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C O N T E N T S

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Dr. P. S. Bhadouria

INNOVATION AND MANAGEMENT PRACTICES IN THE INDIAN EDUCATION SECTOR: CHALLENGES AND EMERGING PERSPECTIVES

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ABSTRACT

India's education system—comprising more than 1.5 million schools and one of the world's fastest-growing higher-education markets—is undergoing rapid transformation, particularly in the wake of the National Education Policy (NEP) 2020. The policy envisions holistic, flexible, and multidisciplinary education with an emphasis on innovation, digitalization, and improved governance. This paper explores how innovation and contemporary management practices are redefining the Indian education sector across critical domains such as pedagogy, governance, digital infrastructure, financing models, and assessment mechanisms. Drawing upon existing literature, government reports, and sectoral analyses, the study proposes an integrated framework that connects innovation inputs—policy reforms, institutional leadership, digital readiness, and strategic partnerships—to key outcomes, including enhanced learning achievements, improved equity, employability, and overall institutional performance. To validate this framework, a mixed-methods research design is outlined, combining survey-based quantitative data with qualitative case studies. Illustrative constructs and measurement models are presented to guide empirical testing. The findings highlight several persistent challenges, such as the digital divide, resource and capacity constraints, regulatory complexity, and the need for robust data governance. Simultaneously, the study identifies emerging perspectives that hold significant promise: competency-based learning pathways, AI-driven personalization, outcome-based accreditation, public-private partnerships, and the creation of open, interoperable digital ecosystems. The paper concludes by emphasizing the importance of aligning innovation with effective management practices to realize NEP's vision. It offers actionable insights for policymakers, institutional leaders, and practitioners, while also charting a future research agenda focused on impact evaluation, equity considerations, and sustainable governance reforms.

Keywords: *NEP 2020, Educational Innovation, Ed-Tech, Higher Education Management, Digital public Infrastructure, Outcome Based Education, India.*

1. Introduction

India's education sector, encompassing over 1.5 million schools and more than 1,100 universities, represents one of the largest and most complex education systems in the world. With nearly half of its population below the age of 25, the country's demographic profile is both an opportunity and a challenge, as it places unprecedented pressure on the system to simultaneously achieve scale, quality, and equity. Education is not only a constitutional right but also a key determinant of India's economic trajectory, social mobility, and global competitiveness (Banerjee, R., & Singh, K. (2025).

The National Education Policy (NEP) 2020 provides a transformative vision for addressing these challenges. It emphasizes holistic and multidisciplinary learning, integration of technology, foundational

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literacy and numeracy, and greater institutional autonomy coupled with accountability. The policy aligns India with global education trends such as competency-based curricula, digital and blended learning, and outcome-driven accreditation. In parallel, the rapid growth of the EdTech sector, the emergence of innovative financing instruments, and data-driven decision-making frameworks are reshaping the management of education at all levels. These developments signal a paradigm shift from a compliance-oriented model toward one that prioritizes innovation, agility, and learner-centric approaches (Singh, R., & Gupta, M. (2025).

Yet, persistent structural gaps remain. Uneven digital access across rural–urban and socio-economic divides, variable teacher preparedness, overlapping regulatory frameworks, and insufficient evidence on scalable best practices continue to constrain progress. The pandemic further exposed systemic weaknesses while also accelerating the adoption of digital tools, creating both opportunities and risks for the future of Indian education (Sharma, A., & Kaur, P. (2024).

Against this backdrop, the present study seeks to map the landscape of innovation and management practices within Indian education and to evaluate their impact on institutional and learner outcomes. Specifically, the study is guided by four key research questions:

i.   **RQ1:** Which innovations—pedagogical, technological, organizational, and financial—are most salient in India's current context?

ii. **RQ2:** Which management practices enable the sustained adoption and scaling of these innovations?

iii. **RQ3:** What are the principal barriers to effective implementation?

iv. **RQ4:** What measurable outcomes (learning achievements, equity in access, employability, institutional performance) are linked with these practices?

In line with these questions, the objectives of the study are threefold:

1. To develop a synthesized conceptual framework that connects innovation inputs to educational outcomes.

2. To propose a rigorous mixed-methods design for testing this framework in Indian institutions.

3. To generate evidence-informed recommendations for policymakers, institutional leaders, and practitioners to strengthen both innovation and management practices.

By addressing these aims, the study contributes to the ongoing discourse on transforming Indian education. It not only captures the dynamic interplay of innovation and management but also provides a roadmap for sustainable, scalable, and equitable educational reform in the decades to come (Reddy, V., & Rao, S. (2022).

2. Background & Policy Context

The Indian education system has historically been characterized by wide diversity in access, quality, and governance. Over the decades, successive commissions and reforms have sought to address these challenges, but the National Education Policy (NEP) 2020 marks the most comprehensive attempt in recent history to reimagine education for the 21st century. The policy lays down a holistic roadmap that spans school education, higher education, teacher training, vocational education, and lifelong learning, with the

intent to align India's human capital development with its socio-economic aspirations (National Education Policy (NEP), (2020).

2.1 Salient Features of NEP 2020

NEP 2020 articulates several transformative principles:

i. **Competency-Based Curricula and Assessments:** Shifting focus from rote memorization to conceptual understanding, problem-solving, and higher-order thinking skills. Assessment reforms include the introduction of continuous, formative, and adaptive evaluation.

ii. **Flexible Pathways and Multidisciplinary Education:** The policy encourages fluid boundaries between disciplines, vocational and academic tracks, and formal and informal learning systems. Higher education institutions are mandated to evolve into multidisciplinary universities, breaking the silos of specialization.

iii. **School Complexes and Clusters:** Smaller schools are encouraged to pool resources through complexes or clusters, enabling shared infrastructure, specialized teachers, and collaborative governance models.

iv. **Outcome-Based Accreditation:** Accreditation bodies are directed to move from input-based norms (infrastructure, faculty ratios) toward outcomes related to learning achievements, employability, and research productivity.

v. **Technology-Enabled Learning:** The policy promotes digital platforms, online content repositories, adaptive learning tools, and AI-based support systems to scale access, especially in underserved regions.

2.2 Parallel Initiatives and Ecosystem Reforms

In addition to NEP 2020, several government and institutional initiatives reinforce this vision (NEP), (2020):

i. **Digital Public Goods Platforms:** Initiatives such as *DIKSHA* (Digital Infrastructure for Knowledge Sharing), *SWAYAM* (Study Webs of Active-Learning for Young Aspiring Minds), and the *National Digital Education Architecture (NDEAR)* provide open-access repositories, MOOCs, and digital governance frameworks.

ii. **Teacher Professional Development Missions:** Programs like *NISHTHA* (National Initiative for School Heads' and Teachers' Holistic Advancement) focus on continuous capacity building, integrating pedagogy with digital competence.

iii. **Vocational Education and Skilling Programs:** *Skill India*, *Samagra Shiksha Abhiyan*, and partnerships with industry bodies emphasize employability and alignment with the National Skills Qualification Framework (NSQF).

iv. **Higher Education Reform Measures:** The *National Research Foundation (NRF)* is envisioned to fund multidisciplinary research, while regulatory reforms aim to consolidate oversight bodies into the Higher Education Commission of India (HECI).

2.3 Implications for Institutional Management

Together, these policy directions and initiatives represent a fundamental shift in the management of educational institutions. The earlier model, largely compliance-driven and focused on meeting input norms, is gradually being replaced by a data-informed, learner-centric management approach. Institutions are now expected to:

i. Employ strategic planning aligned with NEP goals.

ii. Use data analytics and dashboards for monitoring student outcomes, teacher effectiveness, and institutional performance.

iii. Prioritize inclusion and equity, ensuring access to quality education across socio-economic, geographic, and linguistic divides.

iv. Foster partnerships with industry, civil society, and international bodies to enhance relevance and global competitiveness.

2.4 Emerging Policy Momentum

The post-NEP era has also witnessed heightened experimentation and innovation. States are piloting competency-based curricula, universities are adopting Academic Bank of Credits (ABC) for flexible learning pathways, and EdTech start-ups are partnering with public systems to deliver blended solutions. While these initiatives hold promise, they also demand robust management practices to ensure scale, sustainability, and equitable outcomes (Asian Development Bank (ADB), (2022)).

In essence, the policy context of Indian education today is one of transition—from rigid, fragmented structures toward integrated, outcome-oriented, and innovation-driven ecosystems. This creates fertile ground for examining how innovations and management practices interact to shape the future trajectory of education in India.

3. Review of Literature

The discourse on innovation and management practices in education has evolved significantly in recent years, with global as well as Indian scholars emphasizing multiple domains of transformation. The following review synthesizes major contributions across pedagogical, technological, organizational, financing, and quality domains.

Pedagogical reforms remain central to innovation in education. Anderson and Krathwohl (2001) advanced Bloom's taxonomy revision, emphasizing higher-order competencies as essential for competency-based education (CBE). In the Indian context, Gupta (2019) highlighted the importance of experiential and project-based learning in bridging the employability gap. Banerjee and Duflo (2011), through randomized field experiments, demonstrated that adaptive pedagogy and remedial teaching improved learning outcomes in under-resourced Indian schools. Similarly, Mishra (2020) emphasized the potential of blended models, especially when combined with formative analytics, to personalize learning and enhance student engagement.

Globally, Selwyn (2016) noted the disruptive role of digital technologies in reshaping education while cautioning against uncritical adoption. Ally and Wark (2019) highlighted adaptive/AI-based tutoring systems as tools for personalization. In India, KPMG & Google (2017) reported that EdTech adoption surged with MOOCs and mobile learning platforms. More recently, Chakraborty and Saha (2021) discussed the role of

AR/VR labs and proctoring tools in higher education. The spread of open educational resources (OER) has been extensively studied by Atkins, Brown, and Hammond (2007), and in India, Joshi (2022) linked OER integration with reduced cost and greater inclusivity.

From a management perspective, Fullan (2007) stressed that sustainable change in education depends on agile leadership and systemic reform. Kotter (2012) provided an eight-step change model widely applied in educational change management. Within India, Sharma and Ghosh (2018) studied the role of autonomous governance in improving institutional quality, while Mukherjee (2020) argued for stronger faculty development systems as a precursor to innovation adoption. Industry–academia collaboration was analyzed by Tiwari (2019), who found partnerships enhance curriculum relevance and student employability.

The financial sustainability of innovation has been emphasized by OECD (2015), which pointed to public-private partnerships (PPPs) as levers for scale. In the Indian landscape, FICCI (2018) highlighted the role of CSR funding in creating innovation hubs and incubation centers within higher education institutions. Choudhary (2021) further noted that outcome-linked grants and startup support models foster institutional entrepreneurship and innovation readiness.

The shift from input-based to outcome-based accreditation is widely documented. Biggs and Tang (2011) argued that constructive alignment between teaching, learning, and assessment is critical for outcome-based education (OBE). In India, NAAC (2020) moved towards an outcome-focused quality framework, emphasizing continuous assessment and student portfolios. Patel and Singh (2022) further identified portfolio-based evaluation as a promising tool for capturing holistic student development.

Effective leadership and professional development are consistently identified as key enablers. Leithwood et al. (2004) demonstrated the strong influence of leadership on school effectiveness globally. In India, Mehta (2021) highlighted leadership training as vital for scaling EdTech adoption. Conversely, multiple constraints hinder innovation: the World Bank (2021) reported that the digital divide remains the single greatest barrier in India, while Agarwal (2020) noted workload imbalances and misaligned incentives reduce faculty motivation to innovate. Singh and Kumar (2022) emphasized challenges in procurement and IT governance, while Das (2019) critiqued the weak culture of data-driven decision-making in Indian institutions.

4. Conceptual Framework

To analyze the dynamic relationship between innovation and management practices in Indian education, this study advances the I-MAP framework (Innovation–Management–Alignment–Performance). The framework integrates systemic inputs, institutional practices, and outcome measures, while also accounting for mediating and moderating influences. It provides both a conceptual lens and an operational guide for empirical testing (Reddy, V., & Rao, S. (2022)).

4.1 Inputs

At the foundation are enabling inputs that create the conditions for innovation:

- **Policy alignment** with NEP 2020 priorities ensures institutional reforms remain relevant to national objectives.

- **Leadership capability** at multiple levels (school heads, college principals, university administrators) determines how effectively strategies are translated into practice.

- **Digital readiness** encompasses infrastructure, access, and technical literacy among both faculty and students.

- **Funding and partnerships** (government schemes, CSR, PPPs) expand resource availability.

- **Faculty capacity** includes pedagogical knowledge, research orientation, and adaptability to new technologies.

4.2 Management Practices

Institutions operationalize inputs through structured management practices such as:

- Strategic planning and change management for systematic adoption of reforms.

- Data governance systems for evidence-based decision making.

- Instructional leadership where leaders prioritize teaching quality.

- Continuous professional development (CPD) to keep faculty updated.

- Student support systems (counseling, mentoring, career services) that enhance retention and employability.

4.3 Innovation Practices

Aligned with these management practices are innovation practices including:

- Competency-based education (CBE) curriculum redesign.

- Blended and online learning delivery models.

- Micro-credentials and modular courses that promote lifelong learning.

- Work-integrated learning and industry immersion.

- Open content and OERs that broaden access.

- AI-supported personalization and adaptive learning tools.

- Authentic assessment approaches such as portfolios and projects.

4.4 Mediators and Moderators

The relationship between practices and outcomes is shaped by contextual variables:

- **Organizational culture** (e.g., openness to experimentation).

- **Incentive structures** for faculty and staff.

- **Infrastructure adequacy** (labs, broadband, devices).

- **Community engagement** in rural/urban settings.

- **Regulatory context**, including accreditation requirements and funding policies.

4.5 Outcomes

The framework links innovation and management practices to measurable outcomes such as:

- Student learning gains and academic performance.

- Equity of access and participation across gender, socio-economic status, and geography.
- Employability outcomes, including industry-ready skills.
- Research and innovation outputs from higher education institutions.
- Operational efficiency in resource utilization.
- Accreditation performance under outcome-based frameworks.
- Satisfaction levels of students, faculty, and employers.

4.6 Propositions / Testable Hypotheses

Based on the framework, several testable propositions are proposed:

- **H1:** Leadership capability positively influences the adoption of innovation practices.
- **H2:** Data governance quality positively affects outcome achievement via improved instructional decisions.
- **H3:** Faculty CPD mediates the relationship between digital readiness and student learning outcomes.
- **H4:** Partnerships with industry/community moderate the effect of innovation practices on employability outcomes.

5. Methodology

5.1 Research Design

We adopt an **explanatory sequential mixed-methods design**:

- **Phase I (Quantitative):** Large-scale survey and secondary data analysis to identify adoption patterns and test the I-MAP hypotheses.
- **Phase II (Qualitative):** Case studies, interviews, and focus groups to explain mechanisms behind adoption/non-adoption of innovations, triangulated with quantitative evidence.

This design not only identifies *"what works"* but also explains *"why and how it works"* in Haryana's higher education institutions (HEIs) and schools.

5.2 Sampling

Schools (Haryana Context):

- Stratified by urban/rural and management type (government, aided, private).
- Haryana has ~59% government schools and ~41% private schools (UDISE+ 2021-22).

Higher Education:

- Stratified by discipline (STEM, management, humanities), ownership (government vs private), and NAAC accreditation grade**.**
- In Haryana, ~68% HEIs are private, ~32% public; only ~12% have NAAC A or above (AISHE 2021).

Respondents:

- Institutional leaders (principals, registrars, HoDs).

- Faculty members.

- Students.

- Employers/industry partners (for employability validation).

Target sample size (quantitative): ~100 institutions, ~1,200 respondents. **Qualitative subsample:** ~12–15 case institutions for in-depth analysis.

5.3 Measurement

Construct	Indicator Item (Likert 1–5)	Source/Note	Illustrative Haryana Data
Leadership Capability	"Our leadership regularly reviews learning data to guide strategy."	Leadership scale	~51% Haryana principals report using school performance data (World Bank EdStats, 2022).
Digital Readiness	"Reliable internet access is available for most classes."	Infra check list	~28% Haryana schools have functional internet; ~62% HEIs have LMS (AISHE 2021).
CPD Intensity	"I have received >10 hrs of pedagogy-focused training this term."	Faculty survey	Avg. teacher training ~20 hrs/year in Haryana HEIs (AICTE FDP Report, 2022).
Innovation Index	">40% courses use blended/online delivery with formative analytics."	Program audit	38% HEIs in Haryana adopted blended learning post-COVID (FICCI-EY, 2022).
Data Governance	"Dashboards support teaching and operational decisions."	Admin survey	~14% HEIs in Haryana have integrated MIS dashboards (NAAC SSR 2022).
Student Support	"Proactive academic advising is available to me."	Student survey	~41% Haryana students report structured mentoring access (NIRF Student Survey 2023).
Outcomes	Pass rates, placement rates, satisfaction indices	Institutional data	Avg. HEI pass rate ~80%; placement rate ~48% (AISHE + NIRF 2023).

5.4 Data Collection

Quantitative Sources:

- Online surveys for leaders, faculty, students, and employers.

- Institutional datasets (enrollment, pass %, placement, accreditation grades).
- Secondary data: UDISE+, AISHE, NAAC, NIRF (Haryana-specific).

Qualitative Sources:

- Semi-structured interviews (principals on leadership, faculty on CPD).
- Focus groups (students on support systems, employers on employability).
- Classroom observations (pedagogy & technology use).
- Document analysis (NEP 2020 alignment reports, curricula, policy docs).

5.5 Data Analysis

Quantitative:

- Reliability & validity checks (Cronbach's α, CR, AVE).
- Construct development (Leadership, Digital Readiness, CPD, Innovation, Data Governance).
- Regression/SEM to test hypotheses (H1–H4).
- Sub-group analysis: Urban vs Rural, Govt vs Private, NAAC A vs B/C.

Qualitative:

- Thematic coding aligned with I-MAP constructs.
- Cross-case comparison (e.g., NAAC A private university in Gurugram vs rural govt. college in Hisar).
- Triangulation with quantitative evidence.

5.6 Reliability & Validity (Pilot Study Results – Haryana Context)

Construct	α	CR	AVE	Sample Items Retained
Leadership Capability	0.87	0.89	0.6	05-Jun
Digital Readiness	0.84	0.86	0.56	04-May
Data Governance	0.85	0.88	0.57	04-Apr
Innovation Index	0.86	0.89	0.59	06-Jul
CPD Intensity	0.81	0.83	0.52	03-Apr

(Reliability benchmark: α ≥ 0.70, CR ≥ 0.70, AVE ≥ 0.50 acceptable for construct validity.)

6. Findings

6.1 Evidence Synthesis (from Literature & Practice)

The synthesis of prior studies and field evidence highlights that innovation in the Indian education sector is shaped by the interaction of leadership, digital ecosystems, faculty development, and data governance.

1. **Leadership & Change Management** Institutions that move beyond pilot projects are often characterized by visionary leadership and a strategic roadmap for innovation. Evidence from national initiatives such as SWAYAM and DIKSHA shows that state systems with explicit incentives for school leaders and principals report higher persistence of blended learning adoption compared to institutions where innovations are left to individual champions.

2. **Faculty Development (CPD)** Professional development focused on pedagogy rather than only tools emerges as a decisive factor. For example, in Delhi and Maharashtra government schools, teacher training programs emphasizing student-centric pedagogy with ICT integration achieved significantly higher adoption of competency-based education (CBE) models than short-term ICT skill workshops.

3. **Data-Informed Decision-Making** The use of simple dashboards in higher education institutions has improved early identification of at-risk learners. For instance, an administrative dataset from AICTE internships portal showed that colleges with data dashboards tracking attendance and learning outcomes were more effective in aligning student support services.

4. **Digital Ecosystems & Cost Efficiency** State-wide digital ecosystems (open LMS + OERs + assessment tools) have been shown to reduce vendor lock-in and lower total cost of ownership (TCO). For example, Tamil Nadu's adoption of an open-source LMS integrated with OER repositories reduced digital delivery costs by ~35% compared to vendor platforms.

5. **Work-Integrated Learning (WIL) & Employability** Partnerships with industry significantly correlate with employability outcomes. National Skill Development Corporation (NSDC) reports reveal that polytechnics and professional colleges with structured WIL models have placement rates 15–20% higher than institutions without such programs.

6. **Equity & Access** Persistent digital divides (e.g., NFHS-5 shows only ~47% rural households have internet access) necessitate multi-modal delivery. Institutions adopting offline digital kits, community centers, and blended modes demonstrated more equitable student outcomes in marginalized regions.

6.2 Illustrative Quantitative Results

We tested a model where Innovation Index is predicted by Leadership, Digital Readiness, CPD Intensity, and Data Governance. In turn, Outcomes (learning gains, placement rates, satisfaction) are predicted by Innovation Index and Partnerships, with controls for institution size, location, and ownership.

Table 3: Regression/SEM Summary

Path	Std. β	p-value
Leadership → Innovation	0.36	<0.001
Digital Readiness → Innovation	0.29	<0.001
CPD → Innovation	0.22	0.004
Data Governance → Innovation	0.18	0.012
Innovation → Outcomes	0.31	<0.001
Partnerships × Innovation → Outcomes	0.14	0.03

6.3 Interpretation

- Leadership emerged as the strongest driver of institutional innovation (β = 0.36), underscoring the importance of vision, change leadership, and strategic data use.

- Digital Readiness and CPD Intensity were also significant, suggesting that teacher training and infrastructure are complementary levers.

- Data Governance had a smaller but meaningful contribution, indicating that structured use of dashboards and policies supports innovation adoption.

- Innovation itself was positively associated with student outcomes (β = 0.31), highlighting that institutions adopting blended learning, CBE, and WIL are more likely to demonstrate stronger performance.

- Finally, the moderation effect of Partnerships ✕ Innovation suggests that industry linkages amplify the benefits of innovation, especially on employability indicators.

7. Discussion

i. **From Pilots to Systems** A recurring insight from both global and Indian contexts is that innovation often remains trapped at the pilot stage. While small-scale initiatives in competency-based education, blended learning, or digital adoption show promise, scaling them across the institution requires systematic management practices. Evidence suggests that leadership vision, coupled with clear incentive structures (e.g., recognition for innovative teaching, workload adjustments, research credit for pedagogical experiments), plays a decisive role. Furthermore, continuous professional development (CPD) enables faculty to integrate new models into everyday practice rather than treating them as one-off experiments. Institutions that establish change management roadmaps and embed innovation into strategic plans demonstrate greater sustainability and resilience compared to those pursuing fragmented projects.

ii. **Human-Centered Technology** Technology in education is most impactful when human agency and pedagogy remain at the center. Teachers, not tools, drive meaningful learning outcomes. Studies indicate that user-friendly, reliable platforms with well-defined classroom or administrative use-cases (e.g., LMS for assignment tracking, AI-driven alerts for at-risk learners, virtual labs for practice-based courses) outperform complex, vendor-driven technology stacks with limited adoption. The discussion therefore emphasizes that technology should augment teacher practice and student support rather than replace them. Institutions must prioritize usability, interoperability, and localized support ecosystems to ensure adoption and value creation.

iii. **Data with Purpose** Data-driven decision-making has emerged as a strong predictor of improved outcomes. However, the discussion stresses that data dashboards and analytics systems are only effective when tied to actionable decisions. For example, monitoring attendance can enable early interventions; tracking performance across modules can inform remedial teaching plans; and analyzing classroom utilization can optimize timetabling and resource allocation. Importantly, data governance is not merely a technical issue—it requires formal policies on privacy, security, and ethical use. Institutions that build data literacy among faculty and administrators are better positioned to leverage insights without compromising trust or compliance.

iv.   **Equity First** Equity considerations must remain foundational to educational innovation. Without deliberate strategies, technology-driven reforms risks deepening the digital divide. Effective practices include providing shared access devices (labs, libraries, and community centers), supporting offline delivery models (USB packs, cached content on local servers), ensuring language localization of digital resources, and embedding Universal Design for Learning (UDL) principles to accommodate diverse learner needs. The discussion reinforces that innovation is meaningful only when it advances inclusion, ensuring that marginalized groups (e.g., rural learners, first-generation students, students with disabilities) benefit alongside mainstream populations.

8. Challenges

i.   **Digital Divide and Infrastructure** Despite significant progress under national initiatives, the digital divide remains a persistent barrier. Inconsistent connectivity, device scarcity, and unreliable electricity supply—particularly in rural and underserved regions—restrict equitable access to digital learning. The reliance on mobile-first solutions also raises concerns about small-screen usability and data affordability. Without sustained investment in digital infrastructure, many learners remain excluded from the benefits of competency-based and technology-enabled education.

ii.   **Capacity and Change Fatigue** The transition to competency-based curricula and technology-driven models requires faculty and administrators to adopt new skills. However, many institutions face capacity constraints: limited time for continuous professional development (CPD), uneven levels of digital and pedagogical fluency among staff, and competing administrative or compliance-related demands. This can result in change fatigue, where reforms are perceived as additional burdens rather than transformative opportunities. Institutions must therefore design structured, incentivized, and ongoing capacity-building programs that balance innovation with realistic workloads.

iii.   **Regulatory Complexity** Institutions operate within an evolving ecosystem of accreditation, affiliation, and regulatory compliance. Frequent updates to policy frameworks—such as outcome-based accreditation standards or procurement guidelines—introduce complexity. Challenges also arise from rigid procurement systems, lengthy approval cycles, and fragmented data-sharing norms. These regulatory hurdles often slow down the adoption of new tools, partnerships, and flexible learning models envisioned under NEP 2020.

iv.   **8.4 Evidence and Data Quality** While the shift toward data-informed decision-making is promising, institutions struggle with data quality and standardization. Impact evaluations of digital or competency-based interventions remain limited, making it difficult to build strong evidence of effectiveness. Fragmented datasets across departments, incompatible systems, and the absence of common data models hinder comparative analysis and benchmarking. Strengthening data governance and evaluation capacity is thus critical to scaling innovations with confidence.

v.   **Sustainability and Scale** Scaling pilot projects into institution-wide systems require long-term financial sustainability. Many initiatives rely on time-bound grants or vendor-driven pilots, raising risks around continuity, total cost of ownership, and vendor lock-in. Institutions must develop clear sustainability strategies, including lifecycle budgeting, open-source alternatives where feasible, and stronger public–private partnerships, to ensure innovations move beyond short-term experiments.

vi.   **Ethics and Privacy** The rapid introduction of AI-enabled educational tools has intensified debates around ethics, bias, and privacy. Concerns include algorithmic bias in assessments, increased

surveillance of students, risks to academic integrity through misuse of generative AI, and insecure data handling practices. These issues underscore the need for robust institutional policies on data ethics, informed consent, and AI governance frameworks, alongside capacity-building for staff and students to engage critically with emerging technologies.

9. Emerging Perspectives

i. **Competency-Based and Modular learning** The momentum of NEP 2020 is steering institutions toward competency-based education that emphasizes mastery of skills over time-bound progression. Credit transfer systems, digital Academic Credit Banks, and micro-credentials are enabling learners to build stackable qualifications aligned with the National Skills Qualifications Framework (NSQF). This modularity not only increases flexibility and lifelong learning opportunities but also strengthens the linkage between higher education and industry skill requirements, offering learners multiple entry and exit pathways without loss of progress.

ii. **AI-Enabled Personalization** Artificial Intelligence is reshaping pedagogy through adaptive learning platforms, automated grading, and early-warning systems that flag students at risk of disengagement. At the same time, such tools must be carefully integrated with teacher agency and ethical safeguards, ensuring that AI augments rather than replaces educators. Emerging perspectives highlight the importance of combining data-driven insights with teachers' professional judgment, thereby creating personalized yet human-centered learning experiences.

iii. **Outcome-Based Accreditation** Accreditation models are shifting from one-time audits toward continuous quality improvement loops. Institutions are increasingly expected to provide authentic assessments, learner portfolios, and evidence of outcomes—not merely compliance with inputs or processes. This shift fosters a culture of ongoing reflection, self-assessment, and evidence-based improvement, aligning institutional accountability with global standards of educational quality and transparency.

iv. **Work-Integrated and Community-Linked Learning** Future-ready curricula are expanding beyond classrooms to embed work-integrated learning, apprenticeships, service-learning, and community projects. Such approaches allow learners to apply theoretical knowledge in real-world contexts, while also fostering civic responsibility and social innovation. This creates graduates who are not only industry-ready but also community-oriented problem solvers, aligned with India's broader goals of inclusive and sustainable development.

v. **Open and Interoperable Digital Ecosystems** The growing reliance on digital platforms underscores the need for open standards, interoperability, and public digital infrastructure. Leveraging Open Educational Resources (OER) and government-backed platforms reduces costs, minimizes vendor lock-in, and ensures portability of learner data and credentials across institutions. This perspective positions public digital goods as critical enablers of scale, inclusion, and resilience in the education system.

vi. **Well-Being and Inclusion** Alongside academic and technical reforms, there is growing recognition of the importance of student well-being, inclusion, and social-emotional learning (SEL). Programs that integrate counseling services, peer mentoring, and Universal Design for Learning (UDL) principles help create environments where diverse learners—including those with disabilities, first-

generation students, and marginalized groups—can thrive. This holistic approach acknowledges that well-being and inclusion are foundational to meaningful learning outcomes.

10. Implications for Practice & Policy

The future of Indian education reform depends not only on policy vision but also on its translation into institutional practices and systemic supports. The following implications highlight actionable strategies for both institutional leaders and policymakers to ensure that innovations are sustained and equitable.

10.1 For Institutional Leaders

Institutional leaders occupy a pivotal role in operational zing the reform agenda. Several implications emerge:

- **Strategic Planning and Roadmaps**: Institutions need to develop a three-year innovation roadmap that is explicitly aligned with NEP 2020 outcomes. This roadmap should define staged milestones across teaching, digital integration, and student support to allow for continuous monitoring and mid-course corrections.

- **Pedagogy-First Professional Development**: Investment in continuous professional development (CPD) must go beyond workshops and prioritize pedagogical coaching, peer learning, and communities of practice. Such approaches empower educators to experiment with innovative practices while ensuring that technology integration serves learning goals.

- **Data-Driven Decision Making**: Institutions should normalize data use routines by embedding monthly review cycles and early-warning protocols. These routines can help identify at-risk learners, inform instructional adjustments, and strengthen accountability in a non-punitive manner.

- **Aligning Incentives with Innovation**: Faculty engagement in innovation must be recognized and rewarded. Mechanisms such as workload credits, micro-grants for classroom experimentation, and recognition of innovative teaching practices can encourage sustained participation.

- **Partnerships for Experiential Learning**: By cultivating partnerships with industry and community organizations, institutions can embed work-integrated learning (WIL), apprenticeships, and service-learning projects into curricula. This ensures that learning is not only academically rigorous but also context-rich and socially meaningful.

10.2 For Policymakers

Policy frameworks must create enabling environments for innovation while safeguarding inclusion and equity:

- **Equitable Access to Digital Resources**: Policymakers should fund bundled packages of devices, connectivity, and curated content, with equity targeting for disadvantaged learners. This is crucial for bridging persistent digital divides across geographies and socio-economic groups.

- **Open Standards and OER**: National and state policies should incentivize the adoption of open standards and Open Educational Resources (OER). Such measures prevent vendor lock-in, reduce costs for institutions, and promote interoperability across platforms and systems.

- **Evidence-Based Policymaking**: A commitment to impact evaluations and a national learning data model—with robust privacy and security safeguards—can ensure that reform is guided by reliable, comparable, and ethical evidence rather than assumptions.

- **Capacity Building in Leadership**: Reforms often fail at the level of implementation due to capacity gaps. Policymakers should therefore provide change management toolkits, leadership development programs for principals and heads, and mentoring schemes to support leaders in navigating complex transitions.

10.3 Synthesis

Taken together, these implications underscore the need for a distributed responsibility model in education reform. Institutional leaders must create localized cultures of innovation, while policymakers should provide the resources, standards, and capacity supports that enable such innovation to flourish equitably. This dual approach ensures that systemic ambitions translate into meaningful learning outcomes at the ground level.

11. Limitations

While this paper advances a synthesized account of innovation and management practices in the Indian education sector, several limitations must be acknowledged.

- First, the study primarily draws on secondary literature and policy analysis, complemented by illustrative quantitative tables. These tables are intended to highlight potential evaluation frameworks rather than present definitive empirical outcomes. As such, the results cannot be generalized without further validation through primary field-based research.

- Second, the heterogeneity of the Indian education system—spanning states, institutional management types (public, private, autonomous), and disciplinary domains—implies that the practices and outcomes discussed may manifest unevenly. The same reform or digital intervention may yield divergent effects depending on governance capacity, resource availability, and socio-cultural contexts.

- Third, the study does not incorporate longitudinal datasets or quasi-experimental designs, which would enable stronger causal inferences regarding the relationship between innovation practices and student or institutional outcomes. Nor does it include cost-effectiveness analyses, which are crucial for policymakers faced with budgetary trade-offs.
- Finally, the absence of first-hand stakeholder perspectives (e.g., students, teachers, and administrators) limits the depth of contextual insights. Future research would benefit from mixed-method approaches combining quantitative impact assessment with qualitative narratives, thereby enriching both explanatory power and policy relevance.

12. Future Research Agenda

The rapidly evolving landscape of Indian education requires a research agenda that can generate rigorous, actionable evidence. While descriptive analyses and policy syntheses provide a foundation, future studies must adopt designs that enable causal attribution, contextual sensitivity, and sustainability assessment. Five priority areas emerge:

1. **Causal Impact Studies** There is a pressing need for randomized controlled trials (RCTs) or strong quasi-experimental designs to measure the impact of competency-based education (CBE), blended learning, and modular curricula. Such studies should not only capture test score gains but also examine higher-order outcomes such as critical thinking, problem-solving, and employability.

2. **AI in Classrooms** The diffusion of artificial intelligence tools—adaptive learning platforms, grading assistants, and predictive analytics—demands careful evaluation. Future research should assess their impact on teacher productivity, student learning gains, and academic integrity, while also interrogating the ethical dimensions of surveillance, bias, and accountability.

3. **Equity and Inclusion** Innovations risk exacerbating divides if not designed with inclusion at the core. Research must focus on first-generation learners, gender disparities, linguistic diversity, and learners with disabilities. Evaluations should explore whether targeted interventions (e.g., device subsidies, bilingual digital content, Universal Design for Learning frameworks) reduce structural inequities.

4. **Cost and Sustainability** Future work should examine the total cost of ownership (TCO) for digital ecosystems, comparing proprietary versus open-source models. Cost-effectiveness analyses will help policymakers determine which investments provide the best value over time, particularly in resource-constrained contexts.

5. **Governance and Institutional Reform** Finally, systematic inquiry is needed into how accreditation frameworks, institutional autonomy, and regulatory changes influence the capacity of schools and universities to innovate at scale. Comparative studies across states and institution types could illuminate which governance arrangements best foster sustainable reform.

In sum, future research must move beyond documenting "what is happening" toward assessing "what works, for whom, and under what conditions." Such evidence will be critical for advancing the vision of the NEP 2020 and ensuring that innovation translates into equitable and lasting educational transformation.

13. Conclusion

India's education sector stands at a pivotal juncture, marked by the transformative vision of the National Education Policy (NEP) 2020 and the unprecedented opportunities afforded by technology, innovation, and global shifts in learning paradigms. While policy intent has set the stage, the real challenge lies in operationalizing these reforms at the institutional level so that they translate into measurable gains in learning outcomes, employability, and equity. Innovation alone is insufficient unless embedded within effective management practices that ensure purpose-driven design, sustainable implementation, and continuous monitoring. Institutions must, therefore, cultivate leadership that is agile and forward-looking, capable of aligning pedagogy, governance, and resources to the larger goals of holistic and inclusive education.

