mapped score of 11 companies. This data helps in understanding that O&G CSR-SDG score is better than IT CSR-SDG companies. In O&G company average scores vary from 21% to 60% with where Reliance and BPCL emerged as top performers.

Reliance a private company ranked first in this study analysis with a score of 0.64 (64%) and BPCL a public company ranked second with a score of 0.52. Consecutive three FY CSRSDG mapped score aggregates were used in comparative analysis. Three years of data help in robust and informative analysis. IT companies are lagging behind to O&G sector with score range (25%-40%). Infosys and TCS performed better in these five IT companies. The second objective of the study is to determine is there any significant difference between Oil & Gas CSR-SDG performance and IT CSR-SDG performance. To compare both sector performance, t-test: two sample tests with unequal variance was used on CSR-SDG score of both the sectors on each CSR-SDG score of individual SDG. Comparing CSR-SDG Mapping of Oil and Gas Sector with IT Sector A t-test was conducted to compare the CSR-SDG scores of the two sectors under study. A t-test is a statistical test used to compare the means of two groups and

determine whether they are statistically different from each other. It is commonly used in hypothesis testing when the sample size is small and the population standard deviation is unknown.

Table 2 presents the results of the test, which indicate that both sectors contribute towards each SDG. The analysis reveals that both sectors contribute, on average, between 30% and 50% towards achieving various goals.

The Oil and Gas (OG) sector outperforms the IT sector in most SDGs, except for SDG 1- Eradication of poverty and SDG4- Quality Education with (mean score=0.311 for SDG1 and 0.472 for SDG4). In contrast, OG sector demonstrates significant contributions towards SDG 12- Sustainable production and consumption (mean = 0.531) and SDG 14- Life Below Water (mean =0.415).

Both the sectors highly contribute towards SDG8- Decent work and economic growth and SDG16- Peace Justice and Strong Institution. Moreover, significant differences are observed between the two sectors in their contributions towards SDG 6- Ensure availability and sustainable management of water and sanitation for all and SDG 7- Access to sustainable modern energy. The statistical data reveals that OG perform better for SDG6 ($p=0.02$) and SDG7 ($p=0.03$). Similarly, results for SDG 13- Climate action are close to significant with (pvalue-0.09).

Table-2 CSR-SDG score t- test (for each SDG) b/w OG and IT

CSR-SDG (CSDGI) MAPPING SCORE	MEAN		VARIANCE		t-stat	p-value
	OG	IT	OG	IT		
SDG1	0.311	0.384	0.033	0.023	-0.716	0.245
SDG2	0.575	0.203	0.580	0.044	1.144	0.147
SDG3	0.308	0.285	0.015	0.002	0.407	0.348
SDG4	0.472	0.488	0.055	0.078	-0.101	0.460
SDG5	0.24	0.11	0.05	0.006	1.3	0.11
SDG6	0.42	0.25	0.024	0.004	2.404	0.023
SDG7	0.485	0.332	0.026	0.002	2.198	0.035
SDG8	0.591	0.566	0.005	0.023	0.341	0.372
SDG9	0.306	0.246	0.013	0.0007	1.232	0.131
SDG10	0.36	0.332	0.149	0.206	0.108	0.458
SDG11	0.278	0.182	0.018	0.0173	1.193	0.131
SDG12	0.531	0.49	0.018	0.004	0.647	0.267
SDG13	0.415	0.308	0.026	0.003	1.494	0.092
SDG14	0.054	0.03	0.004	0.00075	0.785	0.228
SDG15	0.175	0.144	0.012	0.015	0.437	0.337
SDG16	0.693	0.664	0.098	0.016	0.208	0.420

Source- “Author Contribution Compilation”

Major Highlights of the Content Analysis

The detailed content analysis of CSR activities and sustainability initiatives discloses that both the sectors have significantly and positively contributed towards all SDGs. The mean score for both the sectors ranges from 3% to 69% for different SDGs. The results of t test reveal that oil and gas companies outperform IT companies in several SDGs, particularly for SDGs 6 (Clean Water and Sanitation) are significant with (p value= 0.02). For SDG6, initiatives include Tech Mahindra Reverse Osmosis plant, BPCL "Swachhta Pakhwada" a 14-day program under Swachh Bharat Abhiyan, and water conservation projects like BOOND and "Shramdaan", which integrate water management with skill development. ONGC encourages initiative recycle waste instead of dumping in water and NTPC works for rejuvenation of ponds to reduce water scarcity. On the other hand, HCL's works under "Samuday" program to promote water and sanitation awareness in rural areas. The oil and gas sector also performs better than the IT sector on SDG 7 (Affordable and Clean Energy). NTPC integrates renewable energy into its existing thermal assets while making new investments in clean technologies, green mobility, and energy infrastructure. Power Grid and Coal India expand renewable energy usage through rooftop solar power plants, and Reliance adopts solar energy and bioenergy initiatives. Additionally, oil and gas companies invest significantly in research for biofuels, green hydrogen, biotechnology, and solar power. SDG13 (Climate Action) are close to being significant (p = 0.09). SDG 13 focuses on reducing greenhouse gas (GHG) emissions. Initiatives include ONGC's

dynamic gas blending projects, BPCL's use of micro turbines in cooling towers, Reliance's recycling and low-carbon practices and PAANI foundation for Drought & Climate change. Coal India's adoption of clean coal technologies, solar projects and First mile connectivity program to reduce GHG emission.

Other notable projects include green building initiatives, clean development mechanisms, and gas flare reduction programs.

SDG 5 (Gender Equality). This can be attributed to numerous initiatives aimed at empowering women. For example, Reliance Industries' "Her Circle Every Body Projects" fosters social and professional collaboration among women, enabling them to rise together by sharing authentic stories. Coal India supports tribal women through skill development initiatives, while NTPC's "Udyan Care" program provides higher education and rehabilitates orphaned and abandoned girls. Similarly, ONGC invests in women's hostel infrastructure and offers skill development programs in areas like embroidery, tailoring, and beautician training. For SDG 16 (Peace, Justice, and Strong Institutions), oil and gas companies show better grievance redressal mechanisms with (mean score=0.693) compared to IT companies, further emphasizing their contribution to this goal.

Though both O&G and IT sector have not performed well on SDG 14 (Life Below Water) but HCL is the only company addressing this issue and is involved in initiatives addressing ocean Acidification. IT companies imparting vocational and technical skills through various development programs like Infosys' "Springboard" digital literacy

program promoting AI/ML skills, and Wipro's "Talent Next @ Mission 10X," SMART for youth and disabled individuals.

Both Sectors significantly contribute to SDG 3(Healthy life and wellbeing), SDG 4 (Inclusive Education), through programs like "HCL Grant supports project in environment, health and Education, TCS supports cancer treatment through its digital innovative solutions. Reliance is working for community development through "Drishti" which is a braille newspaper that helps communication for visual impaired, and its CVMI (Computer Vision in Medical Imaging) project help medical practitioners. BPCL runs Lifeline Express (a hospital on a train) to support pregnant tribal women and provide significant contribution in community wellness with projects like "Aayush," " Bachpan, " and "Aarogya Setu."

For SDG 4 (Inclusive Education), IT sector leads with program such as Infosys' work for digital literacy integration into school systems, Wipro promote systematic education for disables through "Earthian" program, and TCS's "Pro-BONO technology" initiative. BPCL 's project "Aakshar" promote fundamental skills into children through storytelling initiatives like "Once Upon a Time" to impart social values.

Both the sectors have contributed in achieving SDG 8 (Decent Work and Economic Growth), by upgrading the internal stakeholder workforce through skill-upgradation training and capacity building program, offering human rights training, ensuring safety audit for workers and ensuring insurance and maintaining transparency in the work environment. Efforts are also taken for inclusion of women and disables individuals

in workforce. BPCL's program - Sarathi - encourages internal workforce participation in CSR activities.

DISCUSSION AND CONCLUSION

This study highlights the important role of corporate sector in achieving SDGs through their CSR activities and sustainable initiatives. After mapping CSR and BRSR disclosures with every SDG target this study found that Indian CSR and BRSR standards are closely linked with SDGs framework. The study develops a practical framework for assessing and aligning CSR with global sustainable objectives (Sarker et al., 2019).

The finding of the study asserts that Oil & Gas (O&G) sector outperforms Information Technology (IT) sector in advancing SDG 6 (Ensure Clean Water and Sanitation for all) and SDG 7 (Affordable and Clean Energy). These results align with Dyllick and Muff's, (2016), that businesses are more inclined towards social SDGs goals. On the other hand, this study differs from Gupta, (2019) who argue that Indian companies underperformed for SDG12 (Responsible production and consumption) and SDG 16 (Peace, Justice & Strong Institutions) where are study shows that both the sectors have scored over 50% in achieving these goals.

This study assesses two divergent sectors- the manufacturing sector (Oil & Gas) and service sector (Information Technology) highlighting sector-specific nature of SDGs performance. Scheyvens et al., (2016) also found that industry- specific strategies are important for SDGs alignment.

This study provides useful insights to the policy maker, corporate leader and sustainability practitioners by suggesting that

leveraging CSR spending and enhancing BRSR disclosures positively promote alignment of corporate sustainability activities with SDGs. This study reinforces the findings of Kolk et al., (2017) that corporates need to focus on transparency and accountability in sustainability disclosures.

Finally, the study companies are contributing for only 35-40 SDGs targets out of CSR-SDG mapped 82 targets. It highlights the company's negligence towards the SDG 11 (Sustainable Cities and Communities) and SDG 14 (Life under water) and SDG 15 (Life on Land). Haffer and Searcy (2018), study also note that companies' sustainable initiatives underperform in preserving eco-system and for urban resilience. This study also found that only one company (HCL) out of 11 companies contributing to marine sustainability and the finding are consistent with Jones et al. (2018) who have also highlighted the limited focus on marine life protection.

PRACTICAL AND MANAGERIAL IMPLICATION

This study quantifies the qualitative data provided by companies in their integrated reports. This CSR-SDG mapping index will provide directions to sustainability practitioners and managers in assessing corporate sustainability initiatives impact on social and environmental goals. This will help in identifying the critical areas where they need to work to ensure social and environmental sustainability. The policymakers need to come up with the plans and incentives for the companies to invest in the activities to address the underperformed SDGs.

LIMITATION AND FUTURE SCOPE OF STUDY

This study is a pilot study to develop the CSR-SDG mapped index and evaluates only two sectors' contribution towards SDG targets. The future studies should consider other major sectors like FMCG, financial service, telecommunication etc. This study has limitation of small data size of 11 companies for 3 (FY21-23), the further studies may do a cross-sectional study with time series data for more extensive analysis. Researchers could also expand the work by exploring the impact of CSR-SDG mapped index on financial performance metrics such as Return on Equity (ROE), Return on Assets (ROA) as highlighted by Margolis and Walsh (2003).

The study concludes that Indian companies are significantly contributing towards SDGs by focusing on sustainable energy, institutional transparency, workforce training and safety, women inclusion in top management, promote equality, poverty eradication, health and education support etc. But there is a long way to go and take more initiative for improving the eco-system, protecting biodiversity, supporting disaster management, urban resilience, sustainable production and consumption patterns etc. This will help corporates in mitigating social as well as environmental negative impacts and support sustainable development.

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CONFLICT OF INTEREST

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CHAPTER 2

INFLUENCE OF ARTIFICIAL INTELLIGENCE (AI) RECOMMENDATIONS ON IMPULSIVE RETAIL BUYING EXPERIENCE: A THEMATIC ANALYSIS

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ABSTRACT

Artificial Intelligence (AI) recommendations have transformed consumer buying behaviour in the retail industry by providing personalised suggestions and experiences. However, their role in influencing Impulsive Buying (IB) behaviour raises concerns about consumer autonomy and decision-making. This study examines how AI-driven recommendations influence IB behaviour in consumers by triangulating baseline theories. While empirical studies have examined online IB, the theoretical justification for how AI recommendations drive this behaviour remains underdeveloped. Our study bridges this gap by identifying recurring patterns in the existing literature and aligning them with the well-established behavioural and psychological theories, offering a structured framework to explain the mechanisms behind such IB. By applying Braun and Clarke's (2006) six-phase framework for thematic analysis, we identified four themes: urgency, cognitive ease, social validation, Intrinsic Motivation, and Emotional triggers, aligning with personal preferences. Our research suggests that AI recommendation significantly enhances consumers' impulsivity to purchase more by reducing consumer deliberation.

These behaviours often result in post-purchase effects, such as cognitive dissonance and financial strain. Moreover, continuous exposure to AI-driven prompts can encourage habitual impulsivity and make consumers more prone to unplanned spending. The broader consequences of these patterns extend beyond individual consumers to societal concerns like overconsumption, increased waste, and ethical concerns surrounding AI's role in influencing purchasing decisions.

Keywords: Artificial Intelligence, AI Recommendation, Impulse Buying, Consumer Behaviour, Urgency, Social Proof, Cognitive-Ease, Intrinsic Motivation, Thematic Analysis

INTRODUCTION

Artificial Intelligence (AI) has rapidly evolved as a key driver which is transforming business across various sectors. With a global adoption rate of 72% in 2024 (Singla et al., 2024). Its impact is particularly evident in the retail sector, where AI is reshaping business models, consumer behaviour, and decision-making processes. It has become a key enabler in personalising customer experiences, inventory management, and predictive

recommendations, which has completely transformed how consumers interact in online retail platforms (Grewal & Roggeveen, 2020).

Among these advancements, AI-powered recommendations have emerged as an innovative tool, enabling retailers to offer highly personalised product suggestions to consumers based on their past behaviour, shopping history, and browsing patterns (Ricci et al., 2011). Companies like Amazon derive 35% of their revenue from recommendation systems (Smith & Linden, 2017), highlighting their substantial impact on consumer purchasing behaviour. These systems not only drive sales and provide personalised suggestions to consumers but also address a critical challenge in digital retail: choice overload.

Choice overload, a phenomenon that seems to be the norm in the age of big data (Wang et al., 2024) Extends into modern digital retail. Moreover, the Paradox of Choice (Schwartz, 2015) States that while having options can elevate satisfaction levels, an excess of choices can lead to decision fatigue, anxiety, and hesitation (Dhelim et al., 2022). To lighten this cognitive load, consumers are increasingly turning to AI-driven recommendations (Rodgers & Nguyen, 2022). It simplifies the purchasing process by narrowing down overwhelming options and presenting only curated selections that align with consumer preferences. This simplification not only accelerates the decision-making process (Hutmacher & Appel, 2023), but also increases the likelihood of IB.

IB refers to unplanned purchases driven by emotional and psychological triggers rather than rational deliberation (Rook, 1987). Traditionally, IB was linked to in-store

stimuli, such as product placement and visual merchandising; however, the rise of AI-driven personalisation has introduced a new digital dimension to this phenomenon (Istiasih, 2024).

While existing studies have explored recommender systems and online consumer behaviour, little research has been done on integrating technological and psychological perspectives to explain how AI-driven personalised recommendations influence impulsive behaviour. Most studies focus on algorithmic efficiency or consumer satisfaction, but the behavioural implications of continuous AI exposure remain an underexplored area. Through a thematic analysis, this study addresses this gap by combining theoretical and empirical insights to investigate how AI strategically employs emotional triggers, cognitive ease, and urgency-driven mechanisms to influence spontaneous purchases.

AI Recommendations in the Retail Consumer Buying Process

AI recommendations have emerged as the lighthouse guiding shoppers through the storm of choices in the retail landscape. By examining extensive datasets related to consumers, including prior acquisition, browsing habits, and real-time engagement, businesses can offer advanced and targeted product recommendations (Sharma & Gaur, 2024). To improve prediction accuracy, these systems employ matrix factorisation, deep learning, and collaborative filtering (Gomez-Uribe & Hunt, 2016). It helps to discover new products that consumers might not be aware of and provides personalised suggestions according to their preferences; ultimately making shopping an effective and enjoyable experience.

These recommendations take advantage of past shopping behaviour and reach consumers through their preferred channels, including websites, mobile apps, and marketing communications (Hall et al., 2017). Adidas exemplifies AI-driven retail success with its Findmine-powered "Complete the Look" feature, which uses real-time behavioural targeting and analytics to suggest relevant outfit pairings, reducing selection time by 95% and increasing engagement by 960% (PYMNTS, 2019). Moreover, creating a more dynamic and engaging shopping environment may encourage impulse purchases.

Impulse Buying (IB) Behaviour

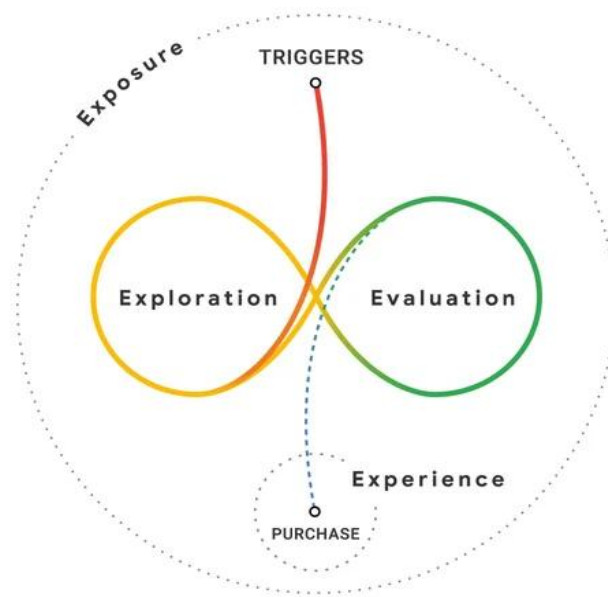
While AI Recommendation systems are highly acknowledged, they are frequently viewed as "Black Boxes" (Ochmann et al., 2021). Due to their lack of transparency, some recommendations may seem perplexing to users, but they often found them useful and in sync with their desires (Sharma & Gaur, 2024). The results produced often align with the user's needs or desires, even if they weren't consciously aware of it until the recommendations were offered. This can trigger IB behaviour or the tendency of people to make unplanned purchases driven by strong emotions or perceived needs, as the cohesive inclusion of AI-driven recommendations into the shopping journey can reduce the cognitive load needed to make purchase decisions (Rohden & Espartel, 2024).

Impulsive purchasing differs from planned purchases in that it lacks careful consideration during the decision-making process. It highlights an important aspect of IB, precisely its impromptu nature and the impact of emotional involvement. Building upon these foundational insights, IB has been categorised into four distinct types: Pure IB occurs without premeditation, while reminder IB is triggered when a product recalls a need. Suggestion IB arises from an immediate desire for a new item and planned IB involves intended purchases with openness to unplanned buys influenced by promotions (Stern, 1962). Stern's theory highlights how external factors, such as product placement and marketing, trigger these types of purchases, and highlights that impulse purchases are guided predominantly by situational triggers rather than personal consumer necessities.

AI Recommendation and Impulsive Buying (IB)

The Messy Middle is a chaotic, nonlinear stage where consumers oscillate between options, seek information, and reassess their decisions (Rennie & Protheroe, 2020) (Fig. 1). AI interventions, such as personalised recommendations and behavioural targeting, reduce uncertainty by streamlining cognitive processes, offering timely and relevant suggestions, and nudging consumers toward unplanned purchases (Cha et al., 2019). By simplifying decision-making in this phase, AI acts as a cognitive organiser, minimising friction and accelerating IB.

Fig: 1 Messy Middle Purchase Behaviour



Source (Rennie & Protheroe, 2020)

Empirical studies further validate this behaviour that AI-driven personalised recommendations significantly enhance consumer purchase intentions (Wu et al., 2025). In sectors like fashion retail, where IB is prevalent, it is observed that AI-driven strategies significantly increase spontaneous purchases by strategically timing product recommendations (Jain & Gandhi, 2021). Further reinforcing these claims, 34.5% of respondents acknowledged that AI recommendations influenced their IB, particularly among female consumers, highlighting demographic variations in AI-driven shopping behaviours (Jawabri et al., 2025). Similarly, (Suriya Kumari et al., 2025 ; Sengupta, 2025) found that AI-powered recommendations significantly drive IB, especially among high impulsive buyers who respond strongly to limited-time offers and influencer promotions. This effect is largely mediated by psychological factors such as fear of missing out (FOMO), loss aversion, and heightened emotional arousal. (Prawira & Sihombing, 2021) identified a link between hedonic shopping value, scarcity-

based promotions, and serendipitous discovery as key factors influencing impulsive online purchase mechanisms that AI Recommendation systems frequently deploy. In support of these findings, (Ampadu et al., 2022) demonstrated that perceived recommendation quality positively shapes e-impulse buying through consumers' product image and satisfaction, with online reviews further strengthening this relationship, confirming that social and cognitive cues within AI-assisted environments amplify impulsive buying tendencies. Furthermore, (Li et al., 2021) found that anticipated regret plays a moderating role in online IB, indicating that AI-driven recommendations may heighten emotional responses that drive consumers toward unplanned purchases.

RESEARCH QUESTIONS

AI recommendations increasingly shape online consumer behaviour by using various cues that can trigger impulsive buying. From urgency signals to personalised content, these mechanisms influence decision-

making in subtle yet powerful ways. This study investigates their impact through the following research questions:

- How do AI-generated urgency cues, such as countdown timers and scarcity notifications, influence impulsive purchasing behaviour?
- How do heuristic cues like "Best Seller" tags and curated recommendations reduce cognitive effort and foster IB?
- How do AI-driven social proof mechanisms, such as user reviews and "Trending Now" labels, impact consumer conformity and IBs?
- How does AI-driven personalisation, including customisation options, enhance intrinsic motivations like autonomy and lead to impulsive actions?

METHODOLOGY

This research employs a qualitative approach. A six-phase framework for thematic analysis, (Braun & Clarke, 2006) applied to a purposive sample of peer-reviewed studies published between 2010 and 2025, focusing on AI recommendations and impulsive buying behaviour. The method is structured as follows:

- **Familiarisation with Data:** Extensive reading of peer-reviewed studies related to AI recommendations and impulsive buying. Notes were taken to identify recurring psychological, behavioural, and design-based triggers.
- **Generating Initial Codes:** Key concepts were coded manually using both theory-driven (e.g., loss

aversion, social proof) and data-driven (e.g., AI-generated scarcity prompts) approaches.

- **Searching for Themes:** Similar codes were grouped under broader patterns such as *Cognitive Ease*, *Social Influence*, and *Urgency* that reflected repeated mechanisms across the literature.
- **Reviewing Themes:** Preliminary themes were refined by checking consistency across sources and reducing overlapping ideas to ensure clarity
- **Defining and Naming Themes:** Each theme was defined in relation to existing psychological theories (e.g., *Prospect Theory*, *Self-Determination Theory*), ensuring conceptual and contextual relevance.
- **Producing the Report:** The final themes were organised into a coherent narrative, integrating literature-based insights with theoretical framing to explore how AI shapes impulsive buying behaviour.

Theoretical Underpinning: A Unified Framework for AI-Driven Impulsivity

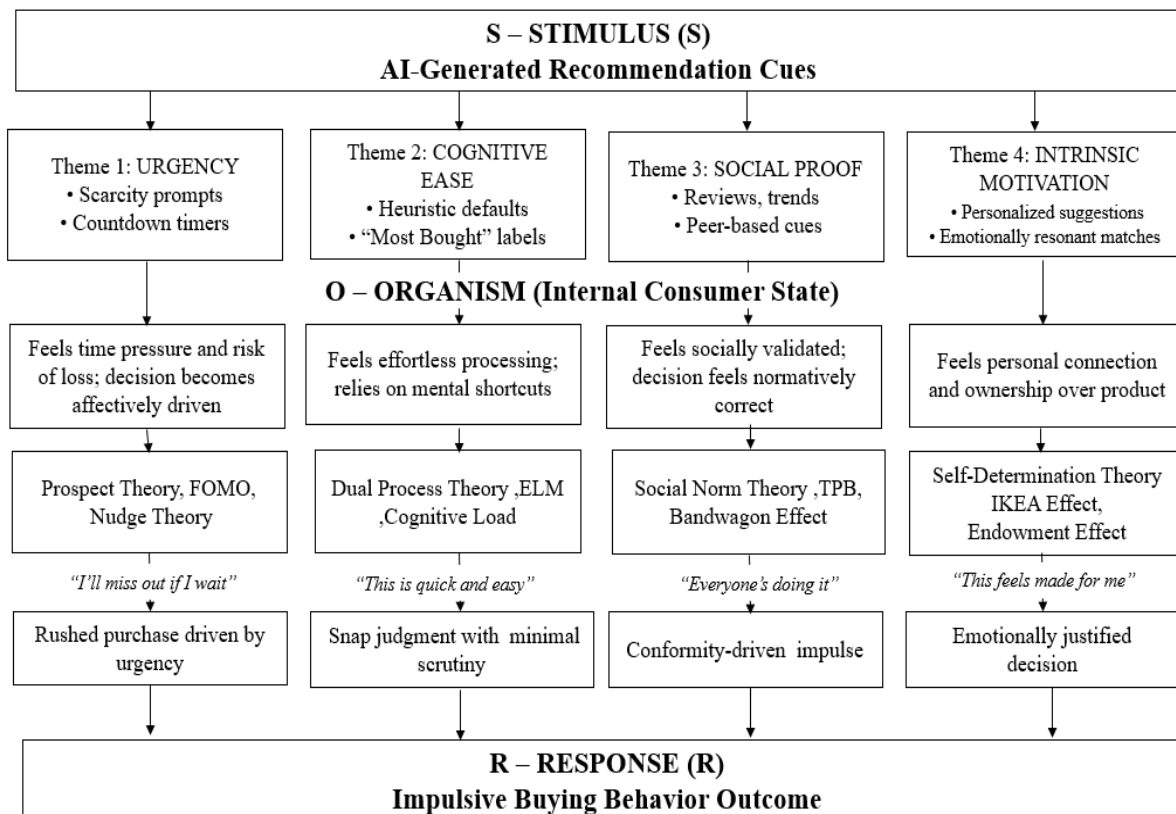
Understanding how AI-driven recommendations influence IB behaviour will require a truly comprehensive and integrative theory combining several behavioural and psychological aspects. Theoretical underpinnings act as an indispensable framework for fostering research advancement (Hunt, 2018). Examining the intricacies of AI-driven IB. The S-O-R model (Stimulus-Organism-Response)(Mehrabian & Russell, 1974) offers a foundational framework for examining the role of AI-driven

recommendations, which serve as an external stimulus that catalyse consumer reactions, primarily through affective and cognitive pathways, causing a behavioural response, typically an IB.

(Fig. 2) illustrates four thematic paths to AI-Recommended induced IB. Each stimulus, whether it is urgency cues, heuristic nudges, or personalisation triggers, activates internal cognitive-affective processes such as emotional arousal, heuristic reliance, social

confirmation, or perceived autonomy. These processes, in turn, lead to impulsive actions, post-purchase rationalisation, or recurring behavioural loops. The integration of supporting theories, such as ELM, SDT, and Prospect Theory, further refines the psychological pathways through which AI-mediated stimuli operate within consumers, reinforcing the multi-layered influence of recommendation systems on modern retail behaviour.

Fig: 2 Thematic Analysis of AI-Induced Impulsive Buying within the S–O–R Framework (Author Compilation)



Source: Authors compilation

Urgency as a Driver of Impulsivity

Urgency plays a key role in IB, especially in AI-driven digital environments where time pressure often overrides thoughtful decision-making (Dhar & Nowlis, 1999; Suri & Monroe, 2003). AI systems utilise urgency cues such as countdown timers, low-stock alerts, and time-sensitive discounts within their recommendation tools to speed up consumer choices. These cues reflect Cue Utilisation Theory (Easterbrook, 1959), which suggests that under pressure, people rely more on noticeable external signals like “Offer ends in 10 minutes” or “Only two items left,” and less on careful evaluation.

The idea of loss aversion from Prospect Theory strengthens this psychological pressure. (Kahneman & Tversky, 1979), where people are more motivated to avoid missing out than to gain something. Scarcity cues, such as “Limited stock,” often create a sense of urgency that triggers FOMO (fear of missing out), pushing consumers to act fast (Kathuria & Bakshi, 2024).

Urgency also works as a behavioural *nudge*, especially for hesitant buyers (Thaler et al., 2013). When framed as a limited-time opportunity, delay feels like a missed chance. Generally, the feeling of FOMO leads to an emotional response that influences purchase decisions (Good & Hyman, 2020) and these FOMO tendencies can significantly influence IBs (Djamhari et al., 2024). Modern AI recommendation systems make these urgency tactics more personal. Instead of using generic scarcity messages, they now match urgency cues with a user’s browsing habits or past purchases, like showing “Only one left in your size.” This subtle approach feels more relevant and emotionally compelling (Sipress, n.d.)

Alongside these quick triggers, urgency also connects to deeper emotional needs. Securing a “last chance” item can bring a sense of accomplishment or uniqueness (Ali et al., 2025), tying into *Self-Determination Theory* (Ryan & Deci, 2000). Over time, these experiences can create a loop where consumers feel good about acting quickly, reinforcing impulsive habits as normal behaviour. In AI-driven platforms, urgency becomes more than just a countdown; it becomes an emotional and psychological tool that pushes consumers toward fast, often unplanned purchases. However, (Simanjuntak & Pratama, 2024) found that when perceived scarcity is too high, it can reduce the effect of immersive flow experiences on impulsive buying, suggesting a threshold beyond which urgency may backfire.

Cognitive Ease and Decision-Making Shortcuts

AI recommendations simplify decision-making by offering low-friction, contextually relevant product suggestions that align with consumers’ browsing history and preferences. Integrated tools like one-click checkouts, AI-curated filters, and voice assistants (e.g., Alexa) reduce the need for cognitive engagement, pushing consumers toward quicker, less deliberate actions. Drawing on *Process Theory* (Evans & Frankish, 2009) this shift reflects a dominance of Type 1 thinking, intuitive, fast, and automatic, over slower, analytical Type 2 reasoning. This shift is evident in how consumers are now dependent on AI-driven media interfaces to simplify their decisions, practically outsourcing the cognitive effort (Yerin, 2024). Such automation minimises cognitive load, fostering faster, more IBs with limited evaluation (Klaus & Zaichkowsky, 2020).

This reliance often leads to heuristic-based judgments, as outlined in the *Heuristic-Systematic Model* (HSM)(Chaiken, 1980), where simple cues like “Best Seller” or personalised tags act as cognitive shortcuts. AI systems not only reduce the number of choices but also present these options in a way that feels complete, invoking the WYSIATI effect (Kahneman, 2011). When platforms frame selected products as the most relevant or comprehensive, consumers are less likely to explore alternatives, which aligns with Hick’s Law which suggest that fewer options lead to quicker decisions (Hick, 1952). Simplified interfaces and tailored suggestions make decisions not just effortless but also justified. (Danish Habib & Qayyum, 2018).

The *Elaboration Likelihood Model* (ELM)(Petty & Cacioppo, 1986) helps explain how, in such low-involvement situations, peripheral cues become more influential. Labels like “Top Rated” or high star reviews serve not only as information but also as affective triggers, making the decision feel both efficient and emotionally rewarding. Over time, this pattern creates a behavioural loop where quick, system-supported decisions become normalised as effective and satisfying, reinforcing impulsive buying as a convenient and justified behaviour.

Social Influence and Validation of Impulse

AI recommendation systems increasingly rely on social proof to shape consumer behaviour by tapping into users’ natural tendency to follow collective cues. (Pizzi et al., 2021) Discuss how AI-curated social proof cues, such as "bestseller" tags and customer testimonials, significantly impact consumer trust and purchase intentions. The integration of AI in social media platforms

allows for real-time analysis of consumer behaviour, enabling marketers to tailor social proof cues effectively (Leonard et al., 2025).

This process is grounded in *Social Influence Theory* (Cialdini, 2001), which highlights how people look to others’ behaviours when making decisions, especially under uncertainty. AI platforms replicate this through algorithmic curation that mimics peer endorsements, making users feel their choices are validated by the crowd. Even AI influencers are now positioned as credible, socially persuasive agents that imitate human-like endorsement patterns (Alboqami, 2023). This creates a bandwagon effect, where perceived popularity enhances desirability, often nudging users toward impulsive decisions (Song et al., 2021) emphasise that these peer-driven cues form a feedback loop; each decision reinforced by social validation increases the user's reliance on AI's recommendations in future interactions.

Elements of conformity are also deeply embedded in AI recommendations design, echoing the insights of the Asch Conformity Experiment (1951). Labels like “Top Rated in Your Area” or dynamic stats such as “15 people bought this today” create subtle pressure to align individual behaviour with the group. The *Theory of Planned Behaviour* (TPB)(Ajzen, 1991) adds further perspective, suggesting that perceived social norms —what users believe others expect or approve —can strongly influence buying choices. AI enhances these subjective norms by embedding them directly into recommendation streams. Notifications showing real-time activity or popularity trends make collective approval feel immediate and relevant, thereby reducing hesitation and increasing impulsive action (Puspitaningrum, 2019).

Together, these mechanisms construct a digital environment where social influence becomes a tool for validation. In doing so, they transform impulsive buying into a socially reinforced habit that feels less like a risk and more like belonging.

Motivation and Intrinsic Drivers of Impulsive Action

AI recommendations often align with the principles of *Self-Determination Theory* (Deci & Ryan, 1985) which frames autonomy, competence, and relatedness as central to motivation. AI recommendations, when paired with customizable features, give users a sense of control and personal involvement, which can enhance emotional attachment and make impulsive actions feel more self-driven and justified (Choi et al., 2024). Emphasise that these features deepen emotional involvement, as consumers feel pride in co-creating their products. This connects directly with the IKEA Effect (Norton et al., 2012), where involvement in customisation boosts emotional attachment and perceived value. Personal input from consumers can lead them to value a product more highly, even before making a purchase (Franke et al., 2010).

Examples like Nike's 'By You' sneaker customisation or Dell's 'build-your-own-PC'

tool illustrate how AI-facilitated personalisation creates meaningful ownership experiences. This effect intensifies when combined with technologies like augmented and virtual reality. Through tools such as L'Oréal's virtual makeup try-on or IKEA's AR furniture placement, consumers see themselves interacting with the product in their own environment. This visualisation fosters a psychological sense of possession, reinforcing the Endowment Effect (Kahneman et al., 1991), where consumers overvalue items that they perceive as "already theirs".

Importantly, AI recommendations do more than guide decision-making; they also turn the shopping experience into something emotionally engaging. These systems activate intrinsic motivators by enabling self-expression and control, while also triggering extrinsic drivers such as reward anticipation or social feedback. In combining these layers, we can conclude that AI doesn't merely assist in the buying process but also reshapes how the buying process feels and turns impulse into an act of personal meaning and emotional satisfaction.

The following table (Table 1) presents the identified themes, along with their associated codes, highlighting the conceptual depth and analytical rigour that underpin this research.

Table 1: Themes And Codes

Theme	Code	Data Extraction
1. Urgency as a Driver of Impulsivity	Time-sensitive offers	Countdown timers, stock scarcity notifications
	Psychological triggers	Loss aversion, FOMO
	Salience in visual design	Bold cues, dynamic notifications

	Emotional responses	Anxiety, regret from scarcity cues
2. Cognitive Ease and Decision-Making Shortcuts	Simplified interfaces	Intuitive navigation, low cognitive load
	Heuristic reliance	"Best Seller, " "Top Pick" labels
	Framing effects	Exclusive offers, curated options
	WYSIATI	Personalised suggestions creating perceived comprehensiveness
3. Social Influence and Validation of Impulse	Social proof mechanisms	Reviews, ratings, "Most Popular" tags
	Peer dynamics	Bandwagon Effect, "Frequently Bought Together"
	Subjective norms	Alignment with expectations from social groups
4. Motivation and Intrinsic Drivers of Impulsive Action	Personalization	Customizable products, "buildyourown" tools
	Emotional fulfilment	IKEA Effect, ownership pride
	Anticipated rewards	Exclusive discounts, flash sales
	Instant gratification	Immediate emotional engagement post-purchase

DISCUSSION

The AI-driven recommendation systems tap into psychological and behavioural cues like urgency, cognitive ease, social validation, and more to prompt fast and quick decision-making (System 1 thinking), bypassing the deliberate process. By subtle nudges and peripheral cues, AI platforms enhance the emotional involvement, encouraging consumers to act quickly, without fully considering all the options.

Nonetheless, these tactics may improve loyalty and sales, but they also have some downsides that could affect the well-being and satisfaction of consumers. It could lead to buyer's remorse, financial strain, and potential erosion of consumers' trust in AI systems, especially among autonomy-conscious consumers who may feel manipulated (Bjørlo et al., 2021). This aligns

with Cognitive Dissonance Theory (Festinger, 1957), which suggests that when consumers realise their purchases were driven by external nudges rather than genuine need, it creates psychological discomfort, instilling the feelings of regret and dissatisfaction (Danks & London, 2017; Pappas, 2016). Frequent IB, especially driven by emotional triggers, can eventually evolve into more pathological states that lead to compulsive buying behaviour over time (Dittmar et al., 2007; O'Guinn & Faber, 1989; Verplanken & Herabadi, 2001). The Competition Commission of India found that Amazon and Flipkart favour preferred sellers, limiting consumer choice and harming smaller businesses (Kalra, 2024). This creates filter bubbles and 'information cocoons,' reducing product diversity and narrowing consumer decision-making (Chen

et al., 2022; Pariser, 2011). Increasing the transparency in AI recommendation algorithms by disclosing how and why specific items are suggested could help address these concerns. Retail platforms can counter algorithmic bubbles by promoting diverse discovery beyond habitual preferences. Inspired by Netflix's "Play Something" and Spotify's "Blend," features like "Surprise Me" or transparent AI recommendations, like LinkedIn's "Recommendation Transparency," can enhance consumer awareness, enabling more informed purchasing decisions (Ferrario & Loi, 2022).

CONCLUSION

This study develops a theoretically robust foundation for understanding how AI recommendations drive IB behaviour. By integrating various perspectives on urgency, cognitive ease, social influence, and intrinsic motivation, it becomes evident that AI Recommendations not only trigger impulsive behaviour but also reshape the entire purchase decision-making process. It also suggests that while these recommendations enhance efficiency by simplifying choices, they also reduce IKEA's deliberate decision-making by subtly guiding consumers toward pre-set preferences, which often creates a filter bubble. Urgency tactics accelerate purchases, often bypassing rational and thoughtful consideration, sometimes leading to post-purchase regret. Social validation in the form of Online reviews and many more, further reinforces conformity, raising concerns about how much control consumers truly have over their choices.

A key debate emerges between theories that emphasise consumer autonomy (*Self-Determination Theory*, *Endowment Effect*) and those suggesting external influence

(*Prospect Theory*, *Social Influence Theory*, *Nudge Theory*). This raises a fundamental question: Does AI empower consumers, or does it subtly shape their decisions under the vision of autonomy?

IMPLICATIONS

Theoretical Implications

This study contributes to the theoretical understanding of AI-induced impulsivity by extending the SOR framework with cognitive and emotional dimensions. It integrates theories like Self-Determination Theory, Prospect Theory, and Social Influence Theory to build a multi-layered explanation of how external algorithmic cues translate into psychological reactions and impulsive actions. This integration provides a foundation for future behavioural models on AI-mediated consumer decisions.

Managerial Implications

The study's findings offer valuable insights for marketers, platform designers, and policymakers. Marketers can refine their recommendation systems by balancing personalisation with transparency, thus enhancing trust while managing consumer autonomy. Designers should also incorporate explainable AI (XAI) in their recommendation systems to reduce filter bubble effects. From a regulatory viewpoint, frameworks related to algorithmic fairness and user agency are vital in mitigating the psychological manipulation risk inherent in AI-driven impulsive triggers.

Limitations and Future Scope of Study

This research is not without limitations. This study is purely based on a qualitative thematic analysis of existing literature, which may limit the generalizability of the findings. Future research could validate these findings through quantitative analysis or experimental designs to measure the strength of AI-driven cues on actual purchase

behaviour. Cross-cultural studies and longitudinal research could also explore whether repeated exposure to AI-driven recommendations fosters habitual impulsivity, much like operant conditioning. Additionally, studying their effects across different cultural and regulatory environments can offer deeper insights into their broader impact.

DECLARATION OF CONFLICTING INTERESTS

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CHAPTER 3

INFLUENCE OF ARTIFICIAL INTELLIGENCE AND PERSONALISATION STRATEGIES ON CONSUMER MANIPULATION: A THEMATIC LITERATURE REVIEW

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ABSTRACT

The evolution of Artificial Intelligence (AI) and personalisation technologies has revolutionised consumer engagement, enabling brands to create hyper-targeted, data-driven experiences that profoundly shape purchasing behaviour. This paper critically examines the powerful influence of AI on consumer decision-making, focusing on the sophisticated tactics businesses employ, such as behavioural profiling, dynamic pricing, targeted advertising, and data overreach. While these innovations offer remarkable opportunities for personalised marketing, they also raise significant ethical concerns regarding manipulation. AI-driven strategies exploit biases through behavioural nudging, fueling addiction and reinforcing confirmation bias. Furthermore, AI algorithms perpetuate filter bubbles and echo chambers, narrowing consumers' exposure to diverse perspectives and deepening societal polarisation. Using thematic analysis of literature cutting across the domains of consumer behaviour and strategic use of

Artificial Intelligence in selling, this paper dissects these mechanisms, emphasising the tension between personalised consumer experiences and the risk of exploitation. We propose two conceptual models: one illustrating the intricate consumer decision-making process under AI influence, and the other outlining a framework for responsible AI deployment in marketing. Ultimately, the paper advocates for transparency, accountability, and consumer autonomy, urging businesses to leverage AI ethically, balancing innovation with the safeguarding of consumer rights and fostering trust in the digital age.

KeyWords: Artificial Intelligence (AI), Personalisation Technologies, Consumer Manipulation, Behavioural Profiling, Consumer Autonomy, Thematic Analysis

INTRODUCTION

Artificial Intelligence (AI) has brought transformative changes to how businesses and consumers interact, especially at the early stages of marketing. It has been the

application of human intelligence by machines, which were acting with intuition before, but now it is based on data to derive actionable strategies that influence consumer behaviour. AI-based personalisation strategies allow marketers in completely different ways; therefore, highly targeted product recommendations, customised advertising messages, and designed consumer experiences are built with the help of intricate algorithms (Chandra et al., 2022). Delivering personalised service and experience on a scale has been possible because AI algorithms have significantly changed the market.

The interjection of AI tools in marketing has also leveraged the rapid development of information technology within marketing science. Predictive significance and performance effectiveness are the most critical aspects of any present marketing approach. An abundance of data has allowed firms to collect and store large amounts of consumer-related data, which can then be analysed and modelled to understand, predict, and influence consumer behaviour and purchasing intentions (Sankaran, 2019). This ability to create insights has therefore marked AI as one of the critical tools in business strategy when seeking a competitive edge. Advanced AI analytics systems uncover complex buying patterns, turning what was once a complicated process of analysing consumer behaviour into separate streamlined procedures for marketers, retailers, and companies in general (Gochhait et al., 2020).

Consumer manipulation has become a

primary ethical concern with the growth of AI algorithm technologies. These mechanisms ignore the consumer's vulnerabilities and mainly focus on business gain, which places fundamental importance on autonomy and informed decision-making. Consumer reactions to AI vary significantly, typically falling into three categories: "slow pokes," who perceive the risks to outweigh the benefits; "enthusiasts," who view the advantages of using AI as outweighing any risks involved; and "pragmatists," who believe that the benefits associated with the use of AI are worth the risks (Jacobides et al., 2019). Recent studies argue that personalised algorithmic decision-making can constrain user independence and self-determination in subtle yet persistent ways, creating self-reinforcing feedback loops that narrow preferences and weaken critical capacities (Lu, 2024). The adoption of the new technology and its ethical concerns have divided the consumer perception. AI holds the benefit of increased consumer satisfaction, but this satisfaction can be manipulated due to AI's inherent design. AI systems can exploit biases, reinforce addictive behaviours, and diminish consumer trust if not used responsibly. There has been a big contrast between the idea of personalisation and manipulation. However, as it has become vague in recent developments, the companies, while making a market plan, must focus on answerability and clarity of consumer choice.