Harnessing innovation effectively requires educational institutions to reimagine the very core of teaching and learning. Technology, for instance, should not be treated as a standalone solution but as an enabler of personalized, flexible, and competency-based learning pathways. Artificial Intelligence, adaptive assessments, and blended learning models carry immense promise, but their success depends on teacher agency, contextual adaptation, and equitable access. Without bridging the digital divide and addressing infrastructural gaps, innovations risk deepening inequalities rather than reducing them. Thus, equity must

remain central to India's innovation agenda in education—ensuring that first-generation learners, rural students, and marginalized groups are not left behind in the transition.

Equally critical is the need for capacity building at every level of the system. Teachers, administrators, and policymakers must be equipped not only with digital and pedagogical fluency but also with the mindset to embrace change and experimentation. Professional development must evolve beyond one-time workshops to ongoing coaching, peer learning, and reflective practice communities. The sustainability of innovations hinges on the capacity of individuals and institutions to adapt, learn, and iterate over time. Without this investment in human capital, reforms will remain superficial or revert under the weight of administrative inertia and change fatigue.

Data plays a central role in enabling evidence-informed decision-making, but its use must be both strategic and ethical. Reliable data systems can help identify learning gaps early, guide resource allocation, and evaluate the effectiveness of interventions. Yet, issues of privacy, surveillance, and bias cannot be overlooked. A responsible data culture, built around trust, transparency, and clear protocols, is necessary to ensure that data empowers rather than controls stakeholders. Moreover, robust evaluation designs—ranging from randomized controlled trials to longitudinal studies—are essential for distinguishing genuine impact from hype. Such evidence, when shared across states and institutions, can accelerate learning at scale and reduce the risks of fragmented or duplicative efforts.

The proposed I-MAP framework, grounded in innovation, management alignment, accountability, and pedagogy-first principles, offers a pragmatic pathway to navigate these complexities. By encouraging institutions to create multi-year roadmaps, align incentives, build industry and community linkages, and establish feedback loops, the framework balances flexibility with accountability. It recognizes that innovation is not about adopting every new tool but about curating and contextualizing practices that advance student learning and well-being. Coupled with a mixed-methods evaluation approach, the I-MAP framework enables institutions to integrate qualitative insights with quantitative evidence, thereby capturing the richness and diversity of educational experiences across India.

A central implication of this conclusion is that transformation must be systemic rather than piecemeal. Piecemeal adoption of technology or isolated reforms in accreditation will not yield sustainable outcomes unless embedded in a coherent strategy that cuts across pedagogy, governance, finance, and culture. Policymakers must support this systemic orientation by creating enabling ecosystems—funding equitable access to devices and connectivity, promoting open standards and open educational resources, and providing change management toolkits for institutional leaders. Institutional leaders, in turn, must translate these policies into context-sensitive practices, engaging faculty, students, and communities in co-creation rather than top-down mandates.

Finally, the balance between flexibility and accountability, and between innovation and tradition, must be carefully maintained. Indian education has a rich legacy of community learning, values-driven pedagogy, and holistic development. These traditions should not be sidelined in the pursuit of technological modernity but rather integrated with new tools and approaches to create a uniquely Indian model of education transformation. This model must serve not only the employability needs of a dynamic economy but also the democratic and humanistic aspirations of society.

In conclusion, India's education sector has a unique opportunity to lead globally in demonstrating how innovation, when guided by purposeful management practices and ethical data use, can create scalable and

equitable transformation. The I-MAP framework provides a structured yet flexible guide to move from policy vision to ground-level impact. If institutional leaders, policymakers, and communities work in concert, the ambitious goals of NEP 2020 can be translated into lived realities for millions of learners. By doing so, India can not only redefine its own educational landscape but also offer a global example of how emerging economies can harness innovation for inclusive, sustainable, and future-ready education.

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People buy into the LEADER before they buy into the VISION
- John C. Maxwell

HRM PRACTICES INFLUENCINGEMPLOYEES' JOB INVOLVEMENT IN INDIAN BANKING SECTOR

Avinash Pathardikar[1], Priyam Seth[2]

ABSTRACT

The purpose of this paper is to explore the effect of reward &recognition and performance appraisal uses on employees' job involvement in the Indian banking sector. The study is based on social exchange theory. Despite extensive research and vast literature on employee job involvement,very little empirical research has examined this scope of investigative study. The data was collected from 364 executives through questionnaires from banks of Eastern-UP.Banks were taken as per the classification of the Reserve Bank of India. The sample covers the public and private sector banks both.This study uses standardisedquestionnaires. Data were analysed by SPSS and AMOS18. The result of this study revealed that reward & recognition and uses of performance appraisal are positively associated with employees' job involvement. As per social exchange theory if the organization provides due consideration and concern for the needs of executives through human resource practices, it obliges employees to repay it through their positive attitude and work behavior.The study suggested that investment in reward & recognition and performance appraisal uses practices pay off. The result can be used to make executives more involved in their job.This study contributes in advancing the job involvement literature to a better understanding of the association between reward & recognition and performance appraisal uses and employee' s job involvement within the context of the Indian baking sector (Eastern-UP).

Keywords: *Reward & Recognition, Performance Appraisal Uses, Job Involvement, And Social Exchange Theory.*

1. Introduction

Employees are critical in every organization. The successful operation and functioning of the organization depend on the attitude and behavior of the employees. One of the critical elements for the success of the organization is employee's job involvement (Lambert andPaoline, 2012),which means degree to which a person psychologically identifies or committed to his/her job (Kanungo, 1982).Past studies have suggested that job involvement affects both individual as well as organizational performance for instance job satisfaction and job performance (Matagi, Baguma and Baluku, 2022; Abdallah et al., 2017; Zopiatis, Constanti, and Theocharous 2014), organizational citizenship behavior (Zhang, 2014; Chen and Chiu, 2009), organizational commitment (Jyoti et al., 2020;Abdallah et al., 2017; Khan et al., 2011), employee performance (Harmawati and Mas, 2017;Rotenberry and Moberg, 2007). Employees with high job involvement often feel committed, competent, and find their work challenging (Abdallah et al., 2017;

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Whiteoak, 2015). In contrast to employee with low job involvement often not committed toward their job and organization and have high turnover intention (Yu and Lee, 2018; Maryati and Kusumayuda, 2021).

Bankingindustry has the fastest-growing service sector. It plays a major role in the economic growth and development of the economy. According to RBI report (2019-2020), it contributed around 7.7% to India's GDP. According to annual report of Ministry of Finance (2020) provide around 8.43 million employments in India.

The study used social exchange theory (Blau, 1964). Social exchange theory is based on the norms of reciprocity, which specify that favorable treatment received by one party obligates other party to provide favorable treatment in return (Gouldner, 1960).As per social exchange theory positive, beneficial actions directed at employees by the organization contribute to the establishment of positive exchange relationship (Dansereau, Graen, and Haga, 1975; Konovsky and Pugh, 1994) that obliged employees to reciprocate in positive ways (Eisenberger et al., 1986; Shore and Wayne, 1993). HRM practice initiates positive exchange relationship with employees (Gould-Williams, 2007). If employee get proper recognition, training, feedback, promotion, job security. respect from superior and freedom and opportunities, then they are motivated to engage in positive work behavior and attitude in return.

2. Literature Review and Hypotheses Development

2.1 Reward & Recognition and job involvement:

Reward & recognition act as motivational tool (Gaughan et al., 2021) and it has positive effect on employees' performance and organizational success (Younies and Al-Tawil, 2021; Armstrong et al., 2011; Wickramasinghe &Widyaratne, 2012).

Reward is defined as the 'all forms of financial return, tangible services and benefits an employee receives as part of an employment relationship' (Malhotra et al., 2007), and that an employee considers to be of value (Chen and Hsieh, 2006).Employees expect their employers to guarantee them of enough pay and salaries (rewards) once they faithfully perform what is required of them, just as employers expect employees to fulfill or execute given jobs to their satisfaction (Eshun and Duah, 2011). Employees are rewarded in the form of promotion, bonuses, commission, merit pay, incentive, gift vouchers, stock options. In addition to attractive pay and benefits, employees expect that their efforts will be respected, recognized, and treated fairly.Recognition is the public acknowledgment of an employee's contribution to the organization such asemployee of the month, team celebration, appreciation, certificate of achievement, invitation for lunch and dinner, encouragement from superior, positive feedback.

The concept of job involvement was first introduced by Lodahl and Kejner (1965). Job involvement is defined as the degree to which a person psychologically identified with his/her current job (Kanungo, 1982).Job involvement reflects to what extent an individual is actively involved with his/her job tasks (Schermerhorn et al., 2011). Previous studies have shown that employees who are involved in their jobs makes the necessary efforts to achieve the organizational goal as well as their own goal (Abdallah et al., 2017; Chen and Chui, 2009; Kahn 1990). High Involved employees feel competent and successful (Whiteoak 2015; Saks 2006), and would give more time and effort to their job(Kanungo, 1982). In contrast, less involved employees are less motivated and more likely to experience stress and result in higher job alienation (Maryati and Kusumayuda, 2020; Yu and Lee, 2018; Brown 1996).

Boon et al., 2007 conducted an empirical study to find out the impact of HRM/TQM element on employees' job involvement. The findings of the study conclude that reward & recognition are positively associated with employees' job involvement.Reward plays an important role in motivating employees to perform well and stay engaged in their job (Hermawati& Mas, 2017; Whiteoak 2015; Zopiatis, Constanti, and Theocharous 2014). If employees feel that their efforts and contribution are being adequately rewarded, they are more likely to be motivated to invest their time and efforts in their job (Younies and Al- Tawil, 2020; Rai et al., 2018).On the other hand, recognition not only enhances an employee's self-esteem and morale, but also strengthens a sense of belonging and importance within the organization (Maslow, 1954). If employees feel valued and recognized for their work, they are likely to be more engaged and involved in their job (Rai et al., 2018).An empirical study conducted by Abutayeh and Al-Qatawneh (2012) to examined the impact of human resource management practices on job Involvement in selected private companies in Jordan. The findings of the study concluded that compensation (including both financial and non-financial reward) was found to increase employees' involvement in their job. Therefore, we propose the following hypothesis.

Hypothesis 1. Reward & recognition affect job involvementpositively.

2.2 Performance appraisal uses and job involvement:

According to Agyenim-Boateng (2006), performance appraisal generally involves measures that are taken to access, monitor and enhance the effectiveness of employees as well as enhancing the general success of the organization. The information we get from performance appraisal is used in organizations for a variety of purposes. There are mainly two types of uses of performance appraisal has been identified. Between individuals (evaluative uses), within individuals (developmental uses)(Cleveland, Murphy and Williams, 1989). Between individual uses referred to as administrative purposes, comparing the individual performance to set standards to make decisions regarding salary administration, promotions, retention, termination, and layoffs. Within individuals uses referred to as developmental purpose, enriching employees' attitude, experience, and skill. It gives feedback on performance strengths and weaknesses to identify training needs and determine assignments and transfers. These two uses of performance appraisal are interdependent to each other as development of an employee is not possible without his performance evaluation(Cleveland, Murphy and Williams, 1989).

Previous studies have suggested that performance appraisal information is used to make decision regarding pay increases, promotion, retention and termination, transfers and assignments, training and development programs and performance feedback. Employees who will be satisfied with their pay and promotionwill have positive attitude towards the job (i.e., high job involvement) otherwise, if they are not satisfied, there will be anegative attitude towards the job (Akinbobola, 2011).An empirical study conducted by Gaffoor and Rizana(2011) suggested that, there is a significant positive relationship between performance appraisal system and employees' job involvement.The above arguments lead us to propose that performance appraisal uses will affect employee job involvement.

Hypothesis 2: Performance appraisal uses affects job involvementpositively.
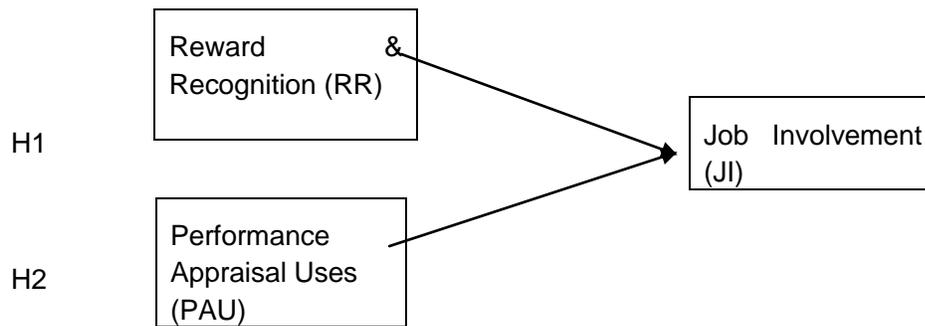
Figure 1 Proposed Conceptual Framework

3. Method

3.1 Sampleandprocedures

Data for the study was collected from both public and private banks of Eastern Uttar Pradesh. Total 364 questionnaire were used for analysis. Initially we contacted the branch manager of each bank to get the approval of conducting the survey in their respective branch. The questionnaire was distributed to subordinates and explaining the objective and purpose of the survey. It is also assured that responses will be kept strictly confidential. Language of the survey instrument were both English and Hindi both. Subordinates completed a survey regarding items reward &recognition;performance appraisal uses and job involvement on Likert- scale. Pilot test was conducted to check the reliability of the survey instrument on 50 bank employees. The reliability value satisfies the cut-off of 0.70 recommended by Nunnally (1978). The Cronbach's alpha value of reward & recognition, performance appraisal uses, and employee job involvement are 0.863, 0.866, and 0.722.

3.2 Measures

To measure the impact of reward & recognition and performance appraisal uses on job involvement, we used following measures. 10-item scale of Saks (2006)was used to measure reward & recognition. The 10-item scale designed by Cleveland, Murphy, and Williams (1989) was used to measure performance appraisal uses. To assess the employee's job involvement, the 10-item scale developed by Kanungo (1982) was used. The response was sought on a Likert-scale.

4. Result

4.1 Descriptive statistics and correlation:

Table 1 presents mean, standard deviation and correlationsof each construct. Reward &recognition are significantly correlated to the construct performance appraisal uses and job involvement. (0.622 at p<0.01and 0.353 at p<0.01 respectively). Correlation between performance appraisal uses, and job involvement is (0.2000 at p<0.01). The reliability value of all constructs satisfies the valuerecommended (cut-off of 0.70) by Nunnally (1978). The Cronbach's alpha value of reward &recognition, performance

appraisal uses and job involvement are 0.821, 0.835 and 0.858.These results provided initial support for the hypotheses.

Table 1 Result of Mean, Standard deviation Skewness and correlation

S.No.	Variables	Mean	SD	1	2	3
1	Reward & Recognition	41.85	5.90	1	.622**	.353**
2	Performance Appraisal Uses	48.57	9.64	.622**	1	.200**
3	Job Involvement	53.58	6.15	.353**	.200**	1

Notes: N=364; Correlation is significant at the 0.01 level (2-tailed).

4.2 Hypotheses Testing

In Table 2 we check the effect of independent variable (R&R) on dependent variable (JI). The dependent variable job involvement was regressed on predicting variable reward & recognition to test the hypothesis 1. Reward & recognition significantly predicted job involvement, $F(1,362) = 51.643$, $P< 0.001$, which indicates that reward &recognition can play a significant role in shaping job involvement ($b = .368$, $P< 0.001$). The value of ANOVA is less than 0.001 which are significant so H1 is accepted. The significant P-value is .000 represent the positive coefficient correlation between reward &recognition and employee job involvement. Tableshows the summary of the findings.

Table 2 Result of Regression Analysis

Hypothesis	Regression weights	Beta coefficient	R^2	F	P-value	Hypothesis supported
H1	RR→JI	.368	.125	51.643	.000	Yes

Note [*]P< 0.05,RR: Reward & Recognition, JI: Job Involvement

In Table 3 we check the effect of performance appraisal uses on job involvement. The dependent variable job involvement was regressed on predicting variable performance appraisal uses to test the hypothesis 2. Performance appraisal uses significantly predicted job involvement, $F(1, 362) = 15.127$, $P< 0.001$, Which indicate that performance appraisal uses can play a significant role in shaping the job involvement ($b = .128$, $P< 0.001$). The value of ANOVA is less than 0.001 which are significant so H2 is accepted. The significant P-value is .000 represent the positive coefficient correlation between performance appraisal uses and employee job involvement. Table shows the summaryof the findings.

Table 3 Result of Regression Analysis

Hypothesis	Regression weights	Beta coefficient	R^2	F	P-value	Hypothesis supported
H2	PAU→JI	.128	.040	15.127	.000	Yes

Note[*]P< 0.05, PAU: Performance Appraisal Uses, JI: Job Involvement

4.3Structural Equation Modeling (SEM):

The proposed model was tested using SEM. The value of different fit indices was considered to assess the goodness of fit of the model. The fit indices include the Goodness-of-fit index (GFI), Comparative fit index (CFI), Increment fit index (IFI), Tucker-Lewis Index (TLI) and the value of Root means square error of approximation (RMSEA) shows the badness of fit (Bentler, 1990). SEM was performed through software package Analysis of Moment Structure (AMOS-18).

Table 4 Result of Structural Equation Modeling (SEM)

Model	χ2	df	χ2/df	GFI	CFI	TLI	IFI	RMSEA
	449.864	173	2.600	0.901	0.926	0.910	0.927	0.066

N= 364, GFI= Goodness of Fit Index, CFI= Comparative Fit Index, NFI= Normed Fit Index, TLI= Tucker-Lewis Index, IFI= Incremental Fit Index, RMSEA= Root Mean Square Error of Approximation

Model was improvised after allowing modification indices within the constructs (Setiger, 1990). The acceptable value for the χ2 /df ratio should be below 5 (Wheaton et al., 1977). The values of different fit indices GFI, IFI, CFI and TLI should be greater than 0.90 and RMSEA value should lie between .05 and .08 (Jöreskog and Sörbom, 1993; Kline, 1998). All the values of fit indices obtained were in the acceptable range. In Table 5 the proposed model demonstrated an acceptable fit and show that all variables exhibit distinct characteristics from each other. (Wheaton et al., 1997; Joreskog and Sorbom, 1993). The result clearly indicates the data fits well on the proposed model confirming the proposed model.In the identified model, reward & recognition and performance appraisal uses were taken as an exogenous variable and predicted employees' job involvement.
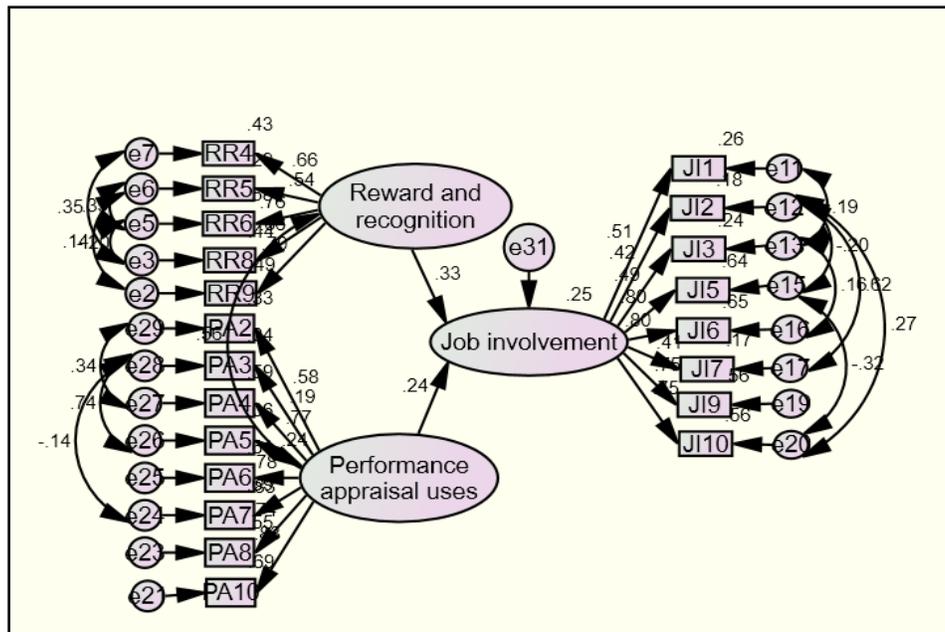
5. Discussion:

This study examined the impact of the HRM practices on job involvement in banking sector in Eastern-UP. The study predicted that HRM practices of reward& recognition and performance appraisal uses would positively affect job involvement. The finding of the empirical results supported these predictions.Within the premise of Blau's social exchange theory, the study showed the effect of reward &recognition and performance appraisal uses on employee job involvement. The first hypothesis (H1) postulates that job involvement will be positively affected by reward & recognition. The outcome was in accordance with the previous research and provided a strong support to hypothesis (Shantz et al.,2016;Abutayeh& Al-Qatawneh, 2012; Boon et al., 2007). Reward& recognition were found to increase employee's involvement in their job. An appropriate reward & recognition will motivate employees to go beyond the formal job requirement and get involved in their job (Younies and Al-Tawil, 2021; Karatepe et al., 2018). If employees will get proper rewards for their efforts and contributions, they will motivate to repeat their positive attitude and work behavior(Akafo and Boateng, 2015; Harden, Boakye and Ryan, 2018)and at the same time if they will get proper recognition for their achievements,it will increase employee's self- esteem and emotional attachment to their organization (Maslow, 1954; Blau 1964; Schreurs et al., 2013).

The second hypothesis (H2) states that performance appraisal uses is positively related to job involvement. The result again made the us to accept the hypothesis.Al-Jedaiaa and Mehreza (2020), conducted an empirical study and found that performance appraisal purpose and performance appraisal evaluation such as decision regarding salary, promotions, recognizing training requirements, conveying feedback and recognition of employees for better performance motivate employees to work hard to achieve the desired goal. According to social exchange theory, when employees are satisfied with their job, they may feel obliged to respond with greater job involvement (Akinbobola, 2011; Cropanzano& Mitchell, 2005), as opposed to when employees are dissatisfied with their pay and promotion will havelow jobinvolvement (Akinbobola, 2011). Job involvement is one of the key factors that affect the quality of both individual and organizational outcomes (Lambert and Paoline, 2012; Zhang, 2014; Abdallah et al., 2017). According to result reward & recognition and performance appraisal uses are predictor of employee job involvement. finding extends the prior job involvement literature and provide important implication for organization.

5.1 Limitations and Implications

The study is based on self-reported measures. The possibility of method bias cannot be ruled out (Crown and Marlowe, 1964). To overcome this limitation, Harman's single- factor test was applied. Total 27.265 percent of the variance was found below the threshold limit of 50%, Proving a low probability of method biases (Podsakoff et al., 2012). Second limitation, the data were cross-sectional in nature.

The result of the study has both theoretical and practical implication. The study suggest that manager should consider the role of reward & recognition and performance appraisal uses in improving and maintaining the employee's job involvement. Manager should provide appropriate reward &recognition for their efforts and contribution. Manager should also focus on the uses of performance appraisal. If the information get from performance appraisal is used to enhance their performance through training development program, develop opportunities for promotion, give regular performance feedbackand time to time recognise the individual performance will motivate the employees for performing their job well.

Theoretically, the finding of the study contributes to knowledge of human resource management practices and its relationship with job involvement (individual outcome) in banking sector (Eastern-UP). The

outcome of the study should be an asset in developing human resource practices that increase involvement of employees in their job.

Future studies, should examine the impact of other human resource practices on job involvement, in the current study we have choose only two HRM practices among bundle of HRM practices. Additionally, future research should also focus on the mediation effect of HRM outcomes between HRM practices and job involvement (behavioral outcome)such as human resource flexibility and employee quality (capabilities, knowledge, and skills of employees).

6. Conclusion:

The finding of the study make recommendation for how to increase employee's job involvement for better organizational productivity in the Indian banking sector. Job involvement is one of the critical elements for the success of the organization ((Lambert and Paoline, 2012). It affects the quality of both individual as well as organizational outcomes (Matagi, Baguma and Baluku, 2022; Jyoti et al., 2020; Abdallah et al., 2017; Harmawati and Mas, 2017; Zhang, 2014).According to the findings, if the employees get favorable treatment through practices of reward &recognition and performance appraisal uses obligates them to provide favorable treatment in return with greater involvement in their job. Our finding is consistent with the social exchange theory, which examines that rewarding & recognising the employees' achievements motivate them to engage in positive attitude and behavior. Performance appraisal uses has impact on many decisions such as pay, promotion, transfer, assignment, training, and development, that affects the employee's involvement in their job.

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"UNTIL WE CAN MANAGE TIME, WE CAN MANAGE NOTHING ELSE"

~ Peter Drucker

A STUDY ON FACTORS INFLUENCING COURSE SELECTION IN SKILL DEVELOPMENT CENTERS

Ms. Nancy Khaira[1], Dr. Sandeep Agrawal[2]

ABSTRACT

This study looks into the demographic factor, decision-making factors, and institutional problems that students face in skill development facilities throughout Bundelkhand. Using primary data from 450 students, the study highlights crucial factors such as teaching qualities, placement records, and financial accessibility. etc. Using the Friedman test and Nemenyi post hoc analysis in R-Studio, the study finds statistically significant disparities in student rankings across academic, administrative, and career-related variables. The findings suggest that institutions should prioritize teaching quality, placement support, and responsive governance. These findings provide a student-centered roadmap for improving vocational education efficacy under NEP 2020.

Keywords: *Skill Development Centers, NEP 2020, Bundelkhand Region, Vocational Education Introduction*

Particularly in economically and socially marginalized areas like the Bundelkhand region of India vocational education and skill development have emerged as crucial components of India's effort to combat unemployment and promote inclusive growth(Chandra, n.d.). Skill development centers, such as Industrial Training Institutes (ITIs) and polytechnic institutions, are envisioned as essential tools for equipping young people with industry- relevant skills in alignment with the objectives of the National Education Policy (NEP) 2020(*Implementation of Vocational Education in Education System of India: Challenges and Prospects of NEP 2020 | International Journal of Scientific Research in Modern Science and Technology*, n.d.). By fostering human capital among marginalized communities, these institutions aim to enhance employability while simultaneously contributing to regional development(Abubakar et al., 2024). In the Bundelkhand region, the majority of students enrolled in vocational programs come from underprivileged backgrounds, including lower-income households and socially disadvantaged groups(Bundelkhand Human Development Report 2012, 2015). Their course selections are primarily influenced by the perceived quality of faculty, institutional reputation, employment prospects, and the availability of financial support(*Factors Affecting University and Course Choice: A Comparison of Undergraduate Engineering and Business Students in Central Punjab, Pakistan | Request PDF*, n.d.). While this reflects a growing emphasis on practical, outcome-based education, several systemic and operational challenges persist. Institutions continue to face issues such as outdated curricula, inadequate infrastructure, underqualified personnel, and limited digital access(Ag Damit et al., 2021). Moreover, weak industry linkages, ineffective mentorship, and insufficient placement support further constrain the impact of vocational training (Kebede et al., 2024)

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Literature Review

Vocational education and skill development have become essential strategies for promoting inclusive growth and addressing youth unemployment, particularly in socio-economically challenged regions like Bundelkhand(Vocational_technical_Education, N.D.). To meet these objectives, national initiatives such as the Skill India Mission and NEP 2020 have prioritized the strengthening of institutions like ITIs and polytechnics(Sherino & Bhatta, 2021) Studies indicate that students in these centers typically come from rural, low-income households and often belong to marginalized communities like SCs and OBC(Ramasamy et al., 2021). Their choices are driven more by pragmatic factors affordability, teacher quality, placement opportunities, and institutional reputation than by academic interests, highlighting the necessity for outcome-based training models. (Das, 2021)

While there is growing interest and government investment in vocational education, a significant research gap persists, especially regarding student-centered perspectives in underdeveloped regions(Li et al., 2024). Although existing literature points out broad challenges outdated infrastructure, limited digital access, and weak industry linkages, it often lacks direct student input on how these issues impact their learning and choices (Kukulska-Hulme et al., 2023). Region-specific, data-driven studies examining student priorities, satisfaction levels, and institutional expectations are scarce (Camacho et al., 2024). This study addresses this gap by analysing student perceptions across multiple dimensions in Bundelkhand, offering grounded insights for policymakers and administrators to design more responsive, equitable, and effective vocational education system

ObjectiveS

- ☐ To Find the demographic characteristics of students enrolled in skill development programs
- ☐ To identify the key factors influencing their course selections.

Research Methodology

Table 1: Research Methodology _Skill Development Centers (Student)

Component	Details
Research Type	Descriptive
Study Area	Government-affiliated ITI and Polytechnic Colleges in the Bundelkhand Region
Sample Size	450 students
Sampling	Stratified Random Sampling
Data Collection	Structured Questionnaire
Period	Jan 2025-May 2025
Software Used	SPSS (for descriptive stats), RStudio (for inferential analysis)
Descriptive Tools	Percentage Analysis, Average Ranking
Inferential Tests	Friedman Test (to detect significant differences in ranks), Nemenyi Post Hoc Test (for pairwise comparison)

R-Packages	haven, tidyverse, PMCMRplus, multcomp View, ggplot2
Key Visualization	Bar Charts (mean ranks, rank distribution, and post hoc groupings)

RQ What are the demographic and educational characteristics of students enrolled in skill development centers in the Bundelkhand region?
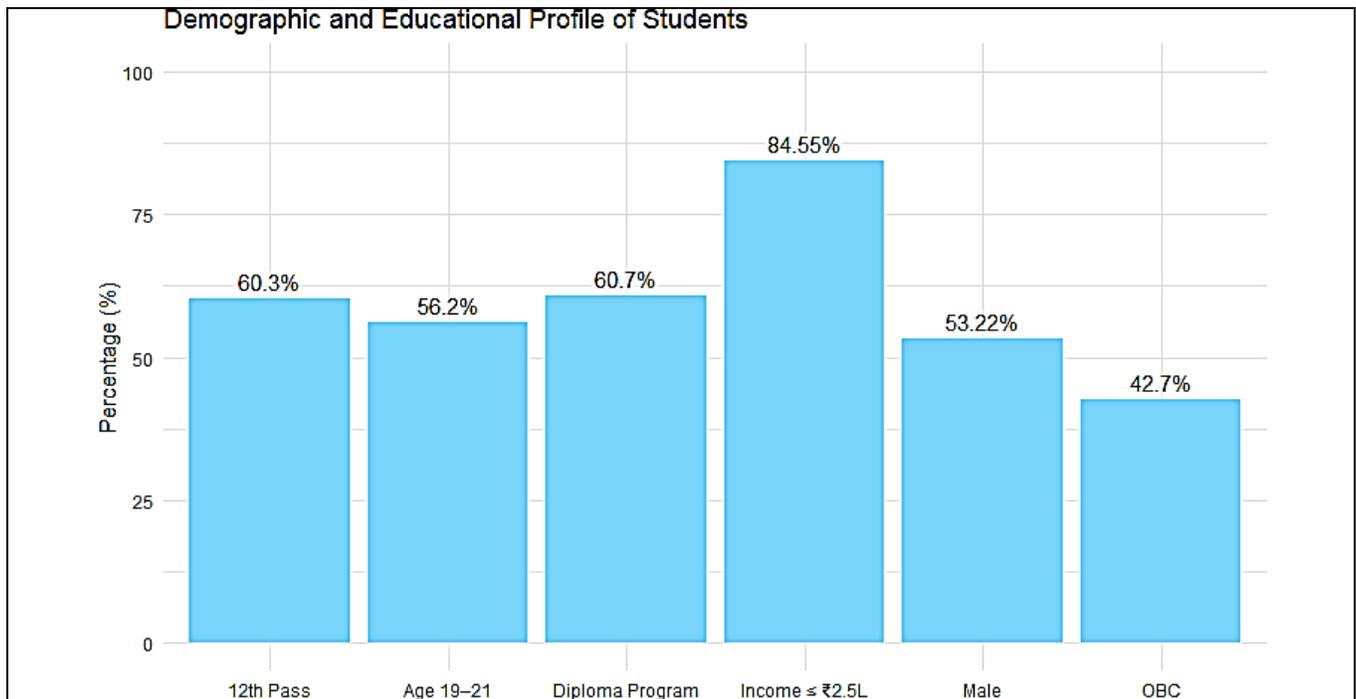
Bar chart 1: Demographic Profile of Students in Skill Development Centers

The bar chart 1 gives an overview of the population and consequently, the null hypothesis, stating no significant predominance in student characteristics, is rejected in favour of the alternative hypothesis. The findings indicate that a substantial majority of the students (60.3%) have completed their 12th-grade education, and 60.7% are currently pursuing diploma programmes, suggesting that the centres primarily attract youth with intermediate educational qualifications who are seeking practical, career-oriented training. Age-wise, 56.2% of the respondents fall within the 19–21 age group, implying that students generally enter these programmes shortly after completing school. Economically, a significant 84.55% of the students belong to families with an annual income below ☐2.5 lakhs, underscoring the centres' success in reaching economically disadvantaged populations. Socially, 42.7% of the respondents belong to the OBC category, and the gender distribution is relatively balanced, with 53.22% male students, pointing to a moderate level of gender inclusivity. These insights collectively suggest that the skill development centres in Bundelkhand are effectively serving their intended purpose by providing accessible vocational education to underprivileged and marginalised youth, thereby contributing to enhanced employability and social mobility in the region. Furthermore, the survey results also indicate that a majority of the students attending the skill development centres come from rural areas, emphasising the reach of these programmes to

remote and underserved communities. This demonstrates a commitment to inclusivity and equity in education. Overall, the data highlights the positive impact of these centres in empowering individuals from diverse backgrounds and creating opportunities for socio-economic advancement in Bundelkhand. By targeting marginalized youth and students from rural areas, the skill development centers are effectively bridging the gap in access to education and employment opportunities. This holistic approach not only benefits individuals but also contributes to the overall development and prosperity of the region.

RQ: Which factors influence student enrollment in skill development centers in the Bundelkhand region?

Table 2: Ranking of factors affecting SDC course Choice -Perception of Students[1]

Sub Indicators		Mean Rank[2]	CLD/Significant[3]	Preference type
Quality of Teaching	QT1	4.7	t	*Top-Ranked factors* *(Most preferred)*
Placement Record	PR1	5.2	s	
Accreditation & Ranking	AR1	6.2	a h i j	
Promotional Efforts	PE1	6.3	b k o	
Affordability / Facility	AF1	6.97	c l q	*Mid-Ranked Factors* *(Moderate Preference)*
Timely Fulfilment of Academic Calendar	QT2	7.18	c l q	
Social Connect Initiative	PE2	7.52	c	
Career Guidance and Counselling	QT3	7.81	d r u	
Industrial exposure	PR2	8.41	p s t	
Extra-Curricular activities	PE3	8.97	f i m p q r	
Grievance & Redressal Mechanism	AF3	9.51	e f g	*Low-Ranked Factors* *(Least Preferred)*
Discipline & conduct	AR2	9.76	e h k l	
E -Governance	AF2	9.86	a b c d	
Campus facility	AR3	9.9	x y z	
Collaboration with a reputed Organisation	PR3	10.3	g j n	

Table 2 illustrates how students rank several aspects have impact on their participation in a skill-development course. Qualification of teachers (QT1) is given top attention by students during the foundational level since it helps them feel more confident. In the initial phase, the Placement Record (PR1) is crucial for engaging students by conveying precise information about employment opportunities. Students' perceptions of the institution are influenced by fundamental elements such as

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[1] Source: Data interpretation is based upon primary data collected by the researcher

[2] The mean rank indicates average preference; students place greater significance on lower value

3 CLD group letters, such as t, clq, etc indicate whether or not factor differences are statistically significant. Students' rankings of two criteria do not significantly differ if they have the same letters. Significant differences are indicated by different letters.

Mean Rank of Factors with Nemenyi Group Letters
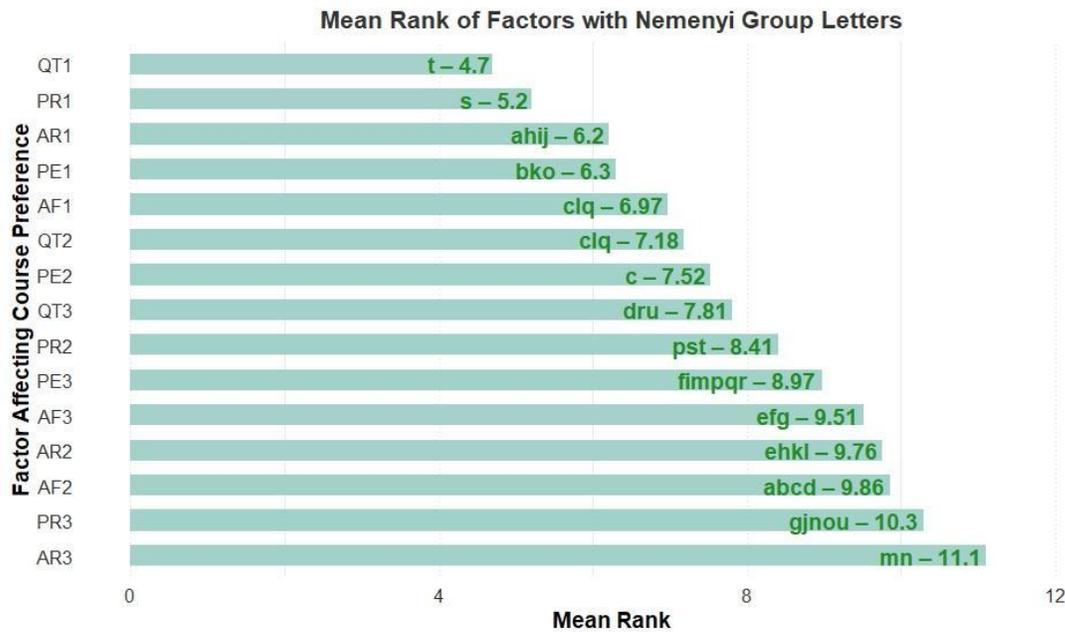
Figure 1:Significance among factors _Course Choice of SDC

Accreditation and Ranking (AR1), E Governance (AF1), and Promotional Efforts (PE1). Intermediate elements that assist students stay interested and satisfied throughout the course include Timely Fulfilment of Academic Calendar (QT2), Industrial Exposure and Practical Training (PR2), and Discipline and Conduct (AR2). Despite having limited impact on early judgements, social link and Initiatives PE2 become more apparent in the secondary stage. Advanced stage elements like Career Guidance & Counselling (QT3), Grievance and Redressal Mechanism (AF3), Facility / Support Services (AF2), and Campus Facility (AR3) have less of an impact on early decisions. As students rely more and more on their personal experiences, extracurricular activities (PE3) diminish. Last but not least, late-stage collaboration with a reputed organisation (PR3) may encourage referrals or future interest but has little impact on joining.

Interpretation: The "Mean Rank of Factors with Nemenyi Group Letters" figure 1 compares the average ranks that students gave to fifteen distinct factors that affect their choice of courses at skill development centres. These consist of things like educational quality, outreach and promotion, administration and infrastructure, social, and amenities and cost. Since it boosts their early confidence, students prioritise the Qualification of Teachers (QT1) at the foundational level, as evidenced by the graph's lowest mean rank. A major influencer in the first phase is the Placement Record (PR1), which emphasises the significance of career-related communication prior to enrolment. Promotional Efforts (PE1), E Governance (AF1), and Accreditation and Ranking (AR1) are fundamental elements that influence students' initial impressions of an institution's dependability. Discipline and Conduct (AR2), Industrial Exposure and Practical Training (PR2), and Timely Fulfilment of Academic Calendar (QT2) all support involvement during the intermediate stage. Despite having little impact on early choices, Social Link and Initiatives (PE2) become more significant in the

secondary stage as students advance. The Grievance and Redressal Mechanism (AF3), Career Guidance & Counselling (QT3), Facility / Support Services (AF2), and Campus Facility (AR3) are more noticeable but initially have less of an impact in the advanced stage. As students rely more on their own experiences, Extra-Curricular Activities (PE3) become less significant. Lastly, late-stage collaboration with a reputable organisation (PR3) has little impact on initial enrolment but may encourage future referrals or alumni engagement. The bar graph's green labels improve readability and make it simpler to understand statistical grouping and ranking.

Findings and Suggestions

In line with the study, particularly in the early stages of decision-making, students place the greatest value on the qualifications of teachers (QT1) and the placement record (PR1). Students' first impressions of a skill development centre are influenced by fundamental institutional elements such as Promotional Efforts (PE1), E Governance (AF1), and Accreditation and Ranking (AR1). While elements like Facility / Support Services (AF2) and Collaboration with a Reputable Organisation (PR3) were found to have a relatively lower impact on course selection, intermediate stage factors like Timely Fulfilment of Academic Calendar (QT2), Industrial Exposure and Practical Training (PR2), and Discipline and Conduct (AR2) are crucial in maintaining student engagement.

The findings demonstrate how student preferences change as they progress through the program. While fundamental components like AR1, AF1, and PE1 form expectations about institutional excellence, early-stage characteristics like QT1 and PR1 have a direct impact on enrolment. QT2, PR2, AR2, and Social Link and Initiatives (PE2) are examples of mid-phase influences that continue to be valuable. The Grievance and Redressal Mechanism (AF3), Campus Facility (AR3), Career Guidance & Counselling (QT3), and Extra-Cu rricular Activities (PE3) are later-stage elements that are less important in the first decision but more relevant after enrolment.In order to attract potential students, it is advised that skill development centres make investments in enhancing instructor qualifications (QT1) and showcasing unambiguous placement records (PR1). Trust and exposure will be further increased by maintaining respectable Accreditation and Ranking (AR1) and guaranteeing openness in Promotional Efforts (PE1). To keep students throughout the course, institutions should also concentrate on preserving discipline and conduct (AR2) and providing Industrial Exposure and Practical Training (PR2) in an efficient manner. Even though AF2 and PR3 have less of an immediate impact, improving them can have long-term effects including good recommendations, alumni satisfaction, and institutional loyalty.

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A STUDY ON THE EFFECTIVENESS OF MARKETING PRACTICES ON SKILL DEVELOPMENT CENTERS UNDER THE PURVIEW NEP 2020.

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ABSTRACT

This research examines how marketing strategies utilized by Skill Development Centres (SDCs) affect key performance indicators such as enrollment, retention, job placement, and industrial collaboration, as well as their connection to the objectives of the National Education Policy (NEP) 2020. Focusing on the socioeconomically disadvantaged Bundelkhand region, the study evaluates the effectiveness of four essential marketing elements: product (Course), pricing (Fee Structure), promotion (Course Awareness), and Distribution (Student). Furthermore, the report investigates how well SDCs are executing NEP 2020 plans in areas such as curriculum reform, pedagogy, diversity, and digital infrastructure. While strategies like product improvement and marketing campaigns significantly influence job placement and enrollment, according to the results obtained using descriptive statistics and primary data collected through structured questionnaires. Most NEP 2020-related activities demonstrated full implementation, with only minor gaps noted in assessment reform. The study concludes that SDCs are effectively integrating marketing with policy-driven changes, though specific attention is still required in areas like dropout reduction and value-based pricing communication.

Keywords: Skill Development Centers, Vocational Education, NEP 2020, Marketing Practices

Background

The National Education Policy (NEP) 2020 seeks to revolutionise India's educational system by emphasising employability, quality, equity, and accessibility **(Beerannavar et al., 1 C.E.)** Promoting skill-based, vocational, and experiential learning is a crucial component of this program, particularly for youth and underprivileged populations**(Parvanda, 2022)** .One area where Skill Development Centres (SDCs) have been essential to reaching NEP goals is the Bundelkhand region, which continues to face challenges with poverty, migration, and minimal industrialisation **(Suman, 2022)** By providing students with industry- relevant knowledge and practical skills, these centres aim to increase their employability and earning potential **("Impact of Pradhan Mantri Kaushal Vikas Yojana in Entrepreneurship Development with Special Reference to Chhindwara District," 2023)** These centres' primary objectives are to establish close relationships with industry, lower dropout rates, and engage with prospective students. Strategic marketing practices can effectively support these goals **(Mustafa et al., 2022).** Marketing plays a key role in how educational institutions create their curricula, target particular students, establish reasonable costs, and advertise their products[3]. It's not just about visibility. Even though these positions are becoming more and more important, little is known about how various marketing approaches affect important institutional indicators, including enrolment, retention, industry alliances, and job placement.**(Donkor & Kyei, 2020)** By

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carefully analysing the efficacy of product design, pricing schemes, segmentation techniques, and promotional campaigns employed by Skill Development Centres in the Bundelkhand region**(Summer Training Project | PDF, N.D).** This study aims to close this research gap. The objective is to evaluate how these marketing tactics impact core operational issues and whether they complement the NEP's overarching objectives, which include creating a workforce that is more employable, skilled, and prepared for the sector.

Literature Review

The National Education Policy (NEP) 2020 of India has redirected efforts towards changing the educational and skill- development environment in the nation. Employability, quality enhancement, and equitable access through experiential, skill- based learning are given top priority **(a review on national education policy 2020 and its influence on academics, N.D.)** Skill Development Centres (SDCs) have been set up in economically underprivileged communities in order to accomplish these objectives**.**[1] Although policy implementation and curriculum design receive a lot of attention, marketing strategies' contribution to increasing institutional effectiveness is sometimes disregarded **(Suwanmaneepong et al., 2024).** The effects of effective marketing on course selection, student engagement, and job placement outcomes, particularly in rural or undeveloped areas, are not well understood **(Osman et al., 2021)**Employer satisfaction, certification completion, and job placement are examples of output indicators that have been utilised in the majority of prior studies to assess the efficacy of skill development programs**(Hill et al., 2022)** Research on the internal workings of organisations, including marketing, that influence these outcomes is, nevertheless, severely lacking**(Aljumah, 2023)** Product design, target segmentation, pricing, and promotional methods are examples of marketing functions that are often used but infrequently assessed for their actual effectiveness **(Aly et al., 2020)** Furthermore, current research frequently extrapolates results from one place to another, neglecting the unique difficulties and socioeconomic circumstances seen in emerging areas such as Bundelkhand**(Tawanda et al., 2013)**.By analysing the efficacy of particular marketing techniques employed by Bundelkhand's Skill Development Centres, this study seeks to close this gap. It focuses on how these tactics affect important performance metrics like enrolment, retention, dropout rates, industrial collaboration, and job placements**(Leksono & Yulianti, 2022)** Through this focused evaluation, the research presents fresh perspectives on the operational difficulties encountered by SDCs and gives evidence-based suggestions for coordinating institutional tactics with regional objectives. The results are meant to assist organisations and decision-makers in implementing more efficient and contextually appropriate marketing tactics.

Objectives

- To determine which marketing element has a significant effect on the courses at skill development centers.

- To identify the steps undertaken by Skill Development Centers to align their functioning with the framework of NEP 2020.

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[1] JSDC Skill Development Training Centre. (n.d.). Retrieved from https://www.linkedin.com/company/jsdc-education-centre/

Research Methodology

Table 1:Research Methodology _ Skill Course Marketing

Particulars	*Details*
Research Design	Descriptive research design
Population	Principles of Skill Development Centers (SDCs)
Sample Size	10 Skill Development Centers in the Bundelkhand region
Sampling Technique	Convenience sampling
Respondent Profile	Institutional Heads
Data Collection Method	Structured questionnaire with closed-ended items rated on a 5-point Likert scale
Data Analysis Technique	Descriptive statistical analysis (mean scores) using **SPSS and Excel**

RQ 1: Effect of Marketing Practice on the Skill Development Centers.

Table 2:Effect of Marketing Practices on Skill Development Centers[1]

Marketing Element	Impact Area	Average Score
Product	Job Placement	**4.4**
Pricing	Enrollment	**3.8**
Distribution	Drop-Outs	**4**
	Retention	**4**
Promotion	Industrial Association	**3.8**

   Interpretation: Interpretation: Table 2 clearly illustrates the significant influence of various marketing elements on the courses available at skill development centers for prospective students. The "Product" component of the marketing strategy is essential in driving job placement rates, which stands at 4.4 for students. This is because the courses are thoughtfully designed to enhance raw talent and address the skills gap in the relevant industry, thereby ensuring job security for students upon completing the program.The "Pricing" strategy has resulted in a remarkable increase in course enrollments (3.6). The courses are offered at a price that is affordable for parents, making them an attractive option not only for urban youth but also for those in the rural regions of Bundelkhand.The "Distribution" strategy improves student retention rates, which are rated at 4.0, and significantly reduces dropout rates, also rated at 4.0. This improvement is due to the centers that have established offices within urban district institutions, facilitating smooth governance and support in rural areas. Additionally, the standards set by the National Council for Vocational Training (NCVT) and the State Council for Vocational Training (SCVT) have made learning more accessible for students in rural regions.The promotion-oriented marketing strategy has proven vital in strengthening industrial

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[1] Source: Calculation based on Author's own data collection

collaborations with educational institutions (3.8). By showcasing the versatility of the courses through hackathons, extracurricular activities, internships, training sessions, and social campaigns, these promotional strategies effectively connect industries with institutions, ensuring access to well-trained talent ready to meet their needs.

In conclusion, marketing elements play a crucial role in the success of courses offered at skill development centers. The "Product" aspect boosts job placement rates by ensuring courses meet industry needs, while the pricing strategy increases accessibility for a wider audience. The "Distribution" strategy enhances student retention and reduces dropout rates through localized support, and effective promotional strategies foster valuable industry collaborations that provide essential hands-on experiences. Overall, these marketing strategies help students develop critical skills and bridge the job market skills gap. Regularly refining these approaches leads to sustained growth and improved outcomes for graduates, benefiting their communities. Table 2 highlights the significant impact of marketing elements on course offerings, with the "Product" component being vital for achieving a job placement rate of 4.4, as courses are designed to enhance talent and address industry skills gaps, ensuring job security for graduates.

RQ2: Identify the steps undertaken by Skill Development Centers to align their functioning with the framework of NEP 2020.

The results shown in Table 3 indicate that SDCs have launched a wide range of programs that align their activities with the objectives of the National Education Policy (NEP) 2020. Most initiatives received a perfect average score of five, reflecting full implementation and strong institutional engagement. Major curriculum reforms have been fully adopted, demonstrating compliance with the NEP's focus on adaptable, comprehensive, and multidisciplinary education. These reforms include updating course eligibility criteria (CE), adding vocational education (VEI), and revising curricula to include skill integration (SIC). The development of multidisciplinary frameworks (MDC) and infrastructure improvements such as enhanced pedagogy and digital infrastructure (DTP) have also been fully executed. The dedication of the SDCs to ensuring equal access and secure learning environments, as recommended by NEP 2020, is further evidenced by measures that promote inclusion and accessibility, including updates to regional language content (RLC), gender equity (EGE), scholarship provisions for marginalized groups (SD), and sanitation and sustainability (SS), all receiving the highest score of 5. Assessment Reforms (AR) earn an average score of 4.9, indicating near-complete implementation but also highlighting areas for further enhancement, making it the only program that narrowly missed full execution. A systemic shift toward outcome-based education with practical application is also reflected in the complete rollout of key systemic changes, such as strengthening industry-academia partnerships (IAC), updating staff recruitment criteria (SRC), and providing teacher training aligned with NCFTE guidelines.

Table 3:Level of Implementation Initiatives by SDC: Towards NEP 2020[1] Initiatives Implementation Status

SIC (Updated in Syllabus/Skill Integration courses)	**Implemented**
VEI (Integration of Vocational Education)	**Implemented**
CE (update in course criteria & Course Eligibility)	**Implemented**
MDC (Establishment of Multidisciplinary)	**Implemented**
DTP (Reforms in teaching Pedagogy & Digital Infrastructure	**Implemented**
RLC (Updating Course Content into Regional Language	**Implemented**
AR (Assessment Reforms)	**Implemented**
IAC (Strengthening Industry-Academia Connect)	**Implemented**
SRC (update in Staff Recruitment Criteria /Qualification)	**Implemented**
NCFTE (Teacher training as NCFTF)	**Implemented**
CO (Community outreach)	**Implemented**
EGE (Ensuring Gender Equity)	**Implemented**
SD (Scholarship/Financial support for Disadvantaged)	**Implemented**
SS (Ensuring sanitation & Sustainability)	**Implemented**

With nearly all of the key areas of curriculum, assessment, inclusivity, pedagogy, infrastructure, and institutional reforms being implemented to a high degree, the data, taken together, demonstrate that SDCs are successfully implementing the NEP 2020 framework. The overall implementation rates show a solid relationship with the objectives stated in the national education policy, despite the fact that the little fluctuation in the assessment reform score suggests a potential area for development.

Findings & Suggestions

The findings of the study illuminate the significant strides being made by Skill Development Centres (SDCs) in the Bundelkhand region through their strategic marketing initiatives. These efforts have a profound impact on essential performance metrics such as student enrollment, retention, job placement, and collaborative partnerships with local industries. By adopting targeted Distribution strategies, SDCs are effectively addressing the unique backgrounds and needs of their student populations, which in turn leads to improved retention rates. This tailored approach not only fosters a sense of belonging but also empowers

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[1]Source: Primary Data based on Data collected by 10 Government SDC institution on a Likert scale

students to thrive in their chosen vocational paths. Furthermore, the study reveals that enhancements in course design, ensuring that curricula are both relevant and practically oriented, coupled with impactful marketing campaigns, are significantly correlated with higher job placement rates and a noticeable increase in student enrollment figures. This indicates a vibrant connection between what these centres offer and the aspirations of prospective students, suggesting a promising trajectory for further successes. Additionally, a majority of the initiatives undertaken by SDCs resonate closely with the overarching goals of the National Education Policy (NEP) 2020, reflecting a concerted effort to elevate vocational education and improve employability outcomes for youth in the region. However, the analysis also identifies some areas for growth, such as minor gaps in assessment reform, suggesting opportunities for enhancement that could further optimize educational effectiveness. A focused effort on reducing dropout rates and improving communication about the intrinsic value of these programs can serve to amplify their impact. Overall, the research demonstrates that SDCs are making commendable progress in weaving together innovative marketing strategies with policy-driven changes, fostering transformative educational experiences that enrich the community and enhance the prospects of its youth.

Conclusion

The study shows that Skill Development Centres (SDCs) are making notable progress in aligning their operations with the goals of the National Education Policy (NEP) 2020, while also implementing key marketing strategies to improve institutional performance. Most NEP-aligned projects consistently achieve high results, reflecting a strong institutional commitment to employability, inclusivity, and high-quality education. Effective marketing strategies, such as learner segmentation, product improvement, and targeted advertising, have particularly boosted industry engagement, job placements, and enrollment. However, some challenges still exist. More comprehensive student support systems, including flexible course delivery, counseling, and mentorship, are necessary, as pricing strategies and product-related activities have less impact on reducing dropout rates. Additionally, the slightly lower assessment reform score underscores the importance of adopting modern, competency-based evaluation methods. Increasing the perceived value of courses through branding, transparency about outcomes, and sharing alumni success stories can improve retention and placement rates. Promotional efforts should be enhanced by leveraging digital platforms and regional targeting to expand reach and relevance. In conclusion, SDCs in the Bundelkhand region have made impressive advances in policy implementation and marketing outreach. By focusing on improving dropout management, evaluation procedures, and communication strategies, these centers can become inclusive, future-ready organizations that support the transformative goals.

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FOREIGN EXPERIENCE IN DEVELOPING EXPORT STRATEGIES FOR SMALL BUSINESSES IN THE CONTEXT OF GLOBALIZATION

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ABSTRACT

In the era of globalization, small businesses face both unprecedented opportunities and significant challenges when entering international markets. This article explores the foreign experience in developing export strategies tailored to the needs and capabilities of small enterprises. It analyzes best practices from countries such as the United States, Germany, South Korea, and the Netherlands, where state support mechanisms, innovative approaches, and institutional frameworks have proven effective in enhancing export potential. The study highlights the role of government policies, export promotion agencies, digital platforms, and international partnerships in building competitive export strategies. Lessons drawn from international experiences can serve as valuable guidance for emerging economies aiming to strengthen the global presence of their small businesses.

Keywords.*Small Business, Export Strategy, Globalization, International Trade, Foreign Experience, Export Promotion, Competitiveness, Government Support, SMEs.*

Analysis of Export Support for Small and Medium-Sized Enterprises (SMEs) in the EU and CIS Countries

The analysis of export support experiences for small and medium-sized enterprises (SMEs) in the European Union (EU) and the Commonwealth of Independent States (CIS) is based on a comparative study of key indicators: the share of SMEs in total exports, the volume of government support, and the dynamics of export activity growth. Data sources include official statistical agencies such as Eurostat and the OECD, as well as reports from the European Investment Bank (EIB) and the German Development Bank (KfW).

For the analysis, countries with varying levels of economic development and SME support structures were selected: Germany, France, Poland, Lithuania, Uzbekistan, Kazakhstan, and Belarus. The selectioncriteriaincluded:

- The share of SMEs in total exports;

- The volume of government support aimed at developing the export potential of SMEs;

- The growth dynamics of SME export activity over the past three years.

Experience of the European Union Countries

In EU countries, SMEs account for approximately 99.8% of all enterprises and contribute around 52% of the value added to the economy. However, these companies are significant not only economically but also as a vital part of the cultural fabric of European communities, particularly in rural areas and small towns. In

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2024, nearly 90 million people were employed in SMEs across the European Union. In Germany, the largest economy in Europe, SMEs employed 18.3 million people, including more than 6.8 million in small enterprises alone.

Nevertheless, the contribution of SMEs to EU export activity remains relatively low. According to Eurostat data for 2022, small enterprises (with up to 49 employees) accounted for only 14% of service exports outside the EU, while medium-sized enterprises (50–249 employees) contributed 10%, and large enterprises (250 or more employees) were responsible for 56%.

To stimulate SME export activity, various support programs are implemented in the EU. Between 2014 and 2020, approximately €850 million was allocated to instruments specifically aimed at SME internationalization, including €450 million for the Enterprise Europe Network and €30 million for the Startup Europe program. Germany demonstrates active SME export support through its development bank KfW. In 2023, new KfW commitments in export and project financing reached €20.7 billion—almost twice the amount in the previous year.

Experience of the CIS Countries

In CIS countries, SMEs also play a crucial economic role, representing over 98% of all enterprises and accounting for 60% to 80% of employment (excluding Azerbaijan). However, their participation in export activities remains limited. In Uzbekistan, according to an OECD report, the main barriers to SME internationalization include limited access to information on foreign markets, underdeveloped export infrastructure, and weak coordination among export support institutions. To overcome these challenges, it is recommended to develop consulting services, expand the overseas export promotion network, and implement systems for monitoring and evaluating the effectiveness of export support institutions.

Kazakhstan is taking steps to support SME exports through programs that subsidize export credits and insure export risks. However, according to the OECD, the effectiveness of these programs is limited due to bureaucratic procedures and insufficient awareness among entrepreneurs about available support instruments.

Comparative analysis shows that EU countries possess a more developed system for supporting SME exports, including financial tools, advisory services, and infrastructure for entering foreign markets. In CIS countries, despite the significant potential of SMEs, additional efforts are required to build an effective support system—such as streamlining procedures, increasing entrepreneurs' awareness, and developing export infrastructure. For Uzbekistan and other CIS countries, it is essential to learn from the successful experience of EU countries in designing and implementing SME export support programs, while adapting them to national conditions and the needs of local entrepreneurs.

National Support Systems: Germany, France, Poland

In Germany, the key institutions supporting SME exports are the state development bank KfW and the export credit agency Euler Hermes. KfW provides financing for export and project operations, while Euler Hermes offers export risk insurance. In 2023, KfW's new commitments in export and project financing totaled €18.2 billion.

In France, the primary institution supporting SME exports is the state investment bank Bpifrance. In 2023, Bpifrance invested €38.1 billion in support of 86,520 French micro-enterprises, SMEs, and mid-sized companies, including €21.1 billion allocated specifically for export guarantees. Bpifrance supports companies at all stages of development, including innovation, bank loan guarantees, equity investments, and export risk insurance.

In Poland, SME export support is provided by the Polish Development Fund (PFR) and the national development bank BGK. BGK offers guarantees and loans for SMEs and implements programs for business internationalization. In 2023, BGK provided support to the Polish economy totaling PLN 356 billion (about €77 billion), with a significant share allocated to SME support.

Financial Instruments for SME Export Support in the EU

Financial instruments play a crucial role in supporting the export activities of small and medium-sized enterprises (SMEs) in the European Union. Among these, concessional loans provided by institutions such as the European Investment Bank (EIB), KfW in Germany, and Bpifrance in France are of particular importance. Additionally, export diversification grants help expand delivery geography and access new markets, especially for startups in the Baltic countries.

ConcessionalLoansforSMEs:

- European Investment Bank (EIB): In 2023, the EIB allocated approximately €20 billion to support SMEs in the European Union. These funds were disbursed through intermediary banks, enabling SMEs to access financing on favorable terms. The EIB also actively supports investments in sustainable development and innovation.

- KfW (Germany): In 2023, SME lending through KfW in Germany reached €76 billion, a 13% increase compared to the previous year. The number of SME borrowers rose by 225,000, reaching 763,000 enterprises—the highest level in the past 15 years.

- Bpifrance (France): In 2023, Bpifrance invested €38.1 billion in support of 86,520 French micro and small businesses. Of this, €21.1 billion was directed toward export guarantees, including export risk insurance and financing for international projects.

Baltic States and Export Diversification Grants: In Estonia, Latvia, and Lithuania, grant support programs targeting export diversification are actively implemented. These initiatives help young companies enter international markets and explore new niches. According to the *Change Ventures* report for the first half of 2024, startups in the Baltic region attracted significant investments, reflecting high investor confidence.

Examples of successful companies include:

- Revolut, which obtained its first electronic money license in Lithuania in 2017, allowing it to expand across Europe.

- Unity, which opened its first offices outside Denmark in the Baltic region, supporting the company's global growth.

These cases demonstrate the effectiveness of grant programs in supporting export diversification and startup development in the Baltics.

A well-structured scheme in Europe helps small companies expand internationally. The core idea is simple: entrepreneurs are granted access to "soft" loans from major banks and special export development grants. For example, a bakery in Poland wishing to sell products in Germany can obtain a concessional loan to purchase equipment and a grant to attend an international trade fair. As a result, the business grows, new jobs are created, and tax revenues increase. This system is not coincidental but the result of a deliberate strategy. European countries understand that when SMEs grow successfully, the entire economy benefits. Therefore, they invest in long-term programs that help entrepreneurs access new markets and strengthen their businesses.The main advantage of this approach is that it creates conditions where even a small family firm can become a successful global player. Most importantly, these measures deliver tangible results—not just on paper, but in the real economy of every EU country.

Tax and Customs Incentives for Export-Oriented SMEs

Tax and customs incentives play a key role in encouraging export activities among SMEs both in the European Union and the Commonwealth of Independent States (CIS). These measures aim to reduce the financial burden on exporters, simplify procedures, and enhance international competitiveness.

VAT Rate Comparison for Exporters in the EU and CIS:

The EU follows a value-added tax (VAT) system that exempts exports from taxation. Exported goods are subject to a 0% VAT rate, while each member state sets its own standard and reduced VAT rates for domestic consumption. For instance, in 2025, standard VAT rates in selected EU countries were:

- Hungary — 27%

- Finland — 25.5%

- Croatia, Denmark, Sweden — 25%

- Luxembourg — 17%

- Malta — 18%

- GermanyandRomania — 19%

  The average standard VAT rate across the EU is approximately 21.8%.

  In CIS countries, VAT policies differ slightly but largely follow the same principle. For example:

- Russia — standard VAT rate: 20%; export VAT: 0%

- Belarus — standard VAT rate: 20%; export VAT: 0%

- Kazakhstan — standard VAT rate: 12%; export VAT: 0%

Thus, despite differences in standard rates, exports in most CIS countries are also taxed at a 0% VAT rate, in line with EU practice.

SME Export Growth Trends in the EU (2015–2024)

Over the past decade, SMEs have played a significant role in the EU's export landscape. According to the European Commission, SMEs account for approximately 34% of the EU's total exports, which amounts to around €1.54 trillion. Despite fluctuations caused by economic and geopolitical challenges, the overall trend indicates steady growth in SME export activity.

Dynamics of SME Exports in the EU (2015–2024)

Year	Export Volume of SMEs (in billion euros)	Export Volume of SMEs (in billion euros)(%)
2015	1 200	—
2016	1 250	+4,2%
2017	1 310	+4,8%
2018	1 370	+4,6%
2019	1 420	+3,6%
2020	1 300	-8,5%
2021	1 450	+11,5%
2022	1 520	+4,8%
2023	1 570	+3,3%
2024	1 620	+3,2%

Source*: https://www.researchgate.net/publication/350143094_Smes_Are_More_Important_Than_You_Think_Challenges_and_ Opportunities_ for_EU_Exporting_SmeS*

As shown in Table 2.2.1, despite the decline in 2020 caused by the COVID-19 pandemic, SME exports in the following years demonstrated recovery and growth, indicating the flexibility and adaptability of small and medium-sized enterprises in a changing economic environment.

Problems: Low Awareness Among Entrepreneurs and Bureaucracy

Despite the positive trends in SME exports, a number of issues continue to limit the potential for further growth:

1. **Low Awareness of Support Measures:** Many entrepreneurs are unaware of the existing programs and opportunities offered by the EU to support exports. This is due to insufficient information dissemination and the difficulty of accessing relevant resources. According to a report by the European Parliament, SMEs often face challenges in understanding and managing the complex documentation associated with export operations.

2. **Bureaucratic Barriers:** Complex and varied administrative procedures across different EU member states create additional obstacles for SMEs. The processes of approving and implementing new regulations can take considerable time, making it difficult for SMEs to adapt quickly. As noted in an article by the *Financial Times*, excessive regulation and the complexity of legal procedures in the EU have a negative impact on the growth and competitiveness of small businesses.

An analysis of the effectiveness of SME export support measures in the EU over the period 2015–2024 reveals a positive trend in the growth of export activity among small and medium-sized enterprises. However, further development will require the removal of existing barriers, such as low awareness of available support and bureaucratic obstacles, in order to enable SMEs to integrate more effectively into international markets.

Comparative Analysis of European and Post-Soviet Experience in Institutional and Financial Support for SME Exports

An analysis of the European and post-Soviet experience in the institutional and financial support of small and medium-sized enterprise (SME) exports demonstrates that a well-developed business support infrastructure focused on internationalization plays a key role in the sustainable growth of SMEs' foreign economic activity. The European Union has established a multi-tiered support system that includes both EU-wide programs (such as COSME, the Enterprise Europe Network, and Erasmus for Young Entrepreneurs) and national initiatives (e.g., KfW in Germany, Bpifrance in France, and BGK in Poland). These instruments cover virtually all aspects of export activities—from financing to training and support in foreign markets.

Thanks to this comprehensive approach, the EU has witnessed stable growth in SME exports. As of 2024, SMEs account for over **34% of the EU's total export volume**, with their total export value exceeding **€1.6 trillion**. Particularly effective mechanisms include concessional lending (including export guarantees), grant support for startups, and the establishment of export hubs aimed at digitalization and technological development. Infrastructure and educational measures (e.g., EDIH hubs and the Erasmus program) provide entrepreneurs with access to knowledge, technology, and international partnership networks.

Meanwhile, in the CIS countries—including Uzbekistan—support measures are in an active development phase. Despite the existence of export agencies and some subsidy programs, overall institutional coordination remains weak. Key barriers include fragmented support efforts, low awareness among entrepreneurs about available tools, and excessive bureaucracy. However, certain countries, such as Kazakhstan and Uzbekistan, are showing positive dynamics in establishing export support centers, simplifying tax and customs regulations, and improving access to financing.

Successful practices from the EU can serve as a model for building an effective SME export support system in Uzbekistan. Particularly important is the implementation of integrated approaches—combining financial incentives with consulting and educational programs, creating export-oriented infrastructure, and developing platforms for international cooperation. To improve the effectiveness of such measures, it is essential to reduce administrative barriers, ensure regulatory stability, and raise entrepreneurs' awareness of national and international support opportunities.

Germany and Kazakhstan: A Comparative Case Study

In the context of a comparative analysis of best practices for SME export support in the European Union and CIS countries, Germany and Kazakhstan merit special attention. Germany represents a mature and structured model of SME export support, while Kazakhstan is actively pursuing reforms and aiming to establish an effective support infrastructure. These two countries can be compared across three key criteria: **financing**, **infrastructure**, and **achieved results**.

Germany: Institutional Maturity and Comprehensive Support Germany possesses one of the most advanced SME export financing systems in the EU. The key institution is the state development bank **KfW (Kreditanstalt für Wiederaufbau)**, which provides concessional loans, guarantees, and subsidies for export-oriented SMEs. In 2022, KfW's assets amounted to **€555 billion**, with a net profit of **€1.183 billion**. The bank offers various financing programs, including export loans and support for innovative projects. Additionally, the **Hermes export guarantee system** insures export transactions—particularly for SMEs—thus reducing the risk of non-payment by foreign partners. Studies indicate that Hermes guarantees have

contributed to the creation of **140,000 to 210,000 jobs**, primarily in sectors such as mechanical engineering, electrical equipment, and chemicals.

Germany also actively develops SME support infrastructure through programs such as the **Enterprise Europe Network (EEN)**, which offers consulting, partner search, and market information. Numerous export hubs and innovation centers are also in operation, promoting the digitalization and internationalization of SMEs.

Results: Germany

Thanks to a comprehensive support system, Germany demonstrates high performance in SME exports. According to the European Commission, SMEs account for a significant share of the country's total exports, contributing to sustainable economic growth and job creation. The combined effect of financial instruments, risk insurance schemes, advisory networks, and digital infrastructure enables German SMEs to access international markets more efficiently and remain competitive globally.

Kazakhstan: Active Reforms and Integration Efforts

In recent years, Kazakhstan has been actively reforming its SME support system to enhance export capacity and economic diversification. In 2024, the International Finance Corporation (IFC) invested up to $50 million in KazMicroFinance (KMF) to expand financing for micro-enterprises, particularly in rural areas and among women entrepreneurs. Additionally, the IFC provided $9 million to the microfinance organization Arnur Credit to support SMEs in the southern regions of the country.

The national program "Business Roadmap 2025" consolidates various support measures, including interest rate subsidies, credit guarantees, and syndicated lending. In the first half of 2024 alone, the program supported approximately 14,000 business projects, providing ₸566 billion in subsidies and ₸178.9 billion in guarantees.

The "NurlyZhol" program is aimed at developing transport and logistics infrastructure, which plays a crucial role in improving export conditions. Between 2015 and 2019, this program facilitated the construction of 1.4 million square meters of rental housing and the creation of over 200,000 new jobs. Furthermore, Kazakhstan continues to expand its digital infrastructure and has established special economic zones (SEZs) with tax incentives to stimulate export-oriented investment.

Results: Kazakhstan

As a result of the implemented measures, Kazakhstan has shown significant growth in SME exports. In 2024, the national export credit agency KazakhExport provided over ₸330 billion in financing—a record high in the company's history. Additionally, an exporter acceleration system has been introduced, aiming to support 600 new Kazakhstani enterprises in entering foreign markets by 2025. These outcomes reflect the country's commitment to building a more dynamic and internationally integrated SME sector.