Theoretical Underpinnings

Artificial intelligence and personalisation technologies like machine learning, natural language processing (NLP), and data analytics have radically changed how businesses connect with consumers (Jacobides et al., 2021). These tools facilitate the analysis of large amounts of data, including browsing action, search history, and social media interactions, to anticipate the behaviours of consumers and create personalised marketing strategies. Through behavioural nudging, predictive analytics, and recommendation systems, AI can fragment audiences and deliver tailored experiences that meet individual choices. While this enriches the consumer experience, it has the potential to manipulate future results.

The surge of automation further represents AI's game-changing role. With approximately 2.5 quintillion bytes of data generated daily (Malhotra, 2021). The businesses are now more dependent on AI to cash this "new oil" of the digital economy (Malhotra, 2021). Such faith allows organisations to predict consumer wants and preferences with great accuracy, and they shape consumer decisions in the process. However, this reliance also raises questions about manipulation, as businesses rely on AI's predictive mechanism to control consumer behaviour according to their pre-established results. AI-driven Personalisation (AI & P) has completely changed the consumer engagement process. Modern customers no longer want to be treated as faceless entities but demand that brands recognise them as individuals with different and

unique desires and preferences. In the thirst of attracting more consumers, brands have now shifted to an AI shopping assistant. These tools trigger the consumer's desire for a personalised experience and benefit the brands by meeting their expectations. These algorithms significantly impact consumer engagement and purchase behaviour by meeting needs and delivering relevant solutions. Such capabilities allow businesses to create deeper customer understanding while nurturing loyalty (Misra et al., 2024). AI & P approaches have progressively contributed to promoting addictive behaviours in users by capitalising on behavioural nudging and habit-forming techniques. The research draws attention to the development of emotional dependency and affection for AI-powered tools, like chatbots and conversational AI, which go well with the more significant frameworks of reliance on technology, like smartphones or internet use. This overdependence sometimes results in unfavourable outcomes, including interpersonal difficulties and mental health issues. (Wiederhold, 2018). The addictive power of AI technologies is deeply rooted in the design of habit loops, where repeated behaviours combined with signals and rewards form routines over time. For example, social media platforms like Facebook push notifications to explore user engagement, forcing the user to have multiple interactions throughout the day. While these habit loops provide a sense of social validation, they can also trigger compulsive and self-destructive

behaviours (Eyal, 2014; Wendel, 2020). Techniques like infinite scrolling, autoplay features, and personalised notifications are developed to keep user attention towards the platform, reinforcing addiction through the creation of an "endless" content experience and provoking emotional responses like fear of missing out (FOMO) (Alter, 2018; Przybylski et al., 2013).

Companies inflate consumers' perception of digital activity by promoting participation in online events, interactions, and communities. This forced pressure to remain actively engaged in digital ecosystems leads to anxiety and amplifies irresistible use (Dossey, 2014). Algorithm personalisation works to create an addictive model; it benefits them through long user engagement. More user watch time leads to more advertisement of the products, which ultimately leads to more clicks by the user. Though AI has enriched user satisfaction, it also creates a dependency loop through its mechanism. These practices highlight the ethical issue of businesses to balance innovation with responsibility, minimising the adverse effects on users' psychological well-being. Recent reviews map concepts and taxonomies of dark patterns, but integration with autonomy theory, recommender explainability, and actionable governance practices for consumer-facing AI is still incomplete (Gray et al., 2023).

RESEARCH GAP

Existing work typically examines autonomy in algorithmic decision-making,

the dynamics of echo chambers and visibility, interface-level dark patterns, and explainable recommendation techniques, but these strands largely evolve in isolation. The literature still lacks an integrative account that demarcates the boundary between legitimate personalisation and manipulation grounded in autonomy theory, connects concrete interface mechanisms to both user-level outcomes and broader ecosystem effects, and translates this synthesis into actionable managerial guidance aligned with contemporary regulatory regimes such as the General Data Protection Regulation (GDPR) and India's The Digital Personal Data Protection Act, 2023 (DPDP Act).

PURPOSE OF THE STUDY

To evaluate the consumer and societal impacts of AI-driven personalisation and delineate the personalisation, manipulation boundary for responsible design and governance.

RESEARCH OBJECTIVES

This study investigates how AI-driven personalisation influences consumers' autonomy, ethical decision-making, and social behaviour. Together, the following research questions explore the complex interplay between technological optimisation and human agency in digital ecosystems.

RO 1. To explore the avenues through which AI-driven personalisation impacts consumer autonomy in their decision-making processes.

This objective seeks to understand how

algorithmic recommendations, predictive analytics, and adaptive interfaces influence users' capacity to make independent and informed choices. It explores whether personalisation enhances convenience or gradually erodes the individual's sense of agency and control.

RO 2. To investigate the ethical concerns that arise from behavioral profiling and manipulative techniques employed in AI systems.

Examines the ethical implications of targeting mechanisms, such as emotional persuasion, micro targeting, and cognitive bias exploitation. It considers how profiling practices may cross the boundary between persuasion and manipulation, challenging the principles of transparency and fairness.

RO 3. To assess the presence of algorithmic bias and its effect on the fairness and inclusivity of personalised AI experiences.

Here, the focus is on the structural and representational biases embedded within data and algorithms. The question assesses how such biases affect user trust, equality of access, and inclusivity across demographic and cultural groups.

RO 4. To explore the influence of filter bubbles and echo chambers formed by AI personalization design on consumer preferences and societal cohesion.

Addresses the broader societal impact of AI-mediated information ecosystems. It explores how personalisation shapes collective exposure, reinforces belief polarisation, and potentially weakens social diversity and critical discourse.

It collectively interrogates how artificial

intelligence, by the use of its personalisation design, impacts the autonomy of the consumer; It also probes how, with endless data, AI algorithms assess biased recommendations and their impact on the generation of addictive behaviour and brain rot through habit-forming recommendations. The research questions further investigate how personalised content leads to the creation of filter bubble and echo chamber and their impact on society.

RESEARCH METHODOLOGY

We have used a systematic framework of this thematic literature review based on the approach suggested by Braun and Clarke (2006) to investigate the impact of artificial intelligence (AI) and personalisation techniques on consumer manipulation and its underlying factors. The six-phase thematic analysis method provides a structured framework for coding data, developing themes, and interpreting results.

METHODOLOGY STEPS

- **Familiarisation with Data:** It involves familiarising oneself with the existing literature. At this stage, meanings are created from diverse studies.
- **Generating Initial Codes:** This stage extracts raw data's essential elements and frames them into meaningful codes.
- **Searching for themes:** Codes to be merged into broader themes that follow a broad structure.
- **Reviewing the themes:** External

heterogeneity and internal homogeneity were considered while studying the themes.

- Defining and naming themes: At this stage, themes are labelled and precise definitions are given. Through a comprehensive description, these themes are then

linked to the research questions.

- Producing the report: Selection of data extract to find key results. The findings must explain research questions and align with scholarly standards.

CODING OF THEMES

Table 1: Thematic Analysis of AI and Personalisation on Consumer

Themes	Codes
Manipulation through the Filter Bubble and Echo chamber	Algorithmic Bias, Cognitive Exploitation, Confirmation Bias, Recommendation System, Filter Bubble, Echo Chamber, Misinformation, Critical Thinking, Tailored Experience, User Experience, Micro Targeting, and Manipulative Tactics.
Personalisation on Consumer Autonomy	Consumer Autonomy, Exploits Vulnerabilities, Engagement Mechanism, Habit Loop, FOMO, Infinite Scrolling, Prolonged Engagement, Dark Pattern, Decision Influence, Brain rot.
Behavioural Profiling in AI Personalisation	Segmentation, Personalised ads, Nudging, Bias exploitation, Attention design, Infinite scrolling, Autoplay, Notifications, Reduced autonomy, Addictive engagement, Predictive targeting, Transparency, Accountability.

Note: Adapted from Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.

THEMES IN LITERATURE REVIEW

Theme 1: How AI and personalisation shape consumer manipulation: Filter bubbles and Echo chambers

AI-powered Personalisation plays a pivotal role in shaping consumer manipulation by creating filter bubbles and echo chambers. These phenomena, resulting from algorithmic design, limit content exposure and reinforce pre-existing beliefs, significantly impacting consumer behaviour and societal dynamics. Filter bubbles emerge as AI algorithms tailor content based on user preferences, engagement history, and demographic data. Social media platforms, such as Facebook and YouTube, use AI-driven recommendation systems that prioritise user engagement over diverse content exposure. For instance, YouTube's recommendation algorithm has faced criticism for promoting extremist content and conspiracy theories to maximise watch time. This practice not only restricts diverse perspectives but also manipulates consumer choices by channelling users into ideologically homogeneous groups, deepening societal divisions. Similarly, Facebook's emotion manipulation experiment in 2014 demonstrated the platform's capability to influence user emotions by curating news feeds. This experiment highlighted how personalised algorithms can exploit emotional vulnerabilities without informed consent, raising ethical concerns regarding transparency and accountability (Kramer et al., 2014).

Echo chambers further amplify this issue by reinforcing a narrow spectrum of ideas

and opinions within these filter bubbles. AI Personalisation strengthens cognitive biases such as confirmation bias, wherein users are consistently exposed to content aligning with their views. This selective exposure not only distorts reality but also perpetuates misinformation and polarising narratives, significantly impacting consumer decision-making processes. While beneficial for targeted marketing, this approach often manipulates consumer behaviour by limiting informed choices and creating artificial needs (Ienca, 2023). The effects of such manipulation are compounded by opaque algorithmic systems, as observed in Uber's surge pricing model. Although economically rational, the algorithm's lack of transparency and potential to exploit consumers during high-demand periods raises ethical concerns about fairness. Consumers are further restricted in their access to varied information, bound by the echo chambers created by AI algorithms. This limitation influences decision-making processes, as users rely exclusively on algorithmic suggestions shaped by their interests. Such practices underscore the broader societal risks posed by algorithmic governance, including reduced autonomy and diminished capacity for critical thinking (Danaher et al., 2017). Algorithmic governance erodes critical thinking and reduces civic autonomy. Limiting these problems requires: Regulatory oversight for algorithmic transparency, Tools to detect and reduce bias and echo effects, and educating consumers to recognise and challenge algorithmic influences (Danaher

et al. 2017).

Addressing the challenges of filter bubbles and echo chambers requires robust regulatory frameworks, bias detection mechanisms, and consumer education that will work on the principles of transparency, diversity and decision autonomy to mitigate the manipulative effects of AI-powered Personalisation and foster a more equitable digital ecosystem.

Theme 2: Effect of AI and personalisation on consumer autonomy

AI-powered personalisation challenges consumer autonomy by shrewdly yet deeply persuading decision-making processes. Targeted strategies, supported by AI algorithms, often erase the thin line between assisting users and manipulating them, raising ethical problems and concerns about the independence of the consumer. In the background of social media, AI-driven algorithms give priority to consumer engagement through mechanisms such as endless scrolling, photo tagging, and like and comment buttons. While these tools at the beginning aimed to increase user interaction, now they have evolved into manipulative technologies that select how individuals look and interact with the digital social media world (Botes, 2021). Personalisation operates along a spectrum:

Persuasion: Presents selective information to guide decisions without suppressing choice.

Coercion: Narrows choices using overwhelming incentives or intrusive mechanisms.

Deception: Misleads consumers into

decisions based on partial or false information.

These mechanisms exploit user cognitive biases, emotional fragility, or lack of awareness, reducing independent decision-making.

Persuasion, a common strategy used by personalised AI, connects directly to an individual's decision-making power by giving information that is designed to influence their choices. However, this approach still gives some users the freedom to make informed decisions after reflecting on the provided information (Susser et al., 2019). Unlike persuasion, coercion goes further by actively stopping individual choices. It capitalises on fragilities in personal beliefs, values, or desires, often presenting "overpowering incentives" that make alternative decisions unattainable unless extraordinary effort is exerted by the consumer. This form of control remarkably impairs autonomy by forcing individuals toward controlled outcomes (Frischmann & Selinger, 2018). The real danger lies not in overt manipulation but in systems that gradually reshape values and perceptions without detection. Over time, these can influence not just consumer behaviour, but democratic participation and societal trust (Selinger & Frischmann, 2018). Deception signifies a more invasive approach, knowingly misleading individuals by presenting false information or half-truths to manipulate their decisions and choices without their knowledge. By exploiting consumer weakness covertly, deceptive strategies rob individuals of their ability to use their informed autonomy, leaving

them unknowingly influenced. As these technologies incrementally change personal beliefs and values, they impact not only individual autonomy but also collective decision-making. This loss of independence in thought and action can fundamentally transform democratic governance, as manipulative systems shift how people evaluate choices, form intentions, and act upon them (Botes, 2021). The ethical implications of these practices show the tension between technological innovation and consumer rights. As AI and personalisation continue to evolve, they challenge the assumption that individuals have full self-governance in their decision-making. When algorithms are structured to covertly manipulate user behavior, they not only exploit consumer vulnerabilities but also raise bigger societal issues about fairness, accountability, and the preservation of individual autonomy. Addressing these challenges requires strong ethical frameworks and greater transparency in the design of AI to ensure that technological progress does not expense of consumer freedom. This includes the implementation of algorithmic explainability, where users can understand how and why specific recommendations are made, as well as opt-out features that allow consumers to disengage from overly personalised experiences. Furthermore, policy interventions must enforce data minimisation, regular audits, and ethical impact assessments to prevent exploitative practices. Ultimately, safeguarding autonomy in the age of AI will depend on a collaborative effort between developers,

regulators, and civil society to promote responsible innovation anchored in human values (Karami et al., 2024).

Theme 3: Behavioural Profiling through AI: Impacts on Consumer Decision-Making

Behavioural profiling enabled by AI represents a transformative yet contentious approach to shaping consumer decision-making. They potentially undermine the autonomy and rationality central to consumer behaviour. Consumer behaviour is increasingly influenced by AI technologies that blur the lines between informed decision-making and manipulation (Baumeister et al., 2008). The journey from decision initiation to purchase is complex, characterised as the "messy middle," where consumers face ambiguous information and multifaceted influences. In this realm, AI's ability to process, segment, and target consumers with personalised content and recommendations has redefined the marketing landscape. Platforms like Google, Facebook, and Amazon utilise behavioural profiling not only to enhance consumer touchpoints but also to predict and influence purchasing behaviours, creating a dynamic interplay between consumer autonomy and corporate profitability (Rennie & Protheroe, 2020; Clough & Wu, 2020). AI-influenced ads, tailored to demographic, psychographic, and behavioural traits, present messages designed to resonate deeply with specific users. While this strategy can optimise marketing outcomes, it raises ethical concerns by exploiting cognitive biases and nudging consumers toward

predetermined decisions (Botes, 2021). The persuasive nature of AI-driven behavioural profiling often evolves into manipulative tactics. Technologies such as infinite scrolling, autoplay tools, and curated notifications are engineered to maintain user engagement, subtly directing consumer attention and actions. These mechanisms exploit vulnerabilities in decision-making processes, aligning consumer behaviour with corporate objectives rather than individual needs or values. Over time, this persistent engagement fosters a reliance on AI-driven systems, further eroding the consumer's sense of control and autonomy (Lockton, 2012; Susser et al., 2019).

Despite these concerns, AI now predicts consumer preferences using machine learning and predictive models. YouTube and Facebook algorithms only deliver content that aligns with their user behaviour, and Amazon automatically filters their products by analysing their past purchases and preferences. Thus, behaviour profiling offers undeniable benefits to companies. For instance, to tailor decisions according to the consumer's needs. AI uses personalised chatbots and recommendation engines. The chatbot analyses its interaction with the consumer, and the recommendation engine records consumers' watch time and their clicks and then streamlines their products accordingly (Hall, 2019). However, the challenge lies in balancing these advantages with preserving consumer rights and autonomy. The pervasive use of behavioural profiling highlights the evolving dynamics of the

consumer-AI relationship, and controlling this issue requires a concrete strategy to check AI personalisation by ensuring transparency.

DISCUSSION

AI-driven personalisation technologies provide substantial value by enhancing relevance, convenience, and engagement. Predictive analytics and recommendation systems connect consumers with products and content aligned to their preferences, increasing satisfaction and retention. However, these benefits are accompanied by deep ethical and social challenges. The present study finds that personalisation mechanisms, while efficient, frequently exploit cognitive biases and foster behavioural dependency, raising concerns about over-reliance on algorithmic decision-making and a gradual erosion of individual autonomy (Mohsin, 2024; Karami et al., 2024). Emotional targeting and dark patterns; now embedded in many AI systems that blur the line between persuasion and manipulation, distorting consumer intent and diminishing free will. Techniques such as infinite scrolling, autoplay, and fear of missing out (FOMO) extend engagement cycles but foster compulsive behaviour, cognitive fatigue, and “brain rot.” These designs exploit behavioural vulnerabilities to align consumer actions with corporate objectives rather than user interests (Susser et al., 2019; Lockton, 2012). Consequently, AI personalisation must evolve from a model that maximises attention to one that promotes healthy, deliberate, and reflective engagement. Behavioural profiling and microtargeting

further complicate the ethical landscape. While these methods can enhance personal relevance and business efficiency, they also compromise transparency and control. Practices such as scarcity marketing and manipulative messaging erode trust by steering users toward predetermined outcomes (Botes, 2021; Rennie & Protheroe, 2020; Clough & Wu, 2020). The study highlights that sustainable consumer relationships depend not only on algorithmic precision but also on preserving fairness, explainability, and autonomy.

Transparency and accountability are therefore central to responsible AI deployment. Regulations such as India's Digital Personal Data Protection Act (DPDPA, 2023), the General Data Protection Regulation (GDPR), and the California Consumer Privacy Act (CCPA) collectively underscore principles of informed consent, purpose limitation, and data minimisation (Council of Europe, 2020). To strengthen consumer trust, policymakers and corporations should mandate independent algorithmic audits, bias detection mechanisms, and regular publication of transparency reports (Karami et al., 2024). Initiatives like NITI Aayog's National Strategy for Artificial Intelligence (NSAI) further encourage the development of inclusive, interpretable, and participatory AI systems (NITI Aayog, 2018). Protecting consumer autonomy should remain the cornerstone of ethical AI design. Users must retain the ability to opt out of personalised experiences. AI systems must treat individuals as moral subjects rather than

data points to be scored, manipulated, or conditioned (Hilgendorf, 2018). Such human-centric frameworks will ensure that technological innovation progresses in harmony with consumer well-being and societal trust (Bracci, 2023; Wind et al., 2019)

IMPLICATIONS

Practical Implications

- **Transparent Communication:** Organisations must clearly disclose how data are collected, processed, and used. Regular algorithmic transparency reports and user-friendly dashboards can strengthen accountability (Karami et al., 2024).
- **Bias and Fairness Monitoring:** Independent audits and explainability assessments should be institutionalised to identify and mitigate bias across algorithmic pipelines.
- **Autonomy-by-design:** Incorporate mechanisms such as adjustable recommendation settings and opt-out options, as recommended (Buijsman et al., 2025).
- **Consumer Education:** Public-awareness campaigns and educational tools can empower users to understand AI decision-making, fostering informed participation and digital literacy (Hilgendorf, 2018).
- **Cross-Regulatory Alignment:** Collaboration between regulators and technology developers is needed to harmonise data

governance standards globally, ensuring consistent consumer protection.

Managerial Implications

- **Human - Centric AI Governance:** Management teams should adopt frameworks that align with NITI Aayog's NSAI and the European Commission's ethical AI guidelines, ensuring that AI deployment respects autonomy and dignity (European Commission, 2019; NITI Aayog, 2018).
- **Ethical Performance Metrics:** Firms should move beyond engagement-based KPIs to include metrics assessing user satisfaction, trust, and perceived fairness.
- **Accountability Structures:** Senior leadership must take responsibility for ethical compliance, supported by cross-functional ethics boards that monitor AI life cycles.
- **Sustainable Consumer Trust:** Long-term brand credibility depends on transparency and responsible data practices. Firms that proactively disclose AI logic and offer opt-out options will build enduring trust and loyalty.
- **Stakeholder Collaboration:** Open dialogue among developers, consumers, policymakers, and civil-society groups can balance innovation with ethical responsibility, leading to sustainable and socially acceptable AI ecosystems (Bracci, 2023).

Together, these implications advocate a dual focus technical transparency and moral accountability as prerequisites for trustworthy AI personalisation.

LIMITATIONS OF THE STUDY

This study, while extensive in its thematic scope, is limited by its reliance on secondary literature and conceptual analysis. The absence of primary empirical data restricts the measurement of behavioural and psychological outcomes of AI personalisation. Future research should incorporate mixed-method approaches, combining quantitative surveys, experimental designs, and qualitative interviews, to validate theoretical claims about autonomy loss, addiction, and algorithmic trust (*Baumeister et al., 2008; Hall, 2019*). Cross-cultural studies are essential to understand how personalisation affects diverse demographic and socio-cultural groups, particularly vulnerable populations. Longitudinal research should assess the cumulative cognitive and emotional effects of sustained algorithmic exposure (*Rennie & Protheroe, 2020; Clough & Wu, 2020*). Additionally, empirical models of bias detection should leverage representative datasets to ensure fairness and inclusivity (*Botes, 2021*). Future frameworks must integrate user-customisable control settings that allow consumers to limit or disable manipulative features in AI systems. Clear, publicly available privacy policies specifying data type, collection purpose, and storage duration can enhance transparency and user empowerment. Moreover, promoting AI literacy through education will

strengthen consumer decision-making and reinforce autonomy (Bracci, 2023; (Wind et al., 2019. By combining technological innovation with ethical governance, organisations can build AI ecosystems that are transparent, inclusive, and aligned with human values. Such systems will not only enhance operational efficiency but also uphold the principles of fairness, accountability, and trust that are indispensable in a rapidly digitising society.

CONCLUSION

This study examined how AI personalisation influences consumer decision-making and autonomy. While personalisation enhances convenience, it often comes at the cost of manipulation, habitual control, and biased recommendations.

We have scrutinised the results of AI algorithms on the user's decision-making process, which ultimately increases their satisfaction. AI and personalisation contain both advantages and disadvantages. It has multiplied consumer engagement through its specific recommendations and dynamic pricing, which makes the user feel more engaged. AI algorithms can encourage addiction through their manipulative design, exploiting psychological vulnerabilities like fear of missing out (FOMO) or social anxiety. These mechanisms blur the thin boundaries between consumer autonomy and coercion. AI-powered tools use micro-targeting to influence consumer expectations, leading to a loss of control and limiting an individual's ability to take

decisions. (Karami et al., 2024). AI recommendation engines and predictive mechanism leads to the creation of filter bubbles and echo chambers, restricting content diversity for the user. The absence of fairness in the design of AI algorithm mechanisms increases their ability to exploit consumer weaknesses (Boddington, 2023). The study emphasises the impact of AI personalisation on consumer autonomy, as AI systems often exploit vulnerabilities designed to target decision-making weaknesses. The review emphasises the impact of AI personalisation on consumer autonomy, as AI systems often exploit vulnerabilities designed to target decision-making weaknesses. Especially when it comes to the issue concerning the trustworthiness of AI recommendations, there has to be a fair equilibrium between personalised user engagement and protecting their decision-making autonomy. Regulating and mitigating the harm of AI technologies necessitates robust regulatory frameworks that balance innovation with consumer protection, emphasising transparency with the use of explainable AI models. This study highlights the need for a more controlling framework that prioritises the systematic and controlled use of consumer data by AI algorithms by coordinating the diverse visions of stakeholders, enabling continuous checks and balances and fostering a transparent AI culture. Regulatory frameworks like DPDPA (2023), which is based on GDPR, and CCPA must be fully enforced and adapted to new AI applications. Emphasis should be placed on key areas of focus like the

development of explainable AI, comprehensive user education, effective bias mitigation strategies, and the integration of ethical design principles

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AUTHOR DECLARATIONS

Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this paper.

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CHAPTER 4

INNOVATIVE LEADERSHIP IN ENHANCING ORGANIZATIONAL PERFORMANCE MANAGEMENT

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ABSTRACT:

In this age of fastening technological advancements and changing organizational dynamics, innovative leadership is becoming an important factor for performance in organizations, sustainability and adapting nature. This study discusses the influence of innovative leadership in employee engagement, strategic alignment, creativity and technological transformation. Essence of emotional intelligence, transformative leadership and process of data-driven decision making need to be integrated, so it will be able to mitigate uncertainty and organizational change by leaders leading an organization. This research follows an integration of theoretical and empirical methodology which combines secondary literature with primary data collected from executives, managers and management students. Statistical analysis is One-way ANOVA and Pearson's Correlation are empirical validation to theoretical insights. This will highlight a positive relationship between organizational efficiency and performance and innovative leadership. Findings demonstrate that leaders who are fostering creativity, emotional engagement and leverage technology will improve outcomes from individual level and organizational level and promote long-term sustainability, continuous improvement and innovation. This study provides actionable

recommendations for organizations to develop forward-thinking leaders who drive growth, purpose-driven work culture and resilience.

Keywords: Innovative Leadership, Organizational Performance, Transformational Leadership, Employee Engagement, Sustainability

INTRODUCTION:

Innovative Leadership is a type of leadership through which we can manage human resources and projects through innovation and creativity. While Innovative leadership has leaders who prefer innovation in productivity in different ways. During the situation of risk and uncertainty there is a need arises for innovation and at such time companies have the need for leaders who are innovative and creative thinkers. Different approaches can help us to solve various issues, but these different approaches can be a challenge for people who stick to the old traditional methods. Through innovative ideas of team members innovative leaders can foster growth of a business. Innovative leaders adapt to change by fostering creative ideas.

Role of leaders should adapt in an environment of companies which changes quickly, which is highlighted by upcoming developments and paths in innovative leadership. To foster effective outcome from R&D initiatives innovative leaders play an

important role in adaptability, encouraging teamwork and originality. Leaders will position their companies for success in a long-term business environment becoming more competitive and dynamic by adapting future trends which will develop innovation, flexibility and an inclusive culture (Madanchian, M, 2025). Transformative leadership influences innovative activities with particular emphasis on exploration and exploitation while both are being improved significantly by transformative leadership. While practical insights provide ideas to leaders and policy makers on leveraging leadership in promoting innovation and improving corporate performance (Jabbour Al Maalouf, N et al., 2025).

Research Objective:

- To examine the impact of innovative and transformational leadership on organizational performance and employee engagement.
- To explore the role of emotional intelligence, creativity, and innovation in driving sustainable organizational growth.
- To analyze the integration of advanced technologies such as data analytics and artificial intelligence in enhancing human resource and leadership practices.

Statistical Analysis:

One Way Anova:

Table 1

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Designation	Between Groups	.850	2	.425	.841	.441
	Within Groups	14.650	29	.505		
	Total	15.500	31			
Innovative leadership in organization encourages employees to try new ideas to improve work performance.	Between Groups	2.569	2	1.284	6.898	.004
	Within Groups	5.400	29	.186		
	Total	7.969	31			

Majority of respondents agree or strongly agree that implementation and new ideas are encouraged by support of organization while executives endorse it strongly and consistently. While managers give mixed opinions with few neutral responses, which indicates a sporadic gap in practical support and resources. To improve process of follow-through, personalized managers training, remove obstacles and enhance implementation procedures while this neutral response will become agreement.

Pearson's Correlation:

There are mostly responses that are strongly agreed which state that in attempting new things managers are encouraging their team members. While putting innovative ideas and practices leaders support and encouraging. Innovative leadership will increase performance and efficiency, and it was supported by many employees. While there are a small number of neutral responses which state that there are sporadic gaps in putting innovative ideas into practice. Manager mentoring and improving implementation procedures will change unbiased opinions into consensus.

Table 2

Correlation			
		Innovative leadership in organization encourages employees to try new ideas to improve work performance.	Innovative leadership practices, our organization has improved its overall efficiency and performance.
Innovative leadership in organization encourages employees to try new ideas to improve work performance.	Pearson Correlation	1	.450**
	Sig. (2-tailed)		.010
	N	32	32
Innovative leadership practices, our organization has improved its overall efficiency and performance.	Pearson Correlation	.450**	1
	Sig. (2-tailed)	.010	
	N	32	32
**. Correlation is significant at the 0.01 level (2-tailed).			

Charts and Tables:

Question 1: Designation:

Chart 1

1. Designation
32 responses

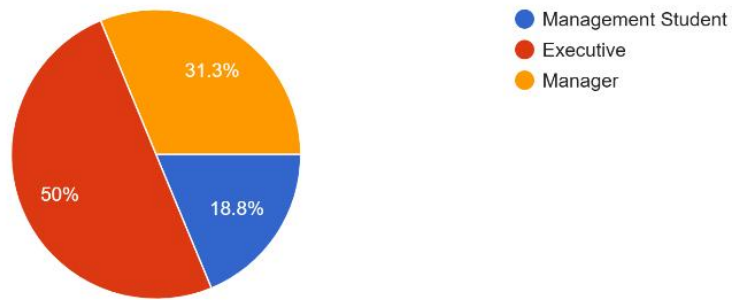


Table 3

Designation	Number of Responses
Management Student	6
Executive	16
Manager	10
Total	32

Question 2: Innovative leadership in organization encourages employees to try new ideas to improve work performance.

Chart 2

2. Innovative leadership in organization encourages employees to try new ideas to improve work performance.
32 responses

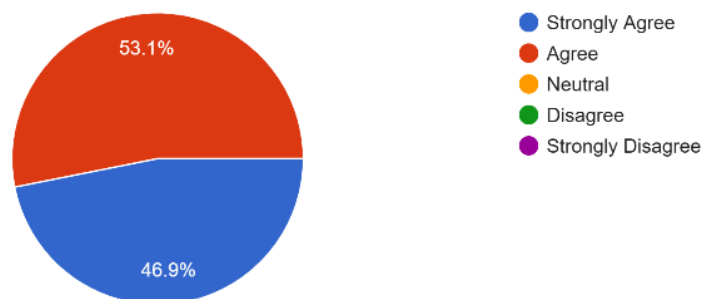


Table 4

Strongly Agree	15
Agree	17
Neutral	0
Disagree	0
Strongly Disagree	0
Total	32

Question 3: Leaders in organization support and motivate teams to implement creative solutions for achieving performance goals.

Chart 3.

3. Leaders in organization support and motivate teams to implement creative solutions for achieving performance goals.

32 responses

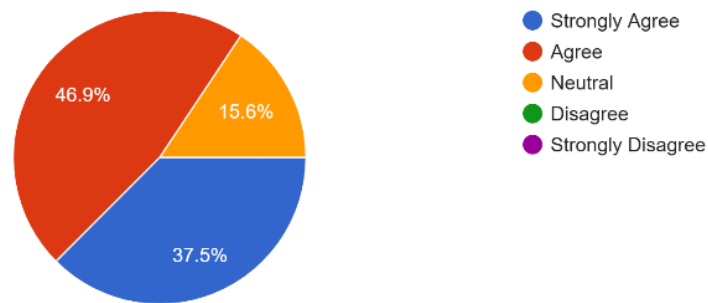


Table .5.

Strongly Agree	12
Agree	15
Neutral	5
Disagree	0
Strongly Disagree	0
Total	32

Question 4: Because of innovative leadership practices, our organization has improved its overall efficiency and performance.

Chart 4

4. Because of innovative leadership practices, our organization has improved its overall efficiency and performance.

32 responses

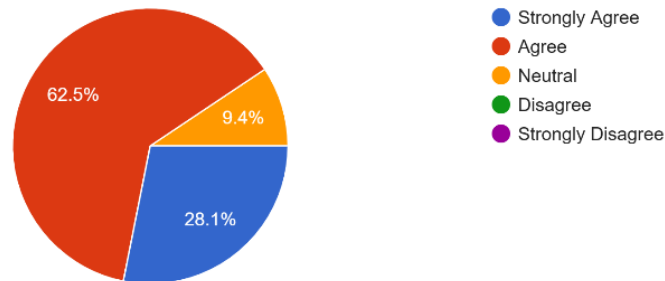


Table 6.

Strongly Agree	9
Agree	20
Neutral	3
Disagree	0
Strongly Disagree	0
Total	32

LITERATURE REVIEW: Transformational Leadership in Organization:

Organizational innovation is influenced by several elements, but one of the most important ones is the leadership style of top managers. Organizational innovation and transformative leadership are strongly and favorably correlated according to research. It also suggests that transformational leadership plays a key role in fostering empowerment and creating an organizational climate that supports innovation (**Dong I Jung et al., 2003**). Transformational leadership enhances organizational performance by leveraging the dynamic capabilities of organizational learning and innovation. While these indirect relationships are crucial for boosting performance, they have not been extensively

studied in previous research. Transformational leadership positively impacts performance through its influence on learning and innovation within the organization. Additionally, organizational learning directly improves performance and indirectly contributes to it through innovation, which itself has a significant positive effect on organizational performance (**Víctor Jesús García-Morales et al., 2012**).

Successful innovation management relies on several factors, highlighting the importance of thoroughly understanding the technological and market dynamics that influence opportunities and constraints for innovation. By integrating insights from organizational behavior and strategic management, a model can be developed to explore the connections between environmental factors, organizational

structures, and performance, providing direction for future innovation research (**Joe Tidd, 2001**). Leadership style has long been recognized as a critical factor influencing a firm's innovation. Both leadership style, as an individual attribute, and organizational learning, as a collective process, contribute positively to fostering innovation within firms. Innovation, in turn, has a significant and positive impact on organizational performance. Notably, organizational learning also enhances performance, primarily by driving innovation (**J. Alberto Aragón-Correa et al., 2007**). Transformational leadership significantly impacts creativity at both individual and organizational levels. On an individual level, hierarchical linear modeling indicates a positive relationship between transformational leadership and employees' creativity, with psychological empowerment serving as a key mechanism. At the organizational level, regression analysis shows that transformational leadership is positively linked to organizational innovation, evaluated using a market-oriented criterion tailored for developing countries and emerging industries. The study also explores the practical implications of these findings and their potential applications (**Lale Gumusluoglu & Arzu Ilsev, 2009**).

Innovative Leadership and Performance Management:

The significance of innovative leadership proves its uniqueness in driving performance of organization by enhancing adaptability and integrating strategic objectives with innovative goals. Emerging trends like entrepreneurial leadership, digital transformation and sustainability states changing expectations and challenges which

are faced by leaders in today's work environment (**Nugroho, H et al., 2025**). Innovative leadership in fields of information and communication technology, change vision and risk management. Developing an innovative environment will have a significant impact in organizational learning and organization's ability in adaptive performance (**Karnsomdee, P., & Nakmanee, P, 2025**). Employee innovation and creativity can be boosted by creative and innovative capabilities through training and development initiatives. Transformational leaders are being cultivated by organizations who empower employees and motivate them in taking risks and pursuing innovation (**Nwankwor, P. P., et al., 2025**).

Innovation capabilities are increased by transformational leadership, but it has some negative impact on innovation performance. While in contrast, knowledge management will influence both performance and innovation capability. A key mediating role is played by innovation capability which strengthens impact of both knowledge management and transformational leadership on innovation performance (**Harsono, T. W et al., 2025**). Merging innovation, participative leadership and organizational culture in an integrated framework will give a new perspective on these elements and their influence in organizational performance. There is important need for inclusive leadership styles and supportive culture, the model highlights its role in employee dedication and promoting innovation which will increase overall performance (**Riza, M. F et al., 2025**).

Innovation, Leadership and Sustainability:

Intrinsic motivation and supportive leadership influence innovative behavior. The mediator between supportive leadership and innovative behavior is career sustainability but it does not be as mediator between innovative behavior and intrinsic motivation (Fauzi, G. N., & Desiana, P. M, 2025). Motivational process and health impairment are aligned by sustainable leadership to enhance environmental performance with change-oriented efforts. It highlights importance of sustainable engagement and performance, motivated workplace, fostering health which supports attaining long-term sustainability goal (Winarno, A et al., 2025). Even though green innovation is adopted by organizations, there is a need in achieving environmental needs. This can be analyzed by interlink between organizational culture and sustainability which is a key driver of green innovation. Thus, findings state that changing organizational culture will help in deeper sustainability efforts. These insightful ideas can support future research which aims at developing impactful and more effective green innovation initiatives. (Demastus, J et al., 2024).

RESEARCH METHODOLOGY:

This study adopts integration of theoretical-empirical research methodology, merging a comprehensive analysis of secondary literature with primary data collection to strengthen the ideas. The theoretical component has been sourced from reputed academic journals, credible online resources and scholarly articles which comprise of domains such as innovative leadership, emotional intelligence, organizational

innovation, transformational leadership and performance management. This literature-based analysis identifies key patterns, research gaps and interconnections which give foundations for conceptual framework that illustrates how organizational performance and foster a culture of innovation by innovative leadership.

In empirical analysis, primary data has been collected from 32 respondents from different groups, which comprise 16 executives, 10 managers, and 6 management students. Sampling method was used here is purposive sampling while selecting participants who have practical experience in leadership roles include executives and managers and academic exposure to concepts of leadership are management students. This method of approach ensures that participants are informed perspectives on innovative leadership, organizational performance and employee engagement while making data should be available for both theoretical and practical analysis.

The data collected has been analyzed using SPSS. Difference in perception of innovative leadership across three participants group was analyzed by applying One-way ANOVA and analyzing relationship between performance outcomes and innovative leadership practices are analyzed by applying Pearson's correlation (two-tailed). Merging statistical analysis with theoretical insights ensures a robust understanding of innovative leadership's impact and combination of qualitative perspectives from literature and quantitative validation from primary data. This methodology will enhance reliability, applicability and comprehensiveness of study,

which will provide actionable insights to practitioners and scholars.

RESEARCH GAP:

The limited theoretical and empirical investigation on innovative leadership and how it merges transformational leadership, technology adaptation (artificial intelligence and data analytics) and emotional intelligence to improve organizational performance in a sustainable way is research gap found in this study. Innovation and leadership styles have been studied in the past, little more is known regarding their interaction to affect employee engagement, long-term competitiveness and flexibility in a company environment which changes rapidly due to digitalization. Providing a view that merges leadership innovation, technology-driven decision making and emotional intelligence, this study fills gaps and offers organizations looking to create innovative, sustainable leadership and resilient frameworks for practical insights.

RESEARCH MODEL:

A conceptual model was developed in this study integrating innovative leadership to organizational performance, merging insights from available literature with empirical findings from current research. Organizational outcomes are influenced by innovative leadership through employee engagement, emotional intelligence and innovation capability, while process is possible by organizational culture and technological integration. Previous research state that creativity and innovation are promoted by transformational leadership (Gumusluoglu & Ilsev, 2009; Dong, Jung, Chow, & Wu, 2003), and that employee engagement enhanced by emotionally intelligent leaders (Fauzi &

Desiana, 2025). The statistical analysis in this study, including ANOVA and Pearson correlation, indicates that employees perceive leaders who encourage new ideas as directly improving efficiency and performance ($r = 0.450$, $p < 0.01$). Some studies analyzed supporting sustainable organizational performance, how innovative leadership, technology adoption and emotional intelligence are interacting in a unified framework. Merging theoretical and empirical analysis, this model states that leaders fostering creativity, leverage technology and providing emotional support can enhance significantly organizational outcomes, by offering a practical and research-based approach for cultivating resilient and forward-thinking workplaces.

DISCUSSIONS AND SUGGESTIONS:

Leadership and Innovation:

Leaders are major role players in driving ideas which are innovative and creative within an organization which will help employees in setting suitable environment and motivate employees to manage between creativity and possible risks. Employees can be motivated with their vision and mission towards their company and are being driven through effective leadership.

Traits of Innovative Leaders:

The traits of innovative leaders seem to be good, then it will help to shape character, mindset and approach towards leadership and help them foster creative ideas in an organization. Leaders who gain trust from employees while motivating them to come from their zone of comfort and put forth their innovative ideas towards business. Thus, authenticity of a leader helps in fostering

communication of creative ideas of employees in a company. Leadership seems to be an important catalyst for innovation, and such leaders help to remove boundaries and stay competitive.

Enhancing Leadership Practices:

The study highlights the critical role of innovative and transformational leadership in driving organizational performance. Leaders who encourage creativity, adaptability, and risk-taking create an environment where employees feel motivated to contribute new ideas. The statistical findings, including Pearson's correlation ($r = 0.450$, $p < 0.01$), support that employees perceive innovative leadership as directly improving efficiency and performance. Organizations can apply these insights by designing leadership development programs that focus on emotional intelligence, visionary thinking, and participative decision-making, equipping leaders to foster engagement and innovation among their teams.

Leveraging Technology and Data Analytics:

Integrating data-driven tools and technology into leadership and HR practices is essential for enhancing organizational efficiency. The study indicates that employees respond positively to leaders who use structured processes and analytics to guide performance management and innovation initiatives. Practical applications include adopting AI-enabled recruitment, performance tracking, and employee engagement platforms, allowing leaders to make informed decisions, identify trends, and align workforce efforts with strategic goals. By combining human judgment with technology, organizations can ensure transparency, fairness, and

responsiveness, strengthening both employee satisfaction and productivity.

Promoting Sustainable and Purpose-Driven Leadership:

The research underscores the importance of sustainability-oriented leadership in shaping long-term organizational success. Leaders who align business objectives with environmental, social, and ethical considerations can enhance employee commitment, retention, and organizational resilience. Practical strategies include setting measurable sustainability goals, encouraging cross-functional collaboration, and recognizing employees who contribute innovative and sustainable solutions. By integrating sustainability into organizational culture, leaders can create a work environment that not only drives performance but also nurtures social responsibility, innovation, and a purpose-driven workforce.

Innovation in Human Resource Management:

Technology has played a major role in the work culture of the current digital world and monitoring of data and projects are automated which are user-friendly to employees. Innovation plays a vital role in reshaping the modern business environment and driving transformation within the Human Resource landscape. While innovation will give a transformative state of human resources from traditional processes, it gives a change in organizational efficiency and culture. Implementing new technologies using Artificial Intelligence businesses can do Human resource process more easily like employee engagement, recruitment and attracting top talents to their company. Agile Human Resource strategies can be created

which are kickstarted by innovation which matches with the workforce of a company and business goals. Such innovation will also give new user experience for employees while they can get development programs, performance management by data-driven techniques and work arrangements with flexibility enhancing work life balance. Thus, innovation in human resources helps the business to employee retention which helps company in long-term success and gives a competitive advantage in a large scale of business landscape.

Role of Data Analytics in Performance Management:

Data Analytics has an important place in employee performance management and helps organizations to enhance work-productivity by assessing it. Businesses can derive more informed decisions with this data which is collected. Accessing data will increase employee satisfaction and employee engagement and transparency among employees. Many valuable insights are being collected from employee data. Employee engagement statistics, tools used for survey and performance metrics will help to frame strategies to foster employee morale and operational efficiency.

Trends and patterns are identified by data analytics, and this will help organization for employee engagement. Employee sentiments and engagements are tracked using advanced data analytics. As these trends and patterns will help businesses to form strategic initiatives, Usage of analytics will help businesses to dynamics of workforce, areas of improvement which will give company a motivated and engaged workforce. We can make improvements continuously and make employees feel that they are valued. While

data which is collected and converted to actionable insights will foster productivity, motivation to workforce and organizational success.