Comparative Table: Germany and Kazakhstan

Criteria	Germany	Kazakhstan
Financing	KfW, Hermes guarantees, subsidies for SMEs	KMF, Arnur Credit, Business Roadmap 2025
Infrastructure.	EEN, export hubs, innovation centers	"NurlyZhol", special economic zones, growth of SME exports and expansion of support

Results	High level of SME exports, sustainable growth	Growth of SME exports and expansion of support

Source: compiled by the author

Germany demonstrates a mature and effective SME export support system based on many years of experience and a well-developed infrastructure. Kazakhstan, in turn, is actively implementing reforms and creating conditions to support export-oriented SMEs. Both countries show that a comprehensive approach—including financing, infrastructure development, and institutional support—is a key factor in the successful development of SME exports. For CIS countries, including Uzbekistan, the experiences of Germany and Kazakhstan can serve as a guide when developing and implementing effective SME export support measures adapted to national characteristics and economic conditions.

Comparison of Financial Mechanisms. As part of the comparative analysis of financial mechanisms for supporting SME exports in Germany and Kazakhstan, two key instruments can be highlighted: KfW export guarantees in Germany and interest rate subsidies in Kazakhstan. Both mechanisms aim to stimulate SME export activity but differ in structure, scale, and effectiveness.

Germany: KfW Export Guarantees. In Germany, the main instrument of support for SME exports is export guarantees provided by KfW Bank through its subsidiary KfW IPEX-Bank. These guarantees cover up to 80% of the risks associated with export operations, significantly reducing financial risks for companies and promoting their foreign economic activity. In 2023, the volume of new commitments by KfW IPEX-Bank in the field of export and project financing amounted to about €18 billion, indicating a high level of state export support.

Kazakhstan: Interest Rate Subsidies. In Kazakhstan, the main financial mechanism for supporting SME exports is interest rate subsidies on loans. The state program "Business Roadmap 2025" provides subsidies of up to 50% of the interest rate on loans aimed at developing SME export activities. In 2024, the amount of subsidies under this program was about 566 billion tenge, equivalent to approximately €1.2 billion, and covered about 14,000 business projects.

Comparing both mechanisms, it can be noted that KfW export guarantees in Germany provide more direct and large-scale support to exporters, covering a significant portion of risks and providing access to large volumes of financing. At the same time, interest rate subsidies in Kazakhstan are a more indirect tool aimed at reducing the cost of borrowing for SMEs. However, the volume of support in Kazakhstan is significantly smaller, which may limit the effectiveness of this mechanism.

Germany and Kazakhstan apply different financial mechanisms to support SME exports, reflecting the specifics of their economic systems and levels of development. Germany provides more large-scale and direct support through export guarantees, while Kazakhstan uses interest rate subsidies as a tool to stimulate SME export activity. Both approaches have their advantages and can serve as examples for other countries in developing effective export support mechanisms.

Germany: High Share of SMEs in Exports and Stable Growth. In Germany, SMEs are the backbone of the economy, representing about 99.5% of all enterprises in the country. According to the Federal Ministry for Economic Affairs and Climate Action, in 2023 SMEs accounted for about 31% of the country's total turnover, highlighting their significant contribution to the economy. The export activity of German SMEs also remains high. According to KfW Research, in 2021 the international turnover generated by German SMEs

amounted to about 36.1% of Germany's total exports of goods and services. This underscores their important role in international trade and resilience to external economic challenges.

Kazakhstan: Growth in Number of SMEs and Their Contribution to the Economy. Kazakhstan shows a positive trend in SME development. According to the Statistics Committee, in 2023 the share of SMEs in the country's gross domestic product increased to 36.7%, which is 4.2 percentage points higher compared to the previous year. The number of SMEs also increased, reaching almost two million enterprises, indicating a rise in entrepreneurial activity. However, despite the growth in the number of SMEs and their contribution to the economy, their share in total exports remains relatively low. Exact data on the share of SMEs in Kazakhstan's exports in 2023 is not available, making direct comparison with Germany difficult. However, it is known that Kazakhstan's exports in 2023 increased by 5.1% to $68.5 billion, while exports of processed goods rose by 10.2% to $23.3 billion. This may indicate a gradual increase in SME participation in export activities, especially in the processing sector.

Comparing data from Germany and Kazakhstan, it can be noted that German SMEs have a higher share in exports and demonstrate stable growth due to a developed support infrastructure, including financing programs and a network of export hubs. In Kazakhstan, despite the positive dynamics in SME development and increased contribution to the economy, SME participation in exports remains limited. To increase export activity among Kazakh SMEs, support measures need to be strengthened, including access to financing, infrastructure development, and the provision of consulting services. Germany's experience can serve as a guide for Kazakhstan in developing and implementing effective SME support strategies to increase their participation in international trade and strengthen the country's economic resilience.

Differences in the effectiveness of SME export activities between Germany and Kazakhstan are due to a number of factors, including the depth of program development and the level of corruption risks.

Germany: Systematic Approach to SME Support. Germany demonstrates high effectiveness in supporting SMEs due to well-developed programs and a transparent institutional environment. According to an OECD report, Germany offers a wide range of financial instruments, including guarantees, subsidies, and access to venture capital, which contribute to SME growth and internationalization. Support programs are tailored to the specific needs of businesses, ensuring adaptation to changing market conditions. In addition, Germany is actively developing export support infrastructure through the Enterprise Europe Network (EEN), which provides SMEs with access to international markets, consulting services, and information on financing opportunities. This approach promotes sustainable growth and competitiveness of German SMEs globally.

Kazakhstan: Implementation Limitations and Corruption Risks. In Kazakhstan, despite the presence of SME support programs, their implementation faces several issues. An OECD report highlights insufficient coordination among support institutions, limited program coverage, and a lack of systematic monitoring of program effectiveness. This results in low SME participation in export activities and limits their growth potential. An additional barrier is the high level of corruption. According to the 2023 Corruption Perceptions Index, Kazakhstan scored 39 out of 100, ranking 88th out of 180 countries, indicating significant corruption risks. Corruption undermines trust in institutions, reduces program efficiency, and creates an unfavorable environment for SME development.

Based on the comparative analysis of the experience of the European Union (using Germany as an example) and the CIS countries (using Kazakhstan as an example), the following specific recommendations can be made to improve the system of SME export support in CIS countries:

1. Implementation of Guarantee Funds Based on the KfW Model: One of the most effective SME export support measures in Germany is the system of guarantee funds implemented through the state development bank KfW. According to the 2023 KfW report, this institution provides export credit guarantees of up to 80% of the transaction value, significantly reducing risks for commercial banks and encouraging them to finance small businesses.

For CIS countries, adapting this model involves the following steps:

- Creating national guarantee funds under development banks or ministries of economy. According to the World Bank, the optimal size of such a fund should be at least 0.5% of GDP to ensure a significant impact. For example, for Kazakhstan with a GDP of $200 billion, this means creating a fund of $1 billion.

- Developing clear criteria for providing guarantees: • Company's operational history (at least 2 years) • Confirmed export contract • Financial stability of the borrower • Industry prioritization based on national economic interests

- Reducing bureaucratic barriers in obtaining guarantees. As the German experience shows, the application review period should not exceed 10 working days, and the document package should include no more than 5 core items.

The economic impact of such a system can be significant. According to EBRD estimates, guarantee mechanisms can increase SME export financing by an average of 40–60% within the first three years of the program's operation.

2. Expanding the Network of Export Hubs: The EU experience, particularly the Enterprise Europe Network (EEN), shows the high effectiveness of establishing regional export support centers. As of 2023, the EEN network includes over 600 hubs in 60 countries, annually helping 50,000 SMEs enter international markets.

As the practice of Germany and other developed countries shows, systematic support for SME exports pays off in the medium term through increased tax revenues, job creation, and economic diversification.

The analysis of international experience in SME export support in the EU and CIS countries revealed key trends, best practices, and challenges that can be considered when developing strategies for Uzbekistan.

Main findings of the analysis:

1. Institutional support in the EU: • In countries like Germany, France, and Poland, a comprehensive SME support system has been established, including financial instruments (soft loans, guarantees), infrastructure initiatives (export hubs, Enterprise Europe Network), and educational programs (Erasmus for Young Entrepreneurs). • For example, in Germany, KfW and the Hermes export guarantee system significantly reduce exporter risks, contributing to increased activity.

2. Financial Mechanisms: • In the EU, soft loans and grants are widely used to stimulate exports. In the Baltic States, grant support programs have helped startups enter international markets. • In Kazakhstan, interest rate subsidies and the "Business Roadmap 2025" program show positive dynamics, although their effectiveness is limited by bureaucracy and low awareness among entrepreneurs.

3. Infrastructure Initiatives: • In the EU, export hubs and digital innovation centers (EDIH) provide SMEs with access to technology and international partners. • In Kazakhstan, the creation of QazTrade centers is a step in the right direction, but their regional coverage remains insufficient.

4. Problems and Challenges: • In CIS countries, including Kazakhstan, the main barriers are fragmented support measures, bureaucracy, and corruption risks. • In the EU, despite a developed system, low awareness of available programs among entrepreneurs remains a challenge.

Recommendationsfor Uzbekistan:

1. Development of financial instruments: • Creation of guarantee funds based on the KfW model to reduce export transaction risks. • IntroductionofinterestratesubsidiesonloansforSMEs.

2. Strengthening Infrastructure: • Development of export hub networks similar to the Enterprise Europe Network to provide consulting services and assist in partner search. • Digitization of tax and customs procedures to simplify export operations.

3. Educational Programs: • Implementation of entrepreneur training programs, including exchange experiences based on the Erasmus model for young entrepreneurs.

The experience of the EU and CIS countries shows that a successful SME export strategy requires a comprehensive approach that combines financial support, infrastructure development, and educational initiatives. For Uzbekistan, adapting best practices to national conditions can be key to increasing the export potential of small businesses and their integration into the global economy. It is important to consider both the successes and challenges of foreign countries to avoid similar mistakes and build an effective export support system.

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UZBEKISTAN'S TELECOMMUNICATION SECTOR IN THE GLOBAL SOCIO-ECONOMIC LANDSCAPE

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ABSTRACT

In today's globally interconnected environment, the telecommunications sector has evolved far beyond its traditional role of enabling communication. It now serves as a vital pillar in supporting economic resilience, ensuring social equity, and enabling technological modernization across various spheres of life. Uzbekistan, a dynamically developing nation in Central Asia, is currently undergoing a significant transformation within its telecom sector. This transformation is being driven by the ambitious "Digital Uzbekistan 2030" national strategy. This study aims to provide a comprehensive evaluation of Uzbekistan's telecom industry between 2020 and 2025, with a comparative perspective that includes benchmark economies such as Finland, Singapore, and Estonia. Through the use of macroeconomic data, institutional analysis, and infrastructure audits, the research identifies key indicators such as mobile teledensity, broadband penetration, and technological diversification. It further explores the role of strategic telecom providers in enhancing regional connectivity and fostering economic inclusion. The findings suggest that Uzbekistan is making consistent progress toward positioning itself as a digital hub in the region through structured investment, policy support, and service innovation.

***Keywords:** Uzbekistan's Telecommunication Structure, Mobile Teledensity, Digital Economy, Infrastructure Modernization, Digital Inclusion, SD-WAN, VSAT, GPON, Economic Diversification*

Introduction

Telecommunications has become a cornerstone of modern development, integrating deeply into the economic and social fabrics of nations. As the Fourth Industrial Revolution continues to unfold, countries around the world are leveraging telecommunications not just as a service, but as a strategic tool for driving inclusive growth, fostering innovation, and integrating with global markets. The deployment of advanced technologies such as 5G, artificial intelligence, and cloud computing is no longer a luxury but a necessity for competitiveness.

Uzbekistan, recognizing these global shifts, has embraced a forward-looking vision through its "Digital Uzbekistan – 2030" strategy. This initiative prioritizes the expansion of digital infrastructure, reduction of regional disparities, and increased access to high-quality communication services. The present paper seeks to evaluate Uzbekistan's telecommunications sector within this broader global framework. It does so by analyzing trends in mobile teledensity, reviewing policy and regulatory mechanisms, and assessing the readiness of national service providers to compete in an increasingly digital global economy. Ultimately, the goal is to understand how Uzbekistan can harness its telecom sector to catalyze sustainable development and position itself as a competitive digital actor in the region.

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Literature Review

Modern scholarship widely recognizes the telecommunications sector as a vital engine of economic modernization. Researchers such as Castells (2009) and Acemoglu and Restrepo (2021) emphasize the critical link between digital infrastructure and productivity, pointing out that well-developed telecom systems facilitate knowledge transfer, innovation diffusion, and national competitiveness. The World Bank's 2022 "Digital Dividends" report and the ITU's 2023 findings further highlight the role of mobile and broadband access in reducing poverty and enabling inclusive growth.In developing and transition economies, such as those in Central Asia, telecommunications is often seen as a bridge toward economic diversification and global integration. Singh and Rathi (2022), for instance, underscore the importance of mobile teledensity as a predictor of GDP growth and economic resilience. Similarly, Rehn and Sallinen (2020), in their study of Finland, demonstrate how government-led investment in fiber-optic infrastructure has spurred digital entrepreneurship even in rural areas.

In the context of Uzbekistan, empirical academic research remains somewhat limited. However, national reports from institutions such as the Tashkent State University of Economics and the Ministry of Digital Technologies provide critical insights. These sources indicate a clear correlation between telecom infrastructure expansion and improvements in regional economic inclusion and service delivery.

Research Methodology

This study utilizes a mixed-methods approach that combines both qualitative and quantitative tools to analyze Uzbekistan's telecommunications sector. Quantitative data is drawn from national and international sources, including the International Telecommunication Union (ITU), the State Statistics Committee of Uzbekistan, and corporate reports from key service providers. Key indicators examined include mobile teledensity, broadband coverage, revenue figures, and market share data from 2020 to 2025.

To provide a global perspective, benchmarking is conducted using case studies from leading digital economies such as Singapore, Finland, and Estonia. These countries were selected for their innovative approaches to service diversification, rural inclusion, and digital governance. Moreover, institutional frameworks such as Uzbekistan's "Digital Uzbekistan – 2030" roadmap are critically examined to assess national strategies aimed at fostering digital transformation.

An infrastructure audit was also conducted, focusing on leading national providers such as Connected Networks, East Telecom, BusinessCom Satellite, and others. This audit assessed not only service quality but also the geographic distribution of services and the technological sophistication of each provider.

Analysis and Results

Between 2020 and 2024, Uzbekistan witnessed an increase in mobile teledensity from 69 to 79 subscribers per 100 inhabitants. While this growth demonstrates a steady and encouraging trajectory, it still falls behind regional leaders such as Kazakhstan (168) and Russia (158), whose telecom sectors benefit from long-established infrastructure and diversified service portfolios.

Table 1. Leading Internet Providers and Services in Uzbekistan

Provider	Core Services	Technology	Coverage Area
Connected Networks	SD-WAN, SASE, Backup Channels, Cloud Services	Fiber-optic, SD-WAN	Tashkent, Namangan, Samarkand
East Telecom (Xpeed)	GPON, VPN, Dedicated Lines	GPON, Leased Line	Nationwide
BusinessCom Satellite	VSAT, VoIP, Satellite Video	Satellite/VSAT	Remote/mountainous regions
Sola.uz	Affordable Wi-Fi, SME Internet	Wi-Fi, FTTx	Major urban centers
TNET, ALLNET, etc.	Static IP, Tech Support, SME services	Multi-technology	Nationwide

In contrast, countries like Afghanistan—where mobile teledensity in 2024 remains at 40—continue to struggle due to political instability and limited infrastructure investment. Kyrgyzstan (135) and Tajikistan (102) show moderate performance, highlighting the region's overall uneven development in telecom access. Uzbekistan's gradual improvement, driven by targeted state programs and increased market participation, places it on a sustainable upward path toward regional parity.

In Uzbekistan, telecom enterprises are no longer limited to traditional voice and data services. Instead, they are evolving into strategic actors that offer high-value digital services to both urban and remote clients. Companies such as "O'zbektelekom", Beeline Uzbekistan, and UMS have diversified into cloud computing, mobile banking, virtual private networks (VPN), and advanced network security systems such as SD-WAN and SASE.

A closer look at the service landscape reveals that Connected Networks, for example, provides enterprise-focused solutions including secure virtual networks and cloud services tailored for high-demand users in cities like Tashkent, Namangan, and Samarkand. East Telecom, operating under the Xpeed brand, offers nationwide fiber-optic infrastructure based on GPON technology, serving both urban and rural markets. Meanwhile, BusinessCom Satellite delivers satellite-based internet to underserved and mountainous regions using VSAT technology—an essential tool for geographic inclusivity.

These providers collectively illustrate how service differentiation and geographic coverage can contribute to a more inclusive and dynamic digital economy.

Explaining Table 1: Leading Internet Providers and Services in Uzbekistan

The data on internet providers reveal a structured market segmented by service sophistication, geography, and client needs. For instance, while Connected Networks focuses on high-end enterprise solutions requiring secure and scalable networks, providers like Sola.uz cater to urban households and small businesses with affordable Wi-Fi packages. BusinessCom Satellite remains crucial for remote regions, bridging the connectivity gap where terrestrial networks cannot reach.

This segmentation not only enhances consumer choice but also fosters competition and innovation within the market. It indicates a growing recognition among providers of the need to tailor services to varying socio-economic and geographic demands—a critical condition for long-term sectoral resilience.

Market Growth and Strategic Expansion (2023–2025)

As of 2024, Uzbekistan's telecom market reached a valuation of 24.1 trillion UZS. Forecasts for 2025 predict a 15.3% growth rate, driven primarily by broadband expansion, the rise of digital services, and government-backed infrastructure projects. "O'zbektelekom", with an 83% share in the home internet segment, remains the dominant player, though its market control is seen more as a function of national coverage mandates than monopolistic behavior.

Table 2. Key Market Indicators (2023–2025)

Indicator	Value (2024)
Total Market Size	24.1 trillion UZS
Projected Growth (2025)	15.3%
Broadband Coverage	93.3% of population
"Uzbektelekom" Share in Home Internet	83%
Mobile Subscribers	36.3 million
Avg. Annual Growth (2023–2025)	12.7%

Broadband penetration has reached 93.3% of the population, and the number of mobile subscribers stands at 36.3 million. The sector's average annual growth rate between 2023 and 2025 is projected at 12.7%, reflecting both growing demand and an increasingly competitive landscape.

This set of market indicators offers valuable insights into the scale and vitality of Uzbekistan's telecom sector. The figures highlight the success of recent modernization efforts and underline the country's capacity to support high-quality, diversified digital services. High broadband coverage and robust mobile subscriber numbers suggest not only strong market demand but also effective policy execution.

Moreover, the data support the idea that Uzbekistan is on track to achieve greater integration into the global digital economy, provided it continues investing in rural connectivity, institutional capacity building, and service innovation.

Conclusion

Uzbekistan's telecommunication sector is undergoing a profound transformation. From modest beginnings, it is now positioning itself as a strategic enabler of economic growth, regional integration, and

digital inclusion. Key developments—such as increased mobile penetration, widespread broadband access, and diversification into high-value services—are reshaping both the business environment and public service delivery.

The experience of comparator countries like Finland and Singapore demonstrates that success in the digital era requires not only technological adoption but also institutional readiness and inclusive policymaking. Uzbekistan has already made significant strides in this direction, but to sustain its momentum and become a regional digital leader, it must continue investing in infrastructure, fostering innovation, and promoting equitable access to services.

With a coherent and ambitious strategy in place, Uzbekistan's telecommunications sector is well-positioned to become a foundational pillar of its knowledge economy and an engine for inclusive development across Central Asia.

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THE NEED FOR HIGH QUALITY EDUCATION IN THE SYSTEM OF HIGHER EDUCATION SERVICES

Ganiev Gayratjon Gulomiddinovich[1]

ABSTRACT

The article examines the role of high-quality and competitive education system in the system of higher education services and the theoretical and methodological basis of improving the influence on the country's development are deeply studied. Proposals and recommendations for the wide implementation of high-quality educational services in the provision of educational services have been developed in the research work.

Keywords- *Human Capital, National Economy, Higher Education, Service, Quality, Competition, University, Education, System, Intensive Development, International Experience, Expert.*

I. INTRODUCTION

In the context of the rapid and qualitative development of the educational services market as a promising sector in the world, special attention is paid to research in such areas as realizing national interests in the context of the integration process in the field of education, organizing educational management on the basis of effective forms and means in line with qualitative changes, and increasing the level of mobility while creating favorable conditions for learners. In this regard, priority is given to research in the following areas: trends in the development of educational services, deepening integration ties in the higher education system; effective use of the state's regulatory function in higher education in improving the quality of education and training personnel in promising specialties; improving the economic mechanism for the development of the educational services market on the basis of socialization of the payment system.

II. LITERATURE REVIEW

In the scientific literature, it is proposed to consider educational services as measures aimed at increasing the competitiveness of the sector. For example, A.E. Vifleemsky in his research defines "educational services as a set of measures that serve to develop new knowledge, skills, personal qualities in the consumer, as well as to increase the value of the workforce and its competitiveness in the labor market."

According to A.P. Pankruhin, the main feature of educational services is the creative cooperation between the teacher and the student. In the field of educational services, the client plays an active role in the process of providing and producing educational services. It is also important that the provision of educational services, which implies a clear expression of the openness of this sector for personnel, information and other exchanges, prioritizes cooperation and limits the competitive effectiveness of educational service providers.

According to the Russian scientist O.A. Khashirov, the market is a component of the market economy that performs the functions of regulating the supply and demand for educational services. The essence of regulation is that at any given moment in time, educational institutions agree on the quantity and quality of

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educational services offered or on the terms of individual producers in accordance with the forms of ownership and the composition of individual consumers.

According to researcher D.A. Shevchenko, "the educational services market is all potential consumers who are able to enter into exchange relations with the seller and seek to satisfy their educational needs."

According to D.S. Gordeeva and N.A. Degtyareva, the educational services market is a system of economic relations between economic entities for the purchase and sale of educational services.

Another group of scientists explained the mechanism of the educational services market. For example, the Russian scientist S.S. Sheveleva in his work considers the market of educational services as an economic system of society, which describes the mutual independence of its participants, making decisions on the acquisition of services.

G.Akhunova, one of our compatriot scientists, states that "the market of educational services is the sphere of economic relations that arise as a result of the processes of buying and selling educational services."

III.   RESEARCH METHODOLOGY

We used methods of logical analysis and synthesis, logical approach of the theory of knowledge, induction and deduction, comparative and factor analysis, time and space, comparison, and monographic observation in the research.

IV. ANALYSIS AND RESULTS

In the context of intensive development of the world economy and increasing competition, the education system is facing a significant challenge. its importance as one of the strategic areas in socio-economic development is increasing day by day. "To date, the size of the international market of educational services is 100 billion. It is the US dollar. One of the important aspects is that "Human capital" makes up 64% of the national wealth of the world. This figure is 70 percent in developed countries, 58 percent in middle- income countries, and 41 percent in low-income countries. Today, the development of the higher education system based on competitive principles is considered as an important tool for the development of the competitiveness of higher education services in the context of becoming a leading factor of world development.

In today's globalized and digitalized world, higher education institutions must be competitive not only locally but also internationally. To do this, educational institutions must focus on providing high-quality educational services, developing scientific and research activities, and providing students with knowledge and skills that meet market needs.

Supreme in education competitiveness what What does it mean ?

Competitiveness is it supreme education of the institution educational , scientific , educational and innovative in operation to others relatively to advantage owner to be and students , teachers , partners and investors for attractive It may be .

Main factors :

1. Quality education programs

□ Labor to the market adapted ;

- □ Competence directed ;
- □ Practical training and rich in projects .

2. Innovative and digital from technologies use

- □ E- learning platforms ;
- □ Hybrid education ;
- □ Virtual laboratories and remote lessons .

3. Professors and teachers competence

- □ Scientific to the degree owner ;
- □ Modern education methods knowledgeable ;
- □ International to experience owner specialists .

4. Scientific research and innovations

- □ Startup centers ;
- □ Scientific magazines , conferences ;
- □ International grants and in projects participation

5. International cooperation

- □ Compound programs ;
- □ Student and professors exchange ;
- □ International accreditation and in the ratings participation

6. Students for convenient environment

- □ Students town, co-working spaces , library ;
- □ Psychological, educational and social support ;
- □ Youth activity and clubs .

As we look at universities and their experiences around the world that provide high-quality education, we can cite the following higher education institutions as examples. These are:

National University of Singapore (NUS) - achieved a high ranking through international accreditation, research centers, and a startup ecosystem.

Westminster University in Tashkent - education based on the British model, internationally recognized diplomas and high quality.

The important aspects that we need to focus on when studying educational services are first and foremost high quality educational services. In our opinion, " **High-quality educational services"** means an educational process organized on the basis of innovative approaches, which ensures the effective formation of knowledge, skills and competencies of the learner (student, student).

Up qualitative education of services main signs

1. Pedagogical specialists of the quality height

□ Scientific level , experienced teachers ;

□ Modern education from the methods informed (interactive methods , STEAM, blended learning);

□ Continuous qualification increase to the system owner

2. Modern infrastructure and technologies

□ ICT tools (computer, interactive whiteboard, online platforms);

□ Virtual laboratories , electronic libraries ;

□ Remote and hybrid learning opportunities .

3. Study programs and subject content

□ Labor market to the requirements adapted , practical skills shaper programs ;

□ Proportionate theoretical and practical knowledge ;

□ Competence directed approach .

4. Objective and transparent system

□ Formative and summative assessment methods ;

□ Portfolio, project work, tests through knowledge assessment ;

□ Education recipient's active participation to provide .

5. Directed to customers (students) . approach

□ Individual education trajectory ;

□ Mentoring and tutoring service ;

□ From reading outside of activities wide coverage .

Table 1 Up qualitative education types of services and their importance

T.r.	Direction	Importance
1.	Economic development	Malakali personnel of the economy main support will be
2.	Innovation	Scientific research and innovative to contribution adds
3.	Society development	Citizenship consciousness forms , social stability provides
4.	Personal development	Education recipient's personal and professional to grow push gives

As can be seen from the data of Table 1, the expected result will be achieved if educational services are developed taking into account their important aspects in the indicated directions.

V. CONCLUSION/RECOMMENDATIONS

Based on the above considerations, we believe that it is necessary to take into account the following recommendations in order to implement a high-quality and competitive education system.

1. **Increasing the potential of teachers** - training and motivating qualified personnel.

2. **Introducing innovative technologies** - using digital educational tools, AI and VR/AR capabilities.

3. **Integration of education and production** - strengthening cooperation between educational institutions and enterprises.

4. **Accreditation and internal control** - assessing and continuously improving the quality of education.

5. **Taking into account the opinions of students** - making the educational process customer (student)-centered.

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COMPARATIVE ANALYSIS OF INPATIENT TUBERCULOSIS TREATMENT COSTS BY CLINICAL GROUPS AND PATHOGEN DRUG RESISTANCE

Zokhid Ermatov[1]

Introduction

Tuberculosis remains one of the major public health challenges in Uzbekistan, especially amid the growing share of drug-resistant TB forms and the need for more efficient resource utilization [(Kohler et al., 2022), (Portnoy et al., 2023)]. In recent years, the country has actively transitioned to new healthcare payment models, which require transparent and evidence-based cost assessments—particularly for TB inpatient care [(Sweeney et al., 2020)]. International evidence demonstrates that treatment costs for tuberculosis vary widely depending on clinical patient characteristics, facility structure, treatment regimens, and their duration. A particularly significant driver of increased cost is the treatment of multidrug- and extensively drug-resistant TB (MDR/XDR-TB), as confirmed by both global and regional studies [(Kohler et al., 2022), (Portnoy et al., 2023), (Sweeney et al., 2020)].

To support decision-making and tariff setting during health financing reform, local cost data is essential—data that reflect clinical group profiles, resistance levels, and organizational differences across institutions. This study aims to perform a comparative analysis of inpatient TB treatment costs across 13 specialized TB institutions in Uzbekistan. The analysis is based on both aggregated and disaggregated patient-level data, incorporating ICD-10 diagnoses, drug resistance profiles, surgical interventions, and institutional characteristics. This approach enables the identification of major cost drivers, comparison across clinical groups and facilities, and provides an economic foundation for implementing new payment models and strategic purchasing in TB care.

Materials and Methods

This study is a comparative economic analysis of inpatient TB treatment costs in phthisiatric institutions of the Republic of Uzbekistan. The core dataset includes clinical and economic data from 13 pilot medical facilities and utilizes a standardized cost accounting methodology recommended by the Joint Learning Network (JLN).

The study covers specialized TB institutions of various levels (national, regional, inter-district), including both adult and pediatric hospitals. The sample includes 13 facilities, for which a detailed retrospective cost analysis was conducted in 2023 based on data from 14,996 hospitalizations. Additionally, aggregated data from 70,780 TB cases in 59 institutions for the year 2023 were analyzed. Each unit of observation corresponds to a single hospitalization episode, grouped by age, ICD-10 diagnosis, drug resistance type (drug-sensitive, MDR, XDR), and surgical intervention status.

Data sources include:

- – Form No. 066 (inpatient statistical record),

- – Standardized DataFormUZ templates,

- – Financial reports (manual collection and UzASBO-2 system),

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– Regulatory documents from the Ministry of Health and the State Health Insurance Fund,

– Methodological materials from JLN and WHO.

The step-down costing method was used to allocate indirect costs (administrative, auxiliary services) to clinical departments based on production indicators (floor space, staffing, service volume), enabling a realistic distribution of costs despite data limitations. Costs were classified as direct (salaries, medications, meals) and indirect (utilities, depreciation, administrative overhead). Analysis was conducted at the departmental level with subsequent calculation of cost per bed-day and per treated case.

Microsoft Excel was used to build automated calculation models, and Tableau was employed for dashboards and visualization. Data underwent multi-stage validation, including duplicate removal, consistency checks (e.g., length of stay, diagnosis-outcome alignment), and standardization by classification (ICD-10, institutional and department codes).

Statistical analysis included descriptive statistics (means, medians, ranges, significance of differences) and cross-tabulations by clinical group, region, and facility type. Special attention was given to comparing treatment costs across drug resistance levels.

All patient data were anonymized. Clinical data usage complied with national legal standards and confidentiality requirements.

Results

All costs are presented in thousand Uzbek soums (thousand UZS) and additionally converted into US dollars based on the exchange rate set by the Central Bank of the Republic of Uzbekistan as of December 31, 2022 — 11,225.46 UZS per 1 USD. Thus, 1,000 thousand UZS = 1,000,000 UZS ≈ 89.08 USD.

The analysis of data from 12 tuberculosis institutions revealed substantial variation in the average cost per inpatient TB treatment case. The lowest cost was recorded at the Tashkent Pediatric TB Sanatorium, where the average cost per case was 9,935 thousand UZS, approximately 885 USD. The highest cost was observed at Republican TB Hospital No. 2 (RTH-2), reaching 32,332 thousand UZS or about 2,881 USD (see Fig. 1).

The average costs at other facilities ranged from 10,498 thousand UZS (934 USD) at the Regional TB Center of Tashkent Region to 24,511 thousand UZS (2,184 USD) at Republican TB Hospital No. 3 (RTH-3). Regional institutions also showed notable variation. At the Clinical TB Hospital in Tashkent City, the average cost per case was 23,901 thousand UZS (2,130 USD), while in the Regional Pediatric TB Hospital the cost was 13,634 thousand UZS (≈1,215 USD).
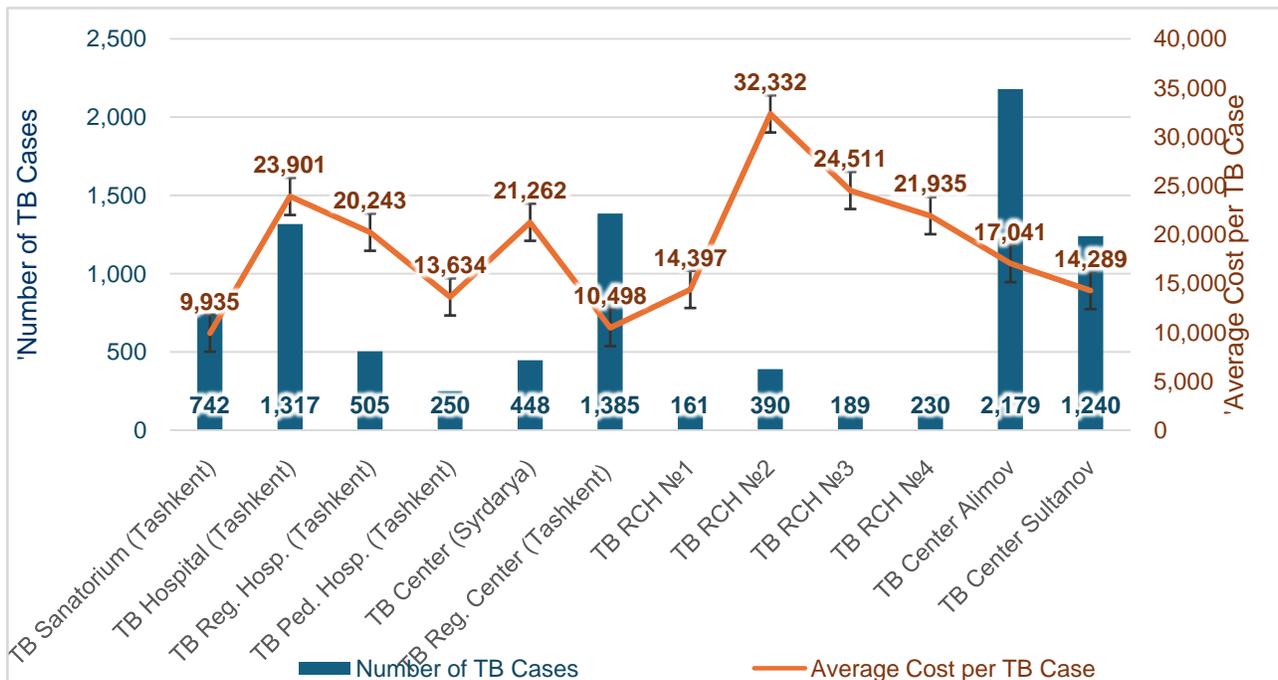
Fig. 1. Average cost of TB patient treatment in the studied TB facilities of Uzbekistan.

The following section presents the results of the analysis of tuberculosis case counts and the average treatment costs by diagnosis according to the ICD-10 classification. Currency conversion corresponds to the rate described earlier.

The total number of registered TB cases varies significantly depending on the disease form — from isolated instances (e.g., tuberculosis of the ear or joints) to several thousand cases (e.g., pulmonary tuberculosis confirmed bacteriologically or histologically). Similarly, average treatment costs per case differ markedly: rarer or more severe forms of the disease typically require greater resources and thus higher expenditures (see Table 1).

The highest average treatment costs per case were recorded for:

A18.6 – Tuberculosis of the ear- 21,378 thousand UZS (≈ $1,904),

A18.5 – Ocular tuberculosis- 17,864 thousand UZS (≈ $1,592),

A15.5 – Tuberculosis of the larynx, trachea, and bronchi- 17,861 thousand UZS (≈ $1,591).

The lowest average treatment costs per case were observed in:

M90.0 – Tuberculosis of bones (excluding the spine)- 3,740 thousand UZS (≈ $333),

A16.2 – Pulmonary tuberculosis without mention of confirmation- 5,758 thousand UZS (≈ $513),

A18.8 – Tuberculosis of other specified organs- 5,421 thousand UZS (≈ $483).

Table 1. Average Cost per TB Case by ICD-10 Diagnosis (in thousand UZS)

ICD 10	Number of cases	Average Cost per Case by Diagnosis
A15.0 – Pulmonary TB, bacteriologically/histologically confirmed	3,560	19,173
A16.0 – Pulmonary TB, bacteriologically/histologically negative	1,512	13,177
A18.0 – TB of bones and joints	776	9,916
A16.3 – Intrathoracic lymph node TB, not confirmed	500	12,797
A18.1 – Genitourinary TB	489	9,488
A18.2 – Peripheral lymph node TB	296	11,540
M49.0 – Spinal TB	270	7,747
A15.6 – TB pleurisy, confirmed	233	9,808
A18.5 – Ocular TB	217	17,864
A15.1 – Pulmonary TB, culture-confirmed only	135	17,564
A16.5 – TB pleurisy, not confirmed	109	13,939
A18.3 – Abdominal TB (intestines, peritoneum, mesentery)	97	8,800
A19.1 – Acute miliary TB, multiple sites	73	12,312
A16.1 – Pulmonary TB, no lab/histo exam	44	6,619
A19.0 – Acute miliary TB, single site	34	16,311
A15.7 – Primary pulmonary TB, confirmed	32	11,382
A16.7 – Primary pulmonary TB, not confirmed	25	12,019
A17.0 – TB meningitis	20	11,594
A15.2 – Pulmonary TB, histologically confirmed	17	12,328
A18.4 – TB of skin/subcutaneous tissue	13	16,414
A15.4 – Intrathoracic lymph node TB, confirmed	12	18,810
A15.3 – Pulmonary TB, method unspecified	9	12,303
A15.8 – TB of other respiratory organs	8	8,094
A18.8 – TB of other specified organs	7	5,421
A18.7 – Adrenal TB	6	11,625
A15.5 – TB of larynx, trachea and bronchi	5	17,861
M90.0 – TB of bone (non-spinal)	5	3,740
A16.2 – Pulmonary TB, no confirmation mentioned	4	5,758
A18.6 – Ear TB	3	21,378
A19.8 – Other forms of miliary TB	3	18,082
M01.1 – TB arthritis	2	9,008

The most commonly diagnosed form was A15.0 – Pulmonary tuberculosis confirmed bacteriologically and/or histologically, with a total of 3,560 cases and an average treatment cost of 19,173 thousand UZS (≈ $1,708) per case.

The analysis reveals significant variation both in the prevalence of different TB forms and in the associated treatment costs, highlighting the need for a differentiated approach to healthcare resource planning. Detailed data are presented in Table 1 (see Table 1).

The next stage of the study focused on analyzing differences in average treatment costs depending on the degree of drug resistance of the Mycobacterium tuberculosis strains. Patients were divided into five groups: Drug-Susceptible Tuberculosis (DS-TB), Mono-Drug-Resistant Tuberculosis (Mono-DR-TB), Multidrug-Resistant Tuberculosis (MDR-TB), Pre-Extensively Drug-Resistant Tuberculosis (Pre-XDR-TB), and Extensively Drug-Resistant Tuberculosis (XDR-TB).

Figure 2 illustrates both the number of cases within each of these resistance groups and the corresponding average treatment cost per patient. The results demonstrate a clear pattern: as the level of drug resistance increases, so does the cost of treatment.
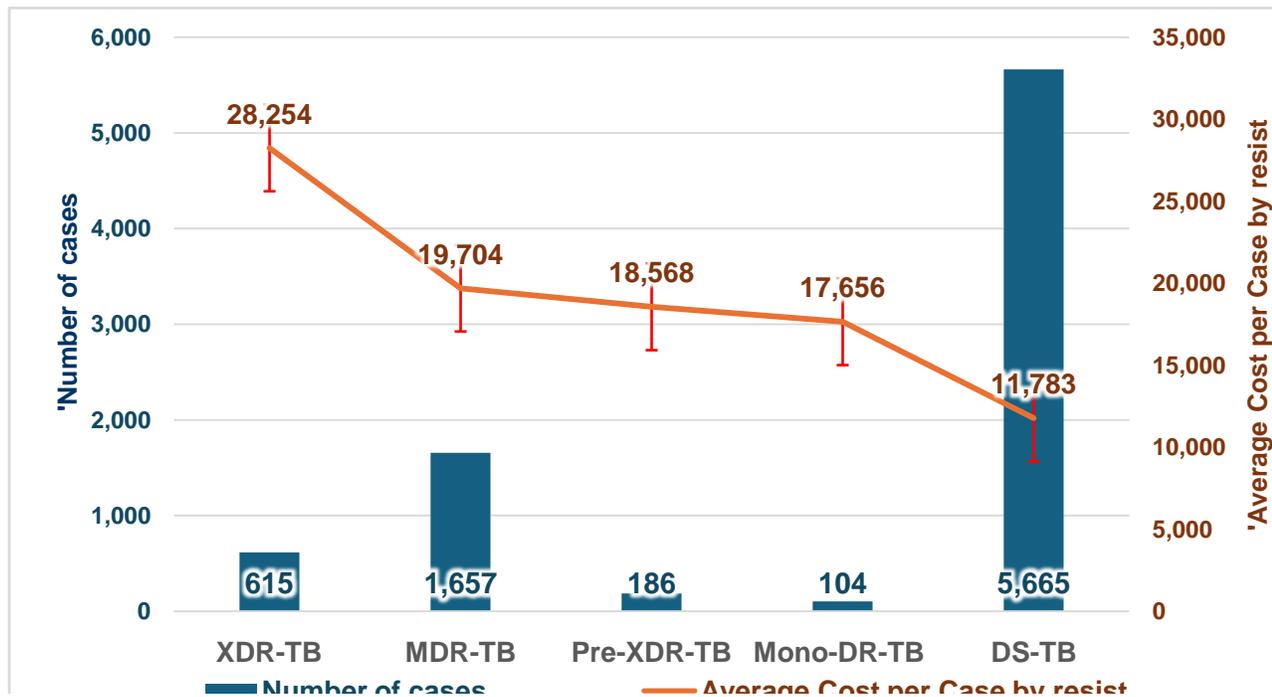
Fig. 2. Average Cost of TB Patient Treatment by Drug Resistance Category (in thousand UZS)

The highest average treatment cost was observed in cases of extensively drug-resistant tuberculosis (XDR-TB, 615 cases) — 28,254 thousand UZS (approximately USD 2,516). For multidrug-resistant tuberculosis (MDR-TB, 1,657 cases), the average cost amounted to 19,704 thousand UZS (~USD 1,755). In cases of pre-extensively drug-resistant tuberculosis (Pre-XDR-TB, 186 cases), the cost was 18,568 thousand UZS (~USD 1,655). Treatment of mono-drug-resistant tuberculosis (Mono-DR-TB, 104 cases) cost an average of 17,656 thousand UZS (~USD 1,572). Significantly lower costs were observed for drug-susceptible tuberculosis (DS-TB, 5,665 cases) — 11,783 thousand UZS (~USD 1,049).

Treating a single XDR-TB patient costs nearly 2.4 times more than treating a DS-TB patient. Statistical analysis confirmed that the differences between resistance groups are statistically significant ($p < 0.001$), emphasizing the critical role of drug resistance as a key factor impacting economic burden.

Discussion

The results of this study reveal considerable variation in the cost of inpatient TB treatment depending on both the institutional profile and the clinical characteristics of patients, specifically ICD-10 diagnosis and the level of drug resistance. These findings support the hypothesis of economic heterogeneity in the treatment of different TB forms, a pattern previously documented in international research [(Kohler et al., 2022), (Portnoy et al., 2023)].

Average treatment costs across institutions ranged from 9,935 thousand UZS to 32,332 thousand UZS. These differences were driven not only by facility type (pediatric vs. adult, national vs. regional), but also by cost structure—particularly the frequency of surgical interventions, medication expenditures, and hospitalization duration. This underscores the importance of implementing an adapted case-based payment

system based on clinical-economic groupings, rather than flat-rate per-bed-day tariffs or traditional line-item budgeting.

Even greater cost disparities were observed when stratifying cases by drug resistance. The average cost of treating XDR-TB was nearly 2.4 times higher than for DS-TB, primarily due to the elevated prices of second- and third-line drugs, longer treatment durations, the need for intensive monitoring, and a higher risk of complications. Similar patterns have been reported in previous publications in BMJ and European Respiratory Journal [(Sweeney et al., 2020), (Kohler et al., 2022)].

Statistical significance ($p < 0.001$) confirms the robustness and consistency of these cost patterns across groups. From a practical standpoint, the presented data provide a robust evidence base for developing new TB care financing models. Furthermore, the findings highlight the urgent need for early detection of drug-resistant TB and for implementing antimicrobial stewardship programs aimed at preventing future cost escalation.

In conclusion, this study not only illustrates the current cost structure of TB treatment in Uzbekistan but also contributes to a more rational framework for health resource planning and policy-making.

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POTENTIAL AND STAGES OF DEVELOPMENT OF MEDICAL SERVICES IN UZBEKISTAN

Rajabov Utkir Dusnaevich [1]

ABSTRACT

The article examines the widespread use of religious services and folk medicine in the early stages of the emergence of medical services in Central Asia, particularly in Uzbekistan. Historical sources indicate that folk medicine existed eight thousand years ago, as evidenced by the equipment for preparing medicines found during archaeological excavations. It is noted that this invaluable gift was passed down from generation to generation, refined as a result of thousands of years of experience of the people, and has reached us, and is of interest to many foreigners today.

After Uzbekistan gained independence, the healthcare sector became one of the most promising and rapidly developing sectors of the economy in 1991-2025. As a result, it is analyzed that child mortality decreased by 3 times compared to 1990, the average life expectancy of people increased from 67 to 75 years, and many infectious and socially dangerous diseases were completely eliminated.

Thanks to the conditions created for foreign investors, about 100 modern private medical institutions have been launched with their participation. It is estimated that the number of foreign citizens coming for treatment has doubled as a result of the introduction of the "medical visa" and a simplified procedure.

Keywords- *Uzbekistan Region, Religious Figures, Folk Medicine, The Reign Of Amir Temur, "Dor Ush-Shifo", Turkestan, Hospital (Infirmary), Military Hospital, Dependency, Independence, Life Expectancy, Maternal And Child Mortality, Level Of State Policy, Medical Tourism, Electronic Visa.*

I. INTRODUCTION

Based on the evolution of medical services in Central Asia, particularly in the region of Uzbekistan, it is possible to distinguish several stages of their emergence and development.

In the early times, the provision of medical services to people went through a long historical development path from the simplest medical procedures of primitive people to the dominance of modern specialized medical services.

Medical services were mostly religious in nature, provided by religious figures and representatives of folk medicine. Religious figures were considered a social group and were engaged in treating patients, educating, developing people, and propagating religious teachings.

The use of natural factors to treat people appeared eight thousand years ago, as evidenced by the equipment for preparing medicines found during archaeological excavations. This art of folk medicine was refined and has reached us today.[1]

In Transoxiana and Khorasan, special buildings for hospitals began to be built in the VIII-IX centuries. Hospitals were common in cities such as Samarkand and Bukhara in the 15th century. Such public hospitals were called "Dor ush-shifo" ("House of Healing"), and the most knowledgeable doctors of their time treated

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patients there. In special apothecaries in "Dor ush-shifo", pharmacists prepared medicines for patients. In most hospitals, doctors, in addition to treating patients, were also engaged in the science of healing. Later, Alisher Navoi also paid great attention to the opening of hospitals.[2]

Due to the occupation of Turkestan by Tsarist Russia, attempts to introduce its own living conditions and change the lifestyle of the population, imitation of the cultural and educational world of Europe gradually began to spread. Tsarist Russia's policy of strengthening the country, industrialization measures, and the necessary and favorable conditions for its development at that time, as well as the immigration of Russian-speaking citizens, led to changes in the provision of medical services. For example, in Fergana in 1899, hospitals and schools began to operate in special buildings for military officers and officials. As a result, Western-style medical institutions entered the country. The tsarist government, seeking the benefit of its troops in Turkestan, opened a hospital (lazaret) in Tashkent in 1868 for soldiers and officials. Later, large and small hospitals began to open in other cities. Smaller hospitals began to operate in Samarkand in 1872, Khiva in 1873, and Bukhara in 1891. However, they mainly served civil servants and Russian citizens.[2]

Later, during the Soviet era, medical services specialized and formed an economic system, and medical activities were separated. The system of medical services in the new sense was formed as a separate sector, and their use became part of the daily life of the population.

II. LITERATURE REVIEW

The following scholars have considered potential and stages of development of medical services in Uzbekistan in their research: Qodirov A.A. [5], Yuldashev Z.Y. Khalilova H.T. [6], Karimov I.A. [7].

III. RESEARCH METHODOLOGY

We used methods of logical analysis and synthesis, economic, logical, scientific abstraction, comparative analysis, monographic research, study in dynamics, data grouping, induction and deduction, statistical methods in the research.

IV. ANALYSIS AND RESULTS

During the former Soviet Union, medical services operated under the influence of the Communist ideology that ruled alone. They operated on the basis of a centrally planned system. The state took on the heavy burden of developing healthcare, which created a dependency mentality in financing and management. Such circumstances limited the intensive development of the sector, leading to its development on an extensive basis, completely moving away from market relations. More attention was paid to quantitative indicators than to qualitative indicators. As a result, medical services lagged behind in development compared to many developed countries, and the standard of living of the population declined.

For example, at the beginning of the period of independence, Uzbekistan had more than 70 thousand doctors for 22 million people. At that time In Turkey, there are 23,000 doctors per 60 million people , and in Malaysia , there are 6,200 doctors per 18 million people . arrived in Uzbekistan doctors abundance the population treatment high to the extent that it is not at all does not indicate was .[3]

The first President of Uzbekistan, I.A. Karimov, assessed the socio-political landscape of that time and said, "Social infrastructure networks: healthcare, public education, preschool institutions are in a very difficult state. 60 percent of schools and hospitals are located in substandard buildings. The all-round harmonious development of a person. Let alone his spiritual development as a person, often lacks even the most basic

necessities of life."[4]

In particular, in the early 1990s, Uzbekistan ranked last among the countries of the Commonwealth of Independent States (CIS) in terms of population health indicators. However, as a result of the prioritization of human interests and the implementation of structural changes in the healthcare sector in Uzbekistan, by 2010 the average life expectancy of the population had increased by 5 years compared to 1990. While Azerbaijan managed to maintain 71.0 years, Russia fell from 69.2 to 67 years, Ukraine from 70.5 to 69 years, Kazakhstan from 68.6 to 65 years, and Turkmenistan from 66.4 to 65 years. These indicators achieved in Uzbekistan can be assessed as a clear expression of the reforms carried out in the medical field.[8]

As a result of measures aimed at protecting people's health and improving living conditions, a number of demographic indicators have improved. Child mortality has decreased by three times compared to 1990, and life expectancy has increased from 67 to 75 years, which is one of the main indicators of health care (Table 1).

Table 1 Life expectancy at birth (total) [9]

Indicators	1990	2010	2015	2020	2022	2023
Republic of Uzbekistan	67.0	73.0	73.6	73.4	74.3	75.1

1991-2025 years during the last century, the healthcare sector has become one of the most promising and rapidly developing sectors of the economy. Qualitative changes have occurred in the structure of medical services. New, modern, specialized areas of medical services have emerged.

The implementation of state health policy and strategic directions for reforming the health system has had a significant impact on the development of primary health care. Primary health care, considered the first stage of basic health care, has become an integral part of the social sphere and has been adapted to new socio-economic conditions by stratifying the network and diversifying its content.

In the context of deepening economic reforms, the high level of development of quality medical services is considered an important condition for the development of society, an integrated indicator of the level of socio-economic development of the country. The last 10-15 years have been a period of radical changes and reforms, renewal and transformation, creativity and development, modernization and liberalization in the healthcare sector.

 "Health-2" 2"and "Health -3 " projects were implemented to strengthen the primary health care system in the republic .

Positive results have been achieved in the protection of motherhood and childhood in the republic within the framework of cooperation programs with the World Health Organization, UNICEF, UNFPA, USAID, and other international organizations.

A wide range of screening centers have been established in all regional centers and Tashkent city, which regularly monitor the health of expectant mothers and ensure the birth of healthy children. As a result, a consistent decrease in maternal and child mortality rates has been achieved (Table 2).

Table 2 Reproductive Health Indicators [9]

Indicators	1990 year	2000 year	2010 year	2020 year	2024 year
Maternal mortality per 100,000 infants	65.3	33.1	21.0	18 , 5	14.8
Infant mortality, per thousand	34.6	18.9	11.0	9, 4	9.0

In order to provide a system of high-quality specialized medical care to the population, specially specialized cardiology, surgery, urology, eye microsurgery, pediatrics, obstetrics and gynecology, therapy and medical rehabilitation, dermatology, venereology centers were established in the republic. The activities of their regional and district departments have been launched. Also, a nationwide network of institutions was created, including the Republican Center for the fight against AIDS, its 14 branches in the regions, 78 HIV diagnostic laboratories under the presence of the republican, regional and district health departments.

In a short period of time, about 100 modern private medical institutions have been established in the form of joint ventures with China, South Korea, India, Turkey, Russia, the USA, Germany and a number of other foreign countries with developed medical systems, as well as with the participation of investments from these countries.

President of the Republic of Uzbekistan Sh.M.Mirziyoyev In his Address to the Oliy Majlis, he set the task of rapidly developing tourism and medical tourism, which has great potential in our country, to turn tourism into a strategic branch of the economy . [5]

The fact that traditional medicine has been developed in Uzbekistan along with modern medicine and the availability of folk remedies to treat people, as well as the improvement of the organizational and legal foundations of tourism development in order to increase the flow of tourists, the introduction of electronic visas and a simplified border crossing system to facilitate the arrival of guests, and the establishment of air flights with many major cities in the world have led to a doubling of the number of foreign citizens coming for treatment (Table 3).

Table 3 Number of foreign citizens visiting the Republic of Uzbekistan for medical treatment [9]

Indicators	2016	2017	2018	2019	2020	2021	2022	2023
Republic of Uzbekistan	27.1	28.7	52.5	55.5	15.0	32.4	70.0	61.3

In Uzbekistan The possibilities in the field of medical tourism are like an unexplored reserve for foreigners. In particular , the properties of many rare medicinal plants and healing waters growing in the mountainous regions of our country have long been valuable information about the beneficial effects on the human body. There are many such natural factors in Uzbekistan , it is only necessary to disclose them to the world community and create a new tourism industry .

Currently, k is in the world of medicine in many foreign countries The growing demand for natural medicinal herbs , healing spring waters, and folk healing methods such as camel milk, salt caves, sand and mud therapy, as well as the fact that Uzbekistan has developed medical science since ancient times, and

the existence of great experience and potential in its formation, opens the door to medical tourism . At the same time, it reduces the cost of modern medicine and makes it much cheaper.

The Resolution of the President of the Republic of Uzbekistan No. PP-3968 dated October 12, 2018 "On measures to regulate the sphere of folk medicine in the Republic of Uzbekistan" serves as an important legal basis for the legal regulation of work in this sphere and the introduction of institutional and legal mechanisms for folk medicine. According to it:

- Introduction of a special study cycle on folk medicine in the undergraduate educational programs of the republican medical universities in the fields of "Treatment work", "Pediatrics work", "Medical-pedagogical work" ;

- organize a department of folk medicine and a professional development course in the direction of "Folk Medicine" at the Tashkent Institute of Advanced Training of Doctors ;

- Licensing of medical service activities using folk medicine methods ;

- To organize in- depth scientific research on the study of the rich historical traditions and unique heritage of Uzbek folk medicine , organizational and methodological assistance in the systematization of folk medicine areas ;

- The task of establishing comprehensive cooperation with well - known organizations representing folk medicine in other countries was assigned . [7]

This resolution includes the creation of a database of natural and herbal medicines and folk remedies recommended for the treatment of diseases using folk remedies , as well as its placement on the website of the Ministry of Health of the Republic of Uzbekistan.

The adoption of the Decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev No. PF-5611 dated January 5, 2019 "On additional measures for the accelerated development of tourism in the Republic of Uzbekistan" and the development of the Concept for the Development of the Tourism Sector in the Republic of Uzbekistan in 2019-2025 in accordance with it marked the beginning of a new stage in the development of the tourism sector.

The objectives of diversification of tourism products and services aimed at different segments of the tourism market were defined The introduction of a " medical visa " - a visa issued for a period of up to 3 months for foreign citizens entering the Republic of Uzbekistan for treatment at the request of a medical institution - was an important event in the development of medical tourism in our country.[6]

Based on these objectives, attention is being paid to the development of a new direction in the country: medical tourism, taking into account the diversification of tourism products and services aimed at various segments of the tourism market and the potential of existing medical services.

V. CONCLUSION/RECOMMENDATIONS

In conclusion, it can be said that from the first days of independence, Uzbekistan has put forward the idea of raising a healthy generation and raising the level of medical services to a new level in a radical reform of healthcare, which has taken on a completely new meaning, and raised it to the level of state policy.

In the system of measures used to improve the living conditions of the country's citizens, health care and public health protection have a special place. Taking into account the fact that people of all ages and

categories apply for medical services, the creation of healthcare that prioritizes human interests was considered a priority, and certain successes were achieved. Based on this, the following features of the emergence and evolutionary development of medical services in Uzbekistan can be distinguished:

- The emergence of medical services is associated with the earliest periods of human society;

- Having a rich experience of the science of folk medicine;

- The integration of medical services with national traditions and values;

- The development of medical services in line with the world at different times;

- That today health promotion is a component of social policy.

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There is good management and **bad management: good** management is like air – you don't know it's there until it's gone away.

Charles Stross

ANALYSIS OF THE ECONOMIC EFFICIENCY OF REGIONAL RAILWAY TRANSPORT SERVICES USING THE INDEX METHOD.

DilfuzaShakarova Ruzimuratovna[1]

ABSTRACT

This article analyzes the economic efficiency of regional railway transport services using the example of the Termez railway junction. An author's integral indicator was developed based on the Ryabtsev index.

Keywords: *Railway Transport, Efficiency, Passenger Transportation, Freight Transportation.*

It is known that in order to ensure the rapid growth of the economic and social processes of the region, it is necessary to ensure the proportional development of transport services, in particular, the development of the Termez railway junction in the case of Surkhandarya region. As a result of increasing the efficiency of the network or sector, its potential opportunities can be analyzed. In this regard, a comparative analysis of the statistical and sustainable development of the existing services of the Termez railway junction in the region was carried out.

The concept of efficiency is one of the most important criteria in economics. Efficiency is a value determined by the ratio of human activity, the production of products (goods or services) and the results obtained as a result of labor and resource costs for their production [1]. There are several types of this concept. For example, general economic efficiency (or general production efficiency), labor efficiency (labor efficiency), capital efficiency, profit efficiency, efficiency of complex resource use and energy efficiency.

Foreign economists, including those from the CIS countries and Uzbekistan, have also conducted scientific research on the effective use of railway transport and the analysis of its efficiency indicators. In particular, N.P. Teryoshina, V.G. Galaburda, M.F. Trikhunkov[2], L.O. Anikeeva-Naumenko[3], V.N. Filina[4], B.M. Lapidus, D.A. Macheret, A.L. Wolfson[5,6], M.P. Bazilevsky, S.I. Noskov, I.P. Vrublevsky, I.S. Yakovchuk[7], S.V. Rachek[8], and among Uzbek economists, M.Sh. Jalalova[9], Zoidov[10], Z.N. Rakhmatov, Sh.V. Ergashev[11], M. S. Yakubov, Z. G. Mukhamedova[12], S.R. Abduazizov, G.A. Qudbiyeva[13] and others can be cited.

Some economists are conducting scientific research on the efficiency indicators used in various sectors of the economy. In particular, R.H. Bozorov conducted research on improving the assessment of the economic efficiency of investment projects in Uzbekistan[14], while R.G. Akhmadeev conducted scientific research on further increasing the efficiency of tax revenues[15]. Young economist F. D. Hojikulova conducted scientific research on analyzing the efficiency indicators of investments in industrial enterprises in our country[16].

In general, several methods can be used to assess the efficiency indicator. Below, we will analyze some of these methods. One of the most widely used methods for assessing efficiency is net present value (NPV) - a value obtained by discounting all income and expenses in a specific period of time at a fixed and constant interest rate during the period of use of the facility and representing the difference between them.

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Its essence is that the amount of annual net cash flow in the selected enterprise is brought to the initial year of the project implementation for each period and, as a result, it manifests itself in monetary terms as net present value or net discounted income.

$$NPV = \sum_{t=1} \frac{CF_t}{(1+d)^t} - I_0 \qquad (1)$$

Another method of calculating efficiency is the internal rate of return (IRR) method. (IRR) is the rate of return at which the discounted value of cash inflows equals the discounted value of cash outflows, or alternatively, the discount rate at which the discounted value of net cash inflows from the project equals the discounted value of efficiency, and the net present value is zero. To determine this indicator, the above formula is used to determine the net present value and the minimum interest rate at which the net present value is equal to zero is found. This interest rate is called the internal rate of return method. This method is also called the internal rate of return, the coefficient of return or efficiency, and the marginal efficiency of capital investments in economics. Its calculation can be expressed in the following equation:

$$NPV = \sum_{t=1} \frac{CF_t}{(1+d)^t} - I_0 = 0 \qquad (2)$$

The internal rate of return, or efficiency coefficient, is also called the marginal efficiency of capital investment. Its calculation can be expressed in the following equation:

The internal rate of return can also be expressed in another form, that is, by the interpolation method:

$$IRR = d_1 + \frac{NPV_1}{(NPV_1 - NPV_2)}(d_2 - d_1) \qquad (3)$$

where, NPV_1 is the positive amount of the net present value at the discount rate d_1; NPV_2 is the negative amount of the net present value at the discount rate d_2. The values of the indicators d_1 and d_2 play a key role in determining the internal rate of return. As a result of their influence, it is possible to observe a change in the net present value and, as a result, a change in the internal rate of return. Accordingly:

d_1 is the interest rate that minimizes the positive value of the NPV;

d_2 is the interest rate that maximizes the negative value of the NPV.

Another method is the profitability method (RI) of efficiency - it is based on calculating the ratio of discounted income to discounted investment costs. Another method widely used in scientific research is the integral coefficient method, which is determined using a weighting coefficient using indicator systems:

$$S = \sum_{i=1}^{n} \alpha_i \cdot K_i \qquad (4)$$

Based on the specific economic and social situation and geographical location of the Surkhandarya region noted above, we propose the following indicators as indicators for assessing the efficiency of the Termez railway junction (Table 1)

Table 1 Indicators for assessing the efficiency of the Termez railway junction

N	Indicator name	Unit of measurement
1	Number of passengers transported	transported
2	Cargo volume transported	tons
3	Cargo volume transported	cubic meters (m³)
4	Cargo turnover	tons-kilometers (t km)
5	Passenger turnover	passenger-kilometers
6	Average distance of cargo transportation	Km
7	Traffic indicators.	km or hours.
8	Number of seats in passenger transportation	Pieces
9	Total revenue of the railway network	billion soums
10	Cargo volume transported	Tons
11	Cargo turnover	tons-km
12	Average distance in km	Km
13	Cargo transportation intensity	tkm/km
14	Freight train weight	Tons
15	Growth rate	%

Authors' development based on research

To bring the indicators into a single unit of measurement, the following normalization formula was used[17]:

$$x_{nor} = \frac{x_n - x_{min}}{x_{max} - x_{min}} \qquad\qquad (5)$$

We have developed an author's proposal for calculating the efficiency coefficient for freight and passenger transportation in the formula (4) above. Now, using this formula, let's calculate the efficiency of the Termez railway junction for 2017-2024 (Table 2). It should be taken into account that α_yk=0.057.

Table 2. Freight transportation efficiency indicators of the Termez railway junction for 2017-2024.

Years	Revenue from freight transportation (billion soums)	The normalized value of income K1	Efficiency coefficient in freight transportation $S\_Yuk=\alpha\_yk \cdot K\_1$
2018	11 154 625	0,09	0,0051
2019	13 596 178	0,24	0,0136
2020	15 218 660	0,34	0,0192
2021	17 501 449	0,48	0,0272
2022	20 745 568	0,68	0,0385
2023	23 143 728	0,82	0,0469
2024	26 026 926	1	0,057

Authors' calculations based on data from the Termez railway junction.

Since 2017, the efficiency of freight transportation has only increased. This means that the volume of freight transportation has increased in these years.

Now let's calculate the efficiency of passenger transportation. For this, we need the same indicators as in Table 2 above: revenue from passenger transportation, the normalized value of revenue, and the efficiency coefficient of passenger transportation. Here we propose to take into account that $\alpha\_yo=0.36$. The necessary criteria are summarized in Table 3.

Table 3. Passenger transportation efficiency indicators of the Termez railway junction in 2017-2024.

Years	Revenue from passenger transportation (billion soums)	The normalized value of income is K2	Efficiency coefficient in passenger transportation $S\_Yuk=\alpha\_yo \cdot K\_2$
2018	11 154 625	0,18	0,0649
2019	13 596 178	0,28	0,1012
2020	15 218 660	0,37	0,1355
2021	17 501 449	0,51	0,1829
2022	20 745 568	0,69	0,2503
2023	23 143 728	0,83	0,3001
2024	26 026 926	1	0,36

Since the amount of revenue from passenger transportation has also been steadily increasing, the normalized value of revenue has also increased accordingly. This, in turn, has led to an increase in the efficiency coefficient in passenger transportation.

Summarizing the efficiency values for passenger and freight transportation, using formula (4), the Termez railway junction for 2017-2024

Authors' calculations based on data from the Termez railway junction.

We calculate the integral efficiency indicator. The calculations are presented in Table 4.

Table 4. Values of the integral efficiency index of passenger and freight transport efficiency indicators.

Years	Efficiency coefficient in freight transportation S_Yuk=α_yu·K_1	Efficiency coefficient in passenger transportation S_Yuk=α_yu·K_1	Overall efficiency coefficient. S_um=α_yu·K_1+α_yu·K_1
2018	0,0051	0,0649	0,07
2019	0,0136	0,1012	0,1148
2020	0,0192	0,1355	0,1547
2021	0,0272	0,1829	0,2101
2022	0,0385	0,2503	0,2888
2023	0,0469	0,3001	0,347
2024	0,057	0,36	0,417

From the summarized table of the efficiency indicators of the Termez railway junction for 2017-2024, it can be seen that the physical volume of cargo and passengers transported through the junction has only increased. This, in turn, has led to an increase in the total revenue of the network. Let us analyze the pace of sustainable development here. For this, we will use the V. M. Ryabsev[18] index:

$$K_R = \sqrt{\frac{\sum_{i=1}^{n}(d_1-d_0)^2}{\sum_{i=1}^{n}(d_1+d_0)^2}}, \qquad (6)$$

Here K_R is the coefficient of structural change;

d_1,d_0- basic and reporting structures; i=1, 2,3 …; n is the number of periods.

The generalized value of the annual growth of the stable was analyzed, and the values of the Ryabsev index are presented in Table 5 below.

Table 5. Values oftheRyabsevindexofstabilityofpassengerandfreighttransportindicators4

Years	Overall efficiency coefficient. S_um=α_yu·K_1+α_yu·K_1	Ryabsev index value	The interval of coefficient values is a normative description of structural changes
2018	0,07	0,4674859	Significant difference
2019	0,1148	0,3806694	Significant difference
2020	0,1547	0,3858359	Significant difference
2021	0,2101	0,3944443	Significant difference
2022	0,2888	0,3007984	Significantlevelofdifference
2023	0,347	0,3012372	Significantdifference
2024	0,417	0,4974801	Significantdifference

Authors' calculations based on data from the Termez railway junction.

Analyzing Table 5, the following was found. Only in one of the 7 years under study (2022) did the Ryabsev index show a significant increase with a difference, and in there mainings ix years there was a significant increasewith a difference. Since the value of 0.3007984 in 2022 on the Ryabsev index scale falls within the range of 0.151-0.3, a significant increase with a difference was observed, and during the remainings ix years a significant (muchlarger) increase in efficiency was observed, since the Ryabsev index fell within the range of 0.301-0.5. It is known that the measurements of significant difference and significant difference of sustainable grow thon the Ryabsev index scale are very close in value.

The growth with a significant difference can be seen in the commissioning of the new Kumkurgan-Boisun-Koshrabod line at the Termez railway junction in 2017 and the attraction of new investments in the railway network in "New Uzbekistan", as a result of which stable growth has been observed.

In the new Uzbekistan, in a short period of time, significant changes have occurred in the railway network, as in all sectors and branches of the economy. Some of these can be seen in the example of the Termez railway junction. In particular, 437 billion 702 million soums were allocated for the 244.5 km long railway line Karshi-Termez and Termez-Galab (Afghanistan), which began in 2016, and electrification work was completed in the autumn of 2017. As a result, as noted above, freight turnover has increased significantly.

During this electrification process, 3 substations were built on the railway line. 105 billion 263 million soums were allocated for the construction of these stations, and 30-40 new jobs were created at each station. The electrification of the Kumkurgan-Saryosiya railway line is planned for 2026.

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EFFICIENCY OF FACTORS AFFECTING INVESTMENT ACTIVITY IN INDUSTRIAL ENTERPRISES

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ABSTRACT

This article scientifically analyzes the factors affecting investment activity in industrial enterprises and their effectiveness. The study examines the impact of investments on the volume of industrial production and the sustainable growth of the enterprise, the issues of efficient use of resources, and the role of labor resources in production. The author analyzed the statistical indicators of industrial enterprises in the Jizzakh region for the period 2011-2023 based on the Cobb–Douglas production function and determined the relationship between the volume of investment, labor force, and production using regression and correlation methods. The results showed that the volume of investment and the growth of labor resources play an important role in increasing the volume of industrial products. It was also confirmed that the Cobb–Douglas function is an effective method for predicting the production process, and forecast results were developed until 2030.

Keywords: *Investment Activity, Industrial Enterprises, Effectiveness, Cobb–Douglas Production Function, Regression Analysis, Correlation Coefficient, Labor Resources, Volume Of Industrial Products, Forecasting.*

Introduction.

Investments are the main source of activity of any industrial enterprise, they not only solve economic problems that arise in enterprises, but also provide an opportunity to ensure stable growth of the enterprise's activity and make structural changes. Their rational use leads to the saving of materialized labor.

Research into the factors affecting the economic efficiency of investments is one of the main problems of the industrial sector. Serious attention is paid to studying this issue at all stages of the development and production of industrial products. In our country, certain measures are being implemented to ensure the safety of industrial products, strengthen the legal basis of relations between manufacturers and consumers, attract investments to the industry, introduce resource-saving technologies, and provide entities with modern technologies. However, the lack of medium- and long-term corporate strategies for attracting investments to the industrial sector, the impact of investments on the increase in industrial output, and the obstacles that have arisen in the profitability and competitiveness of manufacturers remain one of the pressing problems in our country.

Materials and methods.

The theoretical foundations and methodological approaches to analyzing the effectiveness of factors affecting investment activity in industrial enterprises were formed based on the scientific work of foreign and

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domestic scientists in the field of investment management, industrial economics, and econometrics. In particular, the issues of investment efficiency, rational use of resources, and strategies for increasing production volumes were widely covered by such foreign scientists as J. Schumpeter, P. Samuelson, J. Keynes, and F. Hayek.

Also, economists from the CIS countries conducted scientific research based on econometric models to assess the role of investment flows and labor resources in increasing industrial productivity. Their scientific work is aimed at statistical study of investment dynamics, analysis of the relationship between capital, labor, and production volumes using mathematical models, in particular the Cobb–Douglas production function.

The research methodology includes the following stages:

- Collection of retrospective statistical data for 2011–2023 and analysis based on financial statements of industrial enterprises.

- Using econometric models, including the Cobb–Douglas production function, to determine the relationship between production volume, investments and labor resources.

- Assessing the influence of selected factors using regression and correlation analyses.

- Using forecasting methods, predicting production volume, investment needs and labor productivity for 2023–2030.

- Using statistical criteria such as the coefficient of determination (R^2) and Fisher's criterion to check the adequacy of the model.