Transformational Leadership and Innovation in Employee Performance:

Motivating and encouraging employees to make changes and innovate ideas are fostered by transformative leadership. Transformational leaders can make trends shifting and technological innovation and adopt these changes in business. Behavior that is expected from employees by transformational leaders by making themselves as example and it has been followed by employees for high standard performance by making transformational leaders as role models.

By encouraging employees, a change can be made in a company to innovate, problem-solving, critical thinking and creative thinking and this will be a state of status quo in a company. Transformational leaders need to motivate and encourage employees to innovate and create ideas in an organization. Welcome growth and pave way for digital transformation will be made by them in their organization. Feel attached to mission and vision of company, transformational leaders should motivate employees and if employees can make it happen if they feel they are being valued by the company. Transformational leaders should understand their employees because every employee is unique, tailor-made mentoring and training programs and counselling while this will create an innovation in organization.

Emotional Intelligence and Leadership in Employee Engagement:

Emotions are recognized, influenced, understand and managed by emotional intelligence. Conflicts are resolved effectively if an employee has emotional intelligence, able to deal and stay cool with other employees in an empathetic manner. If emotional intelligence lacks, there will arise of workplace conflicts. Relations between employees are being managed by relationship management and conflicts between employees will waste company's time. Employee satisfaction is made by good treatment which will make them happy.

High employee turnover and less employee engagement are because of emotional intelligence is less. Employees who are good at technical skills need good communication with their team members if it is not then it will create conflicts among them. Emotional intelligence manages inter-personal relationships, and this is necessary for empathy, effective collaboration and team dynamics. Advancement of career of an employee and organization is made by emotional intelligence.

Driving professionally with an employee for leaders is supported by emotional intelligence. Effective leadership requires strong emotional intelligence to successfully connect and guide employees. High employee engagement is possible by increasing emotional intelligence quotient. If a leader helps an employee to do their work, it will increase trust of leader among employees. Empathy is a tool for performance indicators. To increase employee engagement and productivity in an organization, is possible by understanding employees and giving benefits to their performance.

Sustainable Innovative Leadership in Increasing Organizational Productivity:

Sustainable innovative leadership will foster innovation and creativity by changing scenario of environment, economy and social. It will make changes in decision-making and problem-solving skills for long-term sustainability for organization in future. Innovative leaders should think of sustainability as efficiency and resilient in organization's growth instead of thinking it was obstacle. Employees are seeking to work in a organization which is purpose-driven to their future and their personal values and purpose must be aligned. Sustainable innovative leadership will attract top-talent to their company by creating a positive work-culture and this will help in employee retention and companies foster innovation and productivity.

Aligning with organization's vision and mission, effective sustainable innovative leadership should set goals. Leaders should unite all departments of a company and achieve sustainability while it cannot be done by one department. Employees from cross-functional teams can make organizations have multiple ideas. Transparency and measurability should be initiative and sustainability, and all stakeholders must be informed regarding these by leaders. Transparency, accountability and trust are integral parts of sustainable innovative leadership.

Experimentation and learning are being encouraged by innovative leaders and it's their role. While innovations are undergone in an organization there are certain risks involved in it so leaders should provide a safe and secure environment for employees to foster

sustainable solutions. If performance management and sustainability are linked, incentives will be given to employees, which will motivate them, increase employee retention and increase productivity. Training programs should be conducted by leaders to employees to make them aware of sustainability.

RESULTS:

This study involves data collected from 32 respondents from different organizational levels to analyze impact of innovative leadership in organizational performance. To find difference in perception among executives, managers, and management students One-way ANOVA is applied. Results state that innovative leadership fosters new ideas for improving work performance ($F = 6.898$, $p = 0.004$), while executives strongly agree. Managers' responses are mixed because there are occasional gaps in practical support and resources which are needed for implementing innovative practices.

Relationship between innovative leadership practices and overall organizational efficiency and performance are analyzed by Pearson's correlation (two-tailed). Through analysis it states that moderate positive correlation ($r = 0.450$, $p = 0.01$), which suggests that innovative leadership is contributing to improved efficiency and productivity which employees perceive. Leaders are providing encouragement and support for new ideas which are agreed or strongly agreed by most respondents, while some neutral responses indicate that additional guidance or resources needed to enhance implementation.

Individual and organizational performance is positively influenced by innovative leadership

which is stated by results. Leaders foster creativity, support employee engagement and encourage experimentation and contribute to a more efficient, innovative and adaptable workplace. This finding gives empirical support to theoretical framework and states importance of merging leadership innovation, technology-driven decision making, and emotional intelligence into organizational practices.

IMPLICATIONS:

Managerial Implications:

The findings will provide managers and organizational leaders with an actionable insight. Managers can foster a culture of creativity, adaptability and engagement by adopting innovative and transformational leadership practices. The statistical results from ANOVA and Pearson's correlation, leaders who encourage new ideas which increase overall efficiency and performance are perceived by employees. While tailoring leadership development programs managers can apply these insights enhance emotional intelligence, participative approaches, and decision-making skills. Managers can make informed, timely, and transparent decisions by leveraging data analytics and artificial intelligence in human resource processes like performance management, employee engagement, and talent development.

Theoretical Implications:

This theoretical implication states that innovative leadership interaction process with transformational leadership, technology integration, and emotional intelligence which influences organizational performance. While these factors are individually examined in

previous research, the integrated conceptual model provides a comprehensive framework which merges leadership practices, innovation capability, organizational outcomes, and employee engagement. Integrated effects of leadership innovation, technology-driven decision making, and emotional intelligence for sustainable performance are provided by framework which fills research gaps. It offers scholars a foundation for cross-industry research and for future empirical studies and in dynamic organizational contexts it expands understanding of sustainable innovative leadership.

CONCLUSION:

This study findings that important role of innovative leadership in improving organizational performance, sustainability and employee engagement. Leaders can foster creativity, purpose-driven culture, and adaptability in organizations by integrating insights from transformational leadership, technology adoption, and emotional intelligence which demonstrated by this research. Statistical analysis including One-way ANOVA and Pearson correlation which supports theoretical framework which states that employees perceive improving efficiency, overall performance, and engagement are by innovative leadership.

Conceptual model in this study connects a major research gap by interpreting integrated influence of leadership innovation, technology integration, and emotional intelligence on organizational outcomes. While in practical organizations can uses these insights during making of leadership development programs, cultivate sustainable work culture, and implement data-driven

human resources which will enhance employee satisfaction, long-term competitiveness, and retention.

Overall studies highlight that driving organizational growth, future-readiness, and resilience, sustainable innovative leadership is both theoretical construct which will applied to practical strategy. Leaders can ensure that employees and organizations will rapidly evolve into business environment by fostering creativity, aligning organizational goals, and technological tools with environmental and social responsibility.

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CONFLICT OF

INTEREST STATEMENT:

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CHAPTER 5

LEVERAGING SMART TECHNOLOGIES IN TOURISM SUPPLY CHAIN – THE CASE OF DUBAI

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ABSTRACT

This study explores the transformative impact of smart technologies on the tourism sector, focusing on their integration across the tourism value chain. The proliferation of digital solutions, including artificial intelligence, web platforms, blockchain, augmented and virtual reality, and mobile applications, has reshaped both the structure of the tourism industry and tourist experiences. The literature emphasizes that the real value of “smart” tourism lies not in isolated technological innovation but in the integration and synchronized application of diverse technologies, enabling seamless connectivity between stakeholders and delivering enhanced value to tourists. The significance of smart tourism became especially evident during the COVID-19 pandemic, when global tourism experienced unprecedented declines in arrivals, revenues, and employment. In response, many destinations fast-tracked their digital transformation, incorporating smart solutions such as contactless check-ins, AI-driven assistance, mobile payments, and health safety management systems. Despite these advances, research and practice remain fragmented, with technological adoption typically limited to specific stages or functions within tourism, rather than being viewed holistically. This study addresses these gaps by proposing and empirically validating an integrated SMART Tourism Framework, structured to cover the entire tourist journey, covering pre-trip, during-trip, and post-trip stages. The framework is grounded in a set of key attributes: accessibility, informativeness, interactivity, personalization, and safety/security. These attributes underpin the ability of smart tourism initiatives to provide

rich, seamless, and secure experiences for travelers. To assess the framework’s real-world applicability, the research adopts a case study approach focusing on Dubai, a global leader in tourism innovation and digital transformation. Dubai’s swift post-pandemic recovery and tourism growth can be attributed to its extensive adoption of technologies such as smart gates, AI-driven chatbots, cashless payment systems, blockchain, and immersive digital content, making it an exemplary case study. Secondary qualitative and quantitative data were collected from government statistics, international indices, practitioner reports, and academic literature. Findings reveal that Dubai has successfully integrated smart technologies to enhance traveler satisfaction, safety, and operational efficiency throughout the value chain. The city’s approach demonstrates coordinated action between public and private sectors, fostering a robust environment for innovation in areas such as digital visitor services, transport, payment, and on-site experiences. However, analysis also identified gaps, most notably in the dreaming and sharing stages, where there is a lack of user-centric platforms for personalized experience and insufficient mechanisms for incentivizing post-trip content sharing. Addressing these gaps with AI- and blockchain-enabled applications could further strengthen Dubai’s smart tourism ecosystem. This study contributes to both research and practice by presenting a practical, adaptable framework for evaluating and guiding smart tourism strategies. While the focus is on Dubai, the framework and insights generated have broad relevance for destinations seeking to enhance competitiveness and resilience in an increasingly digital tourism landscape.

Keywords: Smart Tourism, tourism supply chain, framework, Dubai, United Arab Emirates

INTRODUCTION

Advancements in Information and Communication Technologies (ICT) have significantly changed how tourism products and services are delivered, reshaping both industry structure and destination perceptions (Huang et al., 2016). The real smartness in tourism arises not from isolated innovations, but from the integrated and synchronized use of multiple technologies (Höjer & Wangel, 2015). Smart tourism reflects this increasing dependence on technology by connecting stakeholders and value chain elements to create new business value and enhanced experiences (Gretzel et al., 2015; Garbani-Nerini et al., 2022). Governments globally have heavily invested in infrastructure to support smart tourism (Gretzel et al., 2015). Innovations range from digital bookings and AI solutions for providers to virtual and augmented reality experiences and the metaverse (Statista, 2022a; Stienmetz et al., 2022). The significance of smart tourism grew during COVID-19, which devastated the sector, with tourism declining around 71% in 2020 and 69% in 2021 versus 2019, resulting in about 1 billion fewer international tourists, US\$1 trillion lost revenue, and 100-120 million job losses (UNWTO, 2020). Mental health impacts such as fear and anxiety further impact travel intentions (Zheng et al., 2020), highlighting the urgency to restore traveler confidence.

To recover, many tourism-reliant countries have adopted diverse measures post-COVID-19 (OECD, 2020). Smart technologies are

central to this recovery, improving operations and addressing tourist concerns, especially in hygiene and safety (Tourism Review, 2020). The pandemic also hastened technology adoption, with self-service check-in, mobile keys, and digital payments widely implemented (Statista, 2022b). However, research on technology adoption in tourism remains fragmented and limited to specific technologies or experiences (Balasubramanian et al., 2022; Buhalis & Karatay, 2022; Ling & Sorokina, 2022; Egger et al., 2022). Examining technology's role across the full tourism value chain is needed to integrate its fragmented components (Balasubramanian et al., 2022a). Practitioners often lack understanding of the full potential of smart technologies, limiting wider adoption.

This study aims to address these gaps by exploring technology applications for a seamless, interconnected tourism experience across the value chain: pre-travel, travel, and post-travel. The objectives are to:

- Propose an integrated smart tourism framework covering pre-, during, and post-trip stages.
- Apply the framework in a real-case setting to highlight key smart tourism technologies at each stage.
- Identify improvement gaps in the smart tourism value chain.

This research addresses a major gap in examining smart technology application across the tourism chain and its role in sector recovery during and after COVID-19. Findings are intended to guide practitioners and policymakers in maximizing smart technology benefits. Given tourism's heavy

pandemic impact, the proposed framework and results provide timely policy and operational guidance.

The paper is structured as follows: Section 2 presents the proposed smart tourism framework; Section 3 details the case study methodology; Section 4 presents findings; and Sections 5 and 6 cover the discussion, conclusions, and implications for research and practice.

LITERATURE REVIEW

The 'SMART' concept emphasizes integrated systems and processes that address user needs (Khan et al., 2017). In tourism, this means technological transformation that connects the physical and digital worlds, supporting value creation, innovation, and competitiveness (Lee et al., 2020; Garbani-Nerini et al., 2022). The core relies on advanced ICT to improve tourist experiences (Boes et al., 2016), enhance accessibility (Garbani-Nerini et al., 2022), and enable added value such as

personalized experiences (Neuhofer et al., 2015; Jeong & Shin, 2020). Key smart technologies include web technologies, VR, AR, Metaverse, robotics, RFID, sensors, smart cameras, mobile apps, integrated payment, smart cards, and social networks (Gretzel et al., 2015; Huang et al., 2017; Jeong & Shin, 2020; Stienmetz et al., 2022). Despite increasing studies on smart technologies enriching tourist experiences, research on integrating these across all travel stages remains limited. Figure 1 summarizes the study's four-step approach to creating a connected smart tourism experience.

Adopting Google's five travel stages as shown in Figure 2: dreaming, planning, booking, experiencing, and sharing as a foundation (Robertson, 2015), the framework covers: inspiration through online content, planning with guides, booking travel and activities, on-site experiences, and post-trip sharing via social media (Advance360, 2016; Google, 2020).

Figure 1: Four-step approach for a connected smart tourism experience (Source: Authors)

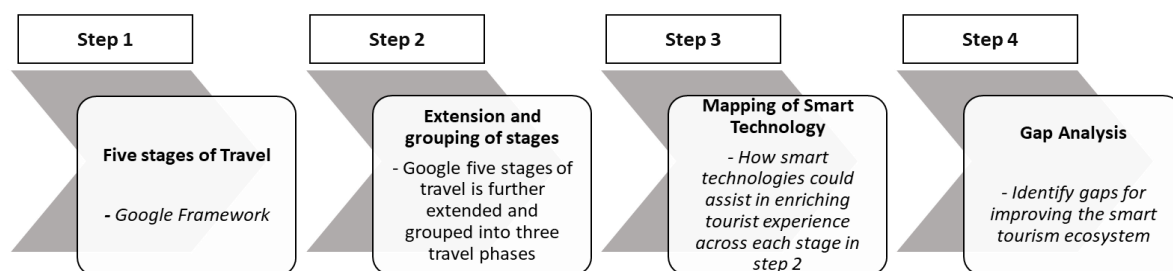


Figure 2: Google's five stages of travel (Source: Google, 2020)

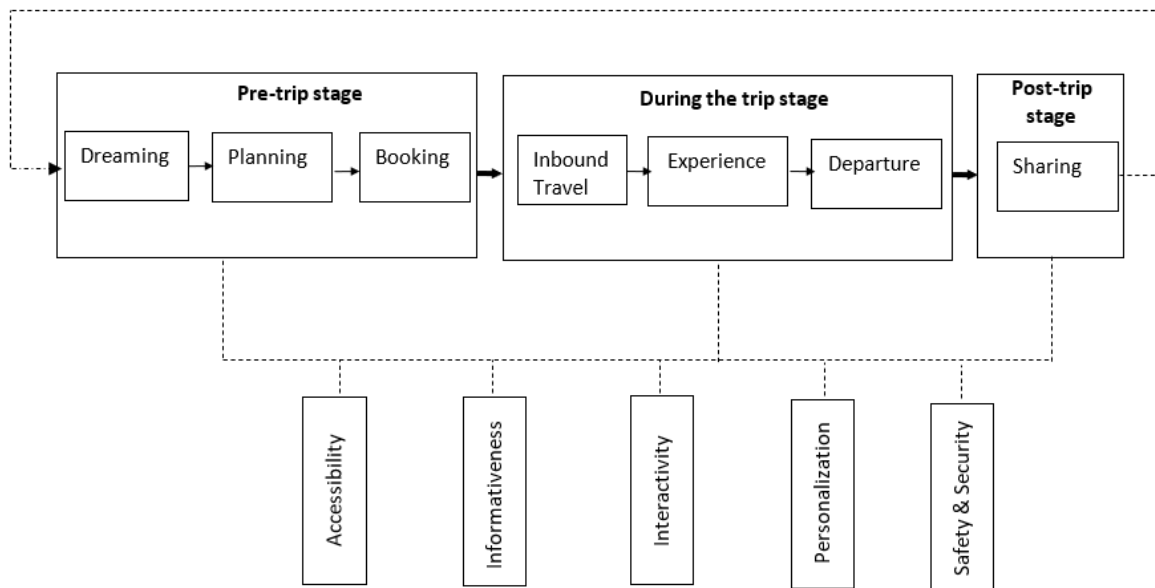


For manageability, these five stages are grouped into three main phases: pre-trip, during the trip, and post-trip, following prior literature (Buhalis & Amaranggana, 2015; Lee et al., 2020). Pre-trip involves destination, transport, and accommodation choices; during the trip covers activities and dining; post-trip concerns sharing satisfaction, often via reviews that influence future travelers (Balasubramanian et al., 2022; Lee et al., 2020).

The framework also identifies key smart tourism attributes: accessibility, informativeness, interactivity, personalization, and safety/security (Khan et al., 2017; Jeong & Shin, 2020; Woyo & Ukpabi, 2022). Accessibility encompasses

both physical and digital access, such as navigation tools and online services (Khomsi et al., 2022). Informativeness relates to perceived knowledge about offerings (Parapanos & Michopoulou, 2022). Interactivity involves real-time, reciprocal communication between stakeholders and tourists, with technologies like VR enabling deeper engagement (Stienmetz et al., 2022). Personalization refers to tailored solutions based on user needs and demographics (Stienmetz et al., 2022; Garbani-Nerini et al., 2022). Finally, safety and security ensure a secure environment for all (Khan et al., 2017). These attributes are essential for improving tourist satisfaction and overall experience. Figure 3 shows the proposed framework SMART Tourism Framework

Figure 3. Proposed SMART Tourism Framework (Source: Authors)



RESEARCH METHODOLOGY

To assess the framework's applicability, a case study approach was selected for its effectiveness in examining real-world, contemporary issues (Yin, 2009). While the framework could be tested anywhere, Dubai, UAE, was chosen due to its strong push towards tourism and smart technologies. Dubai's tourism sector has been instrumental in its transformation into a modern economy, and it is among the first global destinations to rebound to pre-pandemic tourism levels, with 14.36 million international overnight visitors in 2022, an increase of 97% from 2021 (Dubai Tourism, 2023).

This recovery is attributed to initiatives like Smart Dubai, which employ blockchain, AI, and IoT to gain a competitive edge in sectors including tourism. Dubai exemplifies how leveraging smart technologies can reestablish and advance a city as a global tourism leader, particularly during and after COVID-19. Its status as the region's most advanced economy and a top tourism destination positions it at the forefront of Industry 4.0 innovation.

The study followed a single case embedded design, examining multiple units within Dubai's tourism sector (Yin, 2009). A pragmatic, secondary research methodology was used to gain comprehensive insights into the framework, justified by the need for practical, real-world solutions (Balasubramanian et al., 2021). Secondary qualitative data included reports from intergovernmental organizations (such as UNWTO, World Bank), global ranking indices, non-profit/industry/consulting firm reports, academic and practitioner articles, as well as policy documents and official

government sources from the UAE and Dubai. Quantitative data were sourced from Dubai Tourism, Dubai Statistics Centre, World Bank, Statista, and related reports focused on global rankings in tourism and technology. These qualitative and quantitative findings were integrated to critically analyze the elements of the smart tourism framework.

DATA ANALYSIS AND DISCUSSIONS

This section presents a summary of key findings based on Dubai's tourism sector, structured around the smart tourism framework. First, the foundational significance of tourism for Dubai's economy and the sector's resilience during the COVID-19 pandemic are discussed before exploring the adoption of smart technologies across different travel stages.

SIGNIFICANCE OF TOURISM FOR DUBAI'S ECONOMY

Tourism has played a pivotal role in Dubai's diversification strategy, transitioning the emirate from an oil-dependent economy to a global hub for travel and leisure. The Smart Dubai Plan incorporates smart tourism as an integral component, aspiring to build a connected urban ecosystem that enhances visitor experiences through the synergy of people, infrastructure, processes, and technological resources (Buhalis & Amaranggana, 2013; Woyo & Ukpabi, 2022). Reflecting these efforts, Dubai ranked 29th among 118 smart cities worldwide (Smart City Index 2019, 2019). Its adoption of integrated smart systems has contributed to a notable improvement in tourist satisfaction and quality of life (Khan et al., 2017). International rankings consistently highlight Dubai's

prominence, including its fourth-place position among global tourism destinations and its status as the most popular destination in the Tripadvisor Travellers' Choice Awards 2023 for the second consecutive year (DSC, 2025; Global Destination Cities Index, 2019; Dubai Media Office, 2023).

Despite growing global competition, Dubai has remained highly competitive over the last decade. Although the city's 2020 target of 20 million annual visitors was disrupted by the COVID-19 pandemic, the sector demonstrated a robust U-shaped recovery in 2021 and 2022, and the city now aims to attract 31 million annual visitors by 2025 (The First Group, 2023; Zawya, 2022). The economic importance of tourism is further underscored by its 11.5% contribution to Dubai's GDP in 2019, alongside total visitor spending of \$32.1 billion, positioning the emirate as a global leader in travel experiences (Global Destination Cities Index, 2019).

COVID-19 Impact and Dubai's Response

Dubai's response to the pandemic was characterized by the rapid deployment of health protocols, enhanced hospital capacity, and widespread COVID-19 testing, leading the UAE to rank highest in global pandemic resilience indices (Arabian Business, 2022). Advanced and technology-driven measures such as digital payments, touchless service delivery, digital vaccination certification, and crowd management technologies were quickly implemented across all touchpoints in the tourism ecosystem, from airports and transport to hospitals and malls (Balasubramanian et al., 2022a). Dubai was among the first cities in the world to reopen for tourism in July 2020 and has since been at the leading edge of global

tourism recovery (CNBC, 2020; Dubai Tourism, 2021). High vaccination rates, extensive testing, and low COVID-19 mortality cemented the UAE's global reputation as a safe travel destination (WTTC, 2020).

Application of Smart Technologies Across Travel Stages

The findings from Dubai demonstrate extensive adoption of smart technologies throughout the tourism value chain, in alignment with the attributes of accessibility, informativeness, interactivity, personalization, and safety/security. In the pre-trip dreaming stage, Dubai leverages virtual and immersive platforms such as VR and Dubai360 to provide prospective visitors with inspiring and interactive digital experiences of the city (Dubai360, 2025; Dubai Tourism, 2020). The adoption and promotion of the Metaverse is a strategic priority, with initiatives to position Dubai as a hub for the global metaverse community and to offer immersive previews of destinations in the planning phases (UAE, 2023; Verkerk, 2022; Dubai Future Foundation, 2022). Additionally, digital training platforms like 'Dubai Expert' empower travel agents worldwide using video-based, gamified learning experiences that enhance destination knowledge and sales effectiveness (Dubai Tourism, 2019a; Dubai Model Centre, 2019). Strategic partnerships, such as with Alibaba's Fliggy platform, further expand Dubai's presence in key source markets (Hotelier Middleeast, 2018).

During pre-trip planning and booking, Dubai streamlines and digitizes nearly every aspect of entry and reservation. The UAE's online

visa services, mobile applications, and, most recently, video-based visa processing exemplify this seamless digital journey (Khaleej Times, 2015; Time Out Dubai, 2023a, 2023b, 2023c). Strategic integration with airlines and travel agents allows tourists to complete visas while booking flights or accommodations, while the 'Visit Dubai' portal consolidates personalized trip planning, visa information, and interactive itineraries (VFS Global, 2020). Artificial intelligence supports travelers through Rashid, a multilingual chatbot that provides real-time assistance on a variety of platforms (Digital Dubai Authority, 2025). On arrival, services like Marhaba and app-based transport booking further improve the experience and reduce wait times (Marhaba, 2025; Khaleej Times, 2019).

Inbound travel has been transformed by the implementation of more than 110 smart gates at airports, using AI-driven facial recognition for rapid, touchless immigration clearance (Gulf News, 2023; Time Out Dubai, 2023; Dubai Airports, 2025). Pilot programs such as the Biometric Passenger Journey and SMART tunnels further illustrate Dubai's efforts to eliminate physical document requirements in travel processes (The National News, 2019; The National News, 2018). Baggage management benefits from RFID-enabled systems and passengers can now claim VAT refunds digitally and in real time, with additional features tailored to key markets such as Chinese travelers (Mkeulen, 2017; UAE, 2020; Arabian Business, 2019; The National News, 2022).

Within Dubai, the push toward a cashless economy manifests in digital and contactless

payments, cryptocurrency acceptance, and NFC-enabled unified transit cards, facilitating effortless movement for tourists (Gulf Business, 2022; The National News, 2021; NFCW, 2019). Comprehensive transport apps, such as RTA Dubai Drive, S'hail, and Wojhati, help tourists navigate the city, while "Tech Taxi" innovations increase accessibility through features like translation, ride tracking, and in-cab Wi-Fi (RTA, 2019; RTA, 2025). Artificial intelligence tools further enhance safety by monitoring compliance with COVID-19 protocols in public transit (RTA, 2020).

Dubai's adoption of emerging mobility technologies, including flying taxis, hyperloop, and autonomous vehicles, underscores its leadership in smart transport innovation (Gulfnews, 2018; SkyNews, 2023; Al-monitor, 2022). The hotel sector is similarly advanced, with digital and contactless check-ins, smart room access, AI-driven concierge services, and the integration of in-room technologies for personalized guest experiences (Visit Dubai, 2019; Hotelier Middleeast, 2017; Hotel News ME, 2018). Drone technology is rapidly popularizing, with regulations supporting safe drone usage for photography and events, further enriching the tourist experience (Hotelier Middleeast, 2017; Ilkhanizadeh et al., 2020; Gulfnews, 2019; CNN, 2023). Hotels and attractions provide virtual reality experiences and robotic services, while blockchain is increasingly utilized for secure digital identity, payments, smart contracts, and loyalty programs (Önder & Treiblmaier, 2019; Valeri & Baggio, 2021; Balasubramanian et al., 2022a; 2022b; Dubai 10X, 2018). Blockchain-powered platforms also allow tourists to interact directly with

service providers, increasing trust and privacy while reducing intermediaries.

Destination experience is further enhanced through the deployment of digital tools like QR codes for self-guided tours, AI-powered virtual assistants, and multilingual audio guides (ITP Live, 2018). Health safety is maintained using smart apps such as ALHOSN UAE, which facilitates health status tracking and serves as a digital travel pass (National Emergency Crisis and Disasters Management Authority, 2022). In the post-trip stage, although the application of smart technologies is less widespread, Dubai maintains a robust digital footprint on social media and travel review platforms.

Blockchain-based review and loyalty systems are being developed to ensure authenticity of user-generated content, addressing the global issue of fake reviews and enhancing trust for future travelers (Balasubramanian et al., 2022a; 2022b). Hotels and airlines are now adopting blockchain for transparent and secure loyalty programs, enabling guests to earn and redeem benefits easily.

Gap Analysis on the Connected Dubai Smart Tourism Ecosystem

This section discusses the various gaps identified in the smart tourism ecosystem across the different travel stages. Table 1 summarizes the various gaps identified.

Table 1: Gaps Identified for the Connected Dubai Smart Tourism Ecosystem

Stage	Relevant Tasks	Identified Gaps
Dreaming	Link to blogs and personal travel stories (no reviews)	
	Gap 1: Social Media content available but not customized to Dubai. <i>Proposed Technologies: Social Media Analytics, Big Data Analytics and AI</i>	
Planning	Connecting with real travelers for sharing experiences	
	Gap 3: While chatbots and meeting apps could connect with travelers, however, there is no database of trusted travelers who tourists could connect. <i>Proposed Technologies: Cloud-based Database in secure blockchain platform</i>	
Planning	Gap 4: Trusted reviews for selected tourist spots Proposed technologies: A blockchain enabled review platform will enhance tourist trust because of the transparency and immutability feature of the blockchain	
	Optimizing itinerary to include more destinations and recommender systems based on traveler's interests. Gap 5: No current application for customized recommendations based on profile.	

	<i>Proposed Technologies: A smart AI-based system for hyper personalization based on interests and preference</i>
Booking (Pre -Travel)	Booking tours and trips in Dubai Gap 6: While several individual apps exist, there is no one platform listing of all tour operators and their prices with booking links. <i>Proposed Technologies: Cloud-based unified platform in secure blockchain platform</i>
Experiencing (Onsite)	No gaps identified. Mostly covered.
Sharing (Post-travel)	Recommend personal preferences. Gap 7: No unique platforms for nominations and recommendations in a close network of the traveler. <i>Proposed Technologies: AI-enabled blockchain platform for nominations and recommendations</i>
	Incentives for sharing Gap 8: No incentives for sharing back in terms of travel points. <i>Proposed Technologies: Blockchain-based incentive system for sharing reviews.</i>

Looking at the gaps identified for each stage in Table 1, it is clear that Dubai Tourism is strong in the planning and experience stages. The weakest links, on the other hand, are the Dreaming and Sharing stages, which are interconnected. Although several platforms exist to cater to the Dreaming stage, there is a lack of a customized platform that can pull data from Pinterest, Facebook, Twitter, blogs, and other sources using location filters. If a traveler is interested in specific destinations, there is currently no single platform or app capable of connecting to the Application Programming Interfaces (APIs) of popular apps and websites to extract customized inspirational content for the traveler. Furthermore, no platform provides a trusted database of travelers who are open to giving advice and sharing their experiences with potential travelers using technology platforms.

Dubai could follow the example of Venice, one of the most popular destinations in Europe, which has introduced an application named "VeneziaUnica" to help tourists directly interact with the destination supply system, encouraging active participation and facilitating experience sharing (Lee et al., 2020). The planning stage involves several tasks that are currently being served by existing applications; however, no platform or app provides customized planning recommendations for potential tourists based on their profile, using Artificial Intelligence and Machine Learning. The final gap analysis pertains to the Sharing stage, where a proposed app could offer an incentive-based scheme for people to share their experiences, which could, in turn, inspire others (the first stage). Addressing these gaps could further enhance Dubai's connected smart tourism

ecosystem, thereby improving efficiency and travel experience for all its tourists.

Lessons Learned

This research demonstrates that smart technologies have enormous potential to transform the tourism sector. From the dreaming/planning phase to booking, travel, stay, experiencing, departure, and post-travel reviews, smart technologies can be used to promote tourism and enrich tourist experiences. The study also shows that these smart technologies have supported Dubai in reopening its tourism sector after the COVID-19 pandemic and returning to normalcy thereafter. The findings also indicate the coordinated effort required by various public sector entities, such as the Roads and Transport Authority and the police, along with private sector entities, to provide an enriching experience for tourists. The study further highlights the importance of smart city infrastructure, smart governance, Industry 4.0 technologies, and web-based and mobile-based smart applications in providing a connected tourism experience. It was also evident from this study that the five key attributes of smart technologies, namely accessibility, informativeness, interactivity, personalization, and safety and security, are critical for the smart tourism ecosystem. As indicated by the case study, in the case of Dubai, most of the smart technologies are accessible 24/7. Previous studies have shown that high levels of accessibility can contribute to perceived ease of use, enhance tourists' travel experience, and increase satisfaction with the destination (Huang et al., 2017; Jeong & Shin, 2020). Furthermore, information quality and credibility are critical factors that can affect tourists' overall experience at the

destination. Transparent and reliable information, including reviews, can affect tourists' perceptions of the destination as well as their overall experience (Jeong & Shin, 2020). For example, Dubai was able to leverage augmented reality or virtual reality to enhance the depth and scope of information for tourists. The interactivity of smart technologies facilitates bilateral interactions between stakeholders, such as tour operators and governments. Evidence from the literature shows that the interactivity of smart technologies leads to more positive perceptions of a tourist destination (Jeong and Shin, 2020). It was also evident that smart technologies can facilitate the personalization of services, an important element to satisfy tourists' needs and maximize their travel experience, as well as their satisfaction with smart tourism destinations (No & Kim, 2015; Jeong & Shin, 2020). Hyper personalization using consumer insights from data analytics to tailor tourist experiences is central to the Dubai Futurism Programme, a six-week, zero-equity accelerator launched by Dubai Tourism to elevate startups and effect real change in the travel and tourism industry (Dubai Tourism, 2019b). Finally, smart security-enabled safety and security at the destination are critical for imparting tourist confidence, especially during and after COVID-19, when tourists have a fear of getting infected and infecting others. Minimizing touchpoints and providing real-time COVID-19 information for tourists can reduce their risk perceptions.

The achievements of Dubai in smart tourism are not surprising, given that the UAE is one of the first countries to develop a Fourth Industrial Revolution Strategy at the national level (UAE Industry 4.0). This aims to

strengthen the UAE's position as a global hub for Industry 4.0 technologies and increase its contribution to the national economy by advancing innovation and future technologies (Ministry of Industry and Advanced Technology, 2022).

The UAE has achieved tremendous progress in telecommunications infrastructure in recent years. According to the United Nations e-Governance survey rankings, the UAE was ranked 9th globally in 2022 in the Telecommunication Infrastructure Index (TII), up from 26th position in 2016 (UN Global E-government Survey 2022, 2023). Similarly, the UAE was ranked 28th in the world in the 2022 Network Readiness Index (NRI 2022, 2022). This progress has enabled tourists to stay connected during their stay in the UAE, especially in Dubai. For instance, Dubai Airports, the metro, and taxis provide free Wi-Fi for customers. Further, Wi-Fi UAE is a country-wide initiative to provide Wi-Fi access to all users, in line with UAE Vision 2021 (Wi-Fi UAE, 2022). Given that internet access, smartphones, and other mobile devices and applications are considered very important for a tourist experience (Liberato et al., 2018), these initiatives are expected to enhance the tourist experience in Dubai.

According to United Nations e-Governance rankings, which monitor levels of digital transformation in governments worldwide, the UAE is ranked 13th globally in 2022 in the e-government development index, including the capability to provide smart e-services, ahead of countries including Canada, Italy, and Ireland (UN Global E-government Survey 2022, 2023). Among the sub-categories, the UAE is ranked 12th globally and 1st in the Arab region in the Online Services Index

(OSI), which includes information services (making information available online for customers), procedural services (bi-directional digital interactions), and the level of connected services (TRA, 2018). Additionally, Dubai was ranked 1st in the Arab region and 5th globally in the 'Local Online Service Index' (UN E-government Survey 2022, 2022). This demonstrates that Dubai has a strong smart government ecosystem providing efficient services related to travel and tourism, including arrival and departure procedures, visa and other tourism access-related services, and special requirements such as permissions for events and concerts (Khan et al., 2017). In terms of safety, Dubai was ranked among the top 30 Safe Cities in the world in 2019, with an overall rank of 28 and a category rank of 24 for digital security (Safe Cities Index 2019, 2019).

Dubai has leveraged innovative technologies to provide a safe and secure environment for residents and tourists. For example, Dubai Police launched the Oyoon (Eyes) project, which employs thousands of CCTV cameras across the city equipped with artificial intelligence (AI) and automated facial recognition technology. These cameras are installed mostly in tourist areas and are connected to the central command center to prevent crime and improve safety and security (Arabian Business, 2018; Gulf Business, 2018). Dubai is also using AI to analyze visitor data and gain insights into their preferences and behaviors, helping to improve tourism offerings and marketing strategies.

Dubai is one of the cities at the forefront of the smart tourism trend. With its reputation for innovation and forward-thinking, it is likely

that Dubai will continue to explore the potential of smart technologies as a new frontier for tourism in the years to come.

CONCLUSIONS

With smart tourism being a significant factor in tapping into today's generation of technologically advanced travelers, the lessons learned from the exemplary smart tourism capabilities of Dubai across the value chain (from personalized travel planners to the refund of value-added taxes while leaving Dubai) provide an exceptional opportunity for practitioners and policymakers elsewhere to follow the success of Dubai, as well as to address gaps that need to be improved in the smart tourism ecosystem. Overall, this study has several implications for research and practice.

RESEARCH IMPLICATIONS

The study provides a useful four-stage approach to assess the smart tourism ecosystem of any city or destination. The proposed smart tourism framework addresses the gap in literature by examining the application of smart technologies across the interconnected tourism supply chain. The usefulness and applicability of the framework were demonstrated in a real-life setting through a case study of the Dubai tourism sector. Given the generic nature of the framework, researchers could adapt and use it in their respective contexts and validate or supplement the study findings.

Practical Implications

In the process, the study mapped several smart technologies relevant to different stages of travel and identified gaps in the current smart tourism ecosystem that have

implications for the adoption of smart technologies in any destination. The findings can guide policy interventions and support mechanisms to strengthen the recovery and resurgence of the tourism sector, especially for countries facing the challenges of containing COVID-19 while also managing the reopening of the tourism economy.

LIMITATIONS AND FUTURE RESEARCH

The study has some limitations. First, the application of the framework was tested only in one destination. Second, the study is entirely based on secondary research. Future research could involve interviews and surveys with value chain stakeholders to gain a more in-depth understanding of tourist experiences. Future studies can further test, validate and expand the framework.

Despite these limitations, we believe that the proposed framework and its application will significantly enhance understanding of smart tourism. We anticipate that this study will encourage more research on smart tourism and contribute to theoretical advancement in the field.

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CHAPTER 6

LEVERAGING SOCIAL COMMERCE FOR SUSTAINABLE CONSUMER ENGAGEMENT IN THE APPAREL INDUSTRY: A UTAUT MODEL PERSPECTIVE

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This study investigates how social commerce attributes influence sustainable customer engagement in the apparel industry by applying the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). It aims to explain how technology-enabled interactions shape customers' cognitive, emotional and behavioural engagement with sustainable apparel brands on social commerce platforms. A quantitative approach was adopted, and data were collected through a structured online survey from consumers who actively engage with sustainable fashion brands in social commerce environments. The measurement scale was adapted from established UTAUT2 constructs, including performance expectancy, effort expectancy, social influence and facilitating conditions, along with key customer engagement dimensions. Structural equation modelling (SEM) was used to analyse the data and test the proposed relationships. The findings indicate that UTAUT2 factors significantly drive sustainable customer engagement, with performance expectancy and social influence emerging as the strongest predictors, highlighting the importance of perceived usefulness and peer interaction in digital commerce settings. These results suggest that well-designed social commerce experiences can strengthen long-term customer relationships and encourage sustainability-oriented behaviours. The study offers practical implications for apparel

marketers and digital business strategists by showing how technology-driven platforms can be leveraged to improve customer satisfaction, loyalty and engagement. By extending UTAUT2 to the social commerce context, this research provides empirical evidence on the role of technology adoption in fostering sustainable customer engagement.

Keywords: Social Commerce, Effort expectancy, Facilitating condition, Hedonic motivation, Performance expectancy, Perceive value, Social influence, customer engagement.

INTRODUCTION

The fashion industry has impacted people's lives all over the world. Given that retail e-commerce sales have reached trillions of dollars globally, it is not surprising that the fashion e-commerce market is expanding annually. A public collection bin for used clothing, illustrating efforts to recycle apparel waste. The global apparel industry is at a crossroads of rapid digital growth and environmental scrutiny. The Internet and digital devices like smartphones and tablets, along with the rapid advancement and broad usage of information and communication technology (ICT), have completely changed how businesses interact with their customers embracing e-commerce and one-on-one communication (Busalim et al., 2019).

Maintaining social commerce has become an extremely difficult undertaking due to the fierce rivalry in the trade industry (Kassim et al., 2016). The practice of delivering business activities, such as purchasing and selling, through social interactions and user contributions made possible by Web 2.0 and social media websites is known as social commerce (Makudza et al., 2021), (Arzy et al., 2020). In social commerce environments, interactive features enable community-driven marketing. Brand-generated content can project a fashion label's eco-friendly values, while genuine user-generated content (UGC – e.g. peer reviews, outfit posts) offers authenticity and relatability. For example, fashion influencers on Instagram or TikTok often spotlight sustainable products or practices, encouraging followers to make eco-conscious choices. Community forums and hashtags allow consumers to share tips on upcycling or ethical sourcing. Crucially, social engagement metrics (likes, comments, shares) amplify these messages (El-Shihy & Awaad, 2025). In this way, social commerce transforms digital engagement into support for a “slow fashion” movement and other sustainable behaviours. Social commerce has the power to influence customer behaviour since it involves influencers, celebrities, and bloggers who have large followings. In addition to believing in the fashion and comments of these influencers, their followers are also motivated by their lifestyle, attire, and even their opinions (Suresh et al., n.d.). The fashion industry's competitive landscape and the role that social media marketing plays in increasing consumer engagement are emphasized. Beyond only direct followers, social media actions have an impact (Dananjana et al., 2024). Academics and scholars in the field of marketing have become interested in customer engagement (Algharabat et al.,

2020). Numerous approaches have been taken by marketing academics to measuring and addressing Customer engagement (Hollebeek et al., 2014a). Customer engagement is a critical success factor in social commerce (Sashi, 2012). Social media has grown in importance as a business marketing tool as more and more customers use social networking sites like Facebook and Instagram on a regular basis (Xiang et al., 2016). Social commerce's primary objective is to establish and sustain long-term customer engagement, which motivates repeat business and raises the value of products over time. The fashion industry is going through a serious sustainability problem. The quick rise of fast fashion has created huge amounts of waste and added a lot to carbon emissions. Each year, nearly 92 million tonnes of clothing waste end up in landfills, and the sector is responsible for around 10 percent of global greenhouse gas emissions (The Business Waste, 2025). Consumers today are increasingly concerned about the environmental impact of fashion: one report finds that 70% of shoppers consider sustainability when making fashion purchases (McKinsey & Company, 2020). Along with this shift, online shopping has grown rapidly, especially through social media. The mix of e-commerce and social media, often called social commerce, is changing how people find and purchase fashion items. Features like likes, comments, shares, influencer content, and customer reviews help spread brand messages and strongly shape what others decide to buy (Srivastava & Verma, 2023). This combination of a growing e-commerce market and rising sustainability awareness creates a unique research opportunity: how can social commerce platforms be leveraged to promote sustainable fashion consumption

and engage customers long-term? Despite extensive research on technology adoption and on social media engagement separately, gaps remain in combining these areas for sustainable fashion. Earlier work has mostly focused on applying adoption models such as UTAUT and UTAUT2 to general e-commerce or mobile payment systems (Kumar et al., 2024). Some studies have also examined consumer choices in second-hand or circular fashion markets (Xu et al., 2022a). However, very few studies jointly examine how social commerce attributes affect consumer attitudes and engagement in a sustainable fashion context (Abdelmeguid et al., 2025; W. Zhao et al., 2023). Our introduction positions customer engagement on social platforms as a conduit for sustainability. We adopt a UTAUT2 framework to analyze this process. UTAUT2 identifies key constructs like performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, perceived value. As shown in our conceptual framework, this study examines how these UTAUT2 constructs influence consumers' attitudes toward social commerce, and how this attitude which in turn, drives customer engagement in the sustainable apparel space. The research specifically considers how social commerce platforms, by enhancing user experience and value, can encourage deeper, long-lasting, and more sustainable engagement with apparel brands. The research is important as it shows what drives people to engage with sustainable fashion through social media. It helps explain how online platforms can turn awareness into real action for sustainable shopping.