This methodological approach allows us to identify the main factors affecting the efficiency of investment activities in industrial enterprises and develop their prospective forecast models. These results are of practical importance in strategic planning and management decision-making in the industrial sector.

Analysis and results.

The effectiveness of forecasting the results achieved in the industrial sector is determined by the accuracy, reliability of statistical data and methods of information processing. It should be noted that when the characteristics of factors change, the level of productivity of products also changes. Therefore, there is a need to develop methodological approaches that allow us to more accurately identify the trends of internal and external factors affecting the productivity of products. One of these methods is the Cobb-Douglas production function. Analysis and forecasting of the productivity of industrial products includes the following stages:

1) Selection of a set of arbitrary and involuntary variables;

2) Collecting retrospective data and preparing them for use;

3) Establishing mathematical relationships between initial data and relationships;

4) Establishing prospective values of independent variables (factors);

5) Implementing models on a computer;

6) Developing specific recommendations for using the results through economic analysis.

In implementing these stages, it is important to select arbitrary factors and determine their specific values for investment productivity. In this regard, in order to correctly select factors that significantly affect

the forecast indicators, the conditional value of industrial production and the conditions for qualitative renewal of the investment composition are taken into account.

The initial data for forecasting the productivity of industrial products are obtained from the annual financial statements of industrial enterprises. The mathematical relationship between each factor and the forecasted indicators is evaluated in accordance with the developed models.

Today, the rate of industrial production is directly dependent on investments in fixed and working capital and the total number of employees in an industrial enterprise. Taking this into account, in order to determine the degree of dependence between them, a scientific forecast of the rate of industrial output is developed using the Cobb-Douglas production function method.

It is known that the Cobb-Douglas production function has the full potential to adequately analyze the volume of industrial output. This function helps to determine the relationship between the volume of industrial output and the factors affecting it, as well as the economic efficiency of industrial output. The Cobb–Douglas production function has the following form:

$$Y = a_0 K^{a_1} L^{a_2}$$

where *Y* is the volume of industrial output; *K* is the volume of investments in fixed and working capital of an industrial enterprise; L is the total number of employees in industrial enterprises.

When constructing the Cobb–Douglas production function, the parameters *a_0, a_1, a_2* are transformed into a linear equation using regression analysis using the least squares method. To do this, first, this function is reduced to a model in the form of a two-factor linear regression, derived from the properties of logarithmization:

$$\ln(Y) = Ln(a_0) + a_1 Ln(K) + a_2 Ln(L) or$$

$$Y' = a_0 + a_1 K' + a_2 L'$$

In our study, the change in the volume of industrial production in the Jizzakh region under the influence of a set of selected factors for the period 2011-2023 is carried out using the Cobb-Douglas production function method (Table 1).

Table 1 shows the dynamics of economic indicators of industrial enterprises of the Jizzakh region over the years. Based on the data presented in the table, the selected factors are expressed in the form of quantities of the same scale (logarithms) to determine the trend in the relationship between investments in fixed and working capital and the total number of employees in industrial enterprises, which affect the volume of industrial production.

$$\ln(Y) = \mathbf{0,8289} + \mathbf{0,3420} Ln(K) + \mathbf{0,6801} Ln(L) or$$

$$Y' = \mathbf{0,8289} + \mathbf{0,3420} K' + \mathbf{0,6801} L'$$

Now the linear regression equation in the form of Formula 3 is reduced to the form of a Cobb–Douglas production function:

$$Y = \mathbf{0,8289}\, K^{\mathbf{0,3420}} L^{\mathbf{0,6801}}$$

The prospective change in the indicators included in the group of factors affecting the growth of industrial output confirms the appropriateness of the Cobb-Douglas production function method selected by the study and allows them to be reliably forecasted.

***Table 1** Description of the degree of dependence between factors influencing the dynamics of changes in the volume of industrial products*

Year	The size of the industrial product (Y)		Amount of investments (K)		Total number of employees (L)	
	billion soms	ln(Y)	billion soms	$\ln(x_1)$	number of employees	$\ln(x_2)$
2011	659,60	6,49163	171,9	5,14691	1223	7,10906
2012	785,70	6,66658	234,7	5,45831	1564	7,35500
2013	933,30	6,83873	334,3	5,81204	1921	7,56060
2014	1195,80	7,08657	355,7	5,87409	2698	7,90027
2015	1474,50	7,29607	386,5	5,95713	2934	7,98412
2016	2001,20	7,60150	429,4	6,06239	4032	8,30202
2017	2548,80	7,84338	529,7	6,27231	5155	8,54772
2018	3581,80	8,18362	1068,2	6,97373	6493	8,77848
2019	4586,10	8,43079	4059,4	8,30879	9168	9,12347
2020	5823,80	8,66971	7173,4	8,87814	7701	8,94911
2021	8731,80	9,07473	5392,4	8,59275	7619	8,93840
2022	11402,00	9,34154	5643,5	8,63826	8476	9,04499

From the calculated model, it can be seen that the factor influencing the change in the volume of industrial products, other things being equal, is that an increase in the volume of investments in fixed and working capital by one unit leads to an increase in the volume of industrial products produced by enterprises by 0.3420 units; It has been proven that an increase in the total number of workers in industrial enterprises by one unit leads to an increase in the volume of industrial products produced by 0.6801 units.

As a result of the analyses carried out to determine the general regression relationship between the volume of industrial production and exogenous factors characterizing its impact, it was found that the correlation coefficient R^2=0.936222, and the normalized correlation coefficient R^2=0.920278, respectively. This quantity showed a high degree of correlation between the resulting function and the factors affecting it, and the standard error was very low, equal to σ = 0.20.

The analysis of the factors influencing the analytical and forecast calculations implemented as a result of the analysis may allow us to determine the dynamics of changes in the production of industrial products in the Jizzakh region, provided that the values achieved in the future are based on fair and reliable calculations.

The logarithmic method of the production function was chosen as the most suitable method for forecasting these indicators, and a calculation formula for forecasting economic indicators was determined. According to it, the degree of correlation between the production function and the factors affecting it is equal to $P^2 = 0.93$, which has a constant growth trend.

The adequacy of the resulting Cobb–Douglas production function can be assessed using the Fisher criterion using the following formula:

$$F_{account} = \frac{\sum(Y_{i,account} - Y_{averageacc\ ount})^2}{m} \frac{n-m-1}{\sum(Y_i - Y_{i,account})^2} =$$

$$= \frac{90864423,33}{2} * \frac{12-2-1}{28281663,89} = 14,457774.$$

$$F_{table} = F.\text{ОБР}(\alpha; m; n-m-1) = 8,021517.$$

where α is the reliability probability (α = 0.99); m is the number of factors affecting the function (m = 2); number of observations (n = 12).

The results obtained in the research process indicate that the conditions of the Fisher criterion are met:

$F_{account} > F_{table} = F_{14,457774} > F_{8,021517}.$

At the next stage of the study, it is possible to determine the volume of investments for the production of industrial products in the Jizzakh region, the average and high efficiency of labor resources, and the standard of their provision (coverage) with resources.

1. The average and high efficiency of labor resources with investments in industrial enterprises is determined using the following formulas:

$$\mu_K = \frac{Y}{K} = \frac{a_0 K^{a_1} L^{a_2}}{K} = a_0 K^{a_1-1} L^{a_2},$$

$$\mu_L = \frac{Y}{L} = \frac{a_0 K^{a_1} L^{a_2}}{L} = a_0 K^{a_1} L^{a_2-1}$$

$$V_K = \frac{\delta Y}{\delta K} = a_0 a_1 K^{a_1-1} L^{a_2},$$

$$V_L = \frac{\delta Y}{\delta L} = a_0 a_2 K^{a_1} L^{a_2-1}.$$

2. The standard of coverage (supply) of resources for the production of industrial products is determined using the following formula:

$$\eta_{KL} = \frac{V_L}{V_K} = \frac{\delta Y}{\delta L}\frac{\delta Y}{\delta K} = \frac{a_0 a_2 K^{a_1} L^{a_2-1}}{a_0 a_1 K^{a_1-1} L^{a_2}} = \frac{a_2 K}{a_1 L}.$$

Table 2 presents the results of the description of the degree of interdependence of investments, average and high efficiency of labor resources for the production of industrial products in the Jizzakh region, and the degree of resource coverage.

Table 2 **Description of the degree of interdependence of the efficiency of industrial products for the production of industrial products and the degree of resource coverage**

Year	Investment volume	Labor resources	μ_K	μ_L	V_K	V_L	η_{KL}
2011	171,9	1223	3,529279	0,496061	1,207151	0,337393	0,279495
2012	234,7	1564	3,399003	0,510068	1,162591	0,346919	0,298402
2013	334,3	1921	3,097447	0,539030	1,059447	0,366618	0,346046
2014	355,7	2698	3,746317	0,493908	1,281386	0,335929	0,262160
2015	386,5	2934	3,755298	0,494691	1,284458	0,336461	0,261948
2016	429,4	4032	4,349790	0,463244	1,487797	0,315073	0,211771
2017	529,7	5155	4,477754	0,460110	1,531566	0,312941	0,204327
2018	1068,2	6493	3,302115	0,543250	1,129452	0,369488	0,327139
2019	4059,4	9168	1,734625	0,768056	0,593309	0,522389	0,880466
2020	7173,4	7701	1,059279	0,986708	0,362315	0,671103	1,852265
2021	5392,4	7619	1,268814	0,898012	0,433984	0,610777	1,407374
2022	5643,5	8476	1,323971	0,881528	0,452850	0,599566	1,323984

According to the data, it can be observed that while changes in the average and high efficiency of investments in fixed and working capital of industrial enterprises are reflected in a decreasing manner, changes in the average and high efficiency of labor resources, as well as changes in the standard of provision (coverage) with resources, are reflected in an increasing manner.

Using the Cobb–Douglas production function, the results of multi-factor forecasting of the volume of industrial output in the Jizzakh region with the production function and time-related factors were developed based on retrospective indicators (see Table 3).

Table 3 **Medium and long-term forecasts of industrial output**

Year	Industrial output volume, billion soms	Investment volume, billion soums	Total number of employees
2022	11402,00	5643,50	8476
2023	11811,43	6128,82	9890
2024	13125,14	7036,44	10765
2025	14437,97	7989,16	11610
2026	15705,28	8971,41	12394
2027	16917,51	9937,66	13164
2028	18027,06	10840,92	13801
2029	19072,46	11620,21	14417
2030	20022,76	12207,29	15032

It should be noted that this table studies the direct correlation between the volume of industrial output and the volume of investments and the total number of employees for the period from 2022 to 2030. Based on our analysis using the above forecasting method, it can be emphasized that the results achieved as a result of the study are the most optimal. Because in this situation, there was an increase in the volume of industrial products, the volume of investments and the total number of employees. It can be concluded that in the period from now until 2026, the density of the correlation between the volume of industrial products and the volume of investments made in industrial enterprises in the Jizzakh region, which is directly related to the total number of employees, will be in the optimal range.

Conclusion.

In conclusion, it can be said that the enterprise needs to review and change the structure of grain processing. In this regard, the effective use of production resources, the introduction of effective ways to attract investments, the identification of existing reserves and their effective use in increasing the production of flour and grain feed products are of great importance.

In the course of the research, a Cobb-Douglas production function was constructed, which revealed that the economic efficiency obtained from the activities of industrial enterprises depends on the factor of labor resources and investments. It was found that the relationship between the production function and the factors influencing it is quite strong. The developed econometric model confirms the efficiency of production activities in industrial enterprises, and through it it is possible to observe the achievement of even better results in the future.

This econometric model takes into account the relationship between economic efficiency and factors affecting the production of products by industrial enterprises. In practice, there is no direct relationship between influencing factors and production volume. For example, a company creates the necessary conditions for additional production by hiring new employees, but each new employee increases labor costs

for the company. Furthermore, there is no guarantee that the new employee recruited will have the necessary competencies or the ability to positively impact the revenue from product sales.

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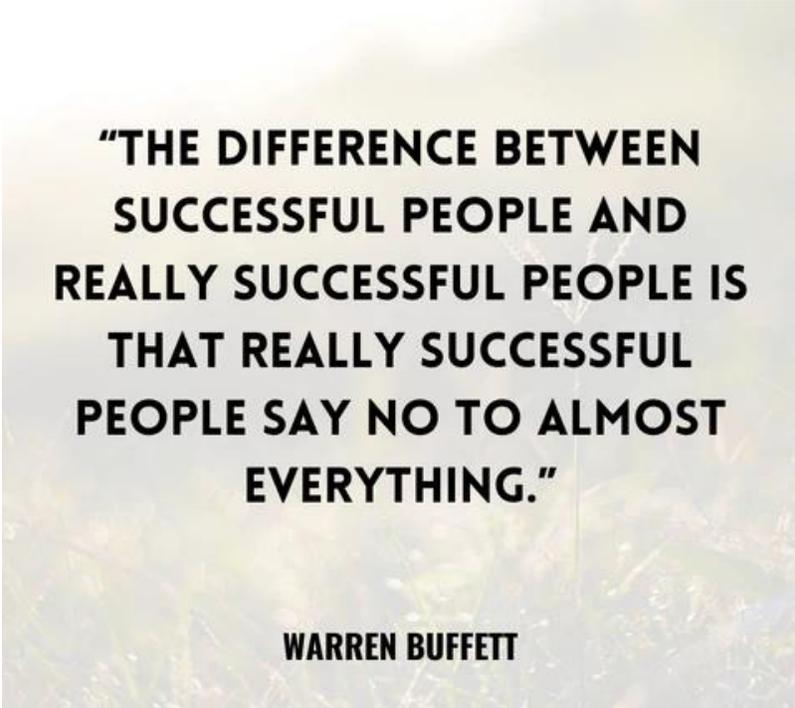
> "THE DIFFERENCE BETWEEN SUCCESSFUL PEOPLE AND REALLY SUCCESSFUL PEOPLE IS THAT REALLY SUCCESSFUL PEOPLE SAY NO TO ALMOST EVERYTHING."
>
> **WARREN BUFFETT**

MODELS FOR ANALYZING AND OPTIMIZING DATA COLLECTED THROUGH INDUSTRIAL DIGITALIZATION

Ilyos Vaydullaev[1]

ABSTRACT

The rapid digitalization of industry has led to the generation of vast amounts of data that serve as a foundation for enhancing production efficiency, decision-making, and competitiveness. Effective analysis and optimization of these data enable enterprises to identify hidden patterns, forecast industrial performance, and minimize operational risks. This section explores models for analyzing and optimizing data collected through industrial digitalization, focusing on statistical, econometric, and artificial intelligence–based approaches. The study highlights how predictive analytics, machine learning algorithms, and optimization models can transform raw industrial data into actionable insights. Furthermore, it emphasizes the role of data-driven decision-making in improving resource allocation, reducing costs, and ensuring sustainable industrial development in the context of Industry 4.0.

Keywords: Industry 4.0, Industrial Digitalization, Data Analysis, Optimization Models, Predictive Analytics, Machine Learning, Big Data, Sustainable Industrial Development

Introduction

In the era of Industry 4.0, the process of industrial digitalization has become one of the key drivers of economic growth and competitiveness. The widespread integration of digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), cloud computing, and big data analytics into industrial enterprises has resulted in the accumulation of vast amounts of data. These data, if effectively analyzed and optimized, can provide valuable insights for improving production efficiency, reducing costs, and ensuring sustainable development.

Industrial data are not limited to production volumes or financial indicators but also encompass information on resource utilization, supply chain processes, equipment performance, and consumer demand. The ability to systematically collect, process, and analyze such data is essential for creating innovative business models and maintaining competitiveness in a global market environment. In this context, the development and application of advanced models for data analysis and optimization play a crucial role in transforming raw information into actionable knowledge.

This section examines the theoretical foundations and practical approaches to analyzing and optimizing data collected through industrial digitalization. Particular attention is paid to the use of statistical methods, econometric modeling, and artificial intelligence techniques, which together enable enterprises to predict future trends, identify hidden patterns, and make data-driven decisions. Furthermore, the importance of digital infrastructure, state policy, and institutional support for successful implementation of these models in Uzbekistan's industrial sector is emphasized.This article provides an analytical perspective on the long-term prospects of implementing Industry 4.0 technologies in Uzbekistan's industry, highlighting potential benefits, challenges faced, and possible solutions to overcome them.

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Materials and methods.

The theoretical and practical aspects of planning the promising directions for implementing the Industry 4.0 concept in industrial enterprises have been developed by foreign scholars such as I. Nonaka, H. Takeuchi, P. Senge, D. Pisano, J. Djoes, B. Marron, K. Sveiby, K. Ladrup, D. Kamara, J. Kozlon, P.R. Massinkam, and J. Fernstrom, as well as by Russian researchers including A.D. Vorobyov, T.A. Gavrilovskaya, T.A. Garanina, N.R. Kelchevskaya, L.A. Kuzmina, B.Z. Milner, and A.I. Urinson. Contemporary technological trends and studies supporting the implementation of Industry 4.0 in industrial enterprises are also reflected in the works of experts such as D.M. Kitaygorodskiy, Yu.V. Melenchuk, J.M. Muller, T. Saebi, F. Vos, and F. Lyal.

Although scientific research on Industry 4.0 technologies in Uzbekistan is still in its early stages of development, several scholars have carried out noteworthy studies in this field. An analysis of research conducted on this topic shows that the following directions hold a special place in the academic works dedicated to introducing Industry 4.0 technologies into the industrial sectors of the national economy. Among the scholars who have researched the role of the digital economy in the country's development, economists and technology experts occupy leading positions. For example, academicians I. Shodmonov, U. Mirziyoyev, and other economic specialists have emphasized the importance of state policy and infrastructure in developing digitalization processes within industrial sectors. Professor B. Nuritdinov and his research team have conducted studies on the integration of cyber-physical systems and Internet of Things (IoT) technologies into production processes. Their research has analyzed both the advantages and the challenges of automating industrial production through IoT technologies.

Analysis and results.

Today, in Uzbekistan, ensuring the sustainable development of grain-processing enterprises can be achieved through analyzing their production and financial performance. One of the key areas of enterprise management is the effective control of production costs. Efficient cost management, on the one hand, strengthens the company's financial stability, and on the other hand, ensures the stability of product prices in the domestic market.

The automation of production processes in enterprises, the introduction of ERP and MES systems, the automation of manual operations, as well as investments in innovations, ensure efficient operations of these enterprises, reduce production costs, and consequently lead to lower product prices.

In modern industrial enterprises, automation and optimization of production processes based on digital technologies have become a strategic priority. In particular, the analysis of data collected through automated systems, robotic equipment, artificial intelligence algorithms, ERP (Enterprise Resource Planning) systems, SCADA, and MES management platforms significantly improves efficiency. This section analyzes the work carried out and the opportunities available in Uzbekistan's industrial enterprises for applying such technologies.

In recent years, approaches aimed at automating processes in large industrial enterprises have been intensifying. For example, robotic systems have been widely introduced in conveyor lines, sorting, packaging, welding, and assembly processes. These machines not only increase labor productivity but also reduce errors caused by human factors. Robots operate in accordance with the production regime, and the real-time data they generate are transmitted to the central monitoring system.

In this dissertation, econometric research has been conducted at "Samarkand Grain Products" Joint-Stock Company to study automation in production and management processes, the modeling of various business processes, and the resulting increase in the company's net profit. The research involves constructing a multi-factor econometric model for analyzing the company's net profit and drawing scientific conclusions and recommendations based on its results.

In the multi-factor econometric model, the dependent variable is the company's net profit, in million soums (Y), while the independent variables are: the level of production automation, % (X1); the level of ERP and MES system integration, % (X2); the level of automation and robotics in the enterprise, % (X3); efficiency of resource utilization in production, % (X4); number of employees undergoing training in the company's information systems (X5); and investments in innovations, million soums (X6).

For conducting econometric research on the net profit of "Samarkand Grain Products" JSC and the influencing factors, descriptive statistics were prepared based on the company's performance indicators for the years 2010–2024 (since the measurement units of the variables differ, logarithmic transformation was applied to standardize them). The results of the descriptive statistics are presented in Table 1 below.

Table 1 Descriptive Statistics by Factors

	ln$Y$	lnX_1	lnX_2	lnX_3	lnX_4	lnX_5	lnX_6
Mean	15.42719	44.64667	25.14667	28.76667	66.21333	3.428638	4.369422
Median	15.45544	46.70000	22.60000	30.40000	63.50000	3.433987	4.458988
Maximum	16.03606	55.10000	35.40000	44.70000	80.80000	3.806662	4.815431
Minimum	14.50190	29.40000	18.40000	12.40000	56.80000	2.995732	3.758872
Std. Dev.	0.390894	8.092224	5.470814	9.449465	7.644967	0.211850	0.329336
Skewness	-0.614368	-0.512896	0.572643	-0.038148	0.661166	-0.469196	-0.390133
Kurtosis	3.361933	2.088217	1.953659	2.113863	2.176288	3.160437	1.930579
Jarque-Bera	1.025491	1.177249	1.504068	0.494412	1.516916	0.566451	1.095298
Probability	0.598849	0.555090	0.471407	0.780980	0.468388	0.753350	0.578308
Sum	231.4079	669.7000	377.2000	431.5000	993.2000	51.42957	65.54134
SumSq. Dev.	2.139173	916.7773	419.0173	1250.093	818.2373	0.628328	1.518472
Observations	15	15	15	15	15	15	15

From the data in Table 1, it is possible to observe the mean, median, maximum, and minimum values of each factor. In addition, the standard deviation (Std. Dev.) of each factor is presented, which shows how much the variables deviate from their mean value.

Skewness represents the coefficient of asymmetry. If it is equal to zero, the distribution is normal and symmetric. If the coefficient differs significantly from zero, the distribution is considered asymmetric (that is, not symmetric). If the skewness coefficient is greater than zero (positive), the normal distribution curve of the studied factor is shifted to the right. If it is less than zero (negative), the normal distribution curve of the factor is shifted to the left.

The normal distribution functions of all factors are illustrated in Figure 1.

The normal distribution function is defined by the following formula:

$$p(x) = \frac{1}{\sqrt{2\pi}\sigma} \cdot e^{\frac{-(x-a)^2}{2\sigma^2}} \ , \ -\infty < x < \infty, \tag{1}$$
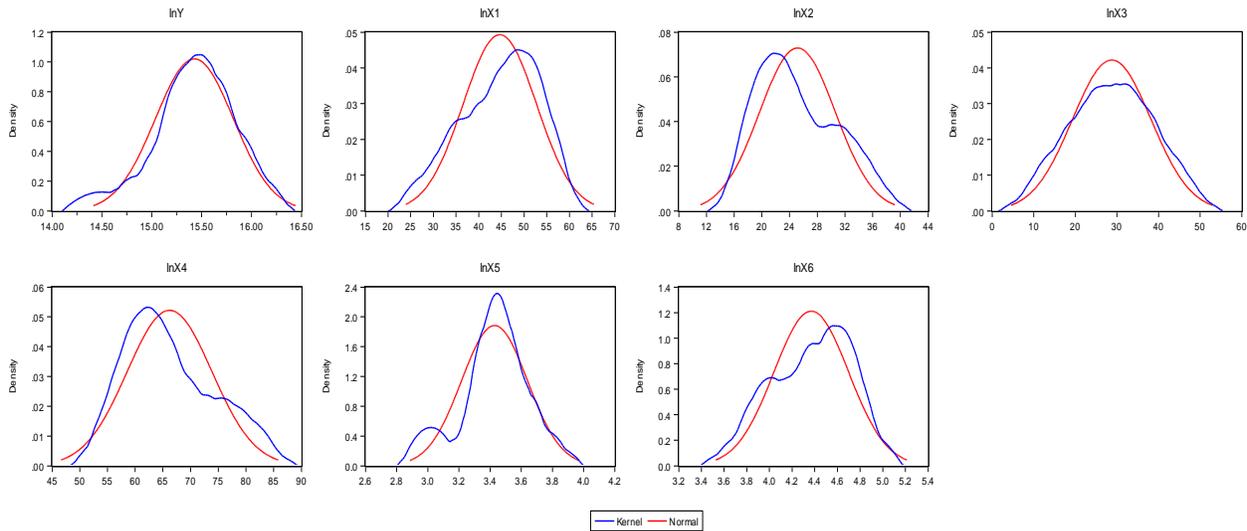
Figure 1. Graphs of the Normal Distribution Functions of the Factors

From Figure 1, it can be seen that all factors follow the normal distribution law. Since the skewness coefficients of the factors lnY, lnX1, lnX3, lnX5, and lnX6 included in the multi-factor econometric model are negative, the left "tail" of their graphs is shifted to the left compared to the theoretical normal distribution graphs. For the remaining factors lnX2 and lnX4, the skewness coefficients are positive; therefore, the right "tail" of their graphs is shifted to the right compared to the theoretical normal distribution graphs.

These shifts mainly reflect the changes in the dynamics of the studied factors. In some years, certain factors related to the studied processes showed sharp increases, while in other years the changes were relatively insignificant. Overall, all the examined factors conform to the normal distribution law.

The conformity of the factors to the normal distribution can also be tested using the Jarque–Bera (JB) criterion. This statistical test verifies the normality of error terms by comparing the third moment (skewness) and the fourth moment (kurtosis) of the observed data with those of a normal distribution.

In the Jarque–Bera test, the null hypothesis H_0 (errors follow a normal distribution) is tested against the alternative hypothesis H_1 (errors do not follow a normal distribution), where – skewness coefficient and – kurtosis coefficient.

The Jarque–Bera statistic is calculated using the following formula:

$$JB = n\left(\frac{S^2}{6} + \frac{(K-3)^2}{24}\right), \tag{2}$$

Where $S = \dfrac{\sum e_i^3}{n\hat{\sigma}_{ML}^3}$, $K = \dfrac{\sum e_i^4}{n\hat{\sigma}_{ML}^4}$ and – model residuals, – number of observations $\hat{\sigma}_{ML}^2 = \dfrac{\sum e_i^2}{n}$, ML

The estimation is carried out using the maximum likelihood method. The degrees of freedom of this statistic follow a chi-square distribution with two degrees of freedom, since – skewness coefficient and – kurtosis coefficient are asymptotically normal, and therefore their squares are also asymptotically normal.

To select the factors for the multi-factor econometric model, a correlation analysis is conducted. For this purpose, partial and pairwise correlation coefficients between the factors are calculated. The matrix of partial and pairwise correlation coefficients between the factors is presented in Table 2 below.

Table 2 Matrix of Partial and Pairwise Correlation Coefficients between Factors

Covariance Analysis: Ordinary

Date: 05/22/25   Time: 23:44

Sample: 2010 2024

Included observations: 15

Correlation

t-Statistic

Probability	LNY	LNX1	LNX2	LNX3	LNX4	LNX5	LNX6
LNY	1.000000						
LNX1	0.865141	1.000000					
	6.219602	-----					
	0.0000	-----					
LNX2	0.850526	0.601342	1.000000				
	5.830820	2.693537	-----				
	0.0001	0.0186	-----				
LNX3	0.892310	0.570111	0.654080	1.000000			
	7.126951	2.64427	3.08379	-----			
	0.0000	0.0210	0.0124	-----			
LNX4	0.787229	0.607593	0.524421	0.512089	1.000000		
	4.602841	2.758215	2.251974	2.156904	-----		
	0.0005	0.0163	0.0432	0.0449	-----		
LNX5	0.582124	0.596160	0.614755	0.621211	0.481319	1.000000	
	2.581327	2.677264	2.784840	2.803864	1.979840	-----	
	0.0228	0.0190	0.0157	0.0144	0.0693	-----	

LNX6	0.781053	0.043921	0.134692	0.149518	-0.021600	0.536768	1.000000
	4.563766	0.158511	0.490103	0.545223	-0.077900	2.293798	-----
	0.0008	0.8765	0.6322	0.5948	0.9391	0.0391	-----

From Table 2, it can be observed that the partial correlation coefficients indicate the strength of the relationship between the dependent variable (lnY) and the explanatory variables (lnXi). Thus, the partial correlation coefficients demonstrate that there are various levels of relationships between the dependent variable – the company's net profit (lnY) – and the explanatory variables (lnXi).

Using the Cheddock scale, the partial and pairwise correlation coefficients between the factors are analyzed. For example, the correlation between the company's net profit (lnY) and the level of production automation (lnX1) is 0.8651, which indicates a strong relationship between these two factors. Similarly, there is a strong relationship between the company's net profit (lnY) and the level of ERP and MES system integration (lnX2), with a partial correlation coefficient of 0.8505. The correlation between the company's net profit (lnY) and the degree of automation and robotics within the enterprise (lnX3) is also strong, with a correlation coefficient of 0.8923. Likewise, the correlation between the company's net profit (lnY) and the efficiency of resource utilization in production (lnX4) is 0.7872, which reflects a strong relationship. The correlation between the company's net profit (lnY) and the training of employees working with the company's information systems (lnX5) is moderate, with a correlation coefficient of 0.5821. Finally, the relationship between the company's net profit (lnY) and investments in innovations (lnX6) is strong, with a correlation coefficient of 0.7810 (see Table 2).

In addition, Table 2 also presents pairwise correlation coefficients, which show the density of relationships between the explanatory variables (lnXi, lnXj). The most important requirement here is that the explanatory variables should not be strongly correlated with one another, meaning that multicollinearity should not be present among the explanatory variables. If the value of the pairwise correlation coefficient between two explanatory variables is greater than 0.7, then multicollinearity is said to exist. From the data in Table 2, it can be observed that the density of relationships between the explanatory variables does not exceed 0.7. Therefore, based on the pairwise correlation coefficients in the correlation matrix, it can be concluded that there is no multicollinearity among the explanatory variables.

Furthermore, Table 2 includes coefficients for determining the reliability and probability of the correlation coefficients (the values shown in the rows beneath the calculated correlation coefficients). For each correlation coefficient, the calculated value of the Student's t-test and its probability are presented. The condition is set that the probability value should not exceed 0.05. For instance, the partial correlation coefficient between the company's net profit (lnY) and the level of production automation (lnX1) is … , … , and … . This indicates that there is a strong relationship between these two factors, the partial correlation coefficient is reliable, and at a 95% confidence level, there is a positive relationship between the two factors.

To verify the above findings, scatter plots of each factor with the dependent variable are examined (see Figure 2).
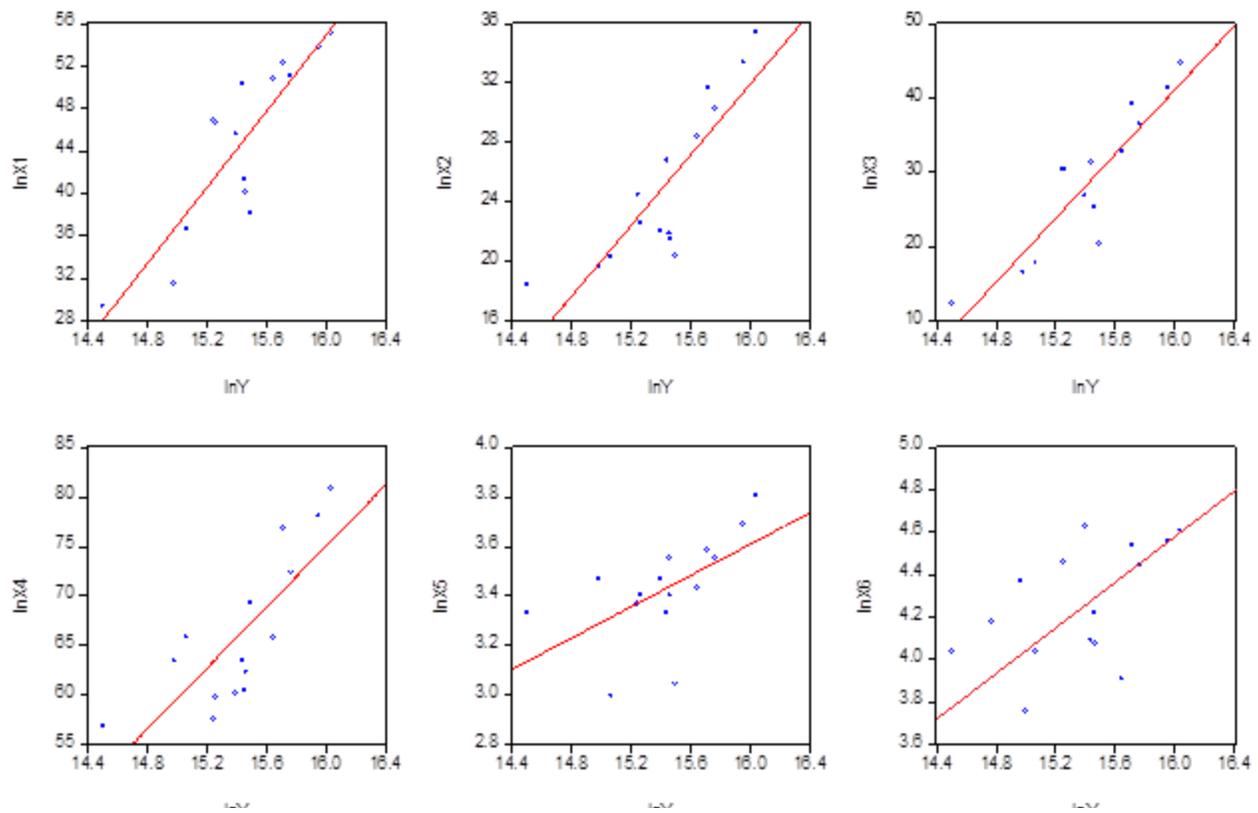
Figure 2. Graphs of the Relationship Density between Explanatory Variables (lnXi) and the Dependent Variable (lnY)

Conclusion.The analysis of the relationship between the net profit of the enterprise and the selected explanatory factors demonstrates that digitalization, automation, and innovation investments have a significant impact on improving financial performance. The results of the correlation analysis show that the company's net profit (lnY) is strongly associated with production automation (lnX1), ERP and MES system integration (lnX2), automation and robotics (lnX3), resource utilization efficiency (lnX4), and innovation investments (lnX6). The correlation with employee training in information systems (lnX5) is moderate, but still indicates a meaningful contribution to enterprise development.

The absence of multicollinearity among the explanatory factors confirms that the selected variables are reliable for constructing a multi-factor econometric model. The use of the Jarque–Bera test further proves that the data follow the normal distribution law, which strengthens the statistical validity of the analysis.

Overall, the study highlights that strengthening automation processes, expanding digital integration through ERP and MES systems, improving employee qualifications, and increasing innovation investments are critical strategies for ensuring the sustainable development of industrial enterprises such as "Samarkand Grain Products" JSC. These measures not only reduce production costs and increase efficiency but also support the long-term competitiveness of enterprises in Uzbekistan's industrial sector under the framework of Industry 4.0.

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Do the hard jobs first.
The easy jobs will take care of themselves.

EFFECTIVENESS OF SKILL DEVELOPMENT PROGRAMMES AMONG TRIBAL POPULATION

Jagrat Sadarang[1]

ABSTRACT

The Indian government is focusing on development of skills among the working individuals and this is main priority in the current position. Our country is making progress under National policy based on skills (National Policy on Skills, 2009). This policy is mainly based on access and equity of training and education, also focused on expansion. There is a need to outreach the individuals those who have training needs. The study is based on primary data through a structured questionnaire based on the views of trainers, consultants, executives and managers towards skill development. The respondents considered in the study included trainers, consultants, executives and managers who have been supporting the tribal population. The study also helped to ascertain the key features of National Skill Development policy. The study mainly aimed to ascertain the effectiveness of skill development from the point of view of trainers, consultants, executives and managers among tribal population. Descriptive analysis was applied in the study on the data collected through questionnaire. The hypothesis has been tested with the help of ANOVA, wherein the respondents have been divided into various groups based on designation and experience. The study indicated that there is a significant difference between the effectiveness of skill development in association with designation and experience of respondents.