The paper proceeds with a discussion of the theoretical background, relevant literature, and the conceptual framework. It will then outline the research methodology employed,

present the results of the analysis, and discuss the hypotheses. Finally, the paper concludes with discussion, limitations, and suggestions for future research directions.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

UTAUT Theories One of the most widely accepted models for understanding how people adopt and use technology is the Unified Theory of Acceptance and Use of Technology (UTAUT). Its extended version, UTAUT2, has been developed to explain user behavior and intentions more precisely in consumer settings. The model includes four core constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions (Dwivedi et al., 2011). These dimensions provide a solid foundation for examining how consumers interact with social commerce in the apparel industry. Since it was first introduced by (Venkatesh et al., 2012a), the UTAUT framework has been successfully applied to predict behavior and usage patterns in a variety of technological contexts (Xue et al., 2024). The flexibility of UTAUT2 has allowed researchers to adapt it to multiple areas such as mobile payment adoption (Liu et al., 2022), online pharmacy services (Al Halbusi et al., 2024), and new e-commerce platforms (Chen et al., 2021). Although the model has received extensive attention in technology adoption research, there is still limited work exploring its relevance to social commerce and sustainable fashion. This gap provides the foundation for the present study, which applies the UTAUT2 model to understand how social commerce attributes drive customer engagement within the sustainable apparel sector.

Social commerce An growing e-commerce subset that revolves around social network

services is called social commerce(D. Kim, 2013).S-commerce can be defined as an advancement of Web 2.0 online commerce that facilitates increased customer interaction and participation through the use of wiki systems, blogs, and the sharing of articles authored by members of the community(Sharma & Crossler, 2014)Social networks and business activity are the two defining features of social e-commerce(Liang et al., 2011).According to Liang and Turban social commerce is a subset of e-commerce that involves using social media to assist in e-commerce transactions and activities(Liang & Turban, 2011a).The social networks provide a range of channels for communication as well as open social features like product ratings, opinion forums, discussion groups, member communities, and rating systems(Maia et al., 2018)Social commerce is a novel method of conducting business that includes cooperative and proactive interactions between all parties involved in the value chain(Baghdadi, 2016)In social commerce, customers research products or services they are interested in and rely on information offered by others to learn more about them(Huang & Benyoucef, 2013)E-commerce has evolved into social commerce as a result of the increase of social connections and interactions on the internet, especially within social networks. By using user-generated material, this progression has made it possible for businesses to interact with customers more effectively than they could with traditional retail techniques(Zhou et al., 2013).

Customer Engagement Customer engagement (CE) is the term used in marketing to describe consumer activity that includes co-creation and interaction with businesses or brands(Eslami et al., 2022).Social commerce has revolutionized

how consumers engage with brands and make decisions about what to buy by integrating e-commerce with social media platforms(Busalim et al., 2019; Erdoğan & Tatar, 2015).According to research, community elements and social support have a big impact on how customers interact with social commerce platforms(Molinillo et al., 2020)For apparel companies to maximize their social commerce strategies as the industry develops, it will be essential to comprehend the dynamics of client involvement over time and across various social media platforms(So et al., 2024; Waqas et al., 2021).According to earlier studies, happy consumers can significantly boost sales, recommendations, and customer loyalty, which will improve corporate performance(Eigenraam et al., 2022).Positive behavioral engagement includes actions like liking, sharing, and commenting, whereas negative behavioral engagement includes actions like writing a negative comment or spreading bad electronic word-of-mouth(Bowden, 2009).It should come as no surprise that a lot of businesses have worked to increase customer engagement with their brands or products, both online (like social media) and offline (like retail storefronts)(De Vries & Carlson, 2014).

Effort Expectancy The degree to which people believe that utilizing a particular system is simple and requires little time and effort is known as effort expectation(Albanna et al., 2022; Venkatesh et al., 2012). High effort expectancy levels show that users think the technology is simple to use and doesn't require a lot of mental or physical work(Wong et al., 2015).social commerce users could be unwilling to use social commerce platforms if it requires a high degree of complexity or experience to operate securely(Faqih &

Jaradat, 2021). Therefore, consumers' opinions of the ease of using social media platforms probably going to have a beneficial impact on its acceptance (Baishya & Samalia, 2020). When platforms that feature sustainable apparel and ethical fashion offerings are easy to navigate and use, consumers feel more satisfied and confident. Ease-of-use has been shown to be a critical determinant of user satisfaction (Xu et al., 2022b) and studies of social commerce adoption confirm that higher effort expectancy (along with performance expectancy) directly boosts consumer attitude (Sarker et al., 2025). Thus, when eco-friendly fashion brands provide intuitive, low-effort interfaces on social media (for example, clear eco-labelling and simple checkout), consumers are more likely to form a positive attitude toward using these platforms for sustainable apparel.

Hypothesis 1: Effort expectancy positively influences customers attitudes toward sustainable apparel through social commerce **Facilitating Conditions**

Customers' perception of the resources and assistance at their disposal to carry out a behavior is referred to as "facilitating conditions" (Dwivedi et al., 2020; Venkatesh et al., 2003). In the context of this study, the term "facilitating conditions" describes how consumers view the assistance and resources offered to participate in social commerce in the apparel industry. This involves having access to trustworthy technology, having user-friendly interfaces, and having customer service or advice available. It includes the availability of social media and digital tools that help users navigate and make use of social commerce platforms when making purchases (Albanna et al., 2022). Facilitating conditions are also expected to shape consumer attitudes toward social commerce. If consumers perceive that

social commerce platforms have strong technical and organizational support such as reliable internet access, secure payment systems, and verified ethical brand certifications this reduces uncertainty and builds trust (Ratnasingam, 2004). The above arguments suggest that enabling conditions have a favourable impact on consumers' participation in social commerce in the clothing sector. Thus, the study hypothesizes:

Hypothesis 2: Facilitating conditions positively influences customers attitudes toward sustainable apparel through social commerce

Hedonic Motivation

"The fun or pleasure derived from using a technology" is the definition of hedonic motivation (Shoheib & Abu-Shanab, 2022). Hedonic motivation is used in this study to characterize how entertaining and engaging social commerce platforms are for users in the apparel industry. Customers engage with companies more on social media as a result of this enjoyment, which improves their shopping experience and raises the possibility that they will make a purchase (Yastuti & Irawati, 2023). Through interactive and exciting brand experiences, social commerce not only benefits businesses but also gives users delight and pleasure (Faqih & Jaradat, 2021b). Consumers of online clothing are driven by involvement and enjoyment, which means that in order to draw in and keep customers, retailers should improve the hedonic aspects of their online platforms (López et al., 2016). According to the study by (Liang & Turban, 2011) customer attitude towards social commerce platforms are greatly influenced by hedonic motivation. When consumers enjoy browsing, sharing, or purchasing sustainable apparel online, this pleasurable experience

can enhance their overall attitude. For instance, studies of subscription and clothing-rental services find that the excitement of unboxing and trying on new outfits including those with ethical or eco-friendly features creates a hedonic atmosphere that positively affects acceptance(Xu et al., 2022b).

Hypothesis 3: Hedonic motivation positively influences customers attitudes toward sustainable apparel through social commerce

Performance Expectancy

As per UTAUT model, “performance expectancy is the degree to which people think that employing technology will improve their work and provide benefits”(Venkatesh et al., 2012c).Performance expectancy as used in this study refers to how much using social media will benefit customers in carrying out particular tasks (Shoheib et al., 2022) when people believe that specialized technology is more beneficial and effective than conventional approaches, they are more inclined to adopt it(Albanna et al., 2022c). Empirical work supports this: higher performance expectancy tends to raise intentions to use social commerce and increases the likelihood of purchase, since users feel these platforms enhance their shopping decisions(Tamilmani et al., 2021).(Arpaci et al., 2022)shown that the intention is positively impacted by performance expectations.Customers are more likely to make purchases when they believe social commerce improves their shopping experience.(Shoheib & Abu-Shanab, 2022)

Hypothesis 4: Performance expectancy positively influences customers attitudes toward sustainable apparel through social commerce.

Perceived Value

In social commerce, perceived value is a key factor in shaping customer behavior, especially when it comes to apparel purchasing clothes. perceived value has a considerable impact on Gen Z consumers' propensity to buy sustainable apparel, according to studies, with positive sentiments about sustainable apparel mediating this link.(Arora & Manchanda, 2022).On social commerce platforms, features that encourage community development and social engagement have a favorable effect on perceived social value, which in turn shapes customer attitudes(Guo & Li, 2022).Another important factor is informational value, which refers to how relevant and helpful the content on these platforms is. Perceived value is increased by accurate and trustworthy information, which results in favorable attitudes regarding social commerce(Alshibly, 2014).Yang et al. (2020) examined at how social media marketing activities (SMMA) affected consumers' perceptions of apparel brands' worth and level of satisfaction. According to their research, SMMA considerably raise the perceived value of brands, which in turn influences consumer satisfaction(Yang et al., 2020).

Hypothesis 5: Perceived value positively influences customers attitudes toward sustainable apparel through social commerce

Social Influence

According to (Venkatesh et al., 2012) social influence defined as “the extent to which an individual perceives that important others believe they should apply the new system”. The two primary dimensions of social influence in social commerce are normative and informational influence. Normative influence happens when people follow others' expectations in order gain social approval or to avoid disapproval, whereas

informational influence happens when consumers accept the opinions of others as a reliable source of truth(Hu et al., 2019). Through the exercise of many social power types, such as expert, referent, and reciprocity power, digital influencers contribute significantly to social commerce. By promoting actions like content creation and participation, their presence on social commerce platforms increases consumer engagement and may raise the possibility of a purchase(Wang & Huang, 2023).

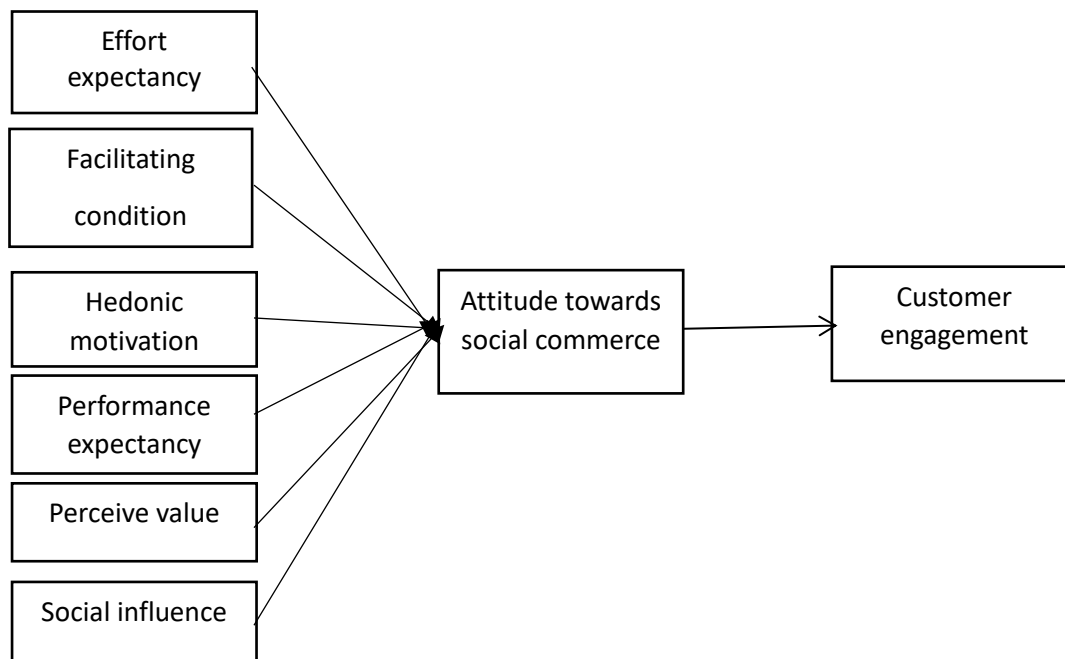
Hypothesis 6: Social influence positively influences customers attitudes toward sustainable apparel through social commerce **Attitude Towards Social Commerce**

Social commerce has drastically changed the apparel industry, influencing customer engagement and purchase behavior. According to research, customers' perceptions of social commerce for apparel shopping are significantly influenced by

social connectivity(Cho & Son, 2019)According to (Al-kfairy et al., 2024)Purchase intentions, trust, and engagement behaviors are all strongly influenced by a positive attitude toward social commerce. Influencers and user-generated content have a big impact on how customers feel and act. They offer individualized experiences and evaluations that can raise customer engagement and trust. Consumer outcomes in social commerce are greatly impacted by the evolution of content aspects, including format, source, and platform(Singh & Pandey, 2024)Establishing connections and interaction on social media platforms increases trust, which is essential for social commerce to succeed(Păuceanu et al., 2023).

Hypothesis 7: Attitude towards using social commerce to buy sustainable apparels positively influences customer engagement.

Figure 1.
Conceptual framework



METHODOLOGY

This study's research methodology is based on a quantitative approach to evaluate how social commerce affects consumer engagement in the clothing sector. The Unified Theory of Acceptance and Use of Technology (UTAUT) serve as the conceptual underpinning for the study. In order to ensure that the responses were pertinent to the research setting, data was gathered from 220 individuals through google forms targeting those who actively use social commerce platforms. Some of the questionnaires were removed because they were incomplete. Prior to performing the main analysis, the dataset was assessed to confirm it satisfied the fundamental quality criteria for PLS-SEM. All responses were examined for missing values, outliers, and consistency. The data revealed no significant outliers; thus, all valid cases were taken for additional testing. The full collinearity approach in SmartPLS was used to evaluate common method bias. All constructs had VIF values below the suggested threshold of 3.3 (Shela et al., 2023), showing that common method bias was not a major issue. These assessments verified that the data were clean, reliable and appropriate for structural modelling. There were total 213 valid respondents in all. The first section of questionnaire focused on collecting demographic information about the respondents, including their age, gender, occupation. Second section assessed the effort expectancy using the 4 items and facilitating conditions using the 4 items adapted from (Patil et al., 2020) and Hedonic motivation is measured using the 4 items adopted from (Rauschnabel, 2021). subsequently, perceived value and customer engagement has been measured using the 4 items adopted from (Nguyen et al., 2015) and (Hollebeek et al., 2014b) respectively, performance expectancy and social influence through 4 items adopted from (Venkatesh et al., 2012e) .

To find participants who buy sustainable clothing through social commerce, a non-probability purposive sample technique was used. An online survey with a structured questionnaire was used to collect primary data. The survey instrument was created to examine the variable as well as factors associated with the UTAUT 1 and UTAUT 2 model, such as performance expectancy, effort expectancy, social influence, and facilitating conditions. There were 31 items in all, and each one was scored on a five-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree."

Data Analysis And Findings

The proposed structural model (Figure 1) was tested using PLS-SEM. This two-stage approach first evaluates the measurement model (as above) and then the structural model with path coefficients. Bootstrapping (5,000 samples) was used to test the significance of hypothesized paths. The partial least squares (PLS) route modeling framework has been used to examine the linkages suggested in the research model of this study. Because the PLS-SEM methodology is suitable for studies looking at novel theoretical dimensions, theories growth and forecasting .It is also favoured for testing extensive models, figuring out how variables correlate, and creating distinctive theoretical frameworks (Lou & Yuan, 2019a). Additionally, this technique is better suited for developing fields of study with prediction-oriented research where the connections between certain constructs have not yet been thoroughly explored (Hair et al., 2017). The key justification for the choosing of this technique was the study's exploratory character (Hair et al., 2011).

Table 1

Category	Sub-category	Frequency	Percent
Gender	Female	133	62.4
	Male	80	37.6
	Total	213	100.0
Age	18-25 years	108	50.7
	26-35 years	75	35.2
	36-45 years	18	8.5
	Above 45 years	12	5.6
	Total	213	100.0
Occupation	Student	75	35.2
	Business	35	16.4
	Professional	68	31.9
	Self-employed	19	9
	Unemployed	16	7.5
	Total	213	100
Do you purchase apparels through social commerce platforms?	Yes	154	72.3
	No	59	27.7
Do you engage with features like reviews, ratings and live shopping events on social media platforms?	Yes	102	47.9
	No	111	52.1
How often do you use social commerce platforms for shopping apparels?	Daily	45	21.1
	Weekly	46	21.6
	Monthly	62	29.1
	Rarely	36	16.9
	Never	24	11.3
How much time do you spend on social media platforms in a day?	Less than 1 hour	30	14.0
	1-2 hour	52	24.4
	2-4 hour	54	25.4
	More than 4 hours	77	36.2

Demographics of Respondents

Measurement model: Results

SmartPLS 4 was utilized in this work for both measurement model validation and structural modeling. Because it can successfully explain complex linkages and models and is frequently used for theory building, the structural equation modeling (SEM) technique was selected. This approach is appropriate for investigating the impacts of interaction and mediation in this study. Table 2 displays the outcomes of the measurement model for the latent constructs. The validity and reliability of the study's constructs were investigated at this phase. The findings demonstrate that all of the constructions' indicators' outer loadings are greater than 0.7, satisfying the conventional rule and demonstrating a robust relationship between each construct and its indicators. Cronbach's alpha and composite reliability ratings for each of the latent constructs were

greater than 0.7, demonstrating the internal consistency and dependability of the measurement instrument(Quinn & Keough, 2023).Additionally, every AVE value was greater than 0.5, indicating that the measurements were convergent This indicates that over half of the variance in each latent variable's indicators can be explained. Additionally, there is Low multicollinearity among the indicators of each construct is indicated by the VIF values for all indicators, which are primarily below 3.3(Leguina, 2015)This implies that there is little correlation between the predictors and that the model is not affected. Even though some of the numbers for Social Influence are marginally higher than 3.3, they are still within a reasonable range. Overall, there are no notable multicollinearity problems in the model.

Table 2

Constructs	FL	CR	AVE	Cronbach's α	VIF
Effort expectancy		0.911	0.719	0.871	
EE1	0.876				2.270
EE2	0.878				2.507
EE3	0.794				2.041
EE4	0.856				2.034
Facilitating conditions		0.944	0.810	0.922	
FC1	0.851				2.773
FC2	0.754				2.201
FC3	0.852				2.997
FC4	0.481				2.720
Hedonic motivation		0.895	0.681	0.845	
HM1	0.851				2.228
HM2	0.754				1.666
HM3	0.852				2.039

HM4	0.841				1.911
Performance expectancy		0.927	0.760	0.894	
PE1	0.879				2.623
PE2	0.844				2.233
PE3	0.911				2.277
PE4	0.850				2.133
Perceive value		0.928	0.763	0.896	
PV1	0.882				2.568
PV2	0.904				2.090
PV3	0.831				1.998
PV4	0.876				2.714
Social influence		0.919	0.739	0.882	
SI1	0.879				3.356
SI2	0.914				3.224
SI3	0.865				3.374
SI4	0.774				1.537
Attitude		0.872	0.695	0.780	
AT1	0.887				2.005
AT2	0.852				1.761
AT3	0.756				1.434
Customer engagement		0.929	0.767	0.899	
CE1	0.880				2.608
CE2	0.898				2.729
CE3	0.838				2.123
CE4	0.887				2.822

Structural model

This study found support for all the seven proposed hypothesis. The results showed that the findings confirm H1 by showing that effort expectancy (EE) significantly improves attitude (AT) towards social commerce to buy apparels ($\beta = 0.494$, $t=8.572$, $p< 0.001$). H2 is supported by the substantial positive correlation between attitude and facilitating conditions (FC) ($\beta = 0.792$, $t=9.180$, $p<0.001$). Similar to this, hedonic motivation (HM) supports H3 by having a favourable effect on attitude, but with a lesser effect size ($\beta = 0.173$, $t=7.772$,

$p<0.001$).supportingH4 ,performance expectancy also has a significant impact on attitude towards social commerce ($\beta = 0.980$, $t=8.160$, $p< 0.001$).similarly H5 tested Perceive value(PV) has a significant impact on attitude ($\beta = 0.821$, $t=7.622$, $p< 0.001$).Furthermore, H6 is supported by the considerable positive correlation between social influence (SI) and attitude ($\beta = 0.746$, $t =7.532$, $p < 0.001$). Similarly, H7 examining attitude towards social commerce platforms impact on customer engagement was supported ($\beta = 0.794$, $t =14.444$, $p < 0.001$). (Table 3)

Table 3

Hypothesis	Path coefficient	P values	t-value	Study results
H1:EE→AT	0.494	0.000	8.572	Supported
H2:FC→AT	0.792	0.000	9.180	Supported
H3:HM→ AT	0.173	0.000	7.772	Supported
H4:PE→ AT	0.980	0.000	8.160	Supported
H5:PV→ AT	0.821	0.000	7.622	Supported
H6:SI→ AT	0.746	0.000	7.532	Supported
H7:AT→CE	0.794	0.000	14.444	Supported

Discriminant Validity

Table 4

Fornell–Larcker criterion Constructs	AT	CE	EE	FC	HM	PE	PV	SI
AT	0.834							
CE	0.784	0.846						
EE	0.513	0.632	0.868					
FC	0.626	0.759	0.835	0.900				
HM	0.577	0.797	0.836	0.863	0.825			
PE	0.526	0.577	0.836	0.793	0.694	0.917		
PV	0.794	0.899	0.593	0.754	0.757	0.583	0.874	
SI	0.574	0.631	0.868	0.858	0.794	0.872	0.657	0.860

Table 5

	AT	CE	EE	FC	HM	PE	PV	SI
AT								
CE	0.494							
EE	0.119	0.424						
FC	0.117	0.457	0.843					
HM	0.126	0.515	0.795	0.867				
PE	0.145	0.416	0.579	0.765	0.649			
PV	0.340	0.449	0.543	0.518	0.710	0.451		
SI	0.116	0.480	0.464	0.466	0.791	0.797	0.647	

Because each construct's square root of AVE (diagonal values) is higher than its correlations with other constructs (off-

diagonal values), the table satisfies the Fornell-Larcker criterion As a result, discriminant validity is proven,

demonstrating that each of the model's constructs are distinct from one another. Table 4 indicates the discriminant validity of the model since the greatest value in each column is the top value (Verma et al., 2024). Discriminant validity was evaluated using the Heterotrait-Monotrait (HTMT) ratio also, which assesses whether constructs that are theoretically expected to be related or unrelated are actually distinct. According to (Henseler et al., 2015), a threshold of 0.85 indicates a strict assessment of discriminant validity, while a more lenient criterion is set at 0.90. These benchmarks were used to determine the adequacy of discriminant validity in the study. As shown in Table 5, all HTMT values are below the conservative threshold of 0.85. This confirms that all constructs in the model exhibit adequate discriminant validity, indicating that each construct is empirically distinct from others.

DISCUSSION

This study integrated UTAUT2 with customer engagement theory to explain sustainable fashion behavior in social commerce. The PLS-SEM analysis revealed that each UTAUT2 factor was relevant in this context like ease of use, usefulness, social influence (SI), supportive infrastructure, enjoyment, and overall value all contributed to positive consumer attitudes. These findings extend prior literature by showing that technology adoption constructs apply not only to generic e-commerce but specifically to sustainable fashion commerce. For example, previous research has highlighted UTAUT's role in mobile payment adoption (Esfahani & Bulent Ozturk, 2019) and this study shows its applicability to eco-conscious apparel buying as well. The fact that attitude mediated all relationships suggests that platforms must not only be technologically

sound but also convey a compelling sustainability message to shape consumer engagement. The structural model was analyzed using PLS-SEM to evaluate the relationships among the proposed constructs. The results confirmed that all hypothesized paths in the extended UTAUT2 model were significant. Performance expectancy, effort expectancy, hedonic motivation, price value, facilitating conditions, and social influence each showed positive effects on consumers' attitudes toward social commerce for sustainable apparel. In turn, attitude had a strong positive effect on customer engagement. These results validate the model tested through PLS-SEM, showing that the UTAUT2 framework effectively explains how technological and social drivers translate into sustainable engagement behaviors in the apparel context. According to our research, Effort Expectancy considerably raises favourable perceptions of SC systems. This is consistent with recent research by (J. Zhao & Zhu, 2023), who discovered that in social commerce scenarios, consumer attitudes are positively influenced by perceived ease of use. In line with earlier studies on the adoption of e-commerce, (Chiemeké & Ewuekpae, 2011) the results show that customers' opinions about social commerce are highly impacted by Performance Expectancy and Perceived Value. In our study, positive attitudes toward social commerce likely reflect greater receptiveness to sustainable product information and peer influence. In turn, such attitudes drive deeper engagement. (Elshaer et al., 2024) observe consumers with positive eco-friendly attitudes are more inclined to advocate and engage with sustainable offerings. Our results imply that social commerce can serve as an avenue for promoting responsible consumption. In line with recent reviews, social and digital

platforms can shift consumer habits toward sustainability. For example, (Schiaroli et al., 2024) emphasize that social media can help shift toward sustainable consumption practices, favoring the spread of sustainable knowledge and awareness among consumers. Likewise, (Balasubramanian & Sheykhmaleki, 2024) find that social media messages and company transparency significantly affect attitudes toward sustainable apparel. In our study, positive attitudes toward social commerce likely reflect greater receptiveness to sustainable product information and peer influence. In turn, such attitudes drive deeper engagement.

Managerial Implications

From a practical point of view, the results provide useful direction for apparel brands and developers of social commerce platforms. Managers can strengthen engagement by adding more interactive and community-based elements to their platforms. Creating online brand communities, discussion spaces, or live shopping sessions can reproduce the social feel of sustainable fashion markets and invite customers to participate more actively (Hollebeek et al., 2014c). Encouraging UGC also plays a crucial role by giving authentic reviews, photos, and testimonials from real customers help build trust and long-term loyalty. Collaborations with influencers who focus on sustainability can extend the brand's reach (Lou & Yuan, 2019b). (Dondapati & Dehury, 2024) noted that such collaborations help humanize brands and make them more relatable which encourages stronger engagement. Likewise, earlier studies have shown that genuine consumer content fosters emotional connections and a sense of community around eco-friendly brands. For both investors and managers, social commerce should be seen not merely as a selling platform but as a wider ecosystem

that nurtures ongoing engagement. Building partnerships with sustainable clothing startups recycling initiatives, or eco-conscious influencers can strengthen this ecosystem. Moreover, investing in technologies like AI-driven personalization can enhance customer loyalty by improving the overall experience and aligning it with consumer values.

Theoretical Implications

Theoretically, this research makes two contributions. First, it extends UTAUT2 to a new domain by applying it in the sustainable apparel social commerce context. While UTAUT2 has been validated in general online shopping and service adoption, there has been a dearth of studies in the literature linking UTAUT2 factors to consumer engagement in sustainability contexts. By demonstrating significant paths from UTAUT2 constructs to attitude and engagement, this study fills that gap and suggests that technology acceptance theories remain robust even when the product category carries an environmental dimension. Second, the study integrates two streams of marketing research the technology acceptance literature and the customer engagement literature. Specifically, we show that the well-known adoption drivers in UTAUT2 translate into psychological attitudes that drive brand engagement. This integration shows that the conventional limits of the UTAUT model can be broadened beyond mere technology adoption to encompass social and experiential elements of digital consumption. Additionally, by connecting UTAUT with engagement theory, the study addresses a conceptual divide between behavioral intention and emotional involvement, providing a more comprehensive insight into consumer behavior in socially engaging shopping contexts. This bridging of

theoretical frameworks helps explain *how* and *why* social commerce features lead to greater consumer involvement with brands. The results thus contribute to a more unified theory of online consumer behaviour, linking functional and hedonic motivations to relational outcomes in the social commerce era.

LIMITATIONS AND FUTURE RESEARCH

While this research aims to give a complete picture of how social commerce affects engagement in the sustainable apparel sector, a few limitations should be noted. The findings are based on data from the clothing industry, which may limit how far the conclusions can be applied to other sectors. Although the study provides valuable insights into consumer behavior in apparel, results may differ in industries such as electronics, cosmetics, or food. Future research should test the proposed model in these other contexts to see if similar relationships hold. Further studies could also explore moderating factors like individuals' environmental values or their views on corporate social responsibility, as these might influence the strength of the link between attitude and engagement. Building on Social Learning Theory, researchers might look at how community-based features such as discussion forums or peer support networks intensify engagement on social platforms. In addition, the role of emerging technologies like augmented reality fitting rooms and AI-based recommendation systems could be examined to see how they shape consumer attitudes toward sustainable shopping. Testing this model in other product categories would also help understand how

social commerce can promote sustainable consumption in a broader business environment.

CONCLUSION

Overall, this study shows that consumers' attitudes toward social commerce serve as a key connection between technological and social factors and their engagement with sustainable apparel brands. The extended UTAUT2 model indicates that when the shopping experience on social platforms feels useful, easy, enjoyable, and socially supported, consumers are more likely to develop favourable attitudes. These positive attitudes then translate into higher levels of participation and long-term engagement with sustainable brands. This means that shaping the right consumer mindset is just as critical as building an efficient platform. Social commerce should not only be seen as a place for transactions but also as a space to encourage responsible fashion choices. When the shopping process is smooth, enjoyable, and socially meaningful, customers naturally become more interested in sustainable options. This research connects two important perspectives technology acceptance and sustainable marketing showing how digital tools can be used to promote more conscious consumption. It shows that digital spaces, when designed thoughtfully, can shape greener buying habits and longer-term engagement. For businesses, the lesson is clear: by combining social commerce features with genuine environmental values, apparel firms can create deeper bonds with eco-conscious buyers and help move the fashion industry toward a more sustainable future.

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CHAPTER 7

NAVIGATING NONPROFIT SUSTAINABILITY: A COMPREHENSIVE LITERATURE REVIEW OF LEADERSHIP PRACTICES IN NONPROFIT ORGANIZATIONS ADVANCING THE UN SUSTAINABLE DEVELOPMENT GOALS

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ABSTRACT

The United Nations' 2030 Global Agenda outlines 17 Sustainable Development Goals (SDGs) that cover poverty, health, education, gender equality, and sustainability, among other areas. Achieving these ambitious targets by 2030 requires significant contributions from nonprofit organizations. Nonprofits face persistent challenges related to organizational sustainability due to both external factors, such as changing donors' priorities, and internal factors, including performance issues, inadequate governance and accountability, unclear ownership, and a lack of data-driven approaches. Existing research literature provides a narrow perspective on organizational sustainability, focusing solely on isolated factors within nonprofits' governance or management structure. This fragmented sustainability approach has misled many nonprofits' quests for sustainability, resulting in frustrations or shutdowns. To clarify the sustainability approach, this paper identifies crucial gaps, formulates research questions,

and provides the foundational knowledge base through a systematic secondary analysis. The research focuses on four fundamental needs (conceptual framework, organization-wide factors, strategic blocks, and leadership practices) related to nonprofit sustainability, as outlined in the form of research questions. The literature review encompassed 37 high-quality journals, sustainability models (e.g., Foraker, TCC), and reports from the United Nations, World Bank, and Harvard, spanning the period from 1990 to 2024. This research develops the first nonprofit sustainability conceptual framework, identifies 191 organization-wide sustainability factors, four governance strategic building blocks with 25 leadership practices, and six management strategic building blocks with 24 leadership practices to elucidate the landscape. The framework and integrated organization-wide approach will enable global nonprofits to tackle complex sustainability challenges and contribute effectively to the SDGs. This research lays the groundwork for a holistic

approach, offering invaluable insights for practitioners, researchers, and policymakers striving to amplify the impact of nonprofit sustainability on the global stage.

Keywords— Nonprofit Sustainability, Governance, Management, Leadership Practices, SDGs.

INTRODUCTION

A nonprofit organization's objective is to serve and benefit society. Nonprofits stand at the forefront of tackling global social issues, making their role essential. However, a concerning trend has emerged in recent years: the closure of nonprofit organizations due to a lack of resources and a lack of orientation towards sustainability, which hinders their ability to sustain their mission. Reports from esteemed media outlets and research agencies, such as Forbes, the National Council for Nonprofits, and Nonprofit Quarterly, underscore the urgent need to address sustainability challenges. This is a problem the world cannot afford to ignore; therefore, it requires immediate global attention. Nonprofits play a significant role in contributing to the achievement of the 2030 Sustainable Development Goals (SDGs) by engaging stakeholders, implementing programs, supporting the development of inclusive policies, advocating for human rights, and drawing attention to social and environmental issues. Nonprofits should strengthen and sustain themselves while contributing to SDGs. According to the National Council of Nonprofits, several factors lead to nonprofit closures, including the inability to combat the organization's sustainability challenges (Weerawardena et al., 2009). To achieve nonprofit sustainability, an organization must consider

several key factors, including integrated functions, enhancing organizational credibility, infrastructure, delivery services, responsible actions, data-driven decisions, and transparent reporting that ensure mission success. Organizational sustainability is not just about finances and managing money; it involves all other factors that influence the organization's performance, branding, and positioning. It is a journey rather than a destination—it requires continuously addressing the issues and ensuring integrated performance to drive sustainability (The Foraker Group, 2023)

While several past studies have demonstrated that nonprofit sustainability extends beyond finances, there is a lack of comprehensive literature with an organization-wide analysis (Samad et al., 2023). This background suggests that nonprofits struggle to achieve sustainability due to the lack of a standard framework that advocates for organization-wide sustainability factors and identifies potential leadership practices in both nonprofit governance and structures.

Considering the available literature and gaps, the study breaks down the bigger problem of nonprofit sustainability into four objective research questions: conceptual framework, organization-wide factors, strategic blocks, and leadership practices. These four questions cover the fundamental information a nonprofit requires to understand the complete nonprofit sustainability landscape, rather than taking a piecemeal approach. The secondary analysis provides key insights into the four research questions, enabling a systematic understanding, undertaking, and achievement of sustainability. Findings also reveal multidimensional aspects of sustainability and interrelations, and

consider nonprofit governance and management areas as a holistic approach. The findings provide essential foundational information to nonprofits, practitioners, researchers, policymakers, and other stakeholders, enabling them to systematically understand, analyze, design, implement, and achieve nonprofit sustainability. This ensures a continued contribution to the SDGs and has an impact on the global stage.

LITERATURE REVIEW

Nonprofit sustainability is crucial for their survival and for fulfilling their mission, as it relies not only on financial performance but also on integrated factors such as human resource capacity, partnerships, competition in the nonprofit sector, co-financing and funding arrangements, navigating the north-south dilemma, and dynamics involved in attempts to remain apolitical (Singh et al., 2020). Intra-alliance factors, including characteristics such as size, mission, resources, and operational mechanisms, significantly influence the sustainability of nonprofits. In contrast, among contextual factors, political pressure emerges as the most critical element affecting nonprofit sustainability. Social entrepreneurial nonprofits identify the key factors and four essential capacities: leadership capacity, adaptive capacity, management capacity, technical capacity, and financial capacity. (Samad et al., 2017). The study focuses on financial and non-financial criteria for sustainability. Financial criteria include financial soundness, liquidity, working capital, fundraising cost, and investment in automation and computerization. Non-financial criteria include board or top management, client retention, customer

satisfaction, client acquisition, marketing and advertising, management quality, delivery time, service quality, attracting volunteers, client complaints, satisfaction of strategic constituencies, customer attraction ability, social responsibility, legal compliance, innovativeness, and facility improvements. (Iwu et al., 2015). The study focuses on critical concerns for nonprofits, including ineffective governance structures, inadequate organizational knowledge, poor quality, and insufficient staff skills and training. (Fangwa et al., 2024).

Corporate social responsibility and sustainability are crucial to nonprofits in Italy; however, many nonprofits struggle to integrate them into their operations effectively. (Gazzola et al., 2017). Integrated financial and non-financial reporting enhances accountability among nonprofits in Spain, effectively demonstrating how funds are used to achieve their mission and objectives. (Brusca et al., 2022). Systematic nonprofit sustainability encompasses financial and economic strategies, organizational characteristics and strategies, capacity building, partnerships, and a value-based perspective. (Samad et al., 2023).

Governance focuses on an oversight function from the top carried out by the governance structures (general assembly, board, committees). In contrast, management carries out day-to-day operations. These two sides of the organization must perform effectively for nonprofit sustainability (Marcus, 2022).

Nonprofits in Romania gauge the perceptions of 81 managers and board members regarding sustainability, encompassing people, business models, operations, strategy, and culture. Nonprofit programs' sustainability includes coordinator

competence, transparency, staff involvement, responsiveness, funding, theory, effectiveness, flexibility, evaluation, champions, integration, understanding of community, political legitimization, leadership, system, stability, patterning and actions, participation, context, support, capacity, leadership, networking, information exchange, and prioritizing (Ceptureanu et al., 2018). Nonprofits in six countries —Australia, Brazil, Israel, Italy, Russia, and the United States —have concluded that formal and strategic succession planning is crucial for nonprofit sustainability. This includes selecting the right board members with the right skills for a good board composition (Santora et al., 2015). Nonprofit effective governance practices prevent fraud, increase accountability, address sector growth, and enhance public trust. Internal mechanisms include structures and procedures, formal policies, governance structures, systems, and web-based practices. On the other hand, external mechanisms involve certification, adherence to codes, voluntary program clubs, and watchdog ratings (Ortega-Rodríguez et al., 2023).

Nonprofits' sustainability depends on diverse factors, including volatile donor priorities. Due to an unpredictable environment, nonprofits should have change management skills and competencies to successfully implement approved policies and programs (Akingbola et al., 2019). Effective crisis management for nonprofits requires responding to stakeholders, identifying vulnerabilities, developing plans to address them, and demonstrating trust and transparency through clear communication. Leadership development at top management levels is key to performance and

sustainability (Esteves et al., 2023). Effective governance practices in nonprofits are associated with increased organizational accountability. The research focused on two primary questions: 1) What are the main drivers for implementing the best governance processes? and 2) What are the best governance practices in nonprofits? The study analyzed 89 articles from the Web of Science database on this topic until 2021. The findings identified various reasons and internal and external mechanisms that drive effective governance. The reasons for implementing best practices included preventing fraud, being accountable to stakeholders, addressing sector growth, and enhancing public trust. Internal mechanisms encompassed several areas, including internal structures and procedures, such as formal policies, governance structures, internal systems, and web-based practices. It also examined board performance, focusing on board diversity and relationships, stakeholder representation, and self-assessment. On the other hand, external mechanisms involved certification, adherence to codes and principles, voluntary program clubs, watchdog ratings, and other external measures. Additionally, the study highlighted 33 principles of good governance and ethical practice that promote nonprofit accountability, organized into four sections. Section 1, "Legal Compliance and Public Disclosure," outlined principles such as compliance with laws and regulations, codes of ethics for directors, staff, and volunteers, conflict of interest policies, safeguarding policies, data protection, asset protection, and transparency in governance, finances, programs, and activities. Section 2, "Effective Governance," included principles related to reviewing and approving the

organization's mission, strategic direction, annual budget, financial transactions, fiscal policies, regular board meetings, attendance, governance responsibilities, diversity and inclusion, board member orientation, board term regulations, and periodic review of the organization's mission and governance structure. Section 3, "Strong Financial Oversight," emphasized maintaining accurate financial records, implementing controls, conducting internal and independent audits, aligning performance with the mission, prohibiting loans to trustees, and ensuring ethical fundraising practices. Finally, Section 4, "Responsible Fundraising," highlighted principles such as transparent communication with donors and the public, adhering to donor intent, providing information on donation expenditures, prohibiting commission-based fundraising, and safeguarding donor privacy according to agreements (Ortega-Rodríguez et al., 2023). Nonprofit boards can drive innovation through their strategic roles, governance practices, oversight, financial management, composition, diversity, leadership, external engagement, networking, and board dynamics. Nonprofit financial sustainability encompasses managing, monitoring, and controlling key aspects, including revenue diversification, financial practices, and financial reserves. Organizational size, governance, external environment, and strategic planning influence sustainability - and capacity building, collaborations, and innovative fundraising boost nonprofit performance and ensure long-term sustainability (Richardson et al., 2023).

Governments require partners for effective public governance and service delivery. This is an opportunity for nonprofits to partner

with governments for funding, mutual benefits, resource sharing, rapid and emergency responses, cross-learning, capacity development, and leveraging innovation for sustainability. Cross-sector partnerships benefit nonprofits when donor funding declines, as the private sector is committed to social development. This opportunity offers benefits such as resource sharing, innovation, and enhanced learning, which can improve nonprofit performance and sustainability (Al-Tabbaa et al., 2013). Nonprofit organizational capacity building, encompassing both human and financial resources, as well as organizational systems and external relationships, is essential. Human resources encompass recruitment, skills development, training, and leadership. Financial resources include economic stability, donor diversification, financial planning and management, and business development. Organizational systems encompass systems, processes, governance procedures, as well as strategic and performance management. Nonprofits can achieve better performance and sustainability by enhancing their financial management, governance decision-making, and capacity building, thereby bridging gaps and sustaining their mission. (Sobeck et al., 2007). Nonprofits can prioritize and utilize technology, computer systems, and data-driven decision-making to optimize resources, support internal controls and audits, align with their mission, provide client-centered services, and enhance nonprofit performance and sustainability. These approaches use reliable data to support strategic planning, risk management, reserve planning, capacity building, donor diversification, and achieving value for money. (Rinaldi et al., 2015).

The Foraker Group's sustainability model helps guide nonprofit organizations in achieving sustainability. It employs a comprehensive and integrated approach to decision-making, focusing on critical areas, including the right people, partnerships, unrestricted funds, and programs and services (The Foraker Group, 2023). The TCC Group's sustainability formula identifies three essential elements—leadership, adaptability, and program capacity—as critical for achieving sustainability. Forbes's article, "Nonprofit Boards: It Is Time to Lift Your Gaze and See the System," suggests addressing sustainability concerns and mission risks by exploring new business models beyond traditional funding to achieve better performance and sustainability. The 13 authors of the Forbes Nonprofit Council propose 13 key steps for building a sustainable nonprofit organization, including having a meaningful mission and vision, staying true to one's purpose, adopting a learning orientation, leveraging local solutions and partners, having a leadership succession plan, investing in talent and continuous performance assessment, individual performance, building a cohesive team, designing for impact, leveraging financial planning, embracing integrity, focusing on driving value, creating a fee-based or B2B arm, and diversifying the ways to impact constituents (Dass et al., 2020). Forbes's article, "Revolutionizing Nonprofit Sustainability: Adopting For-Profit Tactics For Greater Impact," suggests addressing nonprofits' financial and operational difficulties, including inflation, fluctuating donor priorities, and limited funding options, which make sustainability a formidable challenge. Nonprofits require effective

strategies for risk management, leadership development in crises, change management, and relationship management (Sanchez, 2024).

RESEARCH QUESTIONS

The study seeks to answer the following four research questions through a literature review analysis:

RQ1: What is the conceptual framework for addressing nonprofit sustainability?

RQ2: What are the organization-wide sustainability factors that lead to nonprofit sustainability?

RQ3: What are the strategic building blocks for governance and management?

RQ4: What are the potential leadership practices for ensuring nonprofit sustainability?

METHODOLOGY

The study uses the following methodology to conduct the research study through the literature review:

Step 1: Identify suitable reference material about nonprofit sustainability and conduct a literature review (secondary analysis).

Step 2: Develop a conceptual framework for an integrated nonprofit sustainability approach.

Step 3: Identify and categorize the organization-wide governance and management sustainability factors.

Step 4: Grouping of relevant governance and management sustainability factors to create strategic building blocks for ease of use.

Step 5: Rank the strategic building blocks of governance and management based on findings from the literature and the number of suggestions noted in the reviewed literature.

Step 6: Identify and list leadership practices for governance and management strategic building blocks through a literature review.
Step 7: Make conclusions.

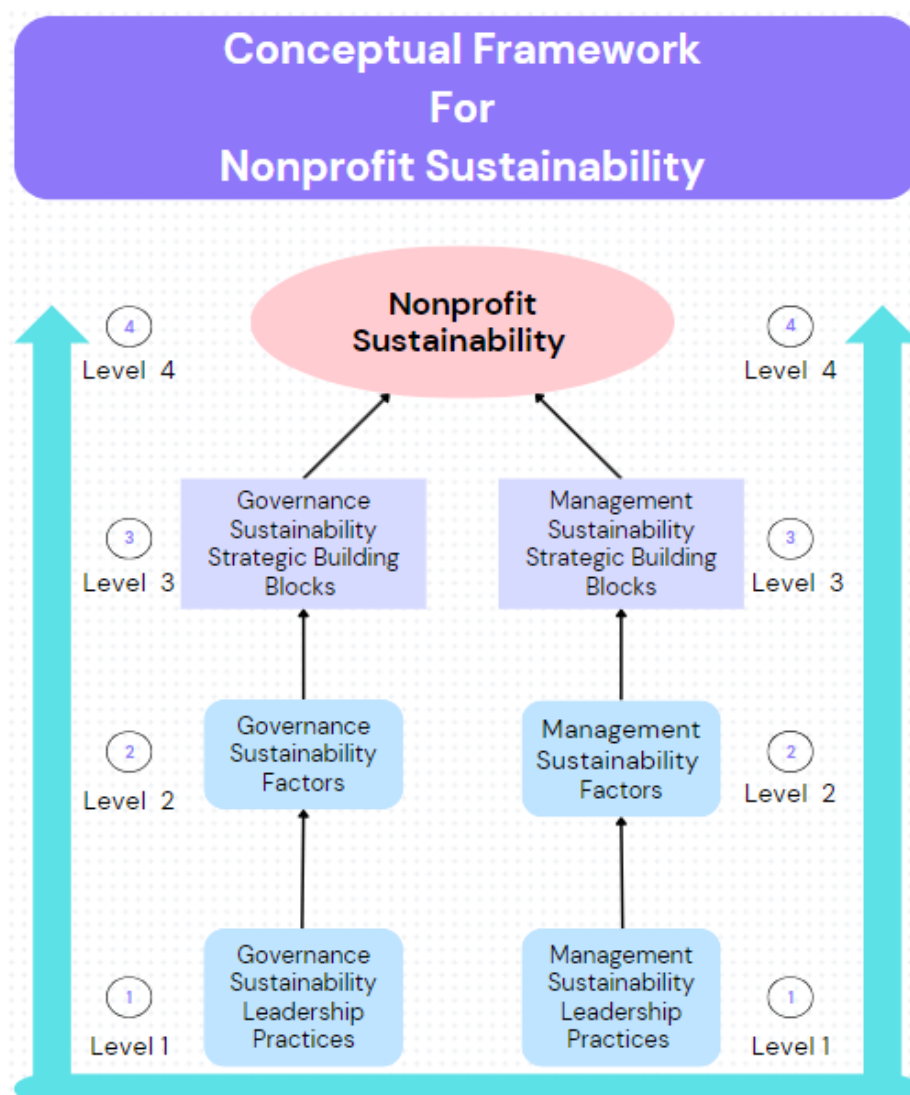
RESULTS & FINDINGS

The study finds the following data, findings, and concepts through a literature review (secondary analysis):

Conceptual Framework For Nonprofit Sustainability

After considering the findings of the literature review, the conceptual framework is presented below (Figure 1).

Figure 1: Conceptual Framework for Nonprofit Sustainability



Source: Compiled by the Author (Refer to literature review)

Nonprofit Sustainability Factors

The literature review lists 191 unique (non-repeated) sustainability factors out of 285 below (Table-1).

Table-1: Nonprofit Sustainability Factors Identified through Literature Review

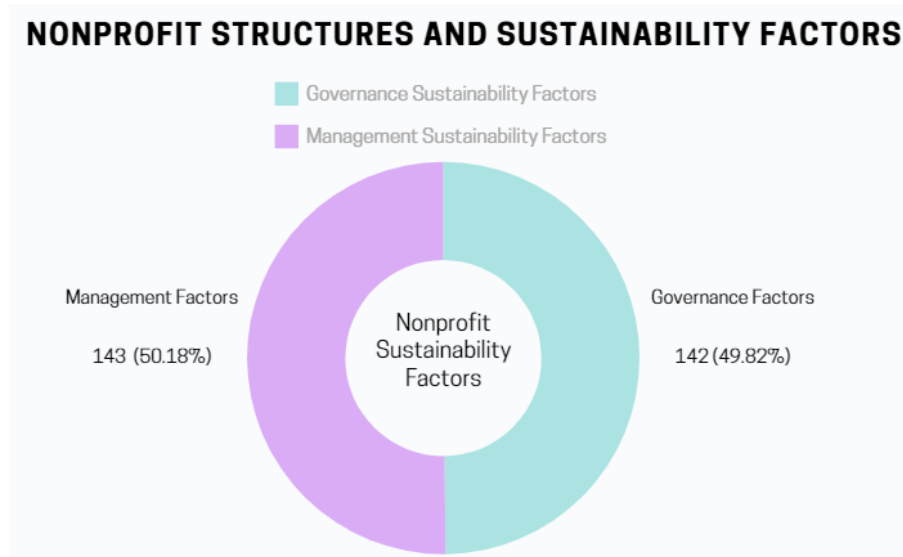
A value-based perspective, Ability to Attract Customers, Ability to Attract Volunteering, Accountability, Adopting a learning orientation, Advertising, Appropriate Facilities to Run Efficient Programs, Auditing, Board Involvement for Revenue Development, Board Earned Income, Board Major Donor Contributions, Board Revenue Diversification, Board Branding, Board Skills, Building a Cohesive Team, Capacity Building, Change Mgmt. Skills/Competencies for Managing Change Effectively, Managers, Staffs, and Volunteers Skills and Role to Manage Changes, Skills to Manage Planned and Unplanned Changes, Client Complaints, Client Retention, Co-financing & funding arrangements, Conducting Program Evaluations using Data, Creating a Fee-Based or B2B Arm, Crisis Leadership Competencies for Technical & Management Directors, Crisis Management Leadership Competencies, Cross-Sector Partnerships, Adaptability to Change, Business-Oriented Program Development, Inclusive Decision-Making, Mission Rooted Values, Customer Satisfaction, Dealing with issues of Fluctuating Donor Priorities, Dealing with issues of Inflation, Dealing with issues of Limited Funding Options, Delivery of Services, Designing for impact, Develop Fundraising Models, Diversifying The Ways to Impact Constituents, Effective Decision-Making Based on Data, Embracing integrity, Adherence to Codes and Principles, Certification, Voluntary Program Clubs, Watchdog Ratings, Community Relationship, Funders Relationship, Partners Relationship, Business Development for Finances, Capacity Building on Finance Mgmt., Computer-Based Financial Systems, Data-Driven Financial Decision-Making, Financial Decision-Support Systems, Donor Diversification for Finances, Economic Stability, Financial Management Practices, Financial Planning & Management, Financial Soundness, Fundraising Cost, Investment (Automation and Computerization), Liquidity, Financial Monitoring, Finance Resource Optimization, Financial Risk Management, Financial Management Practices & Donor Trends, Strategic Financial Planning, Finances from the Community, Grant Makers, Board Members, Technology for Financial Mgmt., Working Capital, Financial Controls, Financial Reserves, Focus on Driving Value, Forming Partnerships, For-Profit Strategies - Positive Mindset of Employees for Competition, For-Profit Strategies - Staying Tune to Mission, For-Profit Strategies - Continuously Improving Processes and Talent, For-Profit Strategies - Innovation for Revenue Generation, Board Composition, Board Dynamics, Board Diversity, Board External engagement, Board Governance, Board Leadership, Board Networking, Board Organizational Structures, Board Oversight, Board Roles, Board Strategic Roles, Governance, Succession Leadership Planning, Meaningful Mission & Vision, Adaptive Capacity, Financial Capacity, Leadership, Leadership Capacity, Management capacity, Recruitment, Skills Development, Sufficient Staff with the Expertise to Deliver Services, Technical Capacity, Training, Management, Human Resource Capacity, Innovativeness, Facility improvements, Integrated Financial & Nonfinancial Reporting, Formal Policies, Org.

Governance Structures, Org. Internal Systems, Org. Web-based Practices, Internal Processes, Investing in Talent, Job Definition Clarity, Clarity of Mission and Vision, Leadership Contribution, Leadership in Cost-Effective Decision-Making and Accountability, Leadership in Decisive Action in the Face of Challenges, Leadership in Strategic Planning and Results, Key Stakeholders Involvement Leadership in Strategic Planning, Leadership Motivation for the Mission, Legal Compliance, Leveraging Financial Planning, Leveraging Local Solutions & Partners, Inadequate Organizational Knowledge, Innovative Fundraising, Innovation for Facility Improvements, Formal Policies, Governance Structures, Internal Systems, Web-based Practices, Maintaining long-term relationships with these stakeholders, Management Quality, Marketing, Navigating the north-south dilemma, New Client Acquisition, Nonprofit competition, Nonprofit Executive Succession Planning, Advocacy Participation, Client-Centric Services, Data-Driven Decision-Making, Operational Efficiency, Quality Control, Training Investments, Governance Procedures, Performance Management, Processes, Strategic Management, Systems, Mission, Operating Mechanisms, Org. Size, Org./Nonprofit competition, Organizational Knowledge, Organizational Characteristics & Strategy, Org. Credibility, Partnership for Access to Emergency Sites with Authorities, Partnership for Capacity Development, Partnership for Cross-Learning, Partnership for Innovation, Partnership for Rapid Response Capabilities, Partnership for Resource Sharing, Partnerships & Collaboration, People, Performance Accountability, Performance Based Incentives, Performance Measurement, Policies, Political Pressure, Program and Services, Relationship Management, Relationship with External Stakeholders, Revenue Diversification, Service Time, No Sole Dependency for Donor Support, Skills Recruitment Balance, Social Responsibility, Staff Retention, Staying True to Mission, Strategic Alignment, A Clear Theory of Change, External Stakeholder Engagement, Strategy for Impact Goals, Revenue Generation Investment, Strategic Planning, The Pursuit of New Revenue Streams, Support Systems, Sustainability Reporting, The Right People, Top Management Skills, Unrestricted Funds, Volunteer Engagement

Source: Compiled by the Author (Refer to literature review)

Categorizing The Sustainability Factors Into Governance And Management Structures

Nonprofits have governance and management structures. The research gathers 285 sustainability factors: 191 unique (non-repeated), 142 (49.82%) governance sustainability factors, and 143 (50.18%) management sustainability factors (Figure 2).

Figure 2: Nonprofit Structures – Governance and Management

Source: Compiled by the Author (Refer to literature review)

Strategic Building Blocks (Sustainability Factors Grouping) For Governance

As shown below (Table-2), 142 governance sustainability factors are categorized into four strategic building blocks: People (56 factors), Strategy (36 factors), Finance (30 factors), and Others (20 factors). Subsequently, the four strategic building blocks have been ranked based on the number of factors (Figure 3).

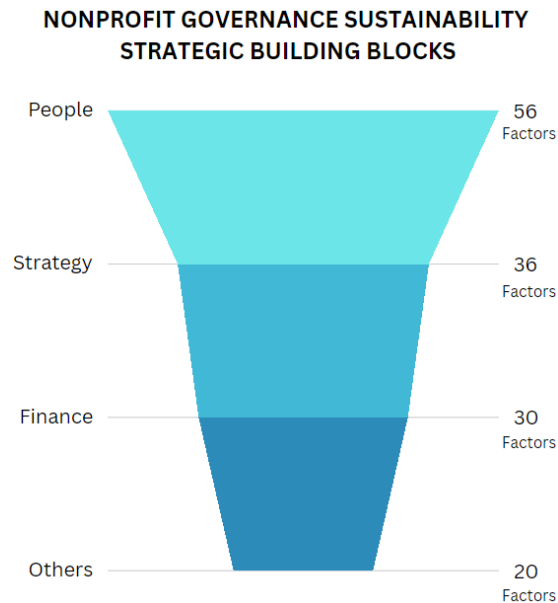
Table-2: Details of Governance Strategic Building Blocks and Sustainability Factors

Building Block	Sustainability Factors
1. People	People, Resource Capacity, Leadership Capacity, Adaptive Capacity, Management Capacity, Technical Capacity, Financial Capacity, Board Skills, Skills Recruitment Balance, HR Mgmt., Leadership Contribution, Performance Accountability, Capacity Building, Change Management Competency for Managing Change Effectively, Change Mgmt. Skills for Board Volunteers, Change Mgmt. Skills for Planned and Unplanned Changes, Board's Composition, Roles, Organizational Structures, Mission Rooted Values, Inclusive Decision-Making, Adaptability to Change, Nonprofit Executive Succession Planning, Formal Policies, Governance Structures & Processes, Recruitment, Skills Development, Board Leadership Skills, Internal Systems, Web-based Practices, External Certification, Adherence to Codes and Principles, Voluntary Program Clubs, Watchdog Ratings, Policies, Org. Size, Board Capacity Building, Capacity Building, Org - Governance Procedures, Org - Performance Management, Relationships With Partners, Relationships With Funders, Relationships With Community, Strategic Roles, Board composition, Board Dynamics, Governance Leadership, Volunteer Engagement, Org. Knowledge, The Right People, Succession Planning Leadership, Talent Investment, Building a Cohesive Team,

	Mission and Vision Leadership, Motivation Leadership, Leadership on Cost-Effective Decision-Making and Accountability
2. Strategy	For-Profit's Continuous Improvement Strategy for Processes and Talent, Advocates shifting to a new organizational culture where employees maintain a positive and flexible mindset to adapt to emerging requirements and remain competitive, Balancing finances with mission adherence, Focus on the Mission is crucial, Seek innovative ways to generate revenue, A Clear Theory Of Change, Impact Goals, External Stakeholder Engagement, Revenue Generation Investment, Strategic Planning, The Pursuit Of New Revenue Streams, Strategic Planning, Relationship with External Stakeholders, Forming Partnerships, Innovative Fundraising, Strategic Alignment, External Environment, External Engagement, Diversity, Networking, Internal Processes, Partnerships or collaboration, Ability to Attract Volunteering, Ability to Attract Customers, Navigating the North-South Dilemma, Co-financing & Funding Arrangements, Partnerships, Org. characteristics and strategy, Partnerships, Meaningful mission and vision, Staying True to Mission, Designing for impact, Embracing Integrity, Focus on Driving Value, Dealing with Issues of Inflation, Dealing with Issues of Fluctuating Donor Priorities, Dealing with issues of Limited Funding Options
3. Finance	Financial Soundness, Liquidity, Working Capital, Fundraising cost, Investment on Automation and Computerization, Revenue Diversification, Earned Income, Major Donor Contributions, Board Involvement for Revenue Development, Computer-Based Systems, Technology, Data-Driven Decision-Making, Decision-Support Systems, Strategic Planning, Capacity Building, Donor Diversification, Monitoring, Risk Management, Revenue Diversification, Financial Management Practices, Financial Reserves, Financial Controls, Sustainability Planning, Donor Diversification Strategy, Leveraging Financial Planning, Unrestricted Funds, Donation from Community, Institutions, Board Members, Dependency on Single Donor, New Fundraising Models, Creating a Fee-Based or B2B Arm
4. Others	Org. Credibility, Org. Mission, Org. Competition Analysis, Nonprofit Competition, Political Pressure, Governance Structures, Auditing, Sustainability Reporting, Integrated Financial and Nonfinancial Reporting, Accountability, Client Retention, Customer Satisfaction, New Client Acquisition, Social Responsibility, Legal Compliance, A Value-Based Perspective, Board Branding, Governance Practices, Governance Skills, Oversight

Source: Compiled by the Author (Refer to literature review)

Figure 3: Nonprofit Governance Sustainability Strategic Building Blocks



Source: Compiled by the Author (Refer to literature review)

Strategic Building Blocks (Sustainability Factors Grouping) For Management

As shown below (Table-3), 143 Management Sustainability Factors are grouped into six Strategic Building Blocks: People (64 factors), Strategy (27 factors), Finance (26 factors), Program and Services (10 factors), Partnerships (10 factors), and Others (6 factors). Subsequently, the six strategic building blocks have been ranked based on the number of factors (Figure 4).

Table-3: Details of Management Strategic Building Blocks and Sustainability Factors

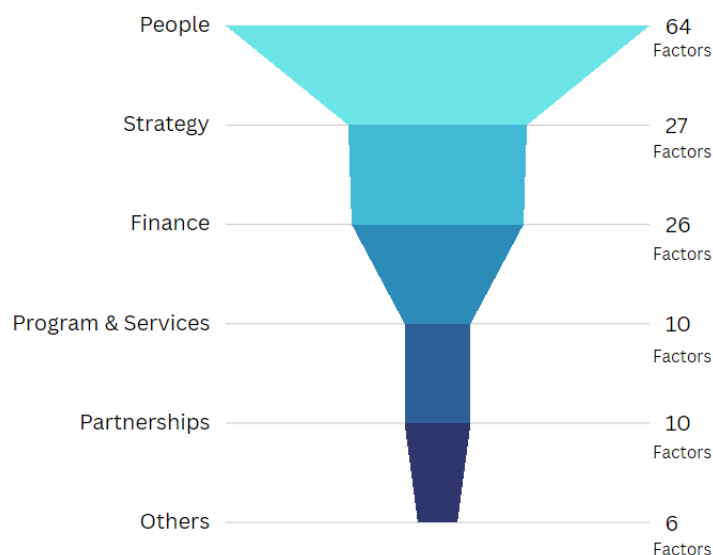
Building Block	Sustainability Factors
1. People	Leadership capacity, Adaptive capacity, Mgmt. capacity, Technical capacity, Financial capacity, Leadership - Clarity of Mission and Vision, Motivation Leadership, Leadership -Decisive Action in the Face of Challenges, Leadership -Involvement of Key Stakeholders in Strategic Planning, Leadership -Demonstrating Strategic Plan Success through Program Outcomes, HR - Sufficient Staff with the Expertise to Deliver Services, Having a leadership succession plan, Investing in talent, Building a Cohesive Team, Adopting a Learning Orientation, Performance Mgmt., Relationships with Partners, Relationships with Funders, Relationships with Community, The Right People, Recruitment, Skills Development, Training, Leadership, Systems, Processes, Capacity Building, Relationship Mgmt., Annual Performance Measurement, Change Management Competencies for

	Managing Change Effectively, Managers, Staff, and Volunteers Change Management Skills, Change Mgmt. Skills for Planned and Unplanned Changes, Crisis Mgmt. for Crisis Management, Crisis Mgmt. Leadership Competencies, Business-Oriented Program Development, Mission Rooted Values, Inclusive Decision-Making, Adaptability to Change, Formal Policies, Top Management Skills, Organizational Size, Capacity Building, Leadership Contribution, Training Investments, Internal Systems, HR Mgmt., Performance Based Incentives, Capacity Building, People, Skills Recruitment Balance, Job definition Clarity, Support Systems, Human Resource Capacity, Ability to Attract Volunteering, Volunteer Engagement, Delivery of Services, Service Time, Client Complaints, Org. Size, Staff Retention, Mgmt. Quality, Management, Inadequate Org. Knowledge, Org. Operating mechanisms
2. Strategy	Diversified Ways for Impact Constituents, For-Profit Strategy for Continuous process and Talent Improvement, For-Profit Strategy for New Organizational Culture, For-Profit Strategy for Balance between Finance and Mission, For-Profit Strategies for Innovative Revenue Generation, Designing for Impact, Leveraging Local Solutions & Partners, Embracing Integrity, Focus on Driving Value, Long-Term Stakeholders Relationships, Strategic Management, Strategic Alignment, External Stakeholder Engagement, Strategic Planning, Client Retention, Customer Satisfaction, New Client Acquisition, Marketing, Advertising, Sustainability Planning, Strategic Plans, Partnerships, Voluntary Program Clubs, External Environment, Integrated financial and nonfinancial reporting, Nonprofit Competition, Political Pressure.
3. Finance	Auditing, Business Development, Capacity Building, Computer-Based Systems, Data-Driven Decision-Making, Decision-Support Systems, Develop Fundraising Models, Donor Diversification, Economic Stability, Financial Management Practices, Financial Management Processes, Financial Planning and Management, Financial Soundness, Fundraising cost, Innovative Fundraising, Investment for Automation & Computerization, Leveraging Financial Planning, Liquidity, Monitoring, Resource Optimization, Risk Management, Sophisticated financial Management Practices & Funding Trends, Strategic Planning, Financial Support from Community, Institutions, Board Members, Technology for Financial Management, Working Capital.

4. Program & Services	Program and Services, Conducting Program Evaluations Using Data, Effective Decision-Making Based on Data, Data-Driven Decision-Making Strategy, Operational Efficiency, Quality Control, Client-Centric Services, Advocacy Participation, Ability to Attract Customers, Innovativeness, Facility improvements
5. Partnerships	Partnership for Resource Sharing, Partnership for Rapid Response Capabilities, Partnership for Access to Emergency Sites, Partnership for Cross-Learning, Partnership for Capacity Development, Partnership for Innovation, Inclusive Partnerships, Cross-Sector Partnerships, Sustainable Partnerships, Partnerships
6. Others	Appropriate Facilities for Implementation, Staying true to one's purpose, Legal Compliance, Organizational credibility, Org. Mission, Social Responsibility

Source: Compiled by the Author (Refer to literature review)

Figure 4: Nonprofit Management Sustainability Strategic Building
NONPROFIT MANAGEMENT SUSTAINABILITY
STRATEGIC BUILDING BLOCKS



Source: Compiled by the Author (Refer to literature review)

Leadership Practices for Governance and Management Strategic Building Blocks

The leadership practices for governance and management from the literature review are below (Table-4&5).

Table-4: Details of Governance Leadership Practices for Strategic Building Blocks

Governance Structure		
S.N.	Building Block	Nonprofit Sustainability Factors Leadership Practices
1	People	Selection of the right board members, board members' leadership skills, board members' working as a cohesive team, board composition, board continuous performance assessment, and succession planning for board members.
2	Strategy	Adopting nonprofit strategies for continuous improvements, risk management strategies, leadership development for crisis management, strategy for change management leadership, donor diversification, and relationship with stakeholders.
3	Finance	Audits, risk management & reserves, regular financial reports, data and system-driven decision-making, donor diversification, value of money
4	Others	Governance structures and reforms, organization branding, marketing and fundraising, use of organizational data, organizational sustainability and oversight role

Source: Compiled by the Author (Refer to literature review)

To simplify governance leadership practices and facilitate understanding, the practices are depicted below with simple graphics for Figures 5-8. (Refer to literature review).

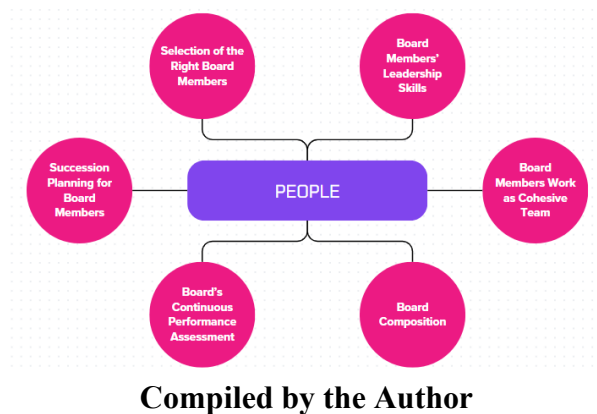
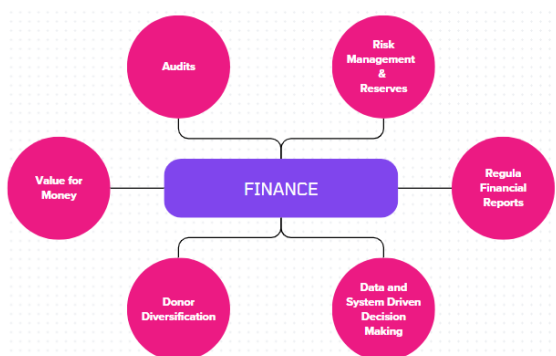
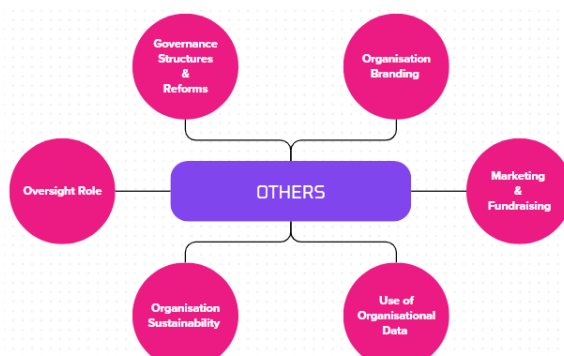
Figure 5: Governance Leadership Practices related to the Strategic Building Block “People”

Figure 6: Governance Leadership Practices related to the Strategic Building Block “Strategy”


Figure 7: Governance Leadership Practices related to the Strategic Building Block “Finance”



Compiled by the Author

Figure 8: Governance Leadership Practices related to the Strategic Building Block “Others”



Compiled by the Author

Table-5: Details of Management Leadership Practices for Strategic Building Blocks

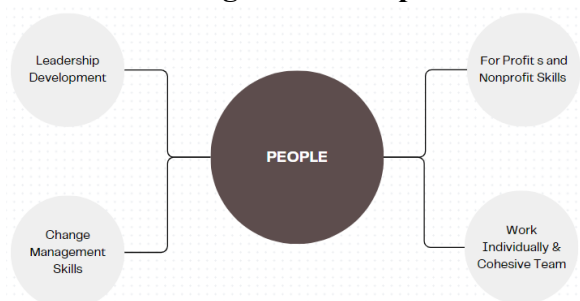
Management Structure		
S.N.	Building Block	Nonprofit Sustainability Factors Leadership Practices
1	People	leadership development, for-profit and nonprofit skills, working individually and in cohesive teams, change management skills
2	Strategy	leadership development at different levels, successful implementation of approved policies and programs, data-based reporting, and collaborative work with the Board.
3	Finance	internal controls and audits, best financial management practices, financial management, resource optimization
4	Program & Services	quality program management, data-driven decisions, innovations, mission-aligned and client-centered
5	Partnerships	For capacity development, for cross-learning, for resource sharing, for fostering innovations.

6	Others	Meeting compliance without fail, boosting org. credibility, appropriate infrastructure to deliver services, and responsible actions.

Source: Compiled by the Author

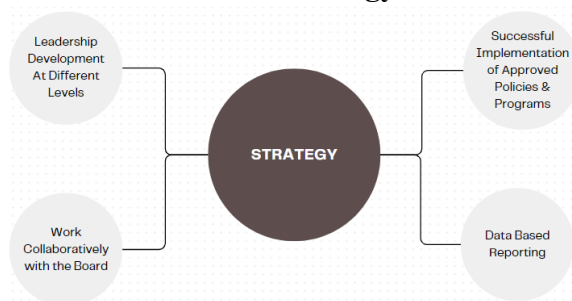
To simplify the management leadership practices and to understand them with ease, the practices are depicted below with simple graphics Figure 9-14, (Refer to literature review)

Figure 9: Management Leadership Practices related to the Strategic Building Block “People”



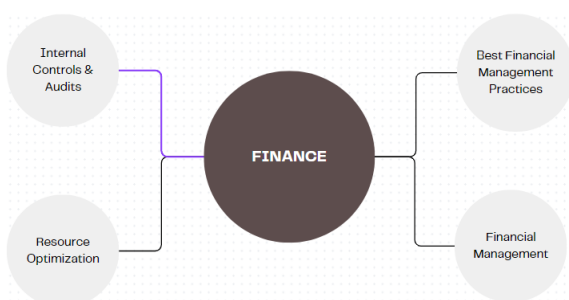
Compiled by the Author

Figure 10: Management Leadership Practices related to the Strategic Building Block “Strategy”



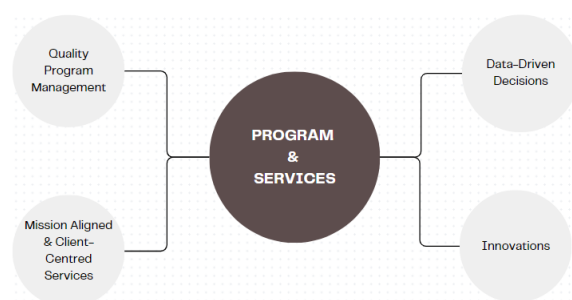
Compiled by the Author

Figure 11: Management Leadership Practices related to the Strategic Building Block “Finance”



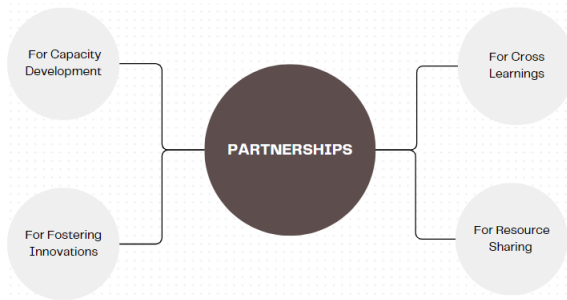
Compiled by the Author

Figure 12: Management Leadership Practices related to the Strategic Building Block “Program & Services”



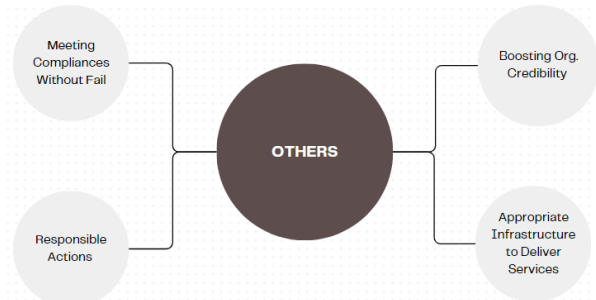
Compiled by the Author

Figure 13: Management Leadership Practices related to the Strategic Building Block “Partnerships”



Compiled by the Author

Figure 14: Management Leadership Practices related to the Strategic Building Block “Others”



Compiled by the Author

DISCUSSIONS

The conceptual framework (Figure 1) developed through the literature review visually represents the complete picture of sustainability components. It has logically developed by considering nonprofit structures, viz. governance and management, organization-wide sustainability factors, and potential leadership practices through sustainability to achieve desired results. Understanding this fundamental framework is crucial for examining the relationship and dynamics between strategic building blocks, sustainability factors, and leadership practices. It explains that nonprofit governance is an oversight function, typically contributing through general assemblies, boards, and committees. Key governance responsibilities include oversight, accountability, legal compliance, public disclosure, effective governance, strong financial oversight, and responsible fundraising. Conversely, the chief executive officer reports to the board and implements governance-approved policies, strategies, decisions, and activities. This clarifies the significant potential of governance and management functions in nonprofit

sustainability. As a result, sustainability strategic blocks and factors exist on the governance and management sides, albeit with different roles. In principle, accountability rests with the board, while responsibility lies with nonprofit management (Ortega-Rodríguez et al., 2023). The study adopts an approach that identifies research papers for literature review that offer comprehensive analyses and systematic reviews of nonprofit sustainability. This method has been instrumental in maximizing the collection of sustainability findings and factors. Subsequently, these sustainability factors are grouped to form the strategic building blocks of governance and management. Finally, the study identifies the most frequently mentioned leadership practices necessary for strategic governance and management building blocks. The findings include leadership practices suitable for global nonprofits. However, relevance and influence may vary depending on a nonprofit's local context, nature, size, operations, law, and compliance requirements (Richardson et al., 2023).

Theoretical implications

This pioneering study establishes a comprehensive conceptual framework that revolutionizes understanding organization-wide sustainability in the nonprofit sector. Through rigorous secondary analysis and systematic review encompassing 191 distinct non-repeated factors, it addresses critical gaps in the literature by providing an evidence-based roadmap where existing research is sparse. The study breaks new ground by delineating essential building blocks for nonprofit sustainability across governance and management domains, creating a robust foundation for future empirical investigation. The framework opens novel pathways for researchers to construct and test theoretical models by identifying these strategic components and their interplay with sustainability factors. Significantly, the study illuminates specific leadership practices that bridge strategic architecture with sustainability outcomes, offering a transformative approach to achieving sustainability in nonprofit contexts.

Limitations and future scope of the study

While this study provides valuable theoretical insights, it relies solely on secondary data analysis. This provides an opportunity to strengthen further empirical evidence with primary methods such as expert interviews with governance and management stakeholders. This can capture and integrate nuanced operational insights from practitioners in the field. Future research can also present rich opportunities to extend this foundational work and conduct empirical investigations validating and refining the proposed conceptual framework through mixed-method approaches. Such empirical endeavors would strengthen the theoretical underpinnings while providing

actionable insights for nonprofit sustainability.

CONCLUSIONS

Using the literature review and secondary analysis of the 37 research papers on nonprofit sustainability, a conceptual framework for addressing nonprofit sustainability (Figure 1) is designed to follow an integrated and holistic approach. This is the first of its kind of nonprofit sustainability framework, which facilitates addressing organization-wide sustainability issues in nonprofits, including the governance and management side of the organization, a unique proposition to offer itself in times of sustainability crisis to global nonprofits. The study

identified 191 distinct non-repeated organization-wide sustainability factors (Table-1) that lead to sustainability, considering governance and management factors. Following this, the factors are grouped based on their commonality to form the strategic building blocks for governance and management. These are arranged in order based on the existing research focus (Figures 3 & 4). Four governance strategic building blocks (Figure 3) include people, strategy, finance, and others (as one group). Six management building blocks (Figure 4) include people, strategy, program and services, partnerships, finance, and others (as one group). Finally, the study gathers, maps, and presents leadership practices for governance (Table-4) and management (Table-5).

This concludes the research study findings. This research paper will serve as the foundation and a valuable reference for individuals and organizations seeking to pursue research on nonprofit sustainability,

whether as researchers, consulting professionals, or experts in nonprofit governance and management. This paper will serve as a valuable resource for donor organizations and nonprofit partners, providing funding support to achieve nonprofit sustainability. Doing this will help nonprofits sustain their missions and operations globally and contribute significantly to the Sustainable Development Agenda.

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CONFLICT OF INTEREST DECLARATION

The author declares no conflict of interest, and no external funding was received for this research.

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CHAPTER 8

SOCIAL RESPONSIBILITY IN BUSINESSES: THE CRITICAL SHIFT FROM TRANSACTIONAL TO TRANSFORMATIONAL MODEL FOR SOCIAL IMPACT

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ABSTRACT

The paper presents a critical review of the literature on Social Responsibility in Businesses in creating and sustaining social impact in context of best practices and models for strategy and implementation of Corporate Social Responsibility (CSR) activities. The paper reviews studies how the CSR models has evolved - moving away from being a purely transactional model to one that leads the way for transformation. In India's context, this is contextualized in the backdrop of the legal and policy mandates from the period of 2013-2023. The main focus of the paper is on the evolving perspectives and approaches on businesses social responsibility practices. Furthermore, the paper presents a critical review of the scholarly work insights related to academic investigations on social responsibility in businesses or Corporate Social Responsibility (CSR) in terms of the major thematic areas, influential authors, articles, journals cited etc. The paper follows a systematic literature review that presents the relevant contexts for global and national level policy and practice frameworks that have paved the way for transformation in CSR models in businesses. The review begins with presenting the context and discourse of CSR as a model and its interlinkages with the surrounding

ecosystem of policy, economic, social, environment etc. changes. The review also presents the overall research trajectory on CSR as a topic or theme in the last decade or so, in terms of publishing, citation, regional spread, thematic coverage, and related field, to discuss the knowledge dissemination and research gaps. According to the results of the analysis, CSR as a subject area is now widely focusing on impact in terms of interplay of CSR investment to be responsive to needs of the vulnerable sections of society, that is sustainable, scalable, responsive, and globally-locally relevant. Business ethics, social impact, environment, philanthropy, etc. are now part of what defines CSR vision and mission. Indian government policies such as Companies Act, 2013 (Act), Companies (CSR Policy) Rules, 2014, the New Foreign Contribution (Regulation) Act (FCRA) etc. have played a pivotal role in enabling meaningful public-private partnership for CSR interventions to come to forefront of social impact, sustainability and environmental challenges. The paper provides a holistic view of the major components that contextualize CSR through a comprehensive process that identified and analysed relevant papers documenting the last decade in CSR. The paper provides the key areas for discussions relevant to the pressing touchpoints for businesses and CSR

investment from the perspective of impact investing and social sector development.

Keywords—Corporate Social Responsibility, Social Responsibility, Businesses Ethics, Sustainability, Social Impact, Transformational CSR, CSR strategy

INTRODUCTION

Background

In the last few years, Corporate Social Responsibility (CSR) as a management concept and vision has witnessed a dynamic trajectory in response to the shifting focus in policy and practice for development. This trajectory is defined by a diverse set of goals that cater to business ethics, sustainability, social impact etc. (Mohammed et al., 2025a). As a result, social responsibility for businesses through CSR activities has progressed beyond transactional engagements and are driven towards a model focussed on transformative and sustainable social impact (PwC, 2013).

India's CSR journey's major breakthrough was marked by the Companies Act 2013 specified, in Section 135, which not only mandated but laid the foundation for engaging public-private partnership for social upliftment(Sharma, n.d.). 'Design to Deliver' has since become cornerstone of CSR strategy and delivery in India. This focused approach to contribute meaningfully in the overall nation building has led corporates (through medium of public trusts, philanthropic foundations and allied forms of CSR) to invest beyond just providing financial & capital support and thus only transacting in the name of development(Sharma, n.d.). Therefore, measurable, visible and sustainable is the goal for development that positively influences lives of vulnerable sections of society. Social sector interventions focus on

partnership models that engage with government, institutions, civil society groups etc. to leverage upon as well as involve all stakeholders holistically through interventions. These interventions majorly focus on thematic areas such as public health, skill development, livelihoods, education etc. including gender, vulnerability, environment and sustainability across sectional themes or sub-themes.

RESEARCH OBJECTIVE

The objective of this research is to present the transformative journey Indian through CSR for social impact, environment and sustainability. The aim of the research is thus to provide a critical review to derive insights to present the evolution of CSR models, emphasizing the shift from transactional delivery to transformational models for social impact. In order to do so, the paper will review literature that supports in assessing the shift in CSR paradigms representing the journey from transactional to transformational models. In doing so, the paper aims to identify key themes, patterns, and trends in CSR research. The paper aims to present the scholarly range and coverage of the topic across impact journals to present intellectual structure of research on CSR, which can further provide basis for more or further in-depth explorations and relationship among different indicators on the CSR topic. And based on the theoretical insights, discuss the impact of transformational CSR on business and society in conversation with each other.

Overall, the paper aims to present the insights related to academic investigations on corporate social responsibility in terms of the mapping authors, most cited articles and journals cited, and key areas of focus on the theme. In this context, scholarly work on CSR since its legal and policy mandate in

India and global context from the period of 2013-2023 was identified and reviewed.

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LITERATURE REVIEW

In this section, the literature review (LR) presents the relevant contexts for global and national level policy and practice frameworks that have paved the way for transformation in CSR models in businesses. The review begins with presenting the context and discourse of CSR as a model and its interlinkages with the surrounding ecosystem of policy, economic, social, environment etc. changes. The review also presents the overall research trajectory on CSR as a topic or theme in the last decade or so, in terms of publishing, citation, regional spread, thematic coverage, and related field, to discuss the knowledge dissemination and research gaps.

Context Setting for Social Responsibility for Businesses: Past, Present and Future

The perception around CSR has evolved over the last few decades, globally as well as thereafter in India. Discussion in 1950's focussed on defining the modern CSR construct. In this context, the pioneering advocate on CSR was the American economist Howard Bowen who is known to officially coin the term 'Corporate Social Responsibility (CSR)' in his book 'Social Responsibilities of the Businessman'. The book has paved the foundation for discussion business ethics and social responsibility as part of strategic planning and managerial

decision-making." Since then, the literature and academic discourse on CSR have evolved in the backdrop of social movements, healthcare concerns, environment needs, civic society development with respect to question on 'How businesses should respond to society's needs?' (Carroll, 2021)

The last few decades have witnessed the solidification of CSR concept as a multidimensional topic in the context of how to define it in terms of: Social performance, Philosophical basis; Philanthropic contributions; Integrating Social Impact Assessments, Policies, Programs as collective outputs of CSR and so on. And with this, the focus on empirical research became critical to measure CSR projects such as context analysing, conducting simple surveys etc. From an academic perspective, the focus on stakeholder theory & management, society of business ethics, CSR-based policies, actions and practice etc. also took centre stage in the theory & practice (Carroll, 1991, 2021).

CSR envisions creating impact through dedicated programs which can provide the means to enhance social impact at the community level to the last mile. Broadly, CSR programs focus on enhancing accessibility, affordability and agency, for vulnerable and marginal communities to truly have a lasting last mile impact.

The Global Multidimensional Poverty report, highlighted how the cycle of poverty is an intergenerational cycle. The poor get more poor with due to lack of resources with limited access to basic necessities of life. This places them on the disadvantaged side to have a fair access to all realms of quality living – social, cultural, economic, political. The 'cascading effect' that sets in motion perpetuates this cycle for the generations to follow, thus it is intergenerational poverty –

The children of poorer families are deprived of the quality education, healthcare, skill building from the early stages that contribute to their intellectual and social development. This further leads to them having fairer accessibility to sufficient resources that provide financial and livelihood stability for families is critical how it shapes the future of these children and overall aspirations of the communities (UNDP, 2023). Therefore, in order to tackle intergenerational and multidimensional poverty, the role of policy and practices for empowering those marginalised, disadvantaged and therefore vulnerable is critical.

Policy, Practice and CSR Engagement: An Interplay of Public-Private Partnerships for Social Impact

Global-local interplay of the international and global parameters through the interventions in the framework and wider implementation is critical in terms of accessing international funding and measuring impact & developmental as per globally accepted and approved indicators & benchmarks.

In this context, the multiple interventions need to be identified and aligned logically to how it would contribute to the United Nations Sustainable Development Goals (SDG's) in terms of global benchmarks as well the national level parameters set out by recent nation-building flagship programs such as Viksat Bharat 2023.

There are several parameters such as geography, local contexts, community engagement, stakeholder landscape, opportunities, gaps, thematic thrust areas etc. Situational and need assessment of the proposed area for expansion is critical reference point for strategizing this model. This reference point will inform on how the model is executed in the expanded geography in terms of thematic focus areas,

type of stakeholder engagement, weightage of activities and interventions and so on

The policy push for leveraging public-private partnerships through CSR interventions in the Indian context, especially post legal & policy mandates since 2013 was pivotal (Mohammed et al., 2025b). In the backdrop of the Companies Act, 2013 (Act) and the Companies (CSR Policy) Rules, 2014 amendment, the mandate is now not only for two-percent CSR contribution but also to further assess the impact of CSR interventions through a third-party impact assessment conducted by an independent agency (Ministry of Corporate Affairs)" (PwC, 2013).

Another critical development at policy level came through post the New Foreign Contribution (Regulation) Act (FCRA) regulations, which has pushed for more pressure on localised sources to drive the impact funding and civic society organisations to engage more through CSR and philanthropic organizations versus the reliance on foreign/international funding as in the past (PwC, 2013).