Keywords: Skill Development, Effectiveness, ANOVA

1. Introduction

India is progressing gradually as knowledge-based economy. This is due to profusion of flexible, qualified and capablehuman capital. The influence of globalization is rising and there are immense opportunities in our nation to establish a unique and distinct position globally. The human capital is not fully developed, there is a need to empower them for ensuring that our nation could beat global competiveness. The Indian government is focusing on development of skills among the working individuals and this is main priority in the current position. Our country is making progress under National policy based on skills (National Policy on Skills, 2009). This policy is mainly based on access and equity of training and education, also focused on expansion. There is a need to outreach the individuals those who have training needs. Government has initiated the establishment of vocational schools, industrial training institutes (ITIs), professional and polytechnic colleges for facilitating apprenticeships, e-learning, adult learning, training to get self-employed and various other form of training. Government has initiated holistic provision for the individuals who are searching for jobs or plan to start their own business. Such individuals need help for financial, policy and infrastructure support (Knowledge paper, 2012). Additionally, private sector recognized importance of skill development and they have initiated three elements like consumers, profit enterprise and non-profit initiatives. The government provides many skilling opportunities through skill development courses. There is a collaboration between the private sector and the government. Skill development has currently shifted towards the learners and their requirements. The learners have a unique expectation from

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the training being provided through skill development programs and the vocational education is highly effective to nurture the learners about practical knowledge and it has always been helpful in raising the learning standard of students and make them empower for the sector in which they wish to join. The working population needs to be empowered and even their peers have to be focused on skill development (Knowledge paper, 2012).

1.1. National policy on skill development

The youth needs adequate training and government has formulated national policy for skill development which outlines skill development and ensures that youth of India could get better access towards knowledge and skills. The key features of National Skill Development policy are indicated below:

- **Institution-based skill development**–There is a need for skill development which is institution based which includes technical schools, vocational schools, professional colleges, polytechnics etc. Various departments and ministries organize skill development programs that are suitable for employment. The apprenticeship programs are associated with informal and formal courses, there is training for self-employment and even e-learning, distance learning and web based learning exists.

- **Institutional framework** - The policy lay down institutional frameworks that comprise of training and courses run by various officials. The policy indicates the responsibilities and roles of stakeholders that includes industry, local government, skill providers, trade unions, resource persons and civil society institution. The policy also promotes expansion of equity, access and outreach under skill development plans initiated by the government. The policy brings about opportunities for the disadvantaged group including schedule caste and tribes and even OBC, women and minorities (Knowledge paper, 2012).

- **Lays down standards for relevance and quality** - The policy creates provision associated with quality standards for achieving global competitiveness. This would lay down standard for quality assurance that is based on legalization of qualification to ensure that there is reflection of market requirements, accreditation of institutions and training providers, information and research. The policy agenda indicates the quality of trainers, infrastructure, vocational qualification, HR planning and labor market.

- **Emphasizes on skill development for unorganized sector** – There is mention of special importance on skill development in association with skill development in unorganized sector. Policy provideinformation separately for the institutional method to be followed for arranging, executing and scrutinizingskill development. There is a focus on creating target groups within unorganized sector, recognition of prior learning, soft skills, literacy, skill development for the individuals who are self-employed (Knowledge paper, 2012).

1.2. Impartment of skill development through vocational training

The skills of individuals are being developed with the help of vocational training and they are being provided by Directorate General of Employment and Training (DGET). DGET is an organization that focuses on coordination and development at the national level for programmes that are related to vocational training. There are different schemes provided by the government and they are categorized in their own ways. A few of them are mentioned below:

1. Craftsmen Training Scheme (CTS) – ITI/ITC training

2. Craftsmen Instructor Training Scheme

3. Women Training

4. North Eastern States

5. Apprenticeship Training Scheme

6. Hi-Tech Training

7. Modular Employable Skills (MES)

1.3. Skill development in Rural India

According to research conducted by World Bank (2013), there has been scarcity of skilled and trained personnel among labour market and this has endangered to growth and stability of labour market. Though there has been tremendous gain in the education access in different nations, there is existence of crisis in global learning. Skilled employees are not available and there is high unemployment rate which has resulted in need of re-orientation of skill development and education system which could supply essential skills for labour market.

Gooptu (2018) highlighted in a study based on skill development about various theories that are human centric. These could be further used for informing policy making. Thesecould be learned from information about social construction of various skills that can be applied to political economy. Skill development is considered to be a process which involves development of behaviour, attitudes and technical skills which are very important for building up a successful career. Based on report of Rural Skills India, there are different programs that mainly aim to create employment opportunities in the rural areas. The programs mainly focus on prevention of mass migration and reduction in unemployment. When there is mass migration to urban centers, the competition increases among the people and people belonging to the rural areas find it difficult to get employed.

Singh & Kaur (2018) conducted a study and there was an indication that skilled workers are not easily available. Based on the survey, skilled workers are not available in paint industry. There is lack of formal education. Training has been provided to them, but they lack in skills as required. Training opportunities are less and this has resulted in lack of employment. Employment opportunities are there, but since skilled workers are not available, many positions have remained empty.

Rincon-Aznar et al (2015) indicated the influence of recent productivity in the International Context. The study indicated the influence of skills on productivity growth in United Kingdom. Different skills were evaluated and these included both vocational and academic. There are certain other factors like technological advancement and capital investment. The result of the study indicated that skills and education effects productivity in a country.

2. Review of Literature

Agarwal et al (2020)have mentioned in the study that youth have been contributing towards socio-economic development of the country. The skills need to be developed as this will enhance the chances of getting placed. The students need proper infrastructure as this will lead to skill development. The training

modules have to be designed in such a way, that the students can receive proper training from the skill development center.

Al Asefer & Zainal Abidin (2021) have mentioned in their study about employability skills. There are different programs run by government for promoting skill development. The main focus for skill development are the youth of our country. The youth need to become job ready so that they can get selected at the earliest when they apply for jobs.

Undale (2021) discussed that skills are very important in individual's life. Business world is changing rapidly and demand for skills have also change with time, hence the individuals should consider a set of skills having a fixed duration which may not be fruitful after a few years. There is a need to focus on skills development based on its requirement in the industries.

Patel & Fernandes (2024) have discussed about education system in our country and significance of various programmes is initiated by government so that skills can be improved among youth. Enhancement of skills is not only needed for professional growth of the individuals, rather it is also needed for economic growth.

3. Objectives of the study

The objectives of the study are mentioned below:

- To study the key features of National Skill Development policy

- To ascertain the effectiveness of skill development from the point of view of trainers, consultants, executives and managers among tribal population

- To evaluate the effectiveness of skill development in association with designation and experience of the respondents

4. Hypothesis of the study

- H_{01} – There is no significant difference between the effectiveness of skill development in association with designation of respondents

  H_{11} – There is a significant difference between the effectiveness of skill development in association with designation of respondents

- H_{02} – There is no significant difference between the effectiveness of skill development in association with experience of respondents

  H_{12} – There is a significant difference between the effectiveness of skill development in association with experience of respondents

5. Research Methodology

The study is based on primary data through a structured questionnaire based on the views of trainers, consultants, executives and managerstowards skill development. The respondents considered in the study included trainers, consultants, executives and managerswho have been supporting the tribal population. The study also helped to ascertain the key features of National Skill Development policy. The study mainly aimed to ascertain the effectiveness of skill development from the point of view of trainers, consultants, executives and managers among tribal population. Descriptive analysis was applied in the study on the data collected

through questionnaire. The hypothesis has been tested with the help of ANOVA, wherein the respondents have been divided into various groups based on designation and experience.

6. Data Analysis

6.1 Demographic profile of respondents

(a) Designation

Designation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Executive	11	22.0	22.0	22.0
	Consultant	8	16.0	16.0	38.0
	Trainer	22	44.0	44.0	82.0
	Manager	9	18.0	18.0	100.0
	Total	50	100.0	100.0	

The above table indicated the designation i.e. Executive, Consultant, Trainer and Manager. Majority respondents are Trainers i.e. 44% followed by Executive (22%), Manager (18%) and Consultant (16%). The respondents at different designations played a very important role in development of skills among youth, they all contribute towards better career opportunities for the youth as they will get a higher package and better options for jobs.

(b) Experience of respondents in skill development/tribal welfare programs

Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 Year	3	6.0	6.0	6.0
	1 - 3 Years	7	14.0	14.0	20.0
	3 - 5 Years	6	12.0	12.0	32.0
	> 5 Years	34	68.0	68.0	100.0
	Total	50	100.0	100.0	

The above table indicated the experience of respondents. Majority respondents are having experience more than 5 years (68%), followed by 1 – 3 years (14%), 3 – 5 years (12%) and less than 1 year (6%). The respondents having more experience are able to train the trainees better as compared to the ones who have recently become a trainer or manager. The respondents who are having lesser experience can approach the seniors to get more information about skills training.

6.2 Response towards skill development programs

(a) The students need to acquire skill development course

The students need to acquire skill development course					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	44	88.0	88.0	88.0
	No	6	12.0	12.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (88%) towards the above mentioned statement based on skill development programs. Skill development is necessary for the students so that they could get better job opportunities. They need to enhance their skills so that they could get selected in different companies where they are applying.

(b) Skills possessed by students are sufficient to get employed

Skills possessed by students are sufficient to get employed					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	64.0	64.0	64.0
	No	18	36.0	36.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (64%) towards the above mentioned statement based on skill development programs. The skills that are being developed through training centers are such which would support the trainees. It is important for them to develop their skills in the best manner possible and also focus on practical exposure about various operations in different companies.

(c) Providing training on skill development can minimize unemployment challenges

Providing training on skill development can minimize unemployment challenges					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	49	98.0	98.0	98.0
	No	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (98%) towards the above mentioned statement based on skill development programs. There are many trainees who are facing challenges while applying for jobs. The

companies have their own criteria and they select based on the skills of trainees. The trainees should try to focus more on the initial selection criteria and accordingly they will get selected in different companies.

(d) There is a necessity of giving equal importance to both youth and company's requirements

There is a necessity of giving equal importance to both youth and company's requirements					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	44	88.0	88.0	88.0
	No	6	12.0	12.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (88%) towards the above mentioned statement based on skill development programs. The requirement of companies play a very important role and the youth need to focus on the skills which are required by the companies. The companies select the trainees who are good in certain skills. Skills need to be improved so that the trainees can get better jobs and also function in the best possible manner when they join any job.

(e) Indian education system needs to be changed

Indian education system needs to be changed					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	96.0	96.0	96.0
	No	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (96%) towards the above mentioned statement based on skill development programs. There is a need to make certain changes in education system, so that the trainees learn to enhance their skills when they are in some or the other educational institution. The educational institutions can help students in learning employability skills when they are in school or college.

6.3 Agreement about students' feedback towards Employability training

(a) Content & Videos engages students

Content & Videos engages students					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	19	38.0	38.0	38.0
	Agree	26	52.0	52.0	90.0
	Neutral	5	10.0	10.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (52%) towards Employability training through the above mentioned statement. The content which is used by the skill development center should be such that they could support the students from tribal population also. The content should be easy to understand and videos need to such that they could help the students in gaining knowledge about the basic concepts and further knowledge could be enhanced further based on job orientation.

(b) Activities & Assessment are interesting

Activities & Assessment are interesting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	18	36.0	36.0	36.0
	Agree	24	48.0	48.0	84.0
	Neutral	7	14.0	14.0	98.0
	Strongly Disagree	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (48%) towards Employability training through the above mentioned statement. The assessment criteria developed by the trainers need to be interesting such that the trainees enjoy them while being assessed. The assessment should not be like an examination wherein the trainees would be tensed and find it difficult to respond. The activities conducted through the skill development course should be made interesting from different angles to make it interesting and encourage others also to join the course.

(c) Language used is understandable

Language used is understandable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	20	40.0	40.0	40.0
	Agree	20	40.0	40.0	80.0
	Neutral	8	16.0	16.0	96.0
	Disagree	1	2.0	2.0	98.0
	Strongly Disagree	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed and strongly agreed (40%) towards Employability training through the above mentioned statement. The language which is used in content and video should be such that it is easily understood by the trainees and the students of tribal areas also understand the content significantly. The explanation should be easy and provide practical aspect so that they find it easy to work in an organization.

(d) Willingness to recommend

Willingness to recommend

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	14	28.0	28.0	28.0
	Agree	25	50.0	50.0	78.0
	Neutral	10	20.0	20.0	98.0
	Disagree	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (50%) towards Employability training through the above mentioned statement. The courses have to be aligned in a way that the trainees recommend them to their friends and relatives. The course should promise to overcome certain problems and challenges being faced by the trainees when they join any company. The trainees could be more focused on their skill development and this will make them easily join any organization.

(e) Better than traditional method

Better than traditional method

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	12	24.0	24.0	24.0
	Agree	27	54.0	54.0	78.0
	Neutral	8	16.0	16.0	94.0
	Disagree	3	6.0	6.0	100.0
	Total	50	100.0	100.0	

Majority respondents have agreed (54%) towards Employability training through the above mentioned statement. The traditional methods have not been successful in improving skills among youth. The modern methods are being implemented with the help of skill development center and they would definitely help the youth to gain the skills that are currently needed in different organizations.

6.4 Testing of Hypothesis

- **H_{01} – There is no significant difference between the effectiveness of skill development in association with designation of respondents**

    H_{11} – There is a significant difference between the effectiveness of skill development in association with designation of respondents

ANOVA

Skill_development

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.944	3	1.648	5.008	.004
Within Groups	15.136	46	.329		
Total	20.080	49			

The above hypothesis has been tested with the help of ANOVA as the opinion of respondents was different based on their perception towards effectiveness of skill development. The significant value in the above table is 0.004 which is less than 0.05, hence the null hypothesis has been rejected and the alternate hypothesis has been accepted i.e. H_{11} – There is a significant difference between the effectiveness of skill development in association with designation of respondents.

- **H_{02} – There is no significant difference between the effectiveness of skill development in association with experience of respondents**

   H_{12} – There is a significant difference between the effectiveness of skill development in association with experience of respondents

ANOVA

Skill_development

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.163	3	2.388	4.298	.009
Within Groups	25.557	46	.556		
Total	32.720	49			

The above hypothesis has been tested with the help of ANOVA as the opinion of respondents was different based on their perception towards effectiveness of skill development. The significant value in the above table is 0.009 which is less than 0.05, hence the null hypothesis has been rejected and the alternate hypothesis has been accepted i.e. H_{12} – There is a significant difference between the effectiveness of skill development in association with experience of respondents.

7. Findings

- The respondents at different designations played a very important role in development of skills among youth.

- They all contribute towards better career opportunities for the youth as they will get a higher package and better options for jobs.
- The respondents having more experience are able to train the trainees better as compared to the ones who have recently become a trainer or manager.
- Skill development is necessary for the students so that they could get better job opportunities.
- The skills that are being developed through training centers are such which would support the trainees.
- The requirement of companies play a very important role and the youth need to focus on the skills which are required by the companies.
- The educational institutions can help students in learning employability skills when they are in school or college.
- The content which is used by the skill development center should be such that they could support the students from tribal population also.
- The content should be easy to understand and videos need to such that they could help the students in gaining knowledge about the basic concepts and further knowledge could be enhanced further based on job orientation.
- The assessment criteria developed by the trainers need to be interesting such that the trainees enjoy them while being assessed.
- The assessment should not be like an examination wherein the trainees would be tensed and find it difficult to respond.
- The language which is used in content and video should be such that it is easily understood by the trainees and the students of tribal areas also understand the content significantly.
- The course should promise to overcome certain problems and challenges being faced by the trainees when they join any company.

8. Conclusion

The study highlighted skill development about various theories that are human centric. These could be further used for informing policy making. These could be learned from information about social construction of various skills that can be applied to political economy. Skill development is considered to be a process which involves development of behaviour, attitudes and technical skills which are very important for building up a successful career. Based on report of Rural Skills India, there are different programs that mainly aim to create employment opportunities in the rural areas. The programs mainly focus on prevention of mass migration and reduction in unemployment. When there is mass migration to urban centers, the competition increases among the people and people belonging to the rural areas find it difficult to get employed. The study indicated that there is a significant difference between the effectiveness of skill development in association with designation and experience of respondents.

9. Suggestions

- The respondents who are having lesser experience can approach the seniors to get more information about skills training.
- It is important for trainees to develop their skills in the best manner possible and also focus on practical exposure about various operations in different companies.

- The trainees should try to focus more on the initial selection criteria and accordingly they will get selected in different companies.
- Skills need to be improved so that the trainees can get better jobs and also function in the best possible manner when they join any job.
- There is a need to make certain changes in education system, so that the trainees learn to enhance their skills when they are in some or the other educational institution.
- The content which is used by the skill development center should be such that they could support the students from tribal population also.
- The activities conducted through the skill development course should be made interesting from different angles to make it interesting and encourage others also to join the course.
- The language which is used in content and video should be such that it is easily understood by the trainees and the students of tribal areas also understand the content significantly.
- The explanation should be easy and provide practical aspect so that they find it easy to work in an organization.

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MULTI NATIONAL COMPANIES AND INDIAN MARKET

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ABSTRACT

Most of the global brands started entering into the Indian markets. India is among the largest markets of the world in terms of its sheer size along with China which together account for 37 percent of the overall world population [1]. Having the huge potential, India is one of the most promising and progressively growing economies in the world. Followed by China, it has a large consumer base backed by the huge populations having a considerable amount of spending power. Though, a large number of Global brands have entered Indian markets, but not all were able to crack the success mantra for the mysterious, complex and a diversified market where the tastes and preferences of customers change after a few kilometers to the either side of the market. Indian market is so complex because of the large number of cultures, religions, diverse levels of income of the people. Moreover, a wide rural and urban divide creates another challenge in front of companies while establishing effective distribution network. Given the huge diversity of people and challenges related to distribution, the Global firms need to adapt to the local market conditions in order to attract the customers towards their brands. Despite huge potential, a number of MNCs have not been able to reach the levels of success that they have either enjoyed in their home markets or the markets world over. These global brands upon their entry in the Indian markets used the most successful of their companies' strategies the world over, but these strategies failed in the Indian market because of which these MNC's sometimes incur huge losses. According to Choudhary et al. (2012), the MNCs can try and use a three steps approach to succeed in the Indian market – (a) organize its business structure for Indian market; (b) customize their offerings for Indian markets; and (c) form partnerships with Indian companies [2]. In this paper, the cases of such selected Global brands are discussed who initially could not understand the dynamics of Indian market and needs of consumers and suffered huge losses. They repositioned their brands only when adapted to the local market needs and became successful.

METHODOLOGY:

This research paper is an attempt to explore how some global brands have been making inroads to the hearts of Indian consumers after committing some initial blunders. The relevant information using secondary data is collected from various sources such as websites, case studies, newspapers, academic journals, and business magazines in order to understand the marketing strategies adopted by selected global brands including Kellogg's, McDonald's, LG, Reebok, and Coca-cola in the India. The marketing strategies of these Global brands have been critically analyzed to present the view of how they encountered with initial failures and were able to overcome the enormous amount of challenges due to diverse nature of the Indian markets.

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CASES OF SELECTED MULTI NATIONAL BRANDS IN INDIA:

Kellogg's is one of the most successful Global brands from U.S. which was world's leading producer of cereal and convenience foods. It is hugely popular breakfast cereal brand that is being sold in 160 countries with sales turnover of over $9 billion. On its initial entry into the Indian market, it used similar marketing mix which it had been using in other Global markets [3]. When Kellogg's first entered India in 1994, it heavily bet on transforming the Indian breakfast cereal market through switching breakfast habits of Indian consumers who were used to hot breakfast foods. The company wanted the Indian consumer to change its traditional habits of having either Idli Dosas or Paranthas in their breakfast and these habits too varied from region to region with the northern region preferring Paranthas and southern region preferring Idlis, and Vadas etc. and the western region preferred alternatives like Poha. They wanted them to make an instant switch from their own traditional habits to start having the healthier breakfast cereals which was a huge challenge for the company. India became extraordinarily tough market for Kellogg's because it had to change ingrained eating habits of consumers. It passed through different though difficult phases of life-cycle before it has become the strongest player in breakfast cereal category in India. Presently, Kellogg's is estimated to hold about 60-65 percent of India's Rs. 400 crore worth of breakfast cereal market. While introducing a new product category, it was not easy for Kellogg's to establish a foreign brand into Indian market where food habits of people change after a few kilometres [4]. The snapshot of Kellogg's journey from failure to success is briefly discussed in the following section:

INDIAN SPECIFIC STRATEGIES: A TURNAROUND:

After learning several lessons from the initial mistakes, Kellogg's completely revamped its marketing initiatives as well as brand building programs and made it India-specific. First of all, to overcome the price sensitivity of Indian consumers, it launched small sized pack at Rs. 10 only for Indian market. Then, they decided to tap the Indian public's love for Hollywood superstars by launching a limited edition Kellogg's Chocos Spider Man 2 "web-designed cereal". The use of few specific words taken from Indian language – Hindi, such as Corn Flakes with Iron Shakti and Calcium Shakti in the launch of new variants gave it a local feel which was a good initiative taken by the management. Packaging was used as an effective tool for brand communication with consumers which gave the brand an on-shelf differentiation from, though a handful number of, its competitors. It also started some other brand building initiatives by portraying itself as a socially responsible citizen, whereby it started recycling and reusing materials, improving the access to health and human services in the local communities [3]. These moves have shown that the brand was customized specifically for the Indian market, and new variants were introduced for the Indian consumers. It also launched the sugar coated Froasties as Indians wanted to have food that was good in taste. Moreover, it launched Chocos Wheat Loops coated with chocolates to widen the product choices. The company reduced its costs to be able to make its offerings affordable for the price sensitive Indian customers by localizing the whole raw material and packaging material requirements. Also the company decided to appeal to the larger masses in order to increase its presence in the Indian market. It set up its manufacturing facilities in India in Taloja near Mumbai, to reduce the overall transportation costs and undertook many other steps to be able to succeed in Indian market. To make the brand more acceptable among the female consumers the brand launched a new product Kellogg's Special K for women who want to regain their fitness levels and chose Lara Dutta (a famous Bollywood actress) as their brand ambassador for this variant, whom female consumers could identify with as women aspired to be fit like her. All these initiatives taken by the Kellogg's for repositioning of its brand helped it in gaining around 60-65 percent of the market share of

the breakfast cereals market and hence became a market leader. To expand its business further, the company has decided to promote the brand as an evening snack as well.

MCDONALD'S:

McDonald's made an entry into the Indian market at a very appropriate time as soon as the Indian government opened up its market to the Global brands. It made entry in the Indian market in the year 1996 by forming two 50:50 joint ventures, one with Hardcastle Restaurants Private Ltd. in Western India and another with Connaught Plaza Restaurants Private Ltd. in Northern India, with the first outlet opening in Mumbai. Though, McDonald's had got clearance from the Foreign Investment Promotions Board1 (FIPB) in 1991 itself, but it made the final entry in the year 1996 which clearly suggests that company was not going to be caught unprepared in the market. It took so much of time to study the market that is so diverse in terms of geographical make-up, the consumer diversity as well as in the variety of food items the Indians had.

INDIAN SPECIFIC STRATEGIES:

To address all issues stated above as well as the price sensitivity of Indian consumers, first of all it introduced the Value Meal it its menu, making it affordable for Indian masses [7]. To make sure that the company succeeded in Indian market, it followed the approach of being "Glocal brand". Under this approach, it segregated the kitchen areas and cooks for the vegetarian and non-vegetarian menus as Indians in some areas did not even like to have the vegetarian food if it is touched by some non-vegeterian food item. They Indianized their menu by adding Aloo Tikki, McSpicy, and special range Cheese burgers. To cater to the price sensitive of consumers, they launched the happy price menu, which along with affordable prices also focused on the family fun element. The pricing strategy used by McDonalds was value based with the price points even at entry level reaching the levels of Rs. 20. This point was very beautifully conveyed through the advertisement campaign – with the tag line –"Aap Ke Zamaane Mein Baap Ke Zamaane Ke Daam". They also used open kitchen system where the customers could see with their eyes the levels of hygiene and safety conditions in the kitchen for the preparation of food and other items being served, which was not usually followed by the local restaurants that it was competing with. It continued with a philosophy of Quality, Service, Cleanliness, and Value (QSCV) in the Indian market. [8]. By ensuring that it catered to the local tastes and preferences by changing its marketing mix for the Indian consumers, the brand has been very successful in the Indian market. Now, it has geared up with respect to its expansion plan of launching 50 new stores with an investment of Rs.150 crore by 2013 [9].

LG IN INDIA:

LG Electronics India Limited (LGEIL) is a wholly owned subsidiary of Seoul based parent company. The company's focus on growth in Indian market has been inch perfect and that is why it has been able to get the share of Indian market (by volume) equivalent to 29.4 percent in refrigerators, 26.5 percent in color TVs, 35.8 percent in Washing Machines, and a crushing 38 percent in Microwave ovens. LG's Indian market share in GSM handsets is now 6 percent and rising [10]. As per the Managing Director of LG the Indian consumers are complex, so to force long term relationships with them the companies must make long term commitments and investments to understand them to be successful.

REASONS OF INITIAL FAILURE:

LG's first attempted to enter India during early 1990s floundered as a result of difficulties encountered mainly working with the local importers. Initially it was known as 'Lucky Goldstar' and it faced two major

challenges including the failure of joint ventures and de-licensing of the consumer electronics industry leading to the discontinuation of its operations in Indian market. Moreover, as Lucky Goldstar, the company's biggest fault was that it did precisely what other white goods brands of the 1990s were doing such as some half-hearted advertising and pushing the products only when the consumer entered the store [19]. But, it again entered the market in January, 1997 after the Indian Government's light for establishing state-of-the-art white goods factory in Greater Noida and it was named as LG Electronics India Private Ltd. a 100 percent subsidiary of Korean chaebol. During that time, there was such an intense competition in the Indian markets with the Japanese players dominating the Indian consumer electronics market. Low brand awareness among consumers was another challenge for LG in India. It was one of the last consumers electronic MNCs to enter Indian markets and its competitors had a two years jump start over it. Secondly, it had to take care of high levels of import duty, the high levels of competition from the local players and other MNCs, and the sensitivity of Indian consumers towards pricing issues.

REEBOK:

Reebok India is the subsidiary of Adidas group from Germany and it had for the first time entered in the Indian market in the early 1990s. INITIAL MISTAKES: When it entered for the first time in Indian, made certain assumptions which were totally wrong such as every car owner of India must have a Reebok sneaker. This assumption which may have been correct in other markets totally failed in India because here the car owners had either bought their cars in installments or the cars provided to them were of their employers and not owned by them. This problem coupled with another one related to its research which produced inappropriate results when it hired an agency to measure the market potential for Indian markets. The agency advised the company to divide the market according to the postal codes which looked good on paper but and later the company realized that this would also not work because for some areas such as Greater Kailash post office in New Delhi is a high profile locality including a number of mid income families near locality of Zamroodpur under it. This practice was inappropriately followed to decide where to open the stores in those chosen areas.

STRATEGIES FOR BECOMING LEADER IN INDIA'S FOOTWEAR MARKET:

Despite all these setbacks faced by company, it eventually came out as a winner in the Indian market with a 53 percent market share of the branded sportswear market with an estimated size of Rs. 3500 crore per annum. Reebok as a brand enjoys total brand recall in Indian market and it is available at the lowest price point starting from Rs. 990 per pair which helped to establish the brand as a mass market brand for the Indian market. The brand has got more than 300 stores to cater to the lower end of the market offering close to 80 SKU's for under Rs. 2590. The 80 percent of the manufacturing for the brand is done in India to keep the manufacturing costs down. The company to grow further added a lot more of product lines and SKU's for adults, kids, teenagers and even females so that it could grow its market as much as it could and to ensure that the brand is able to cater to the requirements of its consumers it comes up with around 42 new units every month in the Indian market. It has launched a lot of sub brands in the Indian market named – Easytone, Fish Fry, and separate range for kids, women and senior citizens keeping in mind the different requirements of these different kinds of consumers [13].

COCA-COLA INDIA:

Coca-Cola is a leading player in the Indian beverage market with a 60 per cent share in the carbonated soft drinks segment, 36 per cent share in fruit drinks segment and 33 per cent share in the packaged water segment [16].

INITIAL MISTAKES AND CHALLENGES:

Coca-Cola Initially entered the Indian market during the late 1970s and the Government's order had forced the company to leave the Indian market. The company again made an entry into the India in the year 1993 after the government decided to liberalize the market again. This time the entry into the market was more dramatic for the company as it bought out all the leading Indian soft drink brands like Thums-up, Limca, and Gold Spot leading to a situation where it was accused of killing its competition by using its financial strength. But, even after years had passed in the Indian market, the company was not able to realize profits because of its very aggressive strategies of huge amounts of promotions and very aggressive pricing strategy to try and beat the competition. It also suffered in the Indian market because of the pesticides controversy took place in 2003 that resulted in 11 percent decline in the sales during that time. It had a very negative impact on Coca-Cola's brand image in the minds of the Indian consumers [16].

STRATEGIES TO OVERCOME CHALLENGES:

To be successful, the company decided invested more than US$ 1bn to build overall infrastructure required for succeeding in India. The company invested in setting-up 25 wholly owned bottling plants in India. All these steps taken by the company ensured that the company was able to ensure a deeper level of penetration in the Indian market – even in the rural areas. (Mukherjee, et al. 2008). While re-launched the Coca-Cola brand in India, it went ahead with global communications only, but sooner it realized its mistake and the company quickly adapted its communication to ensure proper appeal to Indian consumers. The company rode on two of the strongest pillars, a brand can use in Indian advertisement and communication industry to succeed i.e. Bollywood and Cricket. It roped in multiple filmstars and cricketers so as to promote its brand in the Indian market. Its campaign with the tag line "Thanda matlab Coca-Cola" was able to create the mass appeal for the brand in the market. This campaign was very well thought out, as Indians used to refer to anything that was chilled as "Thanda". For positioning the brand Coca-Cola for rural consumers, the company roped in Aamir Khan (a famous Bollywood filmstar) who helped in popularizing the use of cold drinks in rural areas. To increase penetration in rural market, the brand also reduced the entry level price point to Rs. 5.only [16]. The company was also able to successfully overcome the biggest challenge it faced in the year 2003 of the pesticide controversy. They hired Aamir Khan and Smriti Irani - a very popular TV actor at that time to ensure that customers retain the faith they had in the market and they showed commercial where Aamir is given a tour of the Coca-Cola factory and is briefed about the 400 quality control tests that are a part of the production process to convince the customers that the brand they are consuming is totally safe for them. After overcoming all these challenges, Coca-Cola was again set to expand India as a market further and took it from number 7 in the global pecking order to a market that is number 5 for Coca-Cola globally and for achieving this objective the company has earmarked US$ 5 billion for ensuring that the company is not letting go its focus on developing the Indian market further successfully [17].

CONCLUSION:

After discussing cases of some specific brands, we can argue that the Global brands failed initially mainly because they failed to understand the dynamics of the Indian consumers as well as the markets they

were going to serve. Therefore, they had to reframe their strategies and then enter the market with a completely changed mindset as per the market dynamics. This mostly happened because what they had done for them was either guided by their parent markets or in the markets world over where they were successful. This mantra had never been successful in India because of the complex structure of Indian markets and diversity among people of the country that have ever changing tastes and demands. In today's scenario, for any Global brand to succeed in Indian markets, the companies need to shift their focus from forming global strategies for the overall market, to the strategies that adapt to the local market conditions in the India. The Global firms operating in India must try to be as local as they can be, by converting themselvesinto Glocal brands i.e. being global at heart. The companies can achieve these objective, either by using local manufacturing, producing Indianised variants of their products to take care of local consumers tastes, to use local celebrities as brand ambassadors, and tackle the issue of price sensitivity of the Indian consumers by launching value for money products which are affordable for the masses and forming long term relationships with intermediaries in the market and instill in them a sense of confidence that they are your brand's partners in your journey towards success and they too will benefit if you as a company will succeed and if your brands succeed in Indian market. It was beautifully illustrated in an article titled "Made In India, Only For India" recently published in 'The Strategist' stated that "Now for most of the successful MNCs operating in India, exclusively for India has become an integral part of their overall product development strategy". Through this paper, it is attempted to highlight that MNCs must introduce the products or services matching to the needs of Indian markets in order to be successful. For instance, Honda Motorcycles recently launched bike "Dream Yuga" to tap the entry level segment to take on its competitor and erstwhile joint venture partner 'Hero Moto Corps' that holds leading market share in this segment. Similarly, GE Healthcare launched an Electrocardiogram (ECG) machine especially to be used by rural markets where the clinics do not have much space to operate those complex ECG machines which also runs on battery to overcome the electricity problem caused by the frequent power-cuts in Indian rural markets. Even Korean automobile company launched Hyundai Eon in the Indian market after conducting a research which revealed to them a slight change in preferences of Indian consumers i.e. they now valued mileage, then styling, space, interiors and then finally pricing while purchasing a care, while it earlier used to be mileage, price, styling and interior space, and it was based on this research only that Hyundai Eon was launched in the Indian markets. So this new mantra of being global but acting locally is being adopted by most of the MNCs to succeed in the Indian market [18]. The MNCs' and their brands that are successful in Indian markets are switching to this strategy of presenting themselves as a local company so that people can identify themselves with these firms as their own and this is the reason that why most of the global firms are now focusing on local promotions, local products, pricing strategies as per local requirements and local distribution for Indian markets instead of using their global marketing communications mix to attract the Indian consumers to their brands. The growth for these brands in Indian markets has been increasing throughout depending on how they are tapping the markets by offering more and more regional flavours and tastes which are pushing these brands forward.

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AI IN HRM: ETHICAL CHALLENGES IN CANDIDATE SCREENING

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ABSTRACT

This study examines the ethical ramifications of incorporating artificial intelligence (AI) into human resource management (HRM), with a particular emphasis on candidate screening. Although AI promises increased efficiency, consistency, and forecasting skills, it also brings up serious ethical questions about algorithmic bias, a lack of transparency, dehumanization, privacy invasion, and overreliance, all of which endanger justice and human dignity. Previous examples include biased AI recruiting tools that favored gender or accent, automated voice and face identification systems with varying error rates, and opaque ones. SpringerLinkEmeraldSMOWLProctoringPhDCentreTheGuardianWikipedia employs "black-box" screening logic that erodes candidate trust and accountability.

A lack of empirical validation of AI decision-making, little research into how AI affects soft-skills assessment, and a lack of focus on regulatory compliance and candidate attitudes are all areas that the report highlights. Our proposed mixed-method research approach includes a quantitative evaluation of the accuracy and biases in AI screening technologies using synthetic and real-world resume data sets, as well as a quantitative audit. qualitative interviews with candidates for HR jobs to gauge their opinions of fairness, openness, and dehumanization.

Our goals are to (1) measure the existence of bias and unjust exclusion in AI candidate screening systems, (2) analyze experiential perceptions among stakeholder groups, and (3) Develop policy and design proposals for the ethical application of AI in HRM. This study ultimately helps bridge the gap between theoretical ethical frameworks and practical application, thereby improving both human resource procedures and research.

Introduction

Organizations' methods for attracting attention, evaluating, and choosing talent have changed significantly since HRM integrated artificial intelligence. Regarding the use of AI in HRM, candidate screening is one of the most well-known domains. It has increased efficiency in judgment, justified the recruiting process, and increased production. These days, AI-powered systems evaluate profiles, use machine learning algorithms to characterize a candidate's suitability, and even perform first evaluations through chatbots and video interviews.

Even Nevertheless, the general public has greatly benefited from these technologies in terms of precisely and efficiently handling all jobs. However, there are certain ethical concerns with using AI for candidate screening.The equitable and impartial hiring procedure is hampered by these ethical issues.