Under the Companies Act 2013, the mandate for specific CSR funding brackets is for third-party evaluation to measure social impact. CSR projects 'Impact Metrics' will be delivered most significantly through these evaluations to inform future recommendations and learnings for CSR that is truly transformational. How will this be transformational for CSR? This is critically rooted in the data gathered and presented from the grassroots where impact is intended ultimately. However, the need for standardization as well as quality of data mechanism is imperative for the project cycles from inception. (Social Impact Assessment of Corporate Social Responsibility in India, 2021). Studies, Assessments and evaluations such as Social

Return On Investment (SROI), Social Impact Assessments (SIA's), Social Audits etc. are conducted to measure and present impact stories of CSR projects. Some of the popularly used frameworks include CAI Social Audit Standards, OECD DAC Framework, Theory of Change Model, Mixed Methods Approach(ResponseNet, 2025).

The role of measuring impact that is data driven is strongly founded by the strict government mandates for CSR programs to evaluate and assess their impact through third-party social impact assessments (SIA) for CSR programs mandated by government. This push comes in alignment with the shifting need for CSR to be beyond a transactional service delivery model and genuinely driving the social impact through its interventions. The entry of 'Transparency, Accountability and Measurability' can enable CSR projects to align relevance for efforts that will see a future for vulnerable communities to sustain beyond need for welfare and gain self-sufficiency(Mohammed et al., 2025b).

In the current scenario, what we are witnessing is progressive scale-up of CSR programs in policy and practice. Thus, CSR vision intends to redefine its strategies to tackle intergenerational and multidimensional poverty to make them inclusive, responsive and scalable(Rangan et al., 2012).

The drivers for motivating corporates to adopt CSR can be a complex interplay of economic benefits, social-environmental sensitization/awareness, legal-policy mandates etc. For instance, for many corporates investing in green energy, carbon credits, waste reduction etc. could be motivated by the potential for profit maximization or legitimizing their business practice in alignment to government laws

and rules (Bansal & Roth, 2000) The motivation can also be driven by the stakeholder engagement that can be enhance for the businesses, such as a better reputation in market, government, consumers, for engaging in activities that respond to social good for communities. An equivalent of what we call 'good will', that can contribute to up-scaling perception about firms(Bhattacharya et al., 2009).

In the global context, international efforts to institutionalize social responsibility has been a strong push for standardized reporting, integrating CSR in corporate strategy, etc, has taken place as a result of initiatives such as the Global Reporting Initiative and UN Global Compact (Global Reporting Initiative, 1997; United Nations Global Compact, 1999). As we entered 2010, sustainability entered as a critical focus within this discourse (Porter & Kramer, 2011).

From its beginnings, as a charity model of philanthropy to transitioning to a strategic model of social responsibility is critical to note. The charity-based model has now transitioned to value creation, responsiveness, scalability in the model (Carroll, 1991). This marks the 'transformation in CSR' that is evolved rapidly over the last decade, especially in India's context given policy praxis. The obligation has now found a new context for businesses – 'Responsibility' to be inclusive of economic social and environment needs at the same time and in the same model (Bowen 1953, Freeman 1984).

Leveraging public-private partnerships for development is a rising expectation from business, which in turn increases the dependence on firms to engage their CSR activities meaningfully. Furthermore, social-cultural contexts are also critical in shaping CSR for countries. India's local context, and

nation building vision is aligned to empowering the vulnerable communities, in lieu of this CSR will play a major role in contributing supporting national vision and mission Jamali (2010).

Research Trends in CSR: Representing the landscape

In terms of trends, the paper has looked at the publication distribution year wise since 2013. followed by the thematic coverage to identify the scholarly engagement on the topic and arrive the gaps and future for

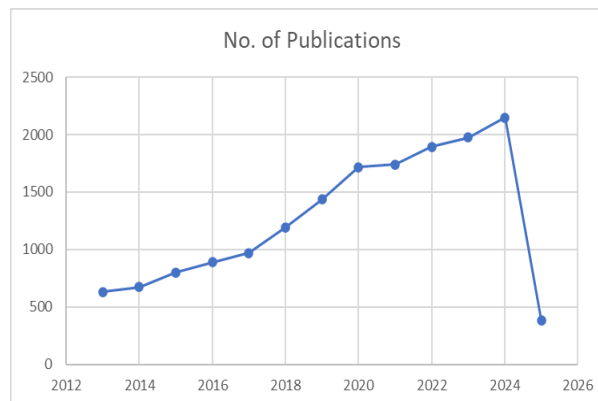
research. The dataset contains 16,451 records which will have been analysed below in details.

If we look at **Table 1 and the related Figure 1** the publication trends over the years, there has been mostly a steady increase in publication since 2013 indicating the increasing interest in research on the topic. From 2018, there is a sharper rise with peaking in 2022 (1,893 publications) and highest in 2024 (2,147 publications).

Table 1: Publications Year-Wise (Source: Author Compilation)

Year	Publications
2013	631
2014	673
2015	801
2016	890
2017	970
2018	1193
2019	1437
2020	1718
2021	1739
2022	1893
2023	1974
2024	2147
2025	385

Figure 1: Publication Trends Over Years (2013- 2025) (Source: Author Compilation)



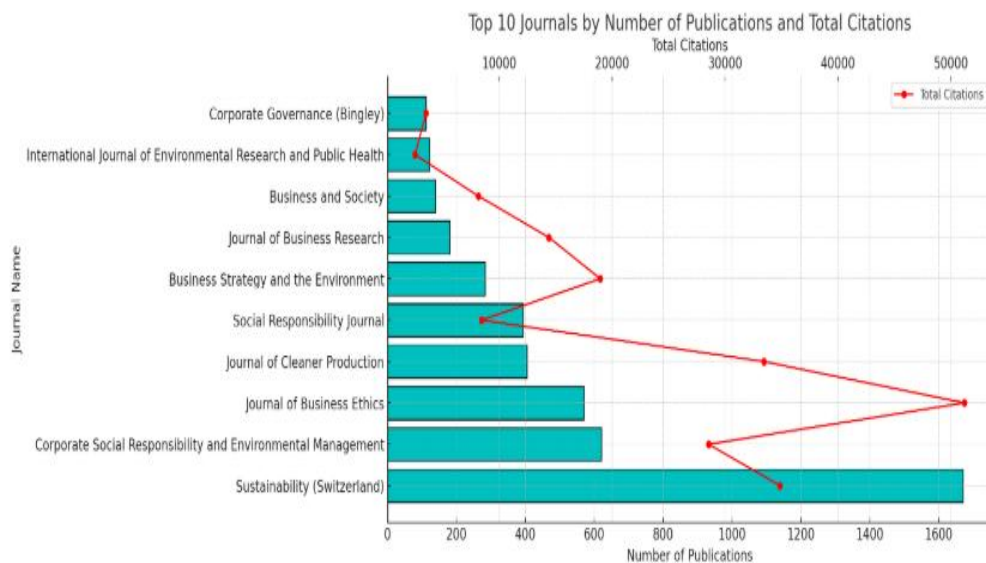
If we look at the research mapped during bibliometric analysis, **Table 2** and **figure 2** present the interdisciplinary nature research on CSR represented by the articles published across different journals on themes such as business ethics, sustainability, environment,

social responsibility, corporate finance, etc. This is representative of the interdisciplinary engagement of CSR models operating across business, finance, environment, sustainability and related fields.

Table 2: Ten Major Journals with Articles Focusing on CSR and Related Research (Of 16,451 Articles Considered from Scopus Database for Bibliometric Analysis) (Source: Author Compilation)

Rank	Journal Name	Number of Publications	Total Citations
1	Sustainability (Switzerland)	1,671	34,869
2	Corporate Social Responsibility and Environmental Management	621	28,541
3	Journal of Business Ethics	570	51,205
4	Journal of Cleaner Production	405	33,431
5	Social Responsibility Journal	394	8,431
6	Business Strategy and the Environment	283	18,953
7	Journal of Business Research	180	14,405
8	Business and Society	139	8,156
9	International Journal of Environmental Research and Public Health	122	2,546
10	Corporate Governance (Bingley)	112	3,527

Figure 2: Top 10 Journal by No. of Publication and Total Citations (Source: Author Compilation)



While Sustainability (Switzerland) journal leads by higher number of publications with over 1,600 articles, the highest citations is by Journal of Business Ethics which has lesser count in numbers of total published articles. Apart from these, the other journals with high impact are Corporate Social Responsibility, Environmental Management and Journal of Cleaner Production.

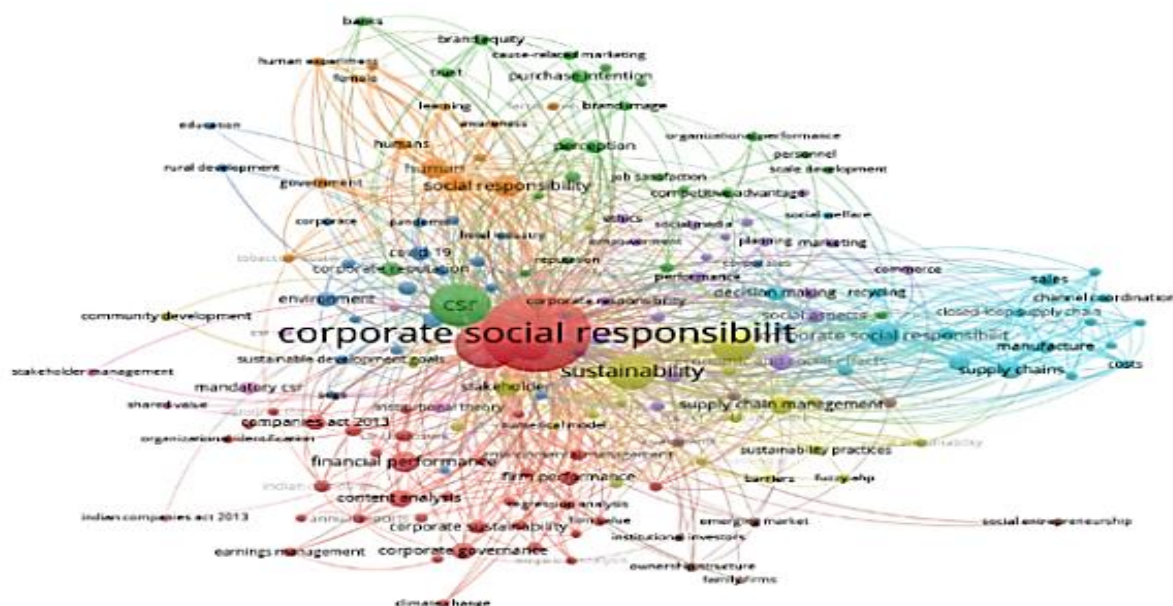
The next trend the paper analyses is on the major thematic focus of the articles, based on the data trend of the most common keywords from the "Author Keywords" column.

Corporate Social Responsibility (CSR) dominates the trend with the most researched theme, appearing in over 10,000 articles followed Sustainability, Sustainable Development, Corporate Governance, Social Responsibility, Financial Performance(El Badri et al., 2025) and Stakeholder Theory also as major areas of interest. This is representative of the balancing of environment, social, profit within the same framework when discussing CSR engagement. **Table 3** and **figure 3** below represents the data for reference:

Table 3: Top 10 Thematic Focus Areas (Source: Author Compilation)

Rank	Theme / Keyword	Number of Articles
1	Corporate Social Responsibility (CSR)	10,137
2	CSR (Acronym Variation)	2,102
3	Sustainability	1,572
4	Corporate Social Responsibility (CSR) (Alternative Mention)	1,371
5	Corporate Governance	978
6	Sustainable Development	875
7	Social Responsibility	596
8	Financial Performance	449
9	Stakeholder Theory	354
10	Stakeholders	349

Figure 3: Major Thematic Focus Areas for CSR Topic (Source: Author Compilation)



Research on Sustainability and related topic such as sustainable development, sustainable leadership, sustainable practices, etc. shows a rise in articles published since 2024. This could be indicative of the growing concern about environmental and social concerns and their impact.

The keyword search was further refined to understand the in context of what themes or topics were words ‘transaction’ and

‘transformation’ used. The data has been presented in **Table 4** below. Transformation in CSR is widely discussed in relation to sustainability, leadership, corporate strategy. The highest-cited paper (i.e. 218 citations) discusses the role of Industry 4.0 in CSR transformation which is in context of leveraging advanced technology, intelligent systems and related in CSR activities that is line with Industry 4.0 revolution.

Table 4: CSR Articles Mentioning "Transaction" or "Transformation" (Source: Author Compilation)

Rank	Title	Authors	Journal	Citations
1	Corporate transformation toward Industry 4.0 and sustainability	Alkaraan F., Albitar K., Hussainey K., Venkatesh V.G.	Technological Forecasting and Social Change	218
2	The Political Dynamics of Sustainable Coffee: Transaction Costs and Power Relations	Levy D., Reinecke J., Manning S.	Journal of Management Studies	208
3	Digital transformation, sustainability, and public policy	George G., Schillebeeckx S.J.D.	Journal of World Business	170
4	The impact of sustainable development strategy on CSR transformation	Nayal K., Raut R.D., Yadav V.S., Priyadarshinee P.	Business Strategy and the Environment	160
5	Payments for Ecosystem Services: Rife with Problems and Potential for Transformation	Chan K.M.A., Anderson E., Chapman M., Jespersen L.M.	Ecological Economics	134
6	The impact of transformational leadership on job satisfaction in CSR-driven firms	Manzoor F., Wei L., Nurunnabi M., Subhan Q.A., Bano S.	Sustainability (Switzerland)	113
7	Sleeping with the Enemy? Strategic Transformation in CSR Partnerships	Burchell J., Cook J.	Journal of Business Ethics	93
8	Transformational leadership, corporate social responsibility, and firm performance	Khan H.U.R., Ali M., Olya H.G.T., Zulqarnain M.	Corporate Social Responsibility and Environmental Management	81

9	Does CSR impact premiums in M&A transactions?	Gomes M., Marsat S.	Finance Research Letters	75
10	Exploring the mediating role of environmental CSR in business transformation	Hussain Y., Abbass K., Usman M., Rehan M., Asif A.	Environmental Science and Pollution Research	75

RESEARCH METHODOLOGY

This section will discuss the research framework and approach that were used in this paper. The systematic review includes mapping, documenting and synthesizing secondary data using descriptive analysis. Scholarly literature related to overall focus CSR policy, practice, strategies, frameworks and explicit focus on CSR models within Indian context was the search strategy. The data collection included sources that were directly extracted directly from sources indexed in Scopus within the time frame of 2013-2025 (only until February 2025), providing approximately ten years of research in the on CSR. The paper examines the concept of "corporate social responsibility in the last decade" - the keyword "corporate social responsibility (CSR)" was searched to develop different trends based on the data set in terms of

citations, thematic focus, keywords, citations, etc. through tables and figures. Finally, around 16,451 articles were selected and included for the bibliometric analysis. This has been the eligibility criteria for search strategy and selection.

The data has been synthesised using a combination of Descriptive content analysis of CSR literature with the support Bibliometric analysis using tools like VOS viewer along with visualizations such as tables, graphs, figures and network maps. Using this approach, this review presents the overall critical discourse of the key knowledge developments in CSR in terms of its and important dimensions with the support of figures or tables.

The LR followed a structured step-by-step approach and following table below presents the methodological steps utilized:

Table 5: Methodological Steps for conducting Research

Indicator	Description
Eligibility Criteria	• Peer-reviewed journal articles and conference papers • Published between January 2013 and February 2025 • Written in English • Emphasis on CSR models, strategies, frameworks • Indexed in Scopus and some in Web of Science (Information Source)
Search Criteria/Strategy	• Keyword: "Corporate Social Responsibility (CSR)" • Search fields: Titles, abstracts, and keywords • Timeframe: 2013–February 2025 • Filters used for peer-reviewed and English-language publications
Selection Process	• Records pulled out from databases • Elimination of Duplicates

	• Title and abstract screening for relevance • Full-text screening as per the inclusion criteria • Final inclusion of 16,451 articles was analysed
Data Collection Process	• Data exported from Scopus (RIS/CSV format) • Extracted details: title, author(s), keywords, citations, source, abstract, year, and country affiliation
Data Items	• Publication year • Author(s) and affiliations • Keywords and thematic clusters • Citation metrics • Source journal/conference • - Country of origin
Synthesis Methods	• Descriptive content analysis of CSR literature • Bibliometric analysis with tools such as VOSviewer • Visualizations used: tables, graphs, network maps
Effect Measures	• No quantitative effect measures utilized • Analysis based on bibliometric indicators include - Citation frequency, Keyword co-occurrence and Thematic mapping
Study Risk of Bias Assessment	• No formal bias tool used due to bibliometric nature • Inclusion limited to peer-reviewed, indexed publications to ensure quality
Reporting Bias Assessment	• No additional assessment performed • Mitigated by using multiple high-quality databases (Scopus and WoS)
Certainty Assessment	• Not applicable due to non-clinical nature of the study • No use of GRADE or similar frameworks

DATA ANALYSIS AND DISCUSSION

Transformation in CSR Models: Transitioning beyond the Transactions

Overall, the aim for CSR models is ‘sustainable development’ that engages within a framework of responsible business around value creation, good governance, societal contribution and environmental integrity. Several CSR vision and mission statements speak of ‘intensified efforts through progressive multi-stakeholder partnerships to leave no one behind and contribute to the tenets of nation building’. The interventions intend to be responsive to the needs and under-stand contextual issues

and arrive at a juxtaposition with indices of multidimensional and intergenerational poverty (Chapagain, 2016). In this context, Wayne Visser’s concept of CSR 2.0 discusses the new CSR as transformative; that is based on five components viz. “Creativity, Scalability, Responsiveness, Glocality & Circularity. The guiding principles here are value creation, good governance, societal contribution and environmental integrity”. (Visser, 2016) Such a program design should develop suitable interventions for community needs. However, the suitability needs to be assessed critical based on the mapping of values,

perspectives, and knowledge that the communities resonate with as well as the scope or capacity of sustaining interventions by communities after a program exits. The program design needs to envision the baseline (such as a needs assessment, rural mapping) before program design. It should also include interventions that form networks for communities to leverage after a program exists to ensure the impact long-lasting and scalable.

Therefore, the program design and delivery need to be cognizant of the backward to forward linkage in the value chain of community development. This will range from community needs assessment, diverse stakeholder engagement (at government, local development, international levels), convergence of public-private partnerships, schemes, resources and so on. This ensures that the program design-to-deliver model is engaging with the value chain of community development holistically and therefore contributes to transformation for last mile impact.’ (Rangan, 2012) (Carroll, 2021)

Based on the literature review, typically CSR is categorised four types: environmental (popularly understood by Environment Social Governance or ESG), philanthropy, ethical, and economic responsibility (Communications, 2023).

Redefining the CSR Discourse

The discourse on CSR for Indian Businesses has been shaped by critical legal and policy level shifts in India and globally over the last decade or so. In the last few years, CSR as a management concept and vision has witnessed critical evolution in response to the changing business environment, emerging social-economic challenges and policy level engagement. This has set the foundation for businesses to be socially responsible beyond a transactional approach and moving towards a transformative and

sustainable social change approach (PwC, 2013).

The discourse on sustainability has over last few years evolved at a pace that has been unprecedented in terms of the cross-cutting across themes related to socio-cultural changes, economic advancement and critical technological shifts. The “Balancing Conundrum” of Environment, Social and Profit Maximisation are impacting the way sustainability is engaged in the present framework businesses and organizations ethical and sustainable practices (Giovannoni & Fabietti, 2013).

Therefore, CSR models have evolved over the past few years to become more than just transactional, offering businesses that invest in social welfare through CSR interventions the chance to reap financial rewards. Lower capital limits apply to companies that do well in CSR (Cheng, 2011). Businesses with extensive CSR efforts and greater social capital, for example, saw higher stock returns during the 2008–2009 financial crisis—roughly 4-7% points higher than businesses with smaller social capital. In general, high-corporate social responsibility (CSR) companies grew more profitably, had higher sales per employee, and raised more debt than low-CSR companies. According to this data, the trust that a company cultivates with its stakeholders and investors—through social capital investments—pays off when the general degree of trust in corporations and markets suffers a negative shock (Lins, 2016).

CSR approach to community development is becoming more transformative, evidence-based, proactive, strategically participatory, localized, and impact, learning, and reflection-focused. They also move away from the transactional model of existential service delivery (Visser, The future of CSR: Towards transformative CSR, or CSR 2.0,

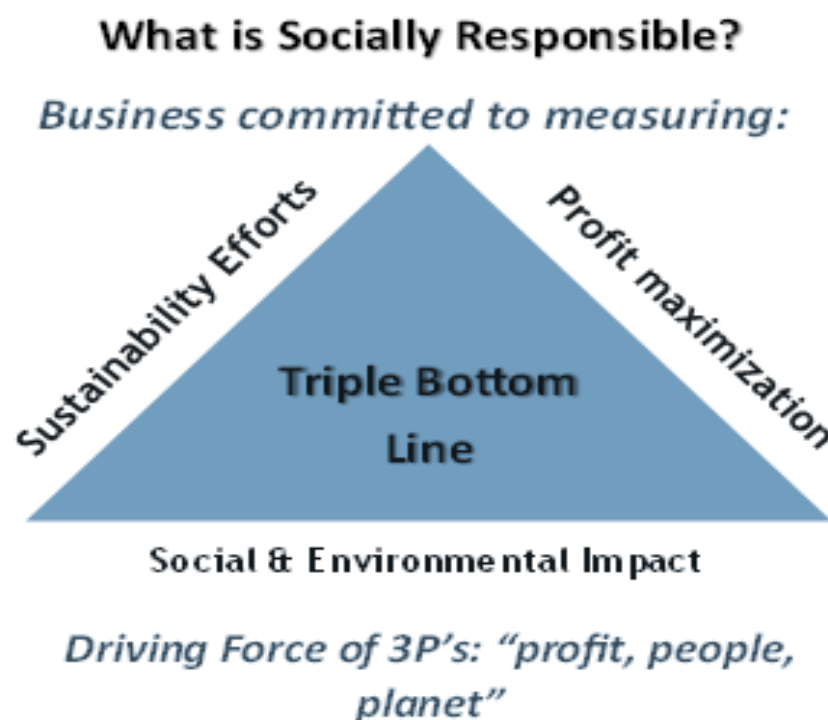
2016) (Visser, The Age of Responsibility: CSR 2.0 and the New DNA of Business, 2010):

The goal is to make the value chain more circular in order to increase community resilience and get them ready for higher living standards. This strategy is based on the idea of establishing the proof of concept at the micro level through contextualized, intensive, multithemed interventions. The location becomes the foundation for additional geographical and thematic expansion once it reaches a saturation point in terms of broad results. The foundation of this strategy is the wide-ranging interaction and communication with the government, from the lowest levels to the highest levels. establishing patterns and working together with a variety of frontline service providers, community leaders, and government duty

bearers to help increase the efficacy of its program initiatives. The method, which is based on the idea of investing in human capital up to the last mile, improves community agency, knowledge, progressive attitudes, perception, and behaviour toward coordinated action for social development that is transformative (Rangan, 2012) (Visser, The Age of Responsibility: CSR 2.0 and the New DNA of Business, 2010).

CSR is typically an organized and systematic model followed by firms, businesses or companies to direct their efforts towards socially responsible projects and interventions that impact and empower. CSR can be categorized four types: environmental (popularly understood by Environment Social Governance or ESG), philanthropy, ethical, and economic responsibility (Communications, 2023).

Figure 4: Figure: Relationships between Profit, Sustainability and Social Impact
(Source: Author Compilation)



Overall, the aim for CSR model is ‘sustainable development’ that engages within a framework of responsible business around value creation, good governance, societal contribution and environmental integrity. Several CSR vision and mission statements speak of ‘intensified efforts through progressive multi-stakeholder partnerships to leave no one behind and contribute to the tenets of nation building’. The interventions intend to be responsive to the needs and understand contextual issues and arrive at a juxtaposition with indices of multidimensional and intergenerational poverty (Chapagain, 2016). In this context, Wayne Visser’s concept of CSR 2.0 discusses the new CSR as transformative; that is based on five components viz. “creativity, scalability, responsiveness, glocality and circularity. The guiding principles here are value creation, good governance, societal contribution and environmental integrity” (Visser, 2016).

Such a program design should develop suitable interventions for community needs. However, the suitability needs to be assessed critically based on the mapping of values, perspectives, and knowledge that the communities resonate with as well as the scope or capacity of sustaining interventions by communities after a program exits. The program design needs to envision the baseline (such as a needs assessment, rural mapping) before program design. It should also include interventions that form networks for communities to leverage after a program exists to ensure the impact long-lasting and scalable.

Today, the thematic range of CSR programs is diverse, with focus on a multi-thematic approach that address all indicators critical for quality living – education, health, livelihood, skill development etc. – to provide the vulnerable with access to holistic

development. Cross cutting concerns such as gender, caste, youth, etc. are also considered important when strategizing the target beneficiaries of the programs. Therefore, the program design and delivery need to be cognizant of the backward to forward linkage in the value chain of community development. This will range from community needs assessment, diverse stakeholder engagement (at government, local development, international levels), convergence of public-private partnerships, schemes, resources and so on. This ensures that the program design-to-deliver model is engaging with the value chain of community development holistically and therefore contributes to transformation for last mile impact (Carroll, 2021; Rangan et al., 2012).

CONCLUSION

CSR models have evolved over the past few years to become more than just transactional models, and thus offering businesses an opportunity to invest in social welfare through CSR interventions to reap better financial performance. For instance, lower capital limits apply to companies that do well in CSR (Cheng, 2011). Thus, businesses with extensive CSR efforts and greater social capital, for example, saw higher stock returns during the 2008–2009 financial crisis—roughly 4-7% points higher than businesses with smaller social capital. In general, high-corporate social responsibility (CSR) companies grew more profitably, had higher sales per employee, and raised more debt than low-CSR companies. According to this data, the trust that a company cultivates with its stakeholders and investors—through social capital investments—pays off when the general degree of trust in corporations and markets suffers a negative shock (Lins, 2016).

CSR approach to community development is becoming more transformative, evidence-based, proactive, strategically participatory, localized, and impact, learning, and reflection-focused. They also move away from the transactional model of existential service delivery (Visser, The future of CSR: Towards transformative CSR, or CSR 2.0, 2016) (Visser, The Age of Responsibility: CSR 2.0 and the New DNA of Business, 2010).

The goal is to make the value chain more circular in order to increase community resilience and get them ready for higher living standards. This strategy is based on the idea of establishing the proof of concept at the micro level through contextualized, intensive, multithemed interventions. The location becomes the foundation for additional geographical and thematic expansion once it reaches a saturation point in terms of broad results. The foundation of this strategy is the wide-ranging interaction and communication with the government, from the lowest levels to the highest levels. establishing patterns and working together with a variety of frontline service providers, community leaders, and government duty bearers to help increase the efficacy of its program initiatives. The method, which is based on the idea of investing in human capital up to the last mile, improves community agency, knowledge, progressive attitudes, perception, and behaviour toward coordinated action for social development that is transformative (Rangan, 2012) (Visser, The Age of Responsibility: CSR 2.0 and the New DNA of Business, 2010).

Therefore, CSR landscape in India has evolved through various phases over the past few years. In this emerging age of responsibility, the current CSR discourse needs to respond to the dynamic social, ethical and environmental trends of society.

Thus, the approach in CSR needs to move beyond just investing or capacitating but to ensure that its leads to transformation that is sustainable and impactful. Understanding the relationships between society and ecosystems at the macro level and adjusting its approach to maximize the results for the larger social, cultural, local, economic etc. systems can ensure transformative journey in corporate social responsibility. Therefore, a CSR model that operates within an ethical business framework cantered and aligned on governance, social upliftment, and environmental integrity (PwC, 2013) (Latapí Agudelo, 2019).

In order to effectively reach the poorest and most vulnerable, that is the 'last mile', CSR program's design and delivery must focus on the community's needs, local cultural contexts; leverage partnerships or collaborations in the local-social ecosystem and so on. (Corporate Social Responsibility- Towards a Sustainable Future A White Paper).

THEORETICAL, PRACTICAL IMPLICATIONS OF RESEARCH

Business ethics, social impact, environment, philanthropy, etc. are now part of what defines CSR vision and mission. Indian government policies such as Companies Act, 2013 (Act), Companies (CSR Policy) Rules, 2014, the New Foreign Contribution (Regulation) Act (FCRA) etc. have played a pivotal role in enabling meaningful public-private partnership for CSR interventions to come to forefront of social impact, sustainability and environmental challenges. Therefore, landscape of social impact investing will only be scaling more through the support of localized funding, which intern means the role of CSR is only to grow furthermore. Therefore, the updated research that bridges the knowledge gaps in

key learning, best practices, recommendations etc. that impact the future roadmap for development through CSR are critical for corporates to have access to. This is particularly important, given the dynamic nature of shift that has happened with the advent of extensive changes in impact investing and evolving role of public private partnership for nation-building development through milestones in policy and practice.

LIMITATIONS OF RESEARCH

This review presents some limitations in terms of further scope and coverage of literature. First, the data used in this study was obtained only from the Scopus database; and has not included other known academic databases, which can limit the exhaustive coverage of the literature that may be published by other relevant journals. Furthermore, this thematic area has several focus areas and is dynamic given the regional, global and policy trends. Therefore, there is further scope to investigate in-depth the literature review on CSR.

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backing. This study was conducted purely based on the author's personal interest in the subject matter.

CONFLICT OF INTEREST

The author(s) declare no conflict of interest. The research paper is based solely on a comprehensive review of the literature, and relevant data, free from any external influence or conflicting interests. All authors have reviewed and approved the final version of the manuscript and agree with its submission.

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CHAPTER 9

STRATEGIC FORESIGHT AND CLIMATE-RESILIENT AGRICULTURE: YEMEN'S PATH TO SUSTAINABLE AGRI-FUTURES

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ABSTRACT

This paper explores how climate change is reshaping Yemen's agriculture through the lens of strategic foresight, highlighting both vulnerabilities and potential pathways to resilience. Leveraging over 40 references and 25 scholarly papers, it uses a qualitative synthesis of secondary data to assess how disrupted rainfall, flooding, heatwaves, and resource stress are impacting crop yields, livestock, and water security. Climate stressors could reduce agricultural output by up to 40% by 2030 and result in substantial economic losses for the livestock sector in a country already facing food scarcity. Reduced pastoral land due to climate change impact will directly impact the livelihood of 79 percent of rural families whose prime source of food is livestock.

Given Yemen's limited institutional readiness, the paper argues for adaptive planning, early warning systems, and ESG-aligned strategies to future-proof food systems. The findings carry strong implications for sustainability leadership and cross-sectoral policy reform in fragile economies.

Keywords: Yemen, Climate Change, Environmental Impact, Agriculture

Production, Crop Yield, Livestock, Draught, Precipitation, Weather events, Climate Resilience, and policy.

INTRODUCTION

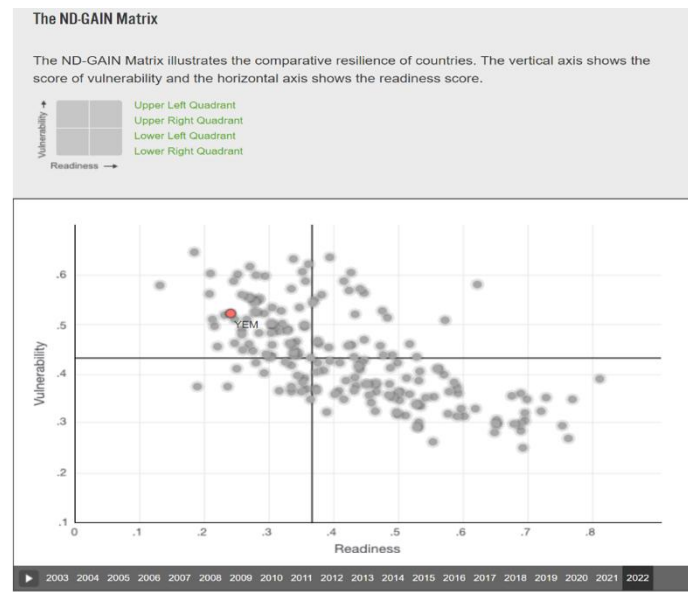
While climate change impacts on agriculture have been widely studied in regions such as Sub-Saharan Africa and South Asia, Yemen's case remains under-explored in academic literature. This study contributes original value by contextualizing Yemen's unique conflict-affected setting and environmental fragility within global climate resilience discourse.

Yemen has a tropical arid and semiarid climate along its coast and inland desert, and a subtropical and temperate climate in its highlands, with generally wide temperature ranges and two monsoonal rainy and dry seasons annually. Over the current climatology (1991–2020), Yemen observed a mean annual temperature of 25.54°C. Average seasonal temperatures nationally during this 30-year period's warm season (May – September) ranged from a minimum of 22.45°C in September to a maximum of 36.50°C in June. Whereas, in the coolest months (November – February), average seasonal temperatures during the same period

ranged from a minimum of 12.93°C in January to a maximum of 28.90°C in November. Mean annual precipitation at the national level from 1991–2020 totaled 189.81 mm, however, there are a variety of regionally and seasonally distinct precipitation regimes. During the course of a typical year, a cooler and drier winter monsoon characterized by northeasterly trade winds across the Arabian Peninsula occurs in all regions from October to March, with the lowest precipitation nationally during the month of December (3.55 mm). The Red Sea Convergence Zone (RSCZ) plays a dominant role in northern governorates' variable winter and early spring precipitation. This rainfall pattern is driven by the confluence of north-westerly winds from the Mediterranean meeting southeasterly winds from the Gulf of Aden.

During spring months (March-May), the first wet season or saif delivers roughly one-third of annual precipitation on average nationally. The Intertropical Convergence Zone (ITCZ) travels quickly across Yemen during May. The spring rainy season's peak month with a national mean precipitation of 28.15 mm. When the ITCZ passes northward in June, the entire country endures a noticeable dip in mean precipitation (17.28 mm nationally). Kharif rains transported by the south-westerly summer wet monsoon occur from July to September and account for another third of annual rainfall, peaking in August in most regions (27.95 mm monthly mean nationally), after which the ITCZ moves southward beyond the Gulf of Aden.

Figure 1: ND-GAIN Matrix for Yemen Climate Vulnerability Rating



According to ND-Gain Matrix, Yemen is the 39th most vulnerable country and the 182nd most ready country. The ND-GAIN Matrix (Fig-1) illustrates the comparative resilience of countries. The vertical axis shows the score of vulnerability and the horizontal axis shows the readiness score. ND-GAIN can be represented as a scatter plot of readiness against vulnerability, that is, the ND-GAIN Matrix (Figure 1). The Matrix provides a visual tool for quickly comparing countries and tracking their progress through time. The plot is divided into four quadrants, delineated by the median score of vulnerability across all the countries and overall years, and the median score of readiness calculated the same way. Approximately half the countries fall to the left of the readiness median and half to the right. Similarly, half fall above the vulnerability median and half below.

Methodology

This study employs a qualitative synthesis of over 40 secondary sources, including global datasets and regional assessments specific to Yemen. While the study uses robust qualitative synthesis, it lacks consistent access to longitudinal, large-sample primary datasets, which limits deeper statistical modeling. However, Triangulation was enhanced by comparing data from global sources (e.g., IPCC, World Bank) with Yemen-specific reports and institutional studies (e.g., YFCA, EPA, UNFCCC), ensuring a more robust validation of findings. In addition, qualitative insights were cross-checked with available numeric indicators to align with patterns observed in climate impact literature across fragile states.

LITERATURE REVIEW

CLIMATE TRENDS

Temperature

Between 1971 and 2020, Yemen's mean annual temperature increased by 0.42° C per decade, with large regional and seasonal differences. During this period, the national average minimum temperatures increased by 0.46° C per decade, while average maximum temperatures increased by 0.38° C per decade. The regional differences in the temperature trends are portrayed by Al Jawf in the highlands and Aden along the coasts. Al Jawf experienced the most pronounced rise in annual average temperatures, with mean temperatures increasing by 0.58° C per decade, minimum temperatures by 0.65° C, and maximum temperatures by 0.51° C. Coastal Aden registered the smallest temperature increases, with mean and minimum temperatures rising by just 0.16° C per decade and maximum temperatures by 0.17° C per decade. Seasonal temperature variations over the past 50 years (1971-2020) are evident, with Al Jawf experiencing notable increases. The region experienced a temperature rise of 0.85° C per decade during the summer and 0.74° C per decade in the fall. In contrast, Aden had the most modest seasonal increases, particularly in the spring, where mean, minimum, and maximum temperatures increased by only 0.14° C, 0.14° C, and 0.15° C per decade, respectively.

Various studies underscore the growth in the aggregate temperatures, for example, according to the Country Climate and Development Report (CCDR), the aggregate temperature could rise by up to 1.69 C under pessimistic climate scenario. This rise will be

more prominent on the coastal regions experiencing highest increase during winter and spring, and highlands and eastern regions during the other seasons. Similarly, according to the Yemen's Second National Communication under the United Nations Framework Convention on Climate Change 2013, it is estimated that the temperatures in Yemen are likely rise further by 1.2° C – 3.3° C by 2060, depending on the rate of climate change. Temperature extremes will also continue to rise. By the end of this century, the hottest day of the year is projected to be 3–7° C hotter than it is today. Using a heat index, scientists estimate that there are about 14 extremely uncomfortable days per year at present, and there could be over 100 such days by the end of the century. Global climate models predict a notable increase in Yemen's temperature by the end of the century. Under the high-emission RCP8.5 scenario, maximum temperatures may rise by 1.56° C and minimum temperatures by 2.3° C. (Al-Falahi et al., 2024). This underscores the pressing need for climate adaptation strategies to address the impacts on Yemen's water resources and agricultural systems.

Precipitation

Yemen's annual rainfall varies significantly across the country. By 2050, precipitation is projected to increase in Yemen between 15 percent under pessimistic scenarios and 43 percent under more optimistic scenarios (*World Bank Group, 2024*). The western region receives relatively higher rainfall, with some areas in the southwest reaching up to 800 mm annually (*Wilby and Yu, 2013*). In contrast, the coastal plains experience less than 50 mm of rainfall each year, remaining predominantly hot and dry. From 1901 to

2022, Yemen's average annual precipitation was 186.04 mm, peaking at 326.33 mm in 1963 and dropping to a record low of 100.14 mm in 1984. Yemen has seen a notable decrease in rainfall per decade, particularly along the western and southwestern coasts, although regional and interannual variations were evident. Between 1971 and 2020, Yemen's mean annual precipitation declined by 6.25 mm per decade. According to the World Bank, Al Hudaydah on the Red Sea experienced the most pronounced reductions, with total precipitation falling by 38.25 mm per decade, with significant declines in summer (–15.34 mm) and fall (–12.46 mm). In contrast, regions outside the coastal Tihama zone and areas east of Abyan showed no notable annual or seasonal precipitation changes. The overall lack of significant change in much of Yemen's rainfall highlights the impact of high variability from year-to-year, as well as the historical influence of climate phenomena such as the El Niño-Southern Oscillation and the Indian Ocean Dipole.

Future projections suggest that rainfall variability will increase, with an uneven distribution across the country. The western region, typically wetter, is expected to receive less rainfall, while the eastern region may see more as the century progresses (*IFAD, 2021*). Heavy rainfall events, leading to flooding, are likely to become more frequent between September and November. These changes emphasize the importance of implementing robust water management strategies and upgrading infrastructure to protect agriculture and water resources from extreme weather events.

Extreme Weather Events

Drought

In Yemen, low and erratic rainfall has led to drought, severely impacting rainfed agriculture and livestock. Drought conditions have hindered livelihoods and sustainable development efforts. Analysis using index maps generated using GIS revealed that from 1985 to 2015, the area experiencing severe drought in Yemen expanded by 26 percent, while areas under moderate drought surged by 64 percent (*Dhaifallah et al., 2018*). The third driest year in the past four decades was recorded in 2022, following 2014 and 2000. These droughts, combined with a rise in temperatures, have affected all agricultural regions, contributing to increased desertification and deforestation, which rose from 90 percent in 2014 to 97 percent in 2022. Despite projected increases in overall precipitation and intensity in Yemen, drought episodes continue to pose a threat due to multi-model uncertainty, high precipitation variability, and longstanding water scarcity. Yemen is also highly susceptible to drought-related health impacts such as malnutrition, vector-borne, and water-borne diseases (*Bellizzi et al., 2020*). Sparse data records prevent complete identification of drought drivers and characteristics of variability, which require further study.

Cyclones and Floods

Yemen has experienced increasing cyclone frequency and intensity, notably Chapala (2015), Sagar (2018), and Gati (2020), resulting in fatalities, asset losses, and displacement. Such extreme events reinforce the need for early warning systems and climate-resilient infrastructure.

Sea Level Rise

Global sea-level rise is a well-established consequence of global warming. Satellite data from 1961 to 2003 reveals that sea levels have been rising at 3 mm/year, a rate significantly higher than the average of the previous 50 years (*Bindoff et al., 2007*). Yemen is among the five most vulnerable low-income countries to sea-level rise, with over 50 percent of its coastal population at risk and more than half of its coastal urban areas falling within potential impact zones (*Dasgupta et al., 2009*). According to *Unnikrishnan and Shankar (2007)*, sea level measurements from the northern Indian Ocean indicate that the sea level at Aden rose by 2 mm per year. By 2100, Yemen's sea level is projected to rise by 0.3 to 0.54 meters (*YFCA, 2023*). USAID projections suggest that this increase will put over 50 percent of Yemen's coastal areas at risk and affect more than 55 percent of the country's coastal population. A rise of 0.5m sea level is expected to inundate 440 ha in Al Mukalla coastal zone. A rise of 0.33m will inundate 5.7 percent of the Aden governorate while a rise of 0.6m will inundate 6 percent of the Aden governorate (*Al Saafani et al., 2015*). By the end of the century, sea levels rise is estimated to result in US\$2 billion in property damage and potential storm surge affecting half of Aden's population and water supply that originates from vulnerable local aquifers.

Earthquake, Volcano, and Landslides

Yemen is positioned on the Arabian plate, near two tectonically active rift zones, making it vulnerable to seismic activity. Yemen occasionally experiences small to moderate earthquakes, particularly 200–300 km from the Red Sea's rift axis, with some events reaching magnitudes of 6 or higher on the

Richter scale. The deadliest earthquake in recent history occurred near Dhamar in 1982, registering a magnitude of 6.3, causing around 2,800 deaths, damaging many buildings, and affecting over half a million people. Between 1980 and 2020, three landslides affected 31 people and one volcanic activity impacted 15 people.

FINDINGS

Recent heavy rains and flash floods in August 2024 caused significant damage to agricultural communities across Yemen's western highlands and lowlands. Approximately 98,726 hectares of farmland were affected, along with 279,400 ruminants (sheep and goats). The rains particularly devastated livestock in the governorates of Al Hudaydah, Al Jawf, Hajjah, Sadah, and Amran, where over 244,000 sheep and goats were impacted. These floods highlighted Yemen's systemic agricultural fragility, which was already vulnerable due to years of conflict and economic instability. The extensive damage to crops and livestock is expected to trigger a rise in food prices, further burdening household budgets across the country.

Agriculture Impact

Climate change is intensifying the already significant challenges to Yemen's agricultural sector. Unpredictable rainfall disrupts growing seasons, making it harder for farmers to plan and manage crops effectively. Intense rainstorms have led to flooding, damaging farmland and infrastructure, while rising temperatures have hastened crop maturity, reducing overall yields. The increasing frequency and severity of droughts have exacerbated water scarcity, putting additional

pressure on Yemen's limited agricultural resources.

Cereal crops, such as wheat, barley, and sorghum are expected to experience significant declines in yields due to decreased rainfall and heightened water stress, potentially resulting in smaller grain sizes and lower production (*YFCA, 2023*). Pulses like lentils and beans will likely face reduced yields, as drought and heat stress hinder their germination and maturation processes. Some regions may see a slight increase in fruit and vegetable production due to longer growing seasons, but overall yields are likely to suffer from irregular water availability and extreme weather events. Increased frequency of heavy rainfall and flash floods, particularly in coastal plains and desert areas, pose a significant risk that may lead to crop loss, soil erosion, and reduced arable land.

Droughts have significantly reduced crop yields in Yemen and during certain months, dry spells and drought contribute to desertification, resulting in an annual loss of 3-5 percent of arable land. Water scarcity remains the largest barrier to agricultural productivity, with declining groundwater reserves exacerbated by climate change. Agricultural output is expected to reduce by as much as 40 percent by 2030. The effects of climate change on agricultural productivity will vary across regions, with projected yield reductions of 20 percent to 40 percent in Raymah and Abyan governorates, while Sana'a and Al Bayda may see yield increases of 12 to 30 percent by 2080, assuming a 3.1° C rise in temperature and a 3 percent decrease in rainfall.

Yemen has frequently faced severe floods due to intense rainfall, and although these floods contribute positively by depositing nutrient-rich sediments in valleys and plains, boosting soil fertility, they also degrade terraces and erode fertile soil along wadi banks. Flood-related damages to infrastructure are projected to rise by up to 20 percent for pluvial floods and as much as 36 percent for fluvial floods over a 50-year period. Recurrent droughts and floods have also significantly impacted livelihoods, with crops destroyed by pests, locusts, diseases, and sandstorms, that contribute to desertification and threaten food security (Godde *et al.*, 2021). Henna, a popular crop in Ghail Bawazir (Hadhramaut governorate), is affected by climate change coupled with a lack of access to energy.

According to the *World Bank Group (2024)*, despite these challenges, Yemen's shifting climate patterns, particularly the possibility of increased precipitation, present opportunities

to mitigate some of the supply-demand imbalances. Strategic investments in water management, soil conservation, and climate-smart agriculture could boost crop yields by up to 13.5% under optimistic climate scenarios during 2041–2050, contributing to improved food security and nutrition for vulnerable populations. The fisheries sector, a vital livelihood source for many Yemenis, is also under threat from rising sea temperatures and disrupted marine ecosystems, with fish stocks potentially declining by as much as 23%. To safeguard these livelihoods and support food security, sustainable fishing practices and robust coastal management strategies must be prioritized.

A Comparative Analysis of Agriculture Production in Yemen, West Asia, and the World

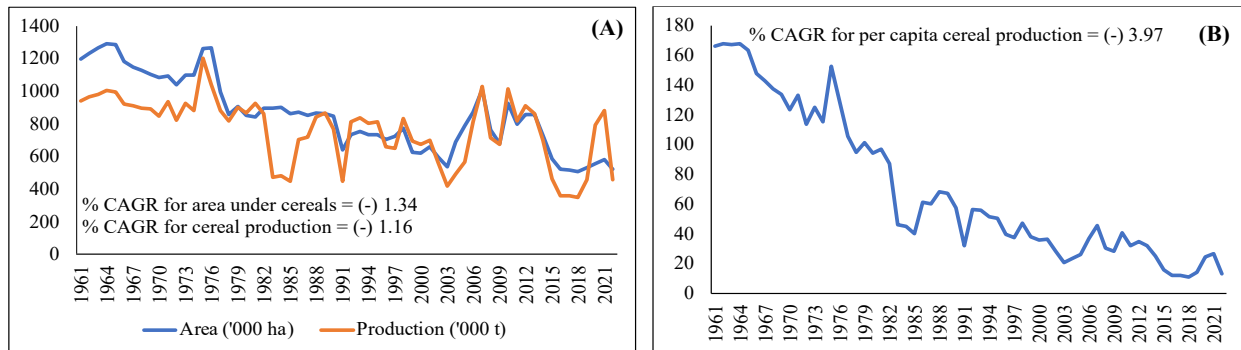
is statistically presented in Table 1. Decline in per capita agriculture production and arable land is presented in Figures 2A and 2B.

Table 1: Average area (ha), production (t), yield (t/ha) in Yemen, West Asia, and between 2000 and 2022, and percent CAGR of major crops during the last 23 years (2000 to 2022) in Yemen
[Data source: FAOSTAT, 2024]

Crop	Production attribute	Yemen	West Asia	World	% CAGR in Yemen (2000 to 2022)
Sorghum	Av Area (ha)	320,158	384,447	40,768,941	(-) 0.64
	Av. Production (t)	324,789	587,682	59,100,650	(-) 1.92
	Av. Yield (t/ha)	1.01	1.53	1.45	(-) 1.29
Millet	Av Area (ha)	92,571	101,873	30,930,561	(-) 0.65
	Av. Production (t)	58,219	80,348	30,509,025	(-)1.15
	Av. Yield (t/ha)	0.63	0.79	0.99	(-) 0.51

Wheat	Av Area (ha)	60,390	10,578,223	217,439,892	(-) 1.62
	Av. Production (t)	111,548	28,649,987	766,930,904	(-) 1.51
	Av. Yield (t/ha)	1.85	2.71	2.71	(+) 0.11
Maize	Av Area (ha)	36,114	1,017,787	199,473,726	(+) 0.36
	Av. Production (t)	61,052	8,100,694	1,157,860,499	(-) 0.76
	Av. Yield (t/ha)	1.69	7.96	5.80	(-) 1.11
Dates	Av Area (ha)	14,620	539,872	1,263,292	(-) 1.80
	Av. Production (t)	61,679	3,322,227	9,414,051	(+) 3.58
	Av. Yield (t/ha)	4.22	6.15	7.45	(+) 5.48
Grapes	Av Area (ha)	11,944	618,841	6,863,047	(-) 2.69
	Av. Production (t)	136,337	5,778,249	77,134,538	(-) 0.39
	Av. Yield (t/ha)	11.42	9.34	11.24	(+) 2.37
Coffee, green	Av Area (ha)	35,977	35,977	12,067,376	(+) 0.63
	Av. Production (t)	27,863	27,863	10,687,381	(+) 5.20
	Av. Yield (t/ha)	0.77	0.77	0.89	(+) 4.54
Sesame seeds	Av Area (ha)	21,199	61,594	12,924,207	(-) 2.08
	Av. Production (t)	20,265	52,748	6,608,214	(+) 0.07
	Av. Yield (t/ha)	0.96	0.86	0.51	(+) 2.19

Figure 2: (A) Area ('000 ha) and production ('000 t) of cereals and (B) Per capita cereal production (kg/person/year) in Yemen during 1961 to 2022. [Data sources: Agricultural data from FAOSTAT, 2024, and Population data from <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=YE>)]



Livestock Impact

Increased Temperature and Carbon Dioxide Impact on Livestock

Warmer temperatures and shifting rainfall patterns create favorable conditions for parasites and pathogens, leading to higher disease incidence among livestock in Yemen. An estimated temperature increase of 0.3° C to 4.8° C by 2100 (*IPCC, 2014*) poses significant risks to livestock, affecting feed crop and forage production and its quality (*Polley et al., 2013*), water availability, animal growth, milk production (*Nardone et al., 2010; Henry et al., 2012*), disease incidence and spread (*Thornton et al., 2009; Nardone et al., 2010*), and reproductive performance (*Nardone et al., 2010*).

Rising temperatures contribute to heat stress in animals, negatively affecting their growth, reproductive health, and milk production. These combined effects are expected to result in substantial economic losses, with projections suggesting that rural households, which rely on livestock for both income and

food security, could face losses exceeding \$3.5 billion by 2050 due to climate-related damages. Herders in Yemen find it difficult to implement effective climate change adaptation strategies, largely due to the ongoing conflict, lack of infrastructure, and limited access to resources.

Various factors, including temperature, humidity, species, genetic traits, developmental stage, and nutritional status, influence heat stress in livestock. The effects of heat stress on livestock can be seen in nutrient utilization, feed intake, production, reproduction, health, and mortality. Most research on feed intake has been focused on cattle, where heat stress reduces feed consumption and feed conversion efficiency (*Haun, 1997; Thornton et al., 2009*). For cattle, decreased feed intake results in a negative energy balance and reduced weight gain (*Lacetera et al., 2003*). Heat stress is a major contributor to reduced production in both the dairy and beef industries, leading to significant economic losses. In the United

States, annual economic losses due to heat stress range from 1.69 to 2.36 billion US dollars, with approximately 50 percent occurring in the dairy sector (*St-Pierre et al., 2003*).

Rising CO2 levels and temperatures alter forage growth and pasture composition, reducing nutrient quality (*IFAD, 2010; Thornton et al., 2015*). This may lower feed digestibility, affecting livestock health and productivity in Yemen’s already fragile environment.

Water Scarcity Impact on Livestock

Water scarcity, rising temperatures, and droughts, significantly impact the livestock sector that requires water for animal consumption, growing feed crops, and processing products (*Thornton et al., 2009*). Livestock use about 8 percent of global potable water resources, and rising temperatures could double or triple water consumption by animals (*Nardone et al., 2010*). Rising sea levels lead to increased saltwater intrusion into coastal freshwater aquifers (*Karl et al., 2009*). Salination, combined with existing chemical and biological contaminants and high concentrations of heavy metals in water bodies, can affect livestock production (*Nardone et al., 2010*). Increased salination can disrupt animal metabolism, fertility, and

digestion. Chemical contaminants and heavy metals pose risks to cardiovascular, excretory, skeletal, nervous, and respiratory systems, and can degrade the hygienic quality of livestock products (*Nardone et al., 2010*).

Flooding Impact on Livestock

According to the Sana’a Center for Strategic Studies, the effects of floods in Yemen on livestock are profound: many animals are lost due to drowning; flood waters facilitate the spread of diseases, such as foot-and-mouth disease and other waterborne illnesses; and floods devastate grazing lands and destroy fodder supplies, leading to food shortages for livestock. The consequent loss of livestock and reduced agricultural productivity create significant economic hardships for farmers who depend on their herds for livelihood. In severe cases, floods force farmers to relocate, disrupting their ability to manage and care for their livestock. These challenges underscore the urgent need for improved flood management strategies and support for the affected communities in Yemen.

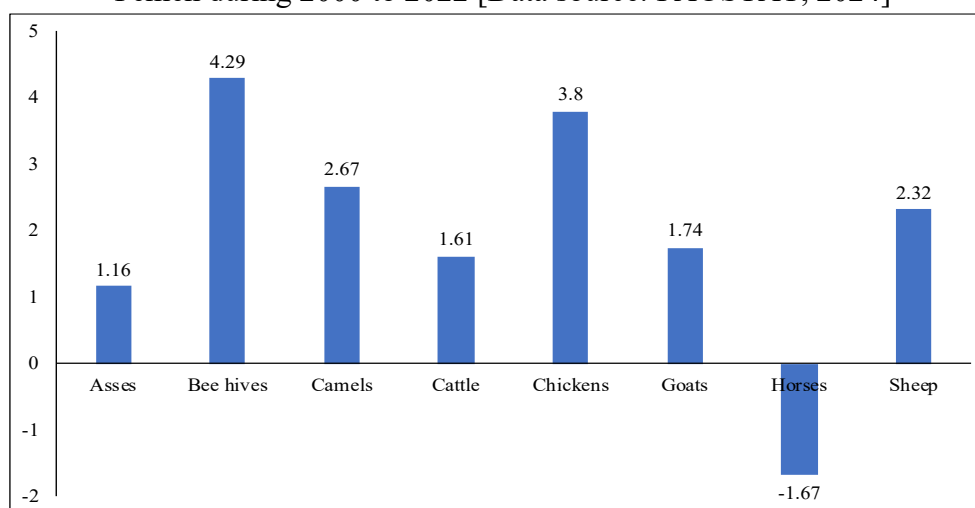
The average production of livestock products and the compound annual growth rate for the number of livestock in Yemen in the past 22 years are presented in Table 2 and Figure 3, respectively. The timeframe selected for data analysis in this manuscript depends on the availability of data.

Table 2: Average production of livestock products in Yemen during 2000-2022. (Data source: FAOSTAT, 2024)

Livestock Product	Average production ('000 t) by						Total ('000 t)
	Chicken	Sheep	Goats	Cattle	Camels	Bee hives	
Meat	191.556	60.965	77.511	74.120	2.895		407.046
Eggs	1393.800						1393.800

Edible offal		12.071	15.502	13.985	0.434		41.992
Fat		6.096	3.876	2.238	0.197		12.406
Milk		58.693	74.563	237.565	2.930		373.751
Raw hide		12.071	15.502	13.845			41.418
Wool		8.845					8.845
Honey						2.751	2.751

Figure 3: Percent compound annual growth rate (% CAGR) for the number of livestock in Yemen during 2000 to 2022 [Data source: FAOSTAT, 2024]



Soil Impact

Climate change has profound effects on soil properties and processes, resulting in various consequences for agriculture and ecosystems. Rising temperatures may lower soil organic carbon, reducing soil fertility and its capacity to store carbon. These changes can affect soil microbial activity, crucial for nutrient cycling and organic matter decomposition. Droughts and temperature rise have increased desertification and deforestation from 90 percent in 2014 to 97 percent in 2022. Desertification has reduced 3 to 5 percent of Yemen's arable land each year. The decline of arable land from 1.6 million ha in 2010 to 1.2 million ha by 2020 highlights the severe impact of climate change on soil and agricultural productivity in Yemen. The

overall downward trend underscores the urgency of addressing these challenges (USAID, 2023)

Pathogenic Impact of Climate Change on Livestock and Crops

Higher temperatures can accelerate the growth and reproduction of pathogens and parasites that spend part of their life cycle outside of their hosts, increasing the risk of infection and disease outbreaks in livestock (Karl *et al.*, 2009). This increased pathogen and parasite activity, combined with reduced resources, poses a significant threat to livestock health and productivity in regions vulnerable to climate change, like Yemen. As global temperatures continue to rise, periods of extreme heat are expected to become more

intense, frequent, and prolonged. This scenario heightens the likelihood of increased outbreaks of infectious bacterial, fungal, viral, and vector-borne diseases (*Anikeeva et al., 2024*).

Climate Resilience in Yemen

The Notre Dame global Adaptation Initiative (ND-GAIN) Index ranked Yemen 171st out of 185 countries in 2024. It is among the most vulnerable countries (148th rank) and one of the least prepared countries (182nd rank), indicating high susceptibility with low readiness to tackle the impacts of climate change.

Yemen has been left behind despite rise in climate finance, reaching a record high of US\$ 1.3 trillion in 2021/2022. Yemen receives significantly less on average, with between US\$1 to US\$2 per capita in adaptation finance compared to almost US\$11 in countries with the lowest vulnerability (*World Bank Group, 2024*).

Institutional Framework and Policies

The capacity of Yemen's institutions to respond to the impacts of climate change has been eroded by the protracted conflict leading to the fragmentation of several institutions. Hence, a robust and reliable institutional setup is required to address the cross-sectoral nature of adaptation and mitigation measures. The National Climate Change Committee (NCCC) was officially launched in 2009 and updated in 2023, it oversees the Climate Change Coordination Mechanism (CCCM), which consists of three levels: i) The high-level Climate Change Committee chaired by the Minister of Planning and International Cooperation or by the Minister of Water and Environment, ii) The Technical Committee

chaired by the EPA Chairman, and iii) the Sub-technical Committees (*World Bank Group, 2024*).

Since 1996, Yemen has been a signatory to the UN Framework Convention on Climate Change (UNFCCC) and since 2008 to the Kyoto Protocol as a non-Annex I Party. The Environmental Protection Authority (EPA) serves as the national focal point for implementing these agreements. With support from international development partners like UNDP, the Global Environment Facility (GEF), the World Bank, and others, Yemen has taken steps to establish legislative, institutional, and policy frameworks. Key environmental policies, such as the National Environmental Action Plan (NEAP) and the National Strategy for Environmental Sustainability (NSES), outline major environmental concerns and identify capacity-building needs, especially for institutions responsible for implementing climate protection measures.

Yemen institutionalized the Clean Development Mechanism (CDM) under the Kyoto Protocol and, in 2009, formed the Inter-Ministerial Committee for Climate Change (IMCCC). This committee, supported by a technical body consisting of representatives from various agencies, aims to enhance institutional coordination and bolster climate change leadership within the country.

DISCUSSION AND CONCLUSIONS

Key findings on Yemen's agriculture sector vulnerabilities to climate change highlight the critical challenges:

- **Water Usage:** Agriculture is the dominant water consumer in Yemen,

accounting for 90 percent of water use, while domestic and industrial sectors use only 10 percent of available water resources.

- **Extreme heat and crop yields:** Projections indicate that by mid-century, Yemen will experience regionally varied increases in extreme heat. This could potentially boost crop yields in the highlands, but other regions are expected to suffer steep declines in agricultural productivity.
- **Water scarcity and crop yields:** Floods and drought have negatively impacted crop yields, but water scarcity remains the largest barrier to agricultural productivity. Groundwater reserves are projected to be nearly exhausted by 2030, leading to an estimated 40 percent loss in agricultural output.
- **Impact on livestock:** 79 percent of rural families, or approximately 1.5 million households, depend on livestock, a sector severely affected by reduced grassland areas and declining productivity.
- **Cropland decline:** Due to climate changes and conflict effects, Yemen's cropland area shrank from 1.6 million ha in 2010 to its lowest point in 2018. Since 2020, it has begun stabilizing.
- **Water Availability:** Yemen's per capita renewable water availability is just 85 cubic meters per year, far below the global water scarcity threshold of 1,000 cubic meters.

Strategic Foresight for Sustainable Agriculture in Yemen

Given Yemen's acute vulnerability to climate change, strategic foresight is essential for crafting resilient agricultural systems. This involves scenario planning, risk anticipation, and systemic adaptation planning across sectors. Climate-smart agriculture (CSA), early warning systems, and adaptive policy frameworks should be embedded within national development agendas. Proactive institutional reforms, coupled with the strengthening of community-based resilience planning and investments in technology and infrastructure, are vital. Integrating ESG (Environmental, Social, Governance) considerations within agriculture planning can further enhance sustainability. This transition requires coordinated efforts across ministries, NGOs, and international partners to ensure Yemen's food systems are future-proof, inclusive, and shock-resilient.

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CHAPTER 10

THE PRICE OF SILENCE: ROLE OF WHISTLEBLOWER PROTECTION IN CORPORATE CULTURE

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ABSTRACT

This study investigates the ethical dilemmas and organizational challenges surrounding whistleblowing, emphasizing the tension between employee loyalty and moral responsibility. Using a qualitative case study approach, the analysis shows that whistleblowers often face retaliation, social isolation and psychological strain. Strengthening protection mechanisms and fostering ethical corporate cultures are essential for promoting integrity and preventing misconduct.

Keywords: Whistleblowing, Ethical Behaviour, Corporate Integrity, Organizational Misconduct, Whistleblower Protection

INTRODUCTION

Whistleblowers are the unsung heroes who expose the dark corners of corruption, shedding light on wrongdoing that might otherwise remain concealed. In India, where the fight against corruption is a persistent struggle, protecting whistleblowers is not merely a moral obligation, but an essential pillar of a thriving democracy.

Whistleblowers serve as watchdogs, holding the powerful accountable. Their revelations often trigger investigations, reforms, and even prosecutions. This transparency fosters public

trust in institutions and strengthens democratic processes. Whistleblowers frequently face retaliation, intimidation, and even violence. Thus, robust legal protection is paramount to encourage individuals to come forward without fear of retribution.

India has taken steps to safeguard whistleblowers, such as the Whistleblower Protection Act, 2014. However, the implementation and enforcement of these laws remain a challenge. To truly protect whistleblowers and solidify democracy, India must cultivate a culture where whistleblowing is encouraged, and those who expose wrongdoing are shielded from harm. This involves ensuring swift investigations, fair treatment, and adequate compensation for whistleblowers. By doing so, India can send a powerful message that corruption will not be tolerated and that the pursuit of truth and justice is a fundamental right.

Whistleblowing presents significant ethical complexity, as individuals must balance personal risk against organizational integrity. Despite the negative repercussions whistleblowers frequently encounter—such as retaliation, career setbacks, and social isolation—the question remains: what motivates individuals to come forward? This study explores these motivations, the challenges whistleblowers face, and the importance of fostering a corporate culture

rooted in integrity.

In India, whistleblowing mechanisms are primarily governed by legal frameworks designed to protect individuals and promote transparency. The Companies Act 2013 mandates vigil mechanisms for listed companies, while the SEBI (Listing Obligations and Disclosure Requirements) Regulations require listed entities to establish whistleblower policies. Additionally, the Whistleblower Protection Act of 2014 provides safeguards for individuals reporting corruption in public sector organizations.

Several key concepts underpin effective whistleblowing systems:

- **Vigil Mechanism:** A formal system enabling employees to report unethical practices confidentially.
- **Audit Committee Oversight:** Ensures independence and impartiality in handling complaints.
- **Anonymous Reporting Channels:** Protects identity and reduces fear of retaliation.
- **Legal Immunity and Anti-Retaliation Provisions:** Safeguards whistleblowers from victimization.
- **Role of Corporate Governance Codes:** Reinforces ethical standards and accountability.

Despite these frameworks, implementation challenges persist. Cultural barriers, lack of awareness, and fear of career repercussions often discourage employees from reporting wrongdoing.

While global studies have examined whistleblower protection extensively, empirical evidence from Indian corporate

culture remains limited. Most existing research focuses on legal compliance rather than the cultural and behavioural aspects influencing whistleblowing. There is a lack of comparative case studies assessing how protection mechanisms shape organizational ethics and employee willingness to report misconduct.

Whistleblowing involves complex ethical considerations, as individuals weigh personal risk against organizational integrity. Despite legal frameworks in India, such as the Companies Act 2013 mandating vigil mechanisms, SEBI regulations requiring whistleblower policies and the Whistleblower Protection Act 2014 offering safeguards, implementation challenges persist due to cultural barriers, lack of awareness, and fear of retaliation. Key mechanisms include confidential vigil systems, audit committee oversight, anonymous reporting channels, and anti-retaliation provisions, all aimed at reinforcing corporate governance codes and ethical accountability. However, most existing research focuses on legal compliance rather than the cultural and behavioural aspects influencing whistleblowing, leaving a gap in understanding how these mechanisms shape corporate ethics and employee willingness to report misconduct. This study seeks to bridge that gap by examining the ethical complexity of whistleblowing, the challenges whistleblowers face, and the role of organizational and legal frameworks in fostering a culture of integrity within Indian corporations.

LITERATURE REVIEW

The whistleblower mechanism is a critical tool for promoting accountability, transparency,

and ethical conduct within organizations. It provides employees and other stakeholders with a safe channel to report unethical practices, fraud, corruption, and other forms of misconduct without fear of retaliation. The following review explores various facets of the whistleblower mechanism, supported by existing research.

Significance Of Whistleblower Mechanisms

Whistleblower mechanisms play a vital role in promoting integrity within organizations. Callahan et al. (2004) highlight that well-designed whistleblower systems not only expose unethical practices but also serve as a deterrent against potential misconduct. Furthermore, research by Near and Miceli (1985) indicates that organizations with strong whistleblower mechanisms tend to foster greater trust and boost employee morale by establishing a workplace where concerns are addressed with seriousness and accountability. Whistleblower mechanisms, while essential, encounter several challenges. A primary obstacle is the fear of retaliation, which remains a significant deterrent to reporting unethical practices (Miceli et al., 2008). Employees often view whistleblowing as a high-risk action, concerned about potential repercussions such as job loss, harassment, or social isolation. Moreover, the organizational culture is a critical factor; environments that emphasize transparency and ethical values tend to encourage whistleblowing, whereas toxic cultures act as a barrier (Brown et al., 2014).

Legal Frameworks And Protections

Legal safeguards are crucial for the effectiveness of whistleblower mechanisms.

For instance, the Sarbanes-Oxley Act of 2002 in the United States requires whistleblower protection in publicly traded companies to combat corporate fraud. Likewise, the Whistleblower Protection Act of 1989 provides federal employees with protection against retaliation. However, Lewis and Vandekerckhove (2017) argue that despite these legislative measures, enforcement gaps often hinder their practical effectiveness.

To strengthen whistleblower mechanisms, organizations can adopt several best practices. These include establishing anonymous reporting channels, offering regular training to employees, and ensuring prompt and unbiased investigations of reported issues. Near and Miceli (1996) underscore that strong leadership commitment is essential, as managerial support significantly influences the success of whistleblower policies. Technological advancements have significantly transformed whistleblower mechanisms. Digital platforms enable anonymous reporting and real-time tracking of complaints, enhancing both accessibility and transparency (Taylor & Curtis, 2010). However, the adoption of technology must be accompanied by robust data privacy measures to protect whistleblowers' identities.

The effectiveness of whistleblower mechanisms is influenced by cultural and organizational contexts. According to Hofstede's cultural dimensions, societies with high power distance may hinder whistleblowing due to hierarchical constraints (Hofstede, 1980). Furthermore, cultural norms surrounding loyalty and collectivism can impact an individual's willingness to report unethical behaviour.

METHODOLOGY

Research Approach:

This research paper adopts a qualitative methodology to explore two pivotal whistleblowing cases in India. These cases were meticulously selected based on their societal impact, the scale of corruption or misconduct they exposed, and the repercussions faced by the whistleblowers. Through this analysis, the study aims to provide valuable insights into the challenges whistleblowers encounter and the consequences of their actions within the Indian context. It delves into the ethical dilemmas whistleblowers navigate, the systemic shortcomings their disclosures highlight, and the reactions from both institutions and the public. This comprehensive investigation seeks to evaluate the effectiveness of whistleblower mechanisms while shedding light on the cultural and legal frameworks influencing whistleblowing in India.

DATA COLLECTION:

Literature Review:

An extensive examination of scholarly literature, government publications, news reports, and legal documents related to whistleblowing, corruption, and public administration in India.

Case Study Analysis:

The study includes an in-depth analysis of two carefully selected whistleblowing cases, providing a comprehensive overview of each case's key elements. This involves examining the backgrounds and motivations of the whistleblowers, shedding light on their personal and professional circumstances that led to their decision to expose misconduct. A

significant focus is placed on the consequences faced by the whistleblowers themselves, highlighting the risks they endured, such as retaliation, harassment, legal challenges, or social ostracism. This includes exploring both the immediate and long-term effects on their careers, reputations, and personal lives. By analyzing these dimensions, the study aims to offer a nuanced understanding of the dynamics of whistleblowing in India and its broader implications for governance and ethical accountability.

Content Analysis:

A systematic analysis of the collected data involves rigorously examining the details of the two selected whistleblowing cases to identify recurring themes, patterns, and challenges faced by the whistleblowers in India. By analyzing the narratives of the whistleblowers, the nature of the corruption uncovered, and the subsequent responses from authorities, the study will identify overarching themes. These may include ethical dilemmas faced by whistleblowers, the role of institutional culture in either supporting or discouraging whistleblowing, and the societal impact of the corruption exposed. The analysis looks for patterns across the cases, such as similarities in the types of corruption (e.g., financial fraud, abuse of power, or environmental violations), the characteristics of the organizations involved, or the sectors most affected (public, private, or nonprofit). It will also explore patterns in the legal and institutional responses, such as the speed and transparency of investigations, the protection or persecution of whistleblowers, and any recurring procedural barriers. The analysis will examine the obstacles faced by

whistleblowers, such as the fear of retaliation, lack of legal protection, social isolation, and challenges in getting their reports taken seriously. It will also assess how these challenges differ depending on the level of government, the industry involved, or the whistleblower's position within the organization.

This systematic analysis aims to distill the key lessons from the cases, offering insights into the strengths and weaknesses of the whistleblower mechanisms in India and providing recommendations for improving these systems in the future.

PROTECTING WHISTLEBLOWERS IS KEY TO PROTECTING DEMOCRACY IN INDIA

The need for whistleblowing has become increasingly critical in contemporary times as organizations worldwide face mounting pressure to maintain transparency and accountability. Whistleblowing plays an essential role in evaluating and ensuring the integrity of organizational procedures. It helps to highlight discrepancies, unethical practices, and corruption within an organization, and by doing so, justifies the transparency of its workflows. An organization's ability to encourage and protect whistleblowing is vital to maintaining its ethical standards, ensuring that it operates in alignment with both legal and moral expectations.

Ethical values are fundamental to the success and sustainability of any organization. As organizations strive to improve their operations and governance, it is essential that these ethical principles are upheld, especially when it comes to reporting unethical behavior. Without a mechanism in place to support

whistleblowers, organizations risk undermining trust among employees, customers, and the public, which can lead to reputational damage and potential legal consequences. Ensuring that ethical values are embedded within organizational procedures, therefore, is not only a matter of compliance but also one of fostering a culture of responsibility and integrity.

The concept of the "whistleblower" often evokes the image of a courageous individual who is willing to risk their own safety and livelihood to expose corruption and unethical practices. In India, one of the most tragic and high-profile examples of whistleblowing is the case of Satyendra Dubey, whose story has become emblematic of the risks faced by whistleblowers. Dubey, an engineer working for the National Highways Authority of India (NHAI), uncovered significant corruption within India's largest highway construction project, the Golden Quadrilateral. He found that the project was plagued by substandard work and the embezzlement of public funds, which could have posed serious safety risks for the public.

Despite the risks, Dubey courageously reported his findings, initially to his superiors and later to higher authorities. However, instead of being supported, Dubey's concerns were largely ignored, and his reports were not taken seriously. Tragically, in November 2003, Satyendra Dubey was murdered in what many believe was a retaliation for his whistleblowing efforts (Sharma, 2004). His death highlighted the severe dangers faced by whistleblowers in India, particularly in sectors where corruption is deeply entrenched.

Dubey's case had a profound impact on the nation's understanding of whistleblower

protection and transparency. It eventually led to increased awareness and led to the demand for stronger laws to protect whistleblowers, culminating in the introduction of the Whistleblower Protection Act, 2011. However, many argue that even this legal framework has been insufficiently enforced, and whistleblowers continue to face risks ranging from career setbacks to physical harm (Kaur, 2017). Dubey's death, alongside the lack of sufficient protection for whistleblowers, underscores the critical need for organizations to develop more robust mechanisms for handling whistleblower reports and ensuring that these individuals are safeguarded.

SATYENDRA DUBEY

Satyendra Dubey, a dedicated Indian Engineering Services (IES) officer, was tragically murdered in 2003 after exposing widespread corruption within a major infrastructure project. As the project director for the National Highway Authority of India, Dubey was overseeing the construction of a crucial section of the Golden Quadrilateral Project, a key initiative under Prime Minister Atal Bihari Vajpayee's government. During his tenure, he uncovered significant financial irregularities, leading to the suspension of three engineers involved in the malpractice. Unfortunately, his courageous act of whistleblowing cost him his life. In recognition of his bravery and commitment to integrity, Dubey was posthumously awarded the "Whistleblower of the Year" title by Index on Censorship, a London-based organization. His legacy endures as a powerful symbol of the fight against corruption and the ultimate

sacrifice made by those who stand for truth and justice.

SHANMUGAM MANJUNATH

Shanmugam Manjunath, an officer with Indian Oil Corporation (IOC), exhibited remarkable courage and integrity in exposing widespread corruption at two petrol pumps in Lakhimpur Kheri, Uttar Pradesh. Through his diligent efforts, Manjunath uncovered the sale of adulterated fuel, leading to the closure of the fraudulent pumps. Despite facing initial resistance from those involved, Manjunath remained resolute in his mission to combat corruption. Tragically, his commitment to transparency and justice cost him his life when he was brutally murdered on November 19, 2005 (Bhatt, 2005).

Manjunath's death highlights the severe risks faced by whistleblowers who challenge corruption, particularly in environments where unethical practices are deeply entrenched. His legacy, however, continues to inspire those committed to fighting injustice and advocating for a more ethical society. Manjunath's story serves as a poignant reminder of the urgent need to protect whistleblowers and ensure they can report wrongdoing without fear of retaliation (Das, 2006).

HURDLES TO BLOWING THE WHISTLE

The barriers to an effective whistleblowing procedure can hinder the identification and prevention of unethical practices within organizations. These barriers may arise from various factors, including institutional, cultural, psychological, and legal challenges. Some of the most prominent barriers include:

Fear of Retaliation:

One of the most significant barriers to effective whistleblowing is the fear of retaliation. Whistleblowers often worry about facing negative consequences, such as job loss, harassment, demotion, or professional ostracism. This fear is exacerbated when organizations lack strong protections for whistleblowers or have a history of punishing those who report misconduct (Miceli, Near, & Schwenk, 1991). Employees may be reluctant to speak up, even when they are aware of unethical behavior, because of the potential personal and professional risks involved.

Lack of Trust in the Reporting System:

For a whistleblowing system to be effective, employees must trust that their concerns will be handled appropriately. If there is a perception that the reporting process is flawed or biased, employees may hesitate to report misconduct. This lack of trust could stem from past experiences where whistleblowers' concerns were ignored, mishandled, or used against them. In organisations where transparency and accountability are lacking, employees may feel that reporting issues will not lead to meaningful outcomes, thereby undermining the effectiveness of whistleblowing mechanisms (Brown, Treviño, & Harrison, 2014).

Organizational Culture:

An organization's culture plays a critical role in shaping employees' willingness to blow the whistle. In hierarchical organizations with a culture of loyalty, conformity, or fear of authority, individuals may be reluctant to report misconduct because they prioritize their loyalty to colleagues, supervisors, or the organization over their ethical obligations. A toxic or unethical organizational culture that

discourages open communication and whistleblowing can create an environment where employees feel pressured to remain silent or ignore wrongdoing (Brown, Treviño, & Harrison, 2014).

Lack of Legal Protections:

In many regions, whistleblowers face limited legal protections, which further discourages them from coming forward. While laws like the Whistleblower Protection Act in some countries are designed to shield whistleblowers from retaliation, enforcement of these laws can be weak or inconsistent. Inadequate legal frameworks, coupled with poor implementation, often leave whistleblowers vulnerable to retaliation without sufficient recourse. The absence of a robust legal framework can discourage individuals from reporting misconduct, particularly when they fear the legal system will not adequately protect them (Jain, 2012).

Psychological and Social Pressures:

Psychological barriers can also impede whistleblowing. Many potential whistleblowers experience anxiety, guilt, or confusion about whether they should report misconduct, especially when the wrongdoing involves close colleagues or superiors. Social pressures to conform or fit in with the group can further dissuade individuals from speaking out. In some cases, whistleblowers may even question their own perceptions of the situation, doubting whether the behaviour they witnessed truly constitutes wrongdoing (Miceli, Near, & Schwenk, 1991).

Lack of Anonymity:

When whistleblowing procedures do not provide anonymity, employees may fear exposure, which could lead to social stigma or further retaliation. Anonymity can play a

crucial role in protecting individuals and encouraging them to report issues without fear of identification. If an organization lacks anonymous reporting channels or if employees believe their identities will be easily uncovered, they may be less likely to come forward (Sharma, 2008).

Inadequate Reporting Channels:

Whistleblowing procedures that are complicated, difficult to access, or unclear can discourage employees from reporting issues. If employees are unaware of how to report misconduct, or if the process is overly bureaucratic or time-consuming, they may choose to remain silent. Additionally, if the reporting channels are not confidential or secure, employees may feel that their reports will not remain private, further deterring them from coming forward (Jain, 2012).

Management and Leadership Resistance:

Whistleblowing often involves challenging the status quo or bringing attention to actions that reflect poorly on leadership or the organization. In many cases, organizational leaders may resist addressing reports of misconduct, either because they are implicated or because they fear reputational damage. If leaders are dismissive or antagonistic towards whistleblowers, the effectiveness of the whistleblowing procedure is severely compromised. Leadership's support for transparency and ethical behaviour is crucial for creating a safe space for whistleblowers (Near & Miceli, 1985).

Lack of Follow-Up and Accountability:

Even when employees report misconduct, a lack of follow-up or accountability can undermine the effectiveness of whistleblowing procedures. If there is no clear process for investigating complaints or if

outcomes are not communicated to the whistleblower, employees may lose confidence in the system. In cases where no corrective action is taken after a report is made, whistleblowers may feel disillusioned and hesitant to report future wrongdoing (Sharma, 2008).

To overcome these barriers, organizations must create a supportive, transparent environment where whistleblowers are protected, their concerns are taken seriously, and the process is accessible and anonymous. Implementing strong legal protections, clear reporting channels, and leadership commitment to ethical behaviour can help mitigate the barriers to whistleblowing, thereby fostering a culture of integrity and accountability within organizations.

FINDINGS

Whistleblowers serve as powerful catalysts for change within organizations and society by exposing corruption, unethical practices, or illegal activities that might otherwise remain hidden. Their actions often trigger formal investigations by internal committees, regulatory bodies, or law enforcement agencies, leading to accountability and reform. For instance, the case of Shanmugam Manjunath, an Indian Oil Corporation officer who exposed fuel adulteration, resulted in the closure of petrol stations and prosecution of those involved (Patel, 2015). Similarly, Satyendra Dubey's disclosure of corruption in a major infrastructure project sparked media attention and investigations into mismanagement that compromised public safety (Jha, 2006). Beyond investigations, whistleblowers provide critical evidence for prosecutions and legal actions, resulting in

convictions and financial penalties for corrupt entities. Their efforts also drive policy reforms, as public outcry following such revelations often leads to stronger laws and governance frameworks. A notable example is the enactment of the Right to Information (RTI) Act in India, which emerged from advocacy and whistleblowing efforts to ensure transparency in government operations (Sharma, 2013). These cases illustrate how whistleblowers not only expose wrongdoing but also influence systemic change by prompting legal, organizational, and policy-level reforms. Moreover, the actions of whistleblowers often encourage a culture of accountability and ethical behavior within organizations. As their revelations prompt legal, organizational, or policy changes, they create an environment where corruption is more likely to be identified and punished. This ripple effect can inspire other employees to feel empowered to report misconduct, creating a cycle of positive change. When organizations implement better safeguards, such as stronger whistleblower protection systems and transparent reporting channels, they create an organizational culture that values integrity and openness.

Overall, whistleblowers are not just individuals who expose wrongdoing—they are active agents of change who play a vital role in creating more ethical, transparent, and accountable systems. Their actions can lead to investigations, prosecutions, policy reforms, and, ultimately, a shift in the organizational or societal mindset towards greater integrity. By continuing to protect and support whistleblowers, organizations can foster a culture of trust and accountability that benefits society as a whole.

Whistleblowers often pay a steep personal price for exposing corruption, unethical behavior, or illegal activities within organizations. The act of blowing the whistle can lead to severe consequences, including retaliation, intimidation, loss of livelihood, and, in extreme cases, even loss of life. These risks highlight the urgent need for robust legal protections and comprehensive support systems to safeguard whistleblowers. Retaliation is the most common consequence, taking forms such as job loss, demotion, harassment, or professional ostracism. Employees who report wrongdoing are frequently labeled as traitors or troublemakers, prompting organizations to silence or discredit them. Research by Miceli et al. (2008) confirms that fear of retaliation is a primary reason whistleblower hesitate to report misconduct. Retaliation can also manifest subtly through reduced responsibilities, exclusion from meetings, or denial of career advancement.

Beyond professional harm, whistleblowers often endure significant psychological distress. The emotional toll of retaliation and social alienation can lead to stress, anxiety, and long-term mental health challenges such as depression and PTSD (Near & Miceli, 1985). Economic hardship compounds these struggles, as job loss and career setbacks create financial instability. The stigma associated with whistleblowing further limits future employment opportunities. In the most extreme cases, whistleblowers have lost their lives for exposing wrongdoing, as seen in the tragic deaths of Manjunath, Dubey, and Singh—grim reminders of the dangers involved. Despite legal frameworks like the Whistleblower Protection Act in India and

similar laws globally, enforcement remains weak (Lewis & Vandekerckhove, 2017). Stronger protections, confidential reporting channels, psychological counseling, and leadership commitment to ethics are essential to creating a safe environment for whistleblowers.

Institutional barriers significantly hinder effective whistleblowing and perpetuate unethical practices within organizations. Fear of retaliation remains the most prominent obstacle, even in jurisdictions with protection laws such as the Whistleblower Protection Act (Miceli, Near, & Schwenk, 1991). Employees often lack awareness of reporting mechanisms or distrust the process, particularly when systems are poorly communicated or cumbersome (Near & Miceli, 1985). Inadequate investigation procedures, where complaints are ignored or mishandled, further discourage reporting (Miceli & Near, 1991). Weak enforcement of legal protections exacerbates these issues, leaving whistleblowers without sufficient recourse when facing retaliation (Lewis & Vandekerckhove, 2017).

Organizational culture also plays a critical role. Cultures that prioritize loyalty or foster fear of authority discourage employees from speaking out. Leadership indifference or hostility toward whistleblowing undermines its effectiveness (Brown, Treviño, & Harrison, 2014). Addressing these barriers requires clear, accessible reporting mechanisms, transparent investigations, strict enforcement of legal protections, and a supportive organizational culture that values ethical behavior.

Media and civil society organizations are vital in amplifying whistleblowers' voices and

exposing corruption, fraud, and unethical practices that might otherwise remain hidden. Media coverage raises public awareness and exerts pressure on institutions to take corrective action, making it harder for organizations to ignore or silence whistleblowers (Bowen, 2004). Civil society groups, particularly those focused on human rights and anti-corruption, advocate for stronger legal protections and monitor enforcement (Harris, 2005). These organizations often provide legal assistance and emotional support, helping whistleblowers navigate retaliation and ensuring their concerns are heard. Together, media and civil society create an environment where whistleblowers feel empowered to come forward, knowing they have external support and a platform for their disclosures (De Maria, 2006).

PRACTICAL AND MANAGERIAL IMPLICATIONS

- **Strengthen Whistleblower Policies**
Organizations should implement clear, comprehensive whistleblower policies aligned with legal frameworks such as the Companies Act 2013 and SEBI guidelines. These policies must explicitly prohibit retaliation and outline reporting procedures.
- **Establish Confidential Reporting Channels**
Secure and anonymous reporting mechanisms—such as hotlines, encrypted email systems, and third-party platforms—should be provided to protect whistleblower identity and encourage reporting without fear.
- **Audit Committee Oversight**

Assign responsibility for monitoring whistleblower complaints to independent audit committees to ensure impartiality and transparency in investigations.

- **Employee Training and Awareness**
Regular training sessions should educate employees about their rights, reporting procedures, and the importance of ethical behaviour. Awareness campaigns can reduce cultural barriers and the fear of retaliation.
- **Psychological and Career Support**
Organizations should offer counselling services and career protection measures for whistleblowers to mitigate psychological distress and economic hardship.
- **Leadership Commitment to Ethics**
Top management must actively promote a culture of integrity by endorsing whistleblower protections and demonstrating zero tolerance for unethical practices.
- **Legal Compliance and Enforcement**
Companies should periodically review compliance with whistleblower protection laws and corporate governance codes, ensuring robust enforcement and accountability.

LIMITATIONS

This study is subject to several limitations. First, the research relies on a qualitative case study approach, which, while providing rich insights, limits the generalizability of findings across all corporate settings. The analysis focuses on two Indian companies, which may not fully represent the diversity of organizational practices within the country or globally. Second, the study primarily uses

secondary data sources, which may lack the depth and accuracy of firsthand interviews or surveys. Third, cultural factors influencing whistleblowing behaviour are complex and may vary significantly across regions and industries, making it challenging to draw universal conclusions. Finally, the research does not quantify the impact of whistleblower protection on organizational performance, leaving room for further empirical validation.

FUTURE SCOPE OF THE STUDY

Future research can address these limitations by adopting a mixed-method approach that combines qualitative insights with quantitative analysis. Large-scale surveys across multiple industries and regions could provide statistically significant data on the effectiveness of whistleblower protection mechanisms. Comparative studies between countries with different legal frameworks would offer a global perspective on best practices. Additionally, future research could explore the psychological and behavioral dimensions of whistleblowing in greater detail, including the role of organizational culture, leadership style, and employee trust. Finally, longitudinal studies could examine how whistleblower policies evolve over time and their long-term impact on corporate governance and ethical compliance.

CONCLUSION

The cases of Satyendra Dubey and Shanmugam Manjunath underscore the immense courage and sacrifice made by whistleblowers in India in the face of systemic corruption. These individuals, driven by a commitment to justice, brought to light significant instances of corruption that not

only exposed unethical practices but also catalyzed investigations, legal actions, and, in some cases, reforms in the sectors they worked in (Near & Miceli, 1985). However, their tragic deaths and the personal toll they endured highlight the severe challenges faced by whistleblowers, particularly the risk of retaliation, intimidation, and professional ruin (Miceli et al., 1991). These cases serve as a stark reminder of the need for comprehensive and robust whistleblower protection laws that go beyond theoretical frameworks and are effectively implemented. Research shows that whistleblowers often hesitate to report misconduct due to fear of retaliation and lack of trust in the reporting mechanisms (Brown et al., 2014), and the absence of strong institutional support exacerbates this problem (Miceli, Near, & Schwenk, 1991).

To address these challenges, it is critical that India invests in creating a supportive environment for whistleblowers. This includes ensuring that whistleblower protection laws are not only enacted but are also enforced effectively (Lewis & Vandekerckhove, 2017). Additionally, organizations should implement anonymous reporting systems, promote transparency, and ensure that whistleblowers have access to legal and financial support, as their actions often come at a great personal and professional cost (Near & Miceli, 1985). Furthermore, institutional and cultural changes must be prioritized to foster environments where employees feel safe reporting unethical behavior without fear of retaliation. It is essential to build a culture of integrity where ethical conduct is rewarded, and those who stand up for truth are supported rather than punished (Brown et al., 2014).

Whistleblowers are essential in uncovering corruption and promoting accountability within organizations and government institutions. Their role in upholding justice and integrity cannot be overstated, and to ensure their continued contribution to societal well-being, it is imperative that robust protections and supportive measures are put in place. In this way, India can create a more transparent and accountable society, where corruption is exposed, and justice prevails. Governments, institutions, and organizations must collaborate to safeguard whistleblowers from retaliation and provide them with the necessary resources and protections to continue their important work (De Maria, 2006).

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CHAPTER 11

VOICES FROM THE MARGINS: A BIBLIOMETRIC EXPLORATION OF STUDENTS' EXPERIENCES WITH INTERSECTIONAL IDENTITIES

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ABSTRACT

Purpose: The purpose of this study is to explore the historical research trends on the concept of intersectionality, the qualitative and quantitative trends of such research, different fields that relate to this concept, and the leading authors in the field of research, as well as the countries where such research is published. The underlying themes are also explored based on co-citation analysis. Based on this, the aim is to identify gaps in the study done in the past, which can then be explored further in the future.

Design: Despite growing awareness of the importance of intersectional perspectives, there remains a need for a comprehensive analysis to map the current state of research in this field through a bibliometric exploration, offering a systematic review of existing literature on students' experiences with intersectional identities. Based on the PRISMA methodology, 272 research studies were shortlisted for bibliometric analysis.

Findings: The study identified important themes, prominent writers, and noteworthy trends in the discipline. The most prominent

themes have been around disability and gender identity. The connections between different social identities and psychological disorders have also been observed.

Originality: The study suggests future research to explore underrepresented aspects of intersectionality, such as immigration status, language challenges, and to understand the long-term implications of intersectionality in education, the effectiveness of educational policies, and the challenges and solutions to promote inclusion across nations.

Keywords: Intersectionality, student experiences, marginalised Students, education, bibliometric analysis, higher education

INTRODUCTION

In an environment where people have become more aware and vocal about their identity, understanding the experiences of students with intersectional identity has become a critical area of study. The term intersectionality was coined by Kimberle

Crenshaw. She was a leading civil rights advocate. She was also a leading scholar of critical race theory. In her article published in 1989, she used this concept to address the groups of people who felt discriminated, where the same could not be understood by existing studied patterns(Phoenix & Pattynama, 2006). Intersectionality emphasizes how various forms of identity intersect to shape individual experiences and systemic inequalities(Kim & Rhinehart, 2025). Too often, disability is not considered to be an element of diversity and, therefore, valuable alliances are overlooked(Ashby, 2010). Ingrained ableism and disability discrimination should be regarded alongside racism, sexism, and heterosexism as key issues in secondary education. In addition, infusing texts written by individuals who identify as disabled would provide another entrée into greater recognition of individual differences. All students need access to marginalized and often silenced perspectives to enrich their understanding of the diversity of the human condition. Despite growing awareness of the importance of intersectional perspectives, there remains a need for a comprehensive analysis to map the current state of research in this field(Ashby, 2010). The following research questions have remained largely unanswered and form a research gap.

RQ1: What are the major publication trends in the literature on students' experiences with intersectional identities over time?

RQ2: Which authors are the most prolific, and which journals are influential in intersectionality literature on intersectional identities in education?

RQ3: What has been the association between the most commonly occurring concepts in the literature of intersectionality over the last few years?

This paper aims to address this gap through a bibliometric exploration, offering a systematic review of existing literature on students' experiences with intersectional identities. By examining trends, themes, and research gaps, this study seeks to illuminate how academic research has evolved and highlight areas requiring further investigation. The study aims to bridge the research gap by conducting a bibliometric and systematic review of the literature on students' experiences shaped by intersectional identities. Through an examination of publication trends, thematic patterns, and emerging research gaps, the paper seeks to trace the intellectual evolution of this field and identify areas warranting deeper scholarly attention. Employing bibliometric analysis, the study systematically evaluates scholarly publications to provide a structured understanding of the scope, growth, and impact of research within this domain.

There is a dearth of rigorous studies and reports providing in-depth analysis of educational marginalization (Giri,2021). Most literature takes 'gender' as the primary factor in marginalization. In-depth analysis of other contributory factors, such as ICT, language, and/or English, is almost non-existent in the research countries (Senegal, Sudan, Bangladesh, Nepal). There are discrepancies between the government's policies on combating/managing educational marginalization and their implementation strategies. As a consequence, the governmental programs have not produced the desired outcomes. There is a lack of comprehensive educational marginalization management plans at the government level (Giri, 2021). As a result, combating educational marginalization is patchwork and largely donor-driven, producing no major impact on

managing/combating educational marginalization(Kukulska-Hulme et al., 2023).

This exploration is crucial for several reasons. Firstly, it helps identify dominant themes and emerging focus areas, guiding future research directions. It underscores the significance of intersectional analysis in educational research and practice, advocating for more inclusive and comprehensive approaches to understanding student experiences. By drawing attention to gaps and underrepresented voices in the literature, this study hopes to promote a more nuanced and equitable conversation within the academic community.

Secondly, through this bibliometric analysis, this paper will contribute to a deeper understanding of how intersectional identities impact students' educational experiences and offer insights that can inform policy, practice, and future research in education by understanding the long-term implications of intersectionality in education, the effectiveness of educational policies, and the challenges and solutions to promote inclusion across nations. Students can derive a range of benefits from educational practices informed by intersectionality.

LITERATURE REVIEW

Intersectionality

Black feminist scholars' attempts to comprehend the particularity and universality of their socioeconomic predicament gave rise to the idea of intersectionality, which was developed during the 20th century by a variety of black feminist advocates(Gopaldas, 2013)

The term intersectionality was first used as an academic idea by Kimberlé Crenshaw (1989, 1991), who drew inspiration from this lengthy history of Black feminist action and

theory (Tefera et al., 2018).Theorizing about race, gender, sexuality, and other forms of inequality that started in the 1960s by women of colour also fostered intersectionality (Beale, 1970; Chun, Lipsitz, & Shin, 2013; Collins, 2000; Collins & Bilge, 2016; King, 1988; Lorde, 1984; Moraga & Anzaldúa, 2015; Yuval-Davis, 2006,Tefera et al., 2018).

The idea of intersectionality gives us a way of thinking and talking about how different social groups and systems are connected and depend on each other. The concept of intersectionality offers a way to conceptualize how several concurrent variables cause disparities across groups. Additionally, intersectionality challenges presumptions of within-group homogeneity and provides a way to examine complicated and nuanced within-group comparisons (Atewologun, 2020).There are numerous applications for the term "intersectionality." The term 'intersectionality', when analysed at a macro level, describes the diversity and interconnectedness of social identity systems like gender, race, and class(Gopaldas, 2013). At the micro level of study, intersectionality implies that each individual in society is vulnerable to a variety of social benefits and disadvantages because they are situated at the intersection of numerous social identity structures(Gopaldas, 2013).

Since scholars from fields other than sociology and even black feminism have joined the growing discussion of intersectionality, more recent definitions of the term do not specifically reference any social identity systems or groups. These more recent definitions broaden the concept of intersectionality beyond race, class, and gender by not naming specific social identity structures. These definitions include income, marital status, mental health status,

occupation, physical ability, religion, sexual orientation, socioeconomic status, age, body type, and other naturalized—though not necessarily natural—methods of classifying human populations (Adeyeba et al., 2025). Everybody's distinct social advantages and disadvantages should be examined as a result of the definitional scope of intersectionality being expanded to encompass all social identity systems (Gopaldas, 2013).

Intersectionality is the term used to describe how social identity systems like gender, race, and class interact to shape life experiences, particularly those of privilege and oppression. This increasingly popular idea has been described by several academics as intriguing yet unclear and complex (e.g., Brewer, Conrad, and King 2002; Davis 2008; Jordan-Zachery 2007; McCall 2005; Nash 2008; Staunaes 2003; Gopaldas 2013). Further, Collins described intersectionality as a framework for understanding the unique experiences of multiple marginalized individuals within a “matrix of domination characterized by intersecting oppressions” (Collins, 2000). Building upon this imagery, these writings have provided a diverse and generative foundation for deploying intersectionality as a critical theory across disciplines and multiple socially constructed identities (Esposito, 2023).

As a result of this rich history of critical scholarship, intersectionality offers researchers a robust analytical approach to understanding and examining the interconnectedness of numerous socially constructed identities (e.g., race, gender, sexual orientation, class, etc.) as they collectively shape the lived experiences of individuals and groups (Abrams et al., 2020). However, researchers in education must abandon one-dimensional or one-axis studies that treat other categories as epiphenomenal or concentrate on a single category (such as

ability, gender, ethnicity, or class). Intersectionality creates conceptual spaces to see the gaps and silences of analyses and methodologies that only use one category, as well as the relationships between categories that are mutually constitutive (Clarke & McCall, 2013; Carbado et al., 2013; Patton, Crenshaw, Haynes, & Watson, 2016; Tefera et al., 2018).

Marginalized Students

In the United States, the college enrolment rates of young adults have been consistently rising, increasing from 35% in 2000 to 39% in 2018 (Irwin et al., 2024). These new college courses consist of a large number of students with marginalized identities, such as women, first-generation college students, and students with disabilities (Baker et al., 2018). College students with marginalized identities are more prone to experiencing psychological disorders (Shepherd et al., 2023). Future studies should look into what causes college students with psychological disorders to report having more mental health issues. These investigations might provide insight into the complex reasons for these difficulties by using a mixed-methods or qualitative approach. Research in the future may also look at therapies and interventions that support students with psychological illnesses, particularly those that target FGCS, ADHD, and/or female students. Last but not least, future studies should focus on how schools may enhance mental health services, especially for underprivileged students with ADHD/autism, while removing any unforeseen obstacles to psychological care (Kim & Rhinehart, 2025).

In the twenty-first century, discrimination and educational disparities continue to impact marginalized groups' possibilities for lifelong learning. Children from

impoverished rural and urban communities, members of linguistic and ethnic minorities, and those who are displaced have long faced prejudice and exclusion from school in Ghana and many other Sub-Saharan African countries (Allotey et al., 2023). Although the intersectionality of multiple marginalized social categorizations, primarily as an analytical framework or tool, has been utilized in education research, insufficient attention has been focused on the intersectionality of Southeast Asian female students' race or ethnicity, gender, and SES affecting their educational outcomes in schools (Jang, 2018). Rather, we suggest that the contemporary higher education context makes so-called 'other' dimensions of difference salient, and therefore that scholarship should extend to the investigation of intersectional impacts of normative regimes of language, ability, and citizenship (Jang, 2018).

Furthermore, the field has by no means fully explored how even binary intersections (gender/race; gender/class) are inflected by sociocultural contexts such as the nation-state, urbanism, or regionality in higher education (Nichols & Stahl, 2019). Given that staff and students have multi-year careers in HE institutions, there is scope to explore how intersectional identities are experienced over time (Nichols & Stahl, 2019). There are many unexplored aspects of the intersectional (dis)advantage in the context of higher education. The vectors of language, immigration status, and (dis)ability have received very little attention. Yet, we know recruitment, participation, and outcomes studies indicate real problems associated with these categories, suggesting scope for further inquiry.

This study is the first to use a bibliometric technique to investigate the field of Initial

Teacher Education for Inclusive Education (ITEIE). There aren't any bibliometric studies that link the domains of teacher education and IE that deal with inclusive education-related concerns. As a result, we close a gap and provide a new angle for further research. We satisfy the demands of academics, teacher educators, and practitioners by offering an unbiased and current summary of ITEIE literature based on bibliometric and visualization analysis. This allows them to be well-informed, documented, and even generate ideas for future research (Cretu & Morandau, 2020).

METHODOLOGY

Inclusion and Exclusion Criteria

The study that was carried out is based on articles, review papers, conference papers, and proceedings on intersectional groups and uses related variable groups that are often part of discussions in these subject matters.

Type of Study

Articles, review papers, conference papers, and proceedings were selected from Scopus. Publications in only selected fields related to the study were considered. Only the English language was chosen for the study.

Search Procedure

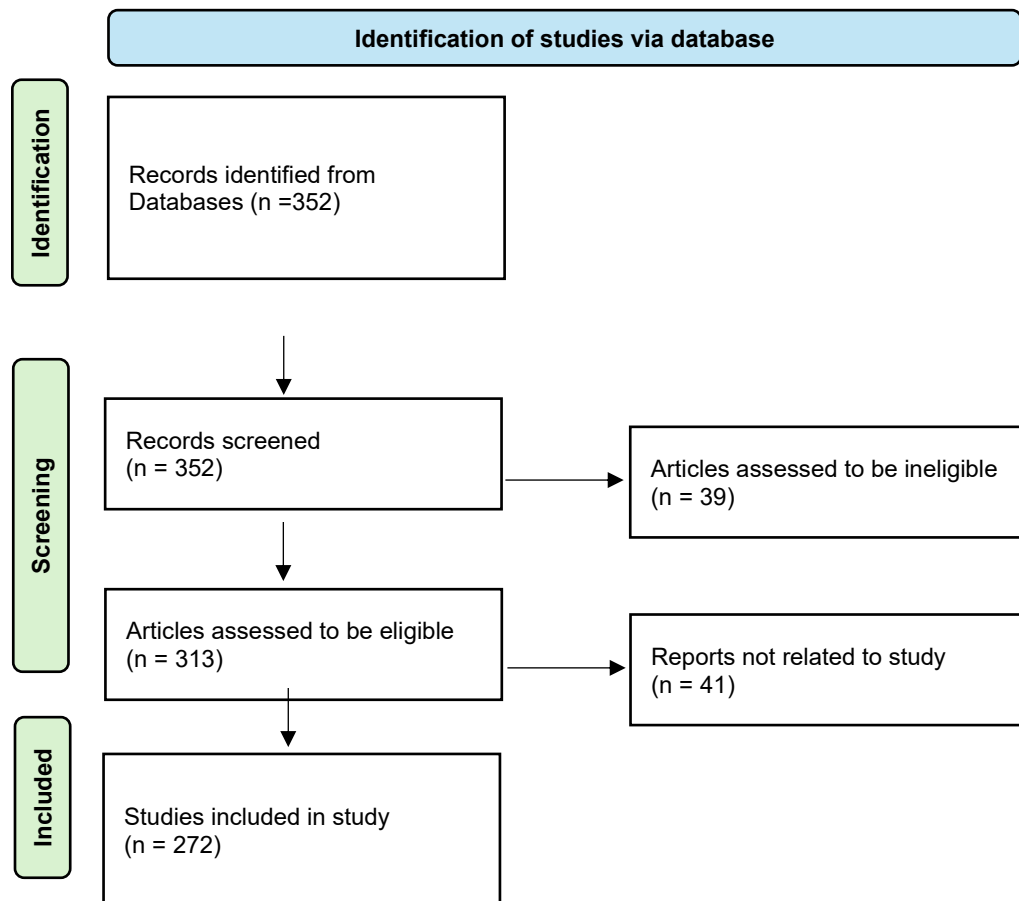
The bibliometric study was done in accordance with the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analysis) methodology. It provides authors with guidance and examples of how to completely report why a systematic review was done, what methods were used, and what results were found.

The data included is for the period from 1992 to 2025. Bibliometric analysis was carried out in this study (Tiwari & Tyagi, 2025). Bibliometrics is a quantitative method to analyse scholarly publications, such as articles, journals, books, and conference proceedings. Research trends can be found

through bibliometric analysis, which helps create new research avenues and multidisciplinary partnerships. It helps assess the impact of specific journals, institutions, and countries on the global research landscape, fostering transparency and accountability within the scholarly community. To determine what is known and what is not about intersectional identities, this study focused specifically on business and management literature using bibliometrics. Thus, using the RStudio program (RStudio Team, 2016), one of the

most popular tools for academics, data analysts, and analytical practitioners to undertake statistical analysis, a quantitative study utilizing performance analysis, and scientific mapping. R updates itself and integrates several packages. The investigation of the theme evolution of the discipline and the author's specialization was carried out through content analysis of the most prominent works. Therefore, the "hidden patterns" that define the field were found, and directions for further investigation were suggested.

Figure 1: PRISMA Framework



Source: Authors

Data Collection Process

Gathering raw data is the first stage of a bibliometric analysis, from which the required metadata (such as authors, countries, references, or citation counts) can be extracted. Numerous bibliometric databases are available. However, the two biggest are the Web of Science (WoS) from Clarivate Analytics and Scopus from Elsevier. Over 90 million documents and more than 15,000 publications are covered by the WoS. With over 20,000 current titles (i.e., books, conference proceedings, and peer-reviewed journals) indexed, Scopus has around 69 million records. In this study, Scopus was consulted to conduct the bibliometric analysis. Elsevier created Scopus, which offers access to millions of peer-reviewed journals, conference proceedings, patents, and other scholarly papers from around the globe. Scopus offers thorough coverage of scholarly literature. With its sophisticated search and analytical tools, researchers may quickly find pertinent material, monitor citation trends, and evaluate the influence of both their own and other people's work. In bibliometric analysis, Scopus is essential because it makes it easier to assess the impact of research, spot new trends, and encourage evidence-based choices in government, business, and academia. It contributes to the growth of knowledge and innovation across disciplines and is a significant resource for academics, institutions, and policymakers due to its comprehensive coverage and user-friendly layout.

The data extracted includes Authors of the articles, their full names, Author ID, title, Publication Year, Source Title, Volume, pages (Start page, end page, and total pages), Citations, links, affiliations, abstract, publishers, etc. The information was pulled up in a CSV file for easy Excel conversion

and importing into the R software. Mendeley's reference management software was used to manage the electronic search results.

To collect data from the Scopus database, the following search string was used within the document topic field: "Student experiences" OR "Student educational experiences" AND "Marginalized students" OR "LGBTQ students" OR "Transgender Students" OR "Disabled Students" OR "Students with Disability" OR "low-income students.". The initial search returned 352 records. Then, restrictions on the document type (articles, review papers, conference papers, and proceedings) and language (only English) were applied, resulting in 313 records. Finally, to answer the research questions of the present study, only the results included in the "social sciences", "Psychology", "Health professions", "Arts and humanities", and Business, Management, & Accounting" fields were considered.

Data Included

The final result was 272 records, representing around 77% of the dataset found in the previous phase and demonstrating the topic's relevance in the selected sub-domains.

BIBLIOMETRICS FINDINGS

The present study contributes to addressing the above-mentioned research gap.

PUBLICATION TREND (RQ1)

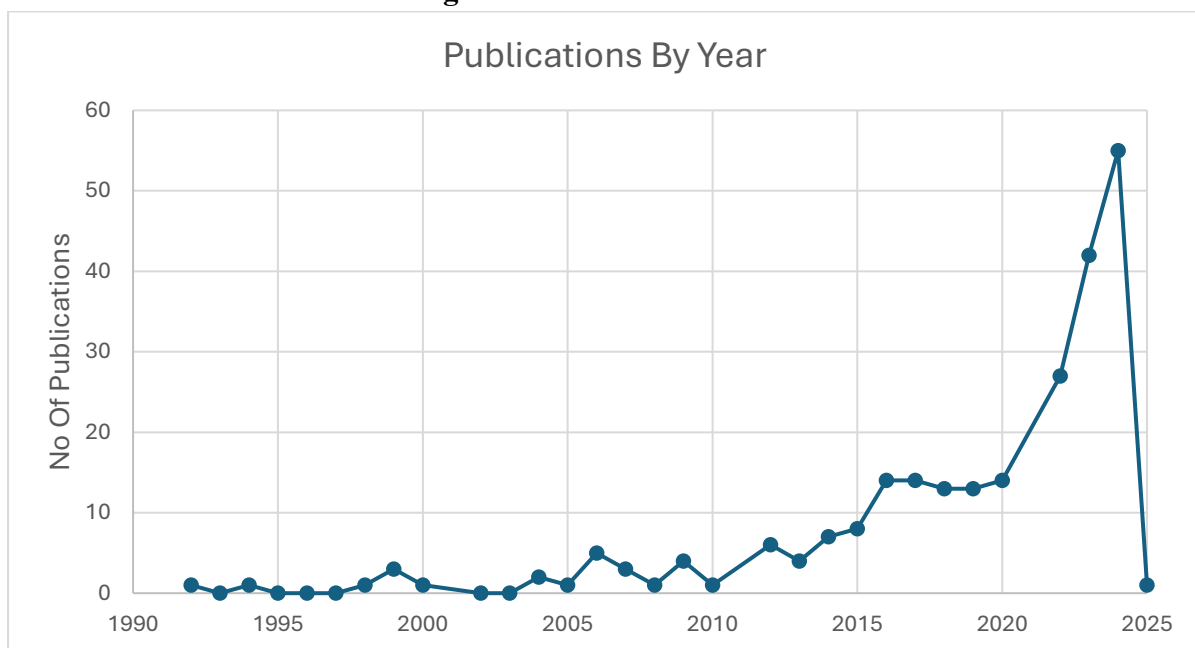
The publications on intersectionality have been presented in Table 1 below. sources from the period 1992 to 2025.

A total of 272 documents were published, of which 217 were cited in other documents. This means about 80% of documents were cited in other documents. Of these 272 documents, 12 are classified as conference papers, 12 are review documents, the remaining 248 being regular articles.

Table 1: Publications on Intersectionality

Publication Metrics	Statistics
Total Publications	272
Total Cited Publications	217
Articles	248
Conference Paper	12
Review Papers	12
Sources	183

Source: Author's calculations

Figure 2: Publication Trends

Source: Authors

Figure 2 shows the number of publications each year from 1992 to 2025.

It is seen that there is a steady increase in the number of publications annually on intersectionality, with a sudden increase in publications after the year 2020. This can be attributed to growing interest in this field. This is evident from the fact that the number of publications in the last 4 years (2021-2025) constitutes more than 50% publications of the total publications under study (up to 1992), as seen in Graph 1, with

the highest publications being done in 2024 (55 publications)

Table 2 adds more depth to this analysis, where it can be seen that the mean total citations per article and the mean total citations per year are shown. An interesting observation is that these figures have gone down over the last few years, as compared to the years 1995-2005, signifying that the research is exploring new dimensions of intersectionality.

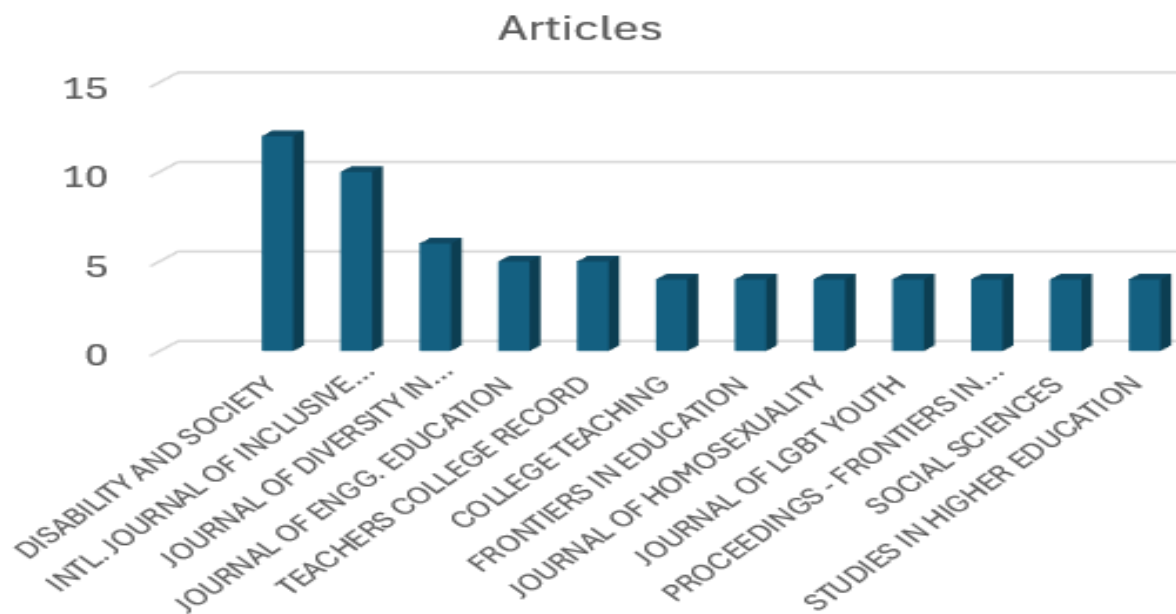
Table 2: Mean total citations per year

Year	Mean TC PY	N	Mean TC PY	Citable Years
1992	0.00	1	0.00	34
1994	9.00	1	0.28	32
1998	21.00	1	0.75	28
1999	72.67	3	2.69	27
2000	214.00	1	8.23	26
2001	31.00	1	1.24	25
2004	193.00	2	8.77	22
2005	11.00	1	0.52	21
2006	34.20	5	1.71	20
2007	58.00	3	3.05	19
2008	16.00	1	0.89	18
2009	33.50	4	1.97	17
2010	341.00	1	21.31	16
2011	33.43	7	2.23	15
2012	36.33	6	2.59	14
2013	23.00	4	1.77	13
2014	34.71	7	2.89	12
2015	47.12	8	4.28	11
2016	33.00	14	3.30	10
2017	35.86	14	3.98	9
2018	29.77	13	3.72	8
2019	47.69	13	6.81	7
2020	10.93	14	1.82	6
2021	8.64	22	1.73	5
2022	4.96	27	1.24	4
2023	4.62	42	1.54	3
2024	1.33	55	0.66	2
2025	0.00	1	0.00	1

Source: Author's calculations

Figure 3 shows the distribution of articles by different sources from 1992 to 2025 as below. Of the total 183 sources, the graph only considers the 12 most significant sources. It is seen that Articles on Disability

and Society, Inclusivity, and diversity have greater emphasis, with most of the other sources being 4 or fewer.

Figure 3: Distribution of articles based on sources

Source: Authors

The research on intersectionality and its publications is mainly concentrated in the USA, the United Kingdoms, Australia, Canada, and New Zealand, as seen in Table 3, which shows total articles by authors from each country. These five countries account for over 66% of the total Research Articles.

Another observation is that the USA has been the only country where authors have collaborated with foreign authors, as seen in the MCP column (Multiple Country Publications). In some countries like Korea and Finland, the research has only been in association with foreign authors.

Table 3: Most Relevant countries based on the articles published by authors

Country	Articles	Articles %	SCP	MCP	MCP %
USA	112	41.2	105	7	6.3
UNITED KINGDOM	43	15.8	42	1	2.3
AUSTRALIA	10	3.7	10	0	0
CANADA	9	3.3	8	1	11.1
NEW ZEALAND	6	2.2	5	1	16.7
NORWAY	4	1.5	3	1	25
SWEDEN	3	1.1	2	1	33.3
CHINA	2	0.7	2	0	0
DENMARK	2	0.7	2	0	0
HONG KONG	2	0.7	2	0	0
ISRAEL	2	0.7	2	0	0
MEXICO	2	0.7	2	0	0
SLOVENIA	2	0.7	2	0	0
SOUTH AFRICA	2	0.7	1	1	50
BELGIUM	1	0.4	1	0	0

FINLAND	1	0.4	0	1	100
GEORGIA	1	0.4	1	0	0
GERMANY	1	0.4	1	0	0
IRELAND	1	0.4	1	0	0
KOREA	1	0.4	0	1	100
NETHERLANDS	1	0.4	1	0	0
PERU	1	0.4	1	0	0
SAUDI ARABIA	1	0.4	1	0	0
SPAIN	1	0.4	1	0	0
TURKEY	1	0.4	1	0	0
UNITED ARAB EMIRATES	1	0.4	0	1	100
VIETNAM	1	0.4	1	0	0

Source: Author's calculations

Abbreviations: SCP (Single Country Publication), MCP (Multiple Country Publication)

Consequently, the articles which have been cited the most also belong to these countries.

Table 4 demonstrates the total citations and the average citations per year for articles that originate in each country.

Table 4: Total and average citations per year

Country	Total Citations	Average Article Citations
USA	2248	20.10
UNITED KINGDOM	1241	28.90
CANADA	179	19.90
NEW ZEALAND	119	19.80
AUSTRALIA	93	9.30
NORWAY	85	21.20
SWEDEN	61	20.30
ISRAEL	39	19.50
HONG KONG	38	19.00
CHINA	22	11.00
FINLAND	20	20.00
TURKEY	13	13.00
MEXICO	12	6.00
GERMANY	7	7.00
UNITED ARAB EMIRATES	6	6.00
KOREA	4	4.00
DENMARK	3	1.50
SLOVENIA	3	1.50

SPAIN	3	3.00
IRELAND	2	2.00
VIETNAM	2	2.00
SOUTH AFRICA	1	0.50
BELGIUM	0	0.00
GEORGIA	0	0.00
NETHERLANDS	0	0.00
PERU	0	0.00
SAUDI ARABIA	0	0.00

Source: Author's calculations

MOST PROLIFIC AUTHORS AND JOURNALS (RQ2)

Table 5 lists down the most cited publications, along with the authors and the number of citations. The most cited paper is authored by Liu C.H. on mental health diagnosis.

Research on disabled students in higher education, such as studies by Fuller M. et al., has garnered significant scholarly attention, evidenced by 228, 214, and 158 citations

respectively. The authors Healey M. and Bradley A. have collaborated with Fuller M. on multiple papers, indicating their strong focus on disability studies in higher education.

Looking at the top areas of focus, the subjects can be classified around:

- Mental Health and Disabilities
- LGBTQ Issues
- Broader Educational Context

Table 5: Journals And Authors

AUTHORS	PUBLICATION	Total Citations	Citations Per Year
Liu C.H.; Stevens C.; Wong S.H.M.; Yasui M.; Chen J.A.	The prevalence and predictors of mental health diagnoses and suicide among U.S. college students: Implications for addressing disparities in service use	350	50
McGuire J.K.; Anderson C.R.; Toomey R.B.; Russell S.T.	School Climate for Transgender Youth: A Mixed Method Investigation of Student Experiences and School Responses	341	21.31
Fuller M.; Healey M.; Bradley A.; Hall T.	Barriers to learning: A systematic study of the experience of disabled students in one university	228	10.36
Goodwin D.L.; Watkinson E.J.	Inclusive physical education from the perspective of students with physical disabilities	214	8.23

Fuller M.; Bradley A.; Healey M.	Incorporating disabled students within an inclusive higher education environment	158	7.18
Goode J.	'Managing' disability: Early experiences of university students with disabilities	147	7.74
Borland J.; James S.	The Learning Experience of Students with Disabilities in Higher Education. A case study of a UK university	125	4.63
Wagner M.; Friend M.; Bursuck W.D.; Kutash K.; Duchnowski A.J.; Sumi W.C.; Epstein M.H.	Educating students with emotional disturbances: A national perspective on school programs and services	115	5.75
Garvey J.C.; Taylor J.L.; Rankin S.	An Examination of Campus Climate for LGBTQ Community College Students	109	9.91
Kendall L.	Higher education and disability: Exploring student experiences	107	10.7

Source: Author's calculations

CO-OCCURRENCE NETWORK (RQ3)

To understand the most occurring ideas in the literature over the last few years, a helpful way is to look at the co-occurrence between different ideas around the central ideas, such as humans, male/female, and students. The co-occurrence network links most occurring words into different clusters based on their betweenness and closeness. The clusters were created using 50 nodes, and the method used was "Louvain". The major clusters were identified: 1: Demographics and Identity, 2: Social and Psychological Studies, and 3: Education and Student Experiences.

Cluster 1: Demographics and Identity

In the first cluster, represented in red in Figure 3, the terms "female" and "male" occur most frequently. Associated words within this cluster include "psychology," "adolescent," and "qualitative research," suggesting a central focus on demographics and individual identity. The terms "United

States" and "Canada" further emphasize the concept of self-identity. The words "female" and "male" have the highest betweenness and page rank scores (105.65 and 86.98, respectively), highlighting their central importance within the cluster. Most other factors have a betweenness score of less than one, indicating their much lower bridging significance.

Cluster 2: Social and Psychological Studies

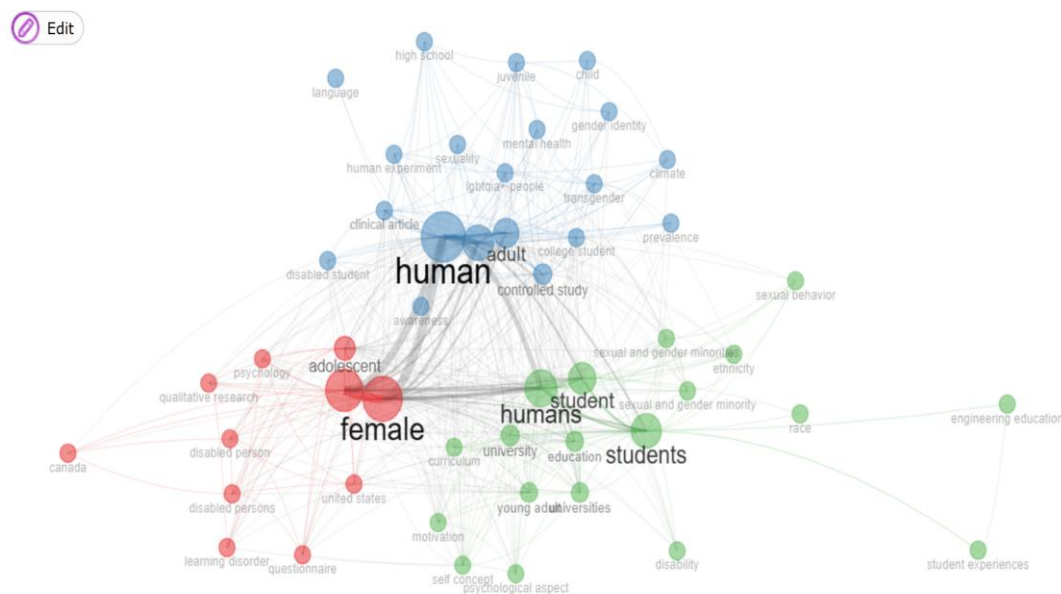
Cluster 2 is represented in Figure 3 in blue. The key nodes are "human," "adult," and "article". This indicates that Cluster 2 revolves around social and psychological studies. The standout node "human" highlights discussions about humanity, psychological aspects, and social behaviour. The word "human" has the highest betweenness score of all data (186.69), which furthers the idea. Central terms such as "adult" and "article" reinforce the focus on

research studies and psychological topics, suggesting this cluster deals with various aspects of human behaviour, social identity, and psychological conditions. The associated words that fall in the cluster are along the lines of disability, language, transgender and LGBTQ+ people, sexuality, ethnicity, and identity. This is evidence of the growing interest in understanding the intersectionality in society. The words in this cluster have a higher betweenness score in general.

Cluster 3: Education and Student Experiences

Cluster 3 is represented in green in Figure 3. The nodes of Cluster 3, such as "students," "humans," "student," and "curriculum," clearly indicate themes focused on education and student experiences. The high betweenness centrality of "students" underscores its role as a key bridging term within the cluster, with a score of 145.44. The network here encompasses various elements of education, learning environments, academic achievements, and the diverse experiences of students, placing education at the heart of this cluster.

Figure 4: Co-occurrence Network between the most occurring words



Source: Created using R-Studio software

TABLE 6: Co-Occurrence Network Data

Node	Cluster	Betweenness	Closeness	PageRank
Female	1	105.655706	0.01851852	0.06998309
Male	1	86.9869778	0.01818182	0.06522271
Adolescent	1	13.5305631	0.01538462	0.03126928
united states	1	0.29922366	0.01219512	0.01429675
qualitative research	1	0.1846971	0.01136364	0.01170754
disabled person	1	0.79577233	0.01204819	0.01467919
disabled persons	1	0.74119357	0.01190476	0.01405747
Psychology	1	0.18984506	0.01219512	0.01296629
Canada	1	0	0.01052632	0.00551887
learning disorder	1	0.04172604	0.01111111	0.00818029
Questionnaire	1	0.08715767	0.01176471	0.01029341
Human	2	186.689627	0.01923077	0.08085536
Adult	2	28.1234433	0.01639344	0.0403476
Article	2	65.4480228	0.01785714	0.05304247
clinical article	2	2.95011473	0.01234568	0.01951122
controlled study	2	8.63227076	0.01408451	0.02467654
LGBTQIA+ people	2	3.3011017	0.01282051	0.01933927
Transgender	2	7.61408139	0.01333333	0.02006051
human experiment	2	0.31935541	0.01176471	0.01208161
college student	2	3.27780881	0.01333333	0.01861928
Sexuality	2	0.01408451	0.01111111	0.00893437
disabled student	2	0.16213148	0.01162791	0.01213821
gender identity	2	0.02754678	0.01098901	0.00789231
Juvenile	2	2.38274722	0.01204819	0.01355722
Language	2	0	0.01010101	0.00400212
Awareness	2	0.02040816	0.01098901	0.0081327
Child	2	0.02761753	0.0106383	0.0063683
Climate	2	0.3400436	0.01149425	0.00859057
high school	2	0.19862162	0.01111111	0.00953823
mental health	2	0.21909725	0.01162791	0.00864703
Prevalence	2	0	0.01136364	0.00714408
Students	3	145.443256	0.01639344	0.05044328
Humans	3	71.3964994	0.01724138	0.05543793
Student	3	48.5070555	0.01639344	0.04450084
Curriculum	3	0.45793268	0.01234568	0.01498154
young adult	3	3.2713543	0.01369863	0.02291833
Education	3	3.07220231	0.01298701	0.02084634
self-concept	3	1.62870888	0.01298701	0.01699266
University	3	2.43497914	0.01333333	0.02379936
student experiences	3	0	0.00925926	0.00679178

Universities	3	1.15951266	0.01282051	0.02162151
engineering education	3	0	0.00925926	0.00648755
Motivation	3	0.28972073	0.01234568	0.01075409
sexual and gender minorities	3	0.41542971	0.01204819	0.01374425
sexual and gender minority	3	0.41542971	0.01204819	0.01374425
Disability	3	0	0.01111111	0.00626889
Ethnicity	3	0	0.01136364	0.0077219
psychological aspect	3	0.24693355	0.01176471	0.01078799
Race	3	0	0.00952381	0.00407888
sexual behaviour	3	0	0.01111111	0.00642477

Source: Author's calculations

IMPLICATIONS, CONCLUSION, AND FUTURE SCOPE

IMPLICATIONS

The literature on students' experiences with intersectional identities has seen several prominent publication trends over time. The number of publications has increased significantly over time, especially in the last 5 years. The focus has been especially on disability, diversity, and inclusion. A study of such publications reveals several insights by clustering the data, which allows us to identify the association between different ideas around the central themes considered in this article.

Cluster 1 shows the critical importance of gender and individual identity in the broader context of demographic research. An increasing scholarly interest in the intricacies of human behaviour and social identity is reflected in the findings from cluster2, which highlight the connections between different social identities and psychological disorders. All things considered, this indicates a changing field of study that emphasizes the incorporation of various aspects of identity and their effects on people and communities. A strong dedication to investigating the complex structure of education is seen in cluster 3, which shows a notable scholarly

interest in comprehending and improving teaching methods and student experiences.

CONCLUSION

An extensive summary of the state of the research on students' experiences with intersecting identities is given by this bibliometric analysis. The study identified important themes, prominent writers, and noteworthy trends in the discipline. In order to analyse trends and conduct in-depth analyses of them, mixed-methods research—which combines quantitative data with in-depth qualitative interviews—has grown in popularity. In order to establish more welcoming and encouraging learning environments, educators and legislators are starting to understand how critical it is to accommodate the special needs of students with overlapping identities. This is evident from the number of citations received by the articles centred around these ideas.

FUTURE SCOPE

The research on intersectionality has been skewed toward the period of 2020-2024. To help understand if the recent increase in publications is a consistent trend, longitudinal analysis of publication trends is needed over a longer period, which would require extended, sustainable scholarships.

Following institutional practices, such as Academic incentives that reward research on intersectionality, could help.

The impact of recent policy research can be studied by examining how policymaking is affected by this new research, particularly in education. This entails assessing how recent understandings of intersectional identities are integrated into educational policies and if they lead to real improvements in school settings. This can be assessed by Audits on Intersectional Equity in Schools/Colleges/institutions by mandating such institutions to perform regular reviews of student data. Policies can be designed to ensure that the curriculum is inclusive through the works of authors and groups that represent different marginalized identities. Research on intersectionality can help develop innovative teaching strategies that can help accommodate students with overlapping identities. The practicality of implementation and real-world challenges should be kept in mind.

Lessons could be planned with intersectionality in mind. For example, Teacher-led groups can be formed that experiment with strategies to integrate intersectional groups to build on students' complex identities. Use of technology to support students with overlapping identities by creating digital tools that enhance learning and offer personalized support. Lessons can then be provided in a way that they are tailored to the needs of the individual students, for example, audio-visual techniques for impaired students. Artificial Intelligence can be used to identify gaps in the existing material. Generative AI can also be used to help speed up bridging of this gap.

Examine the connections between social identities and psychological disorders to identify patterns and interventions that can

support students facing mental health challenges related to their intersecting identities. Providing them with counselling sessions could help. Counsellors would need to be trained to address the issues of students facing marginalization. Social support Groups/Self-help groups can be created for students who share overlapping experiences. Expand research to include a worldwide view of students' experiences with intersecting identities. Comparative studies across various countries and education systems can reveal unique challenges and successful strategies within different contexts. The national policies can be aligned with the global inclusion standards that emphasize intersectionality. Teacher exchange programs can help induce a wider perspective on teaching methods and content with respect to intersectionality.

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