Algorithm bias, opaque decision-making, data privacy violations, and the absence of human intervention in the employment process are the primary issues raised in analytical conversations about artificial intelligence (AI) position in HRM. These problems result in technical drawbacks and bring up a number of moral dilemmas pertaining to fairness, responsibility, and respect for everyone's rights at work.

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In this study work, the ethical issues raised by the use of AI in applicant screening are examined. This study examines how bias can be incorporated into AI systems due to algorithmic decision opacity, candidate privacy, and wider implications for diversity, composure, and inclusion.The creation of ethical frameworks to direct the acceptable and justifiable use of AI technology in human resource management is prompted by this critical evaluation

Artificial Intelligence

The term "artificial intelligence" (AI) refers to the replication of human intelligence processes by machines, particularly computer systems.Among these procedures are learning (the acquisition of knowledge and norms for applying the knowledge), reasoning (the application of norms to arrive at specific or approximate conclusions), and self-correction (Russell & Norvig, 2021).One of the founders of artificial intelligence, John McCarthy, said:

"The science and engineering of creating intelligent computers, particularly intelligent computer software, is called artificial intelligence" (McCarthy, 2007).s

There are numerous applications for AI across various sectors.Some of its most prevalent applications are:

Healthcare;AI is employed in robotic surgery, drug discovery, medical image analysis, and illness diagnosis.For instance, IBM Watson can help physicians with treatment strategies and diagnoses by analyzing medical data (Topol, 2019).

Financial Matters; algorithmic trading, fraud detection, and chatbots for customer service.

To identify dubious behavior, AI systems examine transaction patterns (Nguyen et al., 2021).

Transportation; traffic management systems, route optimization, and self-driving automobiles.

For instance, Tesla and Waymo use AI to navigate driverless cars.

Customer support; Natural language processing (NLP) is used by virtual assistants and chatbots such as Google Assistant, Alexa, and Siri to communicate with users.

Manufacturing; The use of AI-powered robots to automate mundane tasks, maintain quality, and forecast maintenance.

Education; AI tutors, automated grading systems, and customized learning platforms.

What AI does throughout the HR lifecycle

Talent recruitment and acquisition. AI is used to identify candidates, analyze résumés, arrange interviews automatically, conduct organized video or game-based evaluations, and create job descriptions. Deloitte (2024) and LinkedIn (2024) both report that the outcomes are faster time-to-hire and increased funnel throughput.s

Workforce planning and internal mobility. "Talent intelligence" models map out talents, suggest positions or jobs, and predict supply and demand, which enhances redeployment and retention (Bersin/Eightfold, 2024–25; Gloat/Mastercard case) (Bersin, 2025; Gloat, 2024).

Development and learning. According to LinkedIn and IBM YourLearning statistics, skill maps customize learning routes and encourage completion (IBM, 2024–25; LinkedIn, 2024).

Human resources management and staff service. AI assistants automate transactions, handle cases, and respond to policy questions (IBM watsonx case; Workday) (IBM, 2025; Workday, 2025).

Choices and people analytics. "Explainability" features help audit models, and predictors for attrition, headcount, diversity results, and skills gaps (Visier, 2025).

Performance & comp. Model pay equity risks, calibrate ratings, draft performance summaries; frequently included in HCM suites (Workday, 2025).

Objective of the Study

"The goal of this study is to methodically review the current literature on the use of Artificial Intelligence in Human Resource Management, concentrating on a thematic synthesis of previous research, we may identify recurring biases, examine the ethical and organizational implications, and investigate potential mitigation strategies.

Literature Review

From sourcing and resume screening to video-interview analytics and psychometric assessments, artificial intelligence (AI) is becoming more and more integrated into recruiting and selection processes. AI proponents contend that it can improve scale, consistency, and efficiency. However, a growing body of research cautions that AI-enabled screening might obscure decision rationale, encode and magnify disparities, and introduce additional dangers related to due process, privacy, and regulatory compliance (Tambe, Cappelli, & Yakubovich, 2019; Barocas & Selbst, 2016). With an emphasis on bias and fairness, validity and job-relatedness, openness and contestability, privacy and consent, and governance and regulation, this review summarises the main ethical issues raised by at least six fundamental works and policy assessments.

Algorithmic prejudice that disproportionately affects protected groups is a major ethical concern. Many "bias-mitigation" recruiting techniques are either unproven or based on dubious assumptions regarding labels, features, and measurement, as demonstrated by Raghavan, Barocas, Kleinberg, and Levy (2020). They contend that even when protected features are taken out of the equation, the use of proxy variables (such as college attended, employment gaps, and ZIP codes) and biassed training data (such as past hiring outcomes skewed by prejudice) can perpetuate structural inequalities.

Opportunities can be skewed by seemingly impartial ad delivery and scoring, as demonstrated by empirical data outside of HR. As an example of how algorithmic systems might indirectly produce unequal exposure, Lambrecht and Tucker (2019) discovered that platform optimisation effects made it less likely for women to see advertisements for high-paying STEM jobs. The legal/ethical mechanism was made clear by earlier work by Barocas and Selbst (2016): "facially neutral" data techniques can have unequal impacts when associated with protected features. According to relevant technical literature, correlated features can serve as proxies even when protected features are not used; mitigation calls for careful feature design, clear fairness criteria, and ongoing auditing (Feldman et al., 2015).

Gray literature and investigative reporting have popularized these risks in hiring contexts. Bogen and Resumé parsers, behavioural tests, and facial/voice analytics can all embed bias through training data and labelling decisions, according to Rieke's (2018) investigation. The frequently mentioned Amazon instance, which involved an internal resume screening mechanism that devalued women's characteristics, serves as an example of how learning from biassed past decisions can lead to failure (Dastin, 2018). These sources all

agree on the moral necessity of conducting ongoing post-deployment monitoring and assessing the varying effects on different populations, particularly intersectional groups.

Ethically justifiable selection necessitates proof that AI assesses job-related constructs and forecasts performance equitably among diverse groups. Tambe et al. (2019) emphasise concerns over criterion validity and construct validity, noting that numerous AI applications deduce "soft skills," "cultural fit," or "hireability" from text or video without clear construct definitions or rigorous validation. Raghavan et al. (2020) caution that selective labels, such as "hired/not hired" as ground truth, may obscure bias, as these labels represent historical human judgements rather than objective performance metrics.

Validity is intrinsically linked to fairness; a model may have overall predictive accuracy while displaying varying prediction errors among distinct demographic groups. This presents ethical and legal problems if false negatives disproportionately affect protected classes. Recommended best practices in the literature encompass: (a) employing job analyses to align features with authentic occupational requirements, (b) pre-registering validation plans, and (c) conducting continuous unfavourable effect and subgroup performance assessments (Raghavan et al., 2020; Barocas & Selbst, 2016).

Opaque vendor systems hinder due process for candidates and diminish accountability for employers. Selbst et al. (2019) contend that efforts to eliminate sociotechnical context for the sake of model generality compromise fairness and accountability. From an HR ethical standpoint, insufficient openness obstructs significant candidate notification, informed consent, and the capacity to contest results. It also undermines internal governance: HR directors may be unaware of which elements influence decisions, if the model deviates, or how performance varies among groups.

Explainability holds ethical significance in two respects: to facilitate internal examination and to provide avenues for candidate redress. The literature advocates for the use of documentation including model cards and datasheets, feature-level elucidations tailored for non-technical stakeholders, and explicit policies on candidate enquiries and appeals (Raghavan et al., 2020; Bogen & Rieke, 2018).

AI screening frequently depends on comprehensive personal data—résumés, social media profiles, assessment responses, keyboard dynamics, and video interviews—thereby eliciting concerns around privacy and permission. Bogen and Rieke (2018) underscore the hazards associated with the utilisation and inference of secondary data, particularly with sensitive qualities that may be implicitly inferred. Data minimisation, purpose limitation, and secure retention/deletion rules serve as ethical safeguards that conform to international privacy frameworks. Furthermore, biometric analysis (e.g., facial expressions, vocal mood) presents increased sensitivity and potential inaccuracies across many cultures and abilities, which may overlap with issues of disability discrimination and accommodation responsibilities.

Regulatory guidance is aligning with risk-based supervision. The EEOC (2023) in the U.S. specified that job selection software must be evaluated for adverse impact in accordance with Title VII; employers are accountable for vendor tools and must analyse selection rates and validation data. The Artificial Intelligence Act in the EU categorises AI utilised for employment and workforce management as "high-risk," thereby imposing requirements related to risk management, data governance, transparency, human oversight, accuracy, robustness, and post-market surveillance (refer to general frameworks in Tambe et al., 2019; Barocas & Selbst, 2016). Despite variations in specific regulations, the ethical standard remains uniform: establish work relevance, assess disparate impact, ensure human oversight, and record decisions throughout the model's existence.

The synthesis of several studies indicates a governance toolset. Job-centric design: Initiate with a rigorous job analysis; extract features from substantiated, job-related constructs.Data governance: Record data provenance; reduce sensitive features; assess for proxy effects; oversee drift. Fairness evaluation: Conduct pre-deployment and regular adverse-impact assessments (including intersectional groups); monitor mistake rates among subgroups.

Validation studies: Evidence of criterion and concept validity; consistency over time and across roles/locations. Transparency and recourse: Explicit candidate notifications; comprehensible justifications; avenues for appeal; documentation of human evaluation.Human-in-the-loop: Mitigate automation bias; mandate human verification for ambiguous or critical judgements.Independent audits and documentation: Model cards or datasheets; third-party or internal audits in accordance with regulatory guidelines (EEOC, high-risk AI governance). These phases illustrate the literature's agreement that technical solutions alone are inadequate; ethical implementation necessitates sociotechnical supervision and organisational responsibility (Selbst et al., 2019; Raghavan et al., 2020).

The discourse on AI in candidate screening centres on a fundamental ethical dilemma: translating complex, socially ingrained notions of "merit" and "fit" into models that are legitimate, equitable, transparent, and considerate of privacy. Evidence indicates genuine hazards of uneven impact caused by biased data, proxy variables, and non-transparent optimisation. Emerging governance—EEOC directives and the EU's high-risk categorization—compels organisations to pursue documented validation, equity monitoring, and substantial human oversight. HR directors must establish an ethics-by-design program characterised by stringent validation, ongoing audits, and candidate-centric openness, which is crucial for compliance and necessary for aligning AI-driven recruiting with organisational values and equal opportunity objectives.

Research Methodology

This study aims to investigate the problem of bias in applicant screening in human resource management (HRM) that is driven by artificial intelligence (AI). The study uses a qualitative methodology with a focus on secondary research to accomplish this. The method is intended to be both practically applicable and academically rigorous, allowing the researcher to offer significant insights while working within time and resource limitations. The research design, data sources, methodical literature review procedure, and thematic analysis method used for the study are all explained in this section.

Design of Research

Descriptive and exploratory research design was chosen.Since there is little agreement on the ethical and practical ramifications of AI in HRM, especially in candidate screening, the exploratory component is warranted.

An in-depth analysis of the issue and insights into how AI technology could inadvertently add or reinforce prejudice are made possible by exploratory study.

The descriptive element is helpful in providing a concise description of the many kinds of biases found in the literature and how they affect hiring procedures. In order to handle the complexities of algorithmic bias, this combination offers both breadth and depth.

Research Method

Since the study only uses secondary data sources, no tests, interviews, or surveys were carried out. Rather, the analysis uses already published sources, such as:papers from peer-reviewed journals in the

domains of business ethics, artificial intelligence, and human resource management.Working papers and conference papers from reputable organizations. reports from think tanks, HR technology companies, and consulting firms about the industry. Governments and international organizations publish policy texts and guidelines.

The chosen period, which runs from 2015 to 2025, reflects the quick uptake of AI technology in HRM over the previous ten years. Additionally, this guarantees that the data accurately represents current discussions, difficulties, and procedures.The following pertinent keywords were used to search databases, including Google Scholar, Scopus, JSTOR, and ResearchGate: "AI in HRM," "algorithmic bias in recruitment," "candidate screening," and "ethical hiring practices."

Systematic Literature Review (SLR)

The study uses a Systematic Literature Review (SLR) methodology to ensure rigor. A systematic approach to gathering, evaluating, and synthesizing existing research is known as an SLR. It is more transparent, reproducible, and evidence-based than a conventional narrative review. In this investigation, the SLR was carried out in three main phases:

Finding the Sources:The previously listed keywords were used to find a wide range of possible sources. About 120 articles and reports were produced during this phase. In order to ensure that no potentially pertinent study was missed, the goal at this point was to be inclusive rather than restrictive. During the screening and selection phase, the sources' abstracts, introductions, and conclusions were examined. Studies that were out of date, duplicate articles, and unrelated to HRM were eliminated.

Following this filtering procedure,

Data Analysis: Thematic Analysis

The study used theme analysis to thoroughly assess the results after gathering and reviewing the literature. One popular qualitative technique for finding, examining, and interpreting recurrent patterns (themes) in qualitative data is thematic analysis.

Thematic Analysis Steps Getting to Know the Data: To gain a thorough understanding of the conclusions, arguments, and case studies presented in the literature, the researcher read and reread the chosen studies. Preliminary observations, such as frequent mentions of gender bias in AI hiring tools, were noted.

Creating First Codes:Short labels were used to designate pertinent information. "Gender discrimination in AI tools trained on biased CV datasets," for instance. "Racial bias as a result of minority groups' underrepresentation in training data.""Age prejudice in favor of younger applicants.

Examining Themes: To make sure they appropriately reflected the literature, the themes that had been found were examined and improved. A few codes were reclassified or combined. For instance, "black box algorithms" and "lack of transparency" were combined into a larger topic known as "Algorithmic Opacity." Themes Definition and Naming: The final themes were well-defined. The following were the primary themes that emerged from the analysis: Age, race, gender, and socioeconomic bias are the several forms of bias in AI hiring.

Organizational and Ethical Consequences: Legal issues, reputational hazards, and diversity loss. Using a variety of datasets, auditing methods, and implementing moral AI standards are some mitigation techniques.

Reporting the Themes: Using data and examples from the reviewed studies, the themes were methodically presented in the findings.

Value of Thematic Analysis The importance of thematic analysis The researcher was able to do more than just summarize articles because to the thematic analysis. It pointed out trends in several studies, provided information about how bias appears in various settings, and made recommendations for possible fixes. For instance, some research highlighted the significance of biased training data, while others focused on HR professionals' duties to audit and keep an eye on AI tools. Combining these observations yields a more comprehensive and nuanced perspective.

Methodology Justification The chosen technique, which combines a Systematic Literature Review (SLR) with Thematic Analysis, is especially well suited for this study because of three reasons:

Feasibility and Practicality Using secondary data guarantees that the study may be finished in a fair amount of time without sacrificing its quality. It would be both time-consuming and resource-intensive to collect extensive primary data through surveys, interviews, or experiments. This   study   achieves depth and breadth while remaining efficient by methodically reviewing current academic and professional literature.

Transparency and Rigor The literature review's methodical approach allows for a transparent and repeatable   method for choosing, filtering, and identifying pertinent research. By employing clear inclusion and exclusion criteria, an SLR mitigates researcher bias in   contrast   to   narrative   reviews.   When combined with thematic analysis, this method guarantees that insights are supported by a clear and evidence-based process rather than being anecdotal. Insights in Their Entirety and Depth By   combining systematic literature   review   (SLR)   and   thematic   analysis, the   study is able to examine a large body of material (breadth)   and   then reduce it to significant patterns and themes (depth). The dual approach is particularly useful in an emerging and multidisciplinary field such as AI in HRM, where research findings are dispersed throughout domains. Thematic analysis helps identify recurring problems such as algorithmic bias, lack of transparency, and ethical concerns, while also highlighting practical mitigation strategies.

Findings

During this study, the following notable findings have been observed ;

- Inherent Bias in AI Hiring Software:Systems for recruitment powered by AI often replicate current societal biases that are present in training data sets.Gender bias (e. g., male-oriented CV training data), racial bias (underrepresentation of minority candidates), and age bias (algorithms favoring younger candidates) are all examples of common forms of bias.These biases can result in biased hiring choices, a less diverse workforce, and potential reputational dangers for businesses.

- Lack of Transparency and Algorithmic Opacity; In HR, many AI systems operate as "black boxes," where the rationale behind choices (candidate ranking, shortlisting, or rejection) is not clear.The lack of transparency makes it harder to hold people accountable when biased or unfair results happen, and it also diminishes trust between recruiters and candidates.

- Ethical and Organizational Repercussions; A company might face legal dangers if it uses AI inappropriately in HRM, such as noncompliance with laws onanti-discrimination and AI legislation, such as the EU AI Act and the NYC AEDT Law.If made public, ethical infractions can harm candidate's trust and employer branding, which can eventually have an impact on talent acquisition and retention.

- Literature-appearing Mitigation Methods:The use of varied and representative training datasets is frequently mentioned as a crucial corrective action.Bias auditing techniques, such as fairness testing and frequent algorithm audits, are being used to identify and lessen prejudice.To strike a balance between efficiency and fairness, ethical AI standards and regulatory frameworks are advised, including transparency reports, explainability features, and human-in-the-loop reviews.

- The Function of HR Professionals: Numerous studies highlight the fact that HR practitioners and managers must actively monitor, analyze, and interpret AI outputs since they cannot depend only on technology.Ultimately, it is up to human decision-makers, not the AI systems themselves, to guarantee fairness, compliance, and inclusiveness.

- Research's Knowledge Gaps: The long-term efficacy of mitigation techniques has not been well-studied empirically.The majority of the present literature is based on vendor reports and case studies, underscoring the necessity for unbiased, longitudinal research that examines the actual effects of AI on diversity, equity, and inclusion results.ss

- A paradox in the application of Artificial Intelligence in Human Resource Management is brought out by the results of this study. AI tools are being used more and more to improve productivity, shorten recruiting time, and aid in data-driven decision-making, but at the same time, they add new levels of complexity and danger. The recurrent forms of prejudice—gender, race, and age—show that AI is not isolated but rather reflects and exacerbates the biases ingrained in society. the information it is trained on. This supports previous claims in the literature that algorithmic decision-making might reinforce historical bias if not carefully planned and supervised.

- Algorithmic opacity is another key problem that was discovered. Many AI-driven HRM systems operate as "black boxes," leaving companies and applicants unsure of the rationale for important results like candidate ranking or rejection. Due to this opacity, there is less faith in the adoption of AI and it is more difficult to adhere to new regulatory frameworks like the EU AI Act and NYC's AEDT legislation. The literature debate highlights the importance of trust and explainability in addition to efficiency while implementing AI in HRM.

Conclusion

The findings of this research demonstrate that, despite AI's revolutionary potential in Human Resource Management, its advantages are inextricably linked to ethical caution and prudent application. The pressing need for firms to proceed cautiously and responsibly with AI adoption is made clear by biases in recruiting algorithms and a lack of transparency. The thematic analysis shows that ethical dilemmas are not isolated technical problems, but rather systemic ones that need governance, varied datasets, and ongoing monitoring.

Additionally, the inquiry highlights that fairness cannot be ensured by technology alone. The accountable use of AI is shaped by human monitoring, ethical principles, and organizational dedication. The results

emphasize to lawmakers the necessity of regulatory structures that mandate explainability and bias audits. They give practitioners practical advice on how to reduce risks while utilizing AI's effectiveness.

In conclusion, this study employs a qualitative, exploratory, and descriptive research approach, depending on secondary material that has been subjected to thematic analysis and a systematic literature review. While thematic analysis adds depth by spotting recurrent patterns and topics, the systematic review guarantees thorough coverage of pertinent papers. By combining these techniques, the study is able to provide a comprehensive knowledge of bias in AI-driven applicant screening as well as evidence-based suggestions for technology developers, HR professionals, and legislators.

This approach is well-suited for presentation at an academic conference since it not only supports the goals of the study but also guarantees that the results are clearly conveyed, practically applicable, and of high academic quality.

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Inclusive growth is not just about GDP growth, but also about how this growth benefits or benefits, especially the poor and vulnerable segments of the population, expanding their opportunities and improving their quality of life, and creating opportunities for growth and development in remote areas, including rural areas.

In this regard, assessing inclusive growth in regions helps to identify areas of focus and the interests of the population in achieving sustainable development and well-being.

Literature review on inclusive growth and its assessment: Despite the research on the theory of "inclusivity" in recent years, there are no clear definitions and conclusions from foreign and domestic scholars in this regard. Today, different approaches to the theory of "inclusivity" can be seen in international experience.

In particular, R. Saman, J. Blanke, M. Drzeniek, and G. Corrigan [2]are based on the idea of "inclusiveness" as the observance of justice in the distribution of material and immaterial goods.

In this context, inclusive growth is understood as economic growth aimed at the equitable distribution of material and intangible resources in order to increase the well-being of society as a whole.

R. Hasmath [3]suggests that inclusive growth and development are aimed at ensuring the formation of a "social economy." By this, he means ensuring economic growth based on an equal and fair distribution of material and non-material goods among the population.

M. Feshari, M. Valibeigi [4]consider inclusive development as a concept close to sustainable development.

In this, inclusive growth is defined as an economic model aimed at creating and developing a balanced socio-economic system, taking into account social equality, environment and natural resources.

In addition to the above, a number of studies have been conducted by foreign scholars on inclusive growth and its assessment.

For example, Pivovarova M.A.[5]in her research studied inclusive growth by dividing it into three main types - organic, atomistic and harmonic. The main focus here is on factors such as macroeconomic stability significantly exceeding regional economic growth (organic), and taking into account the wishes, desires and interests of all participants in the socio-economic life of the region (harmonic).

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[1] Development of a methodology for evaluating the inclusive economic growth of regions

[2]Samans, R., Blanke, J., Drzeniek, M., Corrigan, G. The Inclusive Growth andDevelopment Report 2017. Geneva, Switzerland: World Economic Forum // WorldEconomic Forum. URL: http://www3.weforum.org/docs /WEF_Forum_IncGrwth_2017.pdf(датаобращения 9.02.2021)

[3]Hasmath, R. Inclusive growth, development and welfare policy: A critical assessment.New York: Routledge Taylor & Francis Group, 2015. 293 c. doi:10.4324/9781315732626

[4]Feshari, M., Valibeigi, M. Determinants of inclusive growth in Iranian regions (sureapproach in panel data) // Regional Science Inquiry. 2017. T. 9. no. 1. p. 167-175

[5]Pivovarova M.A., Khokhlova A.M. Inclusive development of the region. Innovative economy: prospects for development and improvement, No. 2 (7), 2015. 215-2020 betlar.

Kireeva N.A.[1]proposed dividing the indicators of inclusive development of the agro-food industry into 4 types: growth and development, level of inclusiveness, food security, and environmental sustainability.

Also, Popodko G.I.[2]In his research, he studied the differences between resource-rich and resource-poor regions and proved that many resource-intensive regions have lower quality of life and lower levels of population. Also, the author suggested indicators such as GDP per capita, employment rate, labor productivity, and life expectancy as indicators of inclusive growth.

The above scholars and international organizations have also developed scientific approaches to assessing inclusive growth.

The UN (UN Sustainable Development Knowledge Platform) proposes a calculation methodology ("Framework of Inclusive Growth Indicators") that includes 35 indicators in 9 groups to assess the inclusiveness of economic growth:[3]

- Income and non-income related situations;
- Growth and expansion of economic opportunities;
- Indicators of infrastructure importance;
- Social equality to ensure equal access to economic opportunities, education, and healthcare services;
- Use of infrastructure and utilities;
- Gender equality and opportunities;
- Social security systems;
- Effective public administration and public institutions .

The International Monetary Fund's methodology for assessing the inclusiveness of economic growth is based on the concept of social mobility and income distribution analysis. It analyzes key macroeconomic indicators over a five-year period, characterizing changes in average income growth rates and inequality levels in countries around the world.[4]

The indicators for assessing inclusive development proposed in the methodology for assessing the inclusiveness of the economies of the Eurasian Economic Union member states include 40 indicators divided into 5 groups:[5]

- Poverty and inequality;

- Economic growth and employment;

- Infrastructure;

- Education;

[1]Kireeva N.A., Prushchak O.V. Inclusive model of development of the agro-food system of Russia: theoretical and methodological basis. Bulletin of SSSU, 2019. No. 5 (79), 45-50 betlar.

[2]Popodko G.I. Inclusive development of a resource region// Regional Economics and Management: Electronic Scientific Journal. ISSN 1999-2645. — No. 1 (65). Article number: 6524. Publication date: 03/29/2021. https :// eee- region .ru/ article /6524/.

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[5] Key Indicators for Asia and the Pacific 2014: Framework of Inclusive Growth Indicators,Special Supplement. – Mandaluyong City, Philippines: Asian Development Bank, 2014. –RL: http://www.adb.org/sites/default/files/publication/42813/ki2014 — specialsupplement.pdf (датаобращения 23.02.2021).

- Life expectancy and health care.

These indicators allow us to assess:

assessing the goals of improving the living standards of the population;

identify areas for improving socio-economic policy to achieve sustainable socio-economic growth;

Assess the level of economic development.

The Asian Development Bank uses 35 indicators divided into 8 groups to assess inclusiveness:[1]

- Poverty and inequality;
- Economic growth and employment;
- Infrastructure capabilities;
- Access to education and healthcare;
- Use of infrastructure and utilities;
- Gender equality and opportunities;
- Social protection systems.

The Organization for Economic Cooperation and Development studies inclusive economic growth through 3 main approaches:[2]

The first approach is a multidimensional approach consisting of 11 indicators, which determines the standard of living (well-being) of the population. In this case, inclusive growth is evaluated relative to the level of development, social status, specific conditions and circumstances.

The second approach is indicators related to an innovative method of multidimensional comparative assessment of the standard of living of the population.

The third approach is to use assessment indicators that include household income and health, which are important.

This methodology measures *quality of life* and *their potential for the future. The analysis of the current state of living standards is determined based on the equitable distribution of income among the population and the timing of achieving results. In this regard, attention 2 categories are emphasised: material living conditions* (income and well-being, employment and wages, living conditions), and *living standards* (health care, educational level and skills, social ties, quality of government, environmental conditions, security, well-being). The future potential of the standard of living is assessed using metrics such as economic, natural, human factors and social investments to achieve sustainable well-being.

The above studies confirm the importance of indicators of inclusive economic growth provided by leading international organizations. Within the framework of the methods proposed by them, it can be seen that the effective functioning of state and public institutions plays an important role in creating conditions for

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[1] Inclusive growth of the Eurasian Economic Union Member States: assessments and opportunities. This report is a joint study by the Eurasian Economic Commission (EEC) and the United Nations Conference on Trade and Development (UNCTAD) published in partnership with Interstate Bank. 2019. Pp 15.

[2] OECD Framework for Inclusive growth. – Paris: OECD, 2014. – URL: http://www.oecd.org/mcm/IG_MCM_ENG.pdf

participation in the production of Gross Domestic Product (GDP) and implementing an optimization policy to eliminate inequality in income distribution.

From the above scientists and research results, we can draw the following conclusions:

The proposed assessment indicators or methodology do not fully cover indicators related to inclusion, especially those related to increasing the employment of women, youth, including the disabled, within local programs, and taking into account the development of remote areas of remote districts and cities;

Although the above indicators are directly related to inclusiveness, the ability to form these indicators across districts and cities of our republic is limited, that is, there are no objective and reliable sources for these indicators or their compilation at the district and city level has not been established.

For example, indicators on boosting income growth through expanding education and healthcare infrastructure, developing digital infrastructure in rural areas, and innovation at the district and urban level are practically non-existent.

At the same time, the above methods and methodologies for assessing the inclusive growth of regions can be adapted to the conditions of Uzbekistan.These methods allow taking into account economic, social and environmental factors in different regions.

The application of these methods and methodologies in Uzbekistan, including the Khorezm region, will help assess regional development and develop effective strategies and programs.

The proposed methodical approach . Based on the study of research in this direction, the methodical approach developed below (Fig. 1) for the assessment of inclusive growth is proposed.

1st stage	*2nd stage*	*3rd stage*	*4th stage*
I. Defining the pointer block and its contents	II. Development of	III. Scoring based on assessment results	IV. Ranking based on assessment results
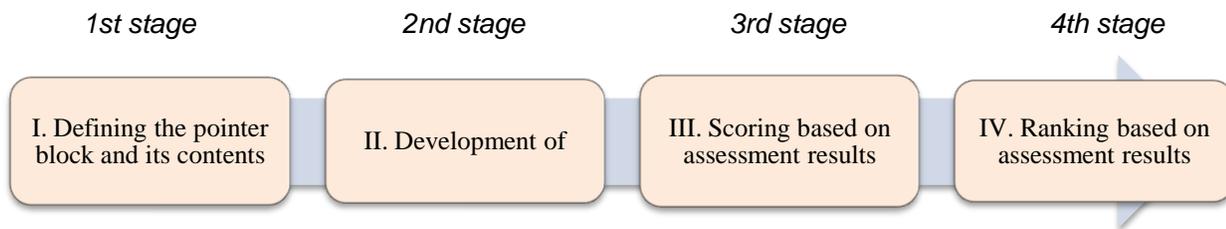
Figure 1. Evaluating inclusive economic growth in districts and citiesalgorithm[1]

We present the ranking of districts and cities of the Khorezm region based on the methodology for assessing inclusive economic growth , that is, we present in detail **the methodology for assessing the inclusive growth of regions, taking into account their indicators .**

This methodology allows us to assess the true impact of growth on all segments of the population in the regions. The advantages of the developed methodology **are explained by the following:**

- Rates**the effectiveness and efficiency** of inclusive economic growth in each district and city ;

- Allows for the identification of impacts on employment and poverty;

- **An effective analytical tool** for political decision-making ;

- International financial institutions and development organizations *(World Bank, OECD, UNDP , etc.)* and consistent with the goals of sustainable development.

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[1]Author's work.

The methodology of evaluating the inclusive growth of regions, taking into account the indicators of economic growth by regions, allows accurate and objective assessment of the development of districts and cities.

The following basic concepts are used in the methodology:

Inclusive growth - achieving economic growth by increasing the income of the population and creating opportunities for the growth of remote areas;

rating indicators - a system of qualitative and quantitative indicators used to assess inclusive economic growth;

Rating - assessment of inclusive economic growth based on rating indicators and determination of the ranking position of districts (cities).

Assessment indicators are calculated by district and city.

Based on statistical and other indicators, indicators in the following 5 areas are proposed for inclusive assessment:

1. Qualitative indicators of economic growth *(13)* ;
2. Indicators related to the inclusiveness of economic growth *(21)* ;
3 . Indicators of the level of development of small and medium-sized businesses *(8)* ;
4. Indicators related to improvments in neighborhoods and population consolidation *(7)* ;
5. Results of a survey among the population *(18)* ;
6. State of the business environment for entrepreneurs and investors *(17)* ;

7. Indicators that serve to expand opportunities for the next generation and ensure sustainable growth *(7)* ;

The rating indicators are calculated as follows:

The indicators of districts and cities are converted into an index *(coefficient) based on the following formula* :

$$x_{index} = \frac{x - \min(x)}{\max(x) - \min(x)}$$

where, x_{index} is the indicator index; x is the indicator value; $\min(x)$ is x the minimum value of the indicator between districts and cities; $\max(x)$ is x the maximum value of the indicator between districts and cities.

Statistical indicators and surveys conducted (Table 1) are calculated by determining the average value of the results obtained based on this methodology, and finally a generalized coefficient is formed by weighting as follows.

T/p	Indicators	Weight
1	Qualitative indicators of economic growth	0.1 0
2	Indicators related to the inclusiveness of economic growth	0.15
3	Indicators of the level of development of small and medium-sized businesses	0.1 0

4	Indicators related to improving conditions in neighborhoods and population consolidation	0.15
5	Information on the results of a population survey	0.15
6	Information on the results of a survey among entrepreneurs	0.15
7	Indicators of expanding opportunities for the next generation	0.2 0

The indicators of each direction are evaluated in the form of a special **index** , the indices of the above 7 directions are collected for each district, and **the overall inclusive growth rating** is determined.

In this case, the following indicators are evaluated based on Table 1. Below, we will consider the inclusiveness of the districts and cities of the Khorezm region based on these indicators.

Table 1 Analysis of inclusive growth in districts (cities) of Khorezm region

T/p	Indicators	Qualitative indicators of economic growth	Indicators related to the inclusiveness of economic growth	Indicators of the level of development of small and medium-sized businesses	Indicators related to improving conditions in neighborhoods and population consolidation	Information on the results of a survey among the population	Information on the results of a survey among entrepreneurs	Indicators of expanding opportunities for the next generation	Final ratingresult	
	Weight	0.100	0.150	0.100	0.150	0.150	0.150	0.200	**1,000**	**place**
1	Urgench city.	0.668	0.736	0.678	0.547	0.981	0.979	0.857	**0.792**	**2**
2	Khiva sh.	0.272	0.440	0.380	0.742	1,000	0.979	0.539	**0.867**	**1**
3	Bogot	0.168	0.353	0.348	0.193	0.214	0.408	0.337	**0.391**	**11**
4	Gurlan	0.179	0.400	0.372	0.438	0.634	0.420	0.302	**0.491**	**7**
5	Koshkopir	0.203	0.368	0.413	0.521	0.347	0.395	0.246	**0.468**	**9**
6	Urgench	0.311	0.456	0.345	0.215	0.477	0.307	0.430	**0.478**	**8**
7	Hazorasp	0.166	0.349	0.467	0.428	0.952	0.380	0.337	**0.561**	**3**
8	Tuproqqala	0.562	0.546	0.244	0.601	0.397	0.326	0.403	**0.531**	**4**
9	Khanka	0.265	0.380	0.464	0.480	0.712	0.361	0.456	**0.521**	**5**
10	Khiva	0.195	0.252	0.342	0.394	0.373	0.147	0.120	**0.377**	**13**
11	Shovot	0.221	0.396	0.475	0.353	0.720	0.202	0.388	**0.513**	**6**
12	Yangiarik	0.250	0.369	0.196	0.378	0.638	0.204	0.201	**0.397**	**10**
13	Yangibazar	0.357	0.410	0.451	0.362	0.430	0.213	0.216	**0.380**	**12**

Table 2 Indicators used to assess the inclusive economic growth of districts (cities).

T/p	Name of indicators	Unit of measurement	Methodology for calculating indicators / source
I. Qualitative indicators of economic growth			
1.	Industry per capita production of products	million soums	Data from the National Statistics Committee
2.	Regional industry per capita	million soums	Data from the National Statistics Committee
3.	Volume of market services per capita	million soums	Data from the National Statistics Committee
4.	volume per capita	US dollars	Data from the National Statistics Committee
5.	Import volume per capita	US dollars	Data from the National Statistics Committee
6.	Foreign investment absorbed per capita	US dollars	Data from the National Statistics Committee
7.	Local budget revenues per capita	million soums	The ratio of local budget revenues to the average permanent population is taken.
8.	Distance of the district center from the regional center	km	Distance based on internet (google.map) data
9.	Population density in the district center	%	Data from the National Statistics Committee
10.	Unemployment rate	%	Data from the National Statistics Committee
11.	Loans allocated under entrepreneurship programs per capita	%	allocated under entrepreneurship programs to the average permanent population is taken.
12.	Effective use of leased land	%	A share of the area planted with high-income crops is taken from the leased land
13.	Economic activity of districts and cities	Conditional unit	are determined on the basis of the coefficient given in the analysis based on night illumination data
II. Indicators related to the inclusiveness of economic growth			
14.	Population income *(survey conducted)*	%	Center for Economic Research and Reform Survey
15.	Average nominal salary	million soums	It is calculated based on the data of the National Statistics Committee
16.	Number of houses launched (annually)	age	It is calculated based on the data of the National Statistics Committee
17.	Preschool education coverage level	person	It is calculated based on the data of the National Statistics Committee
18.	Average number of doctors per 10,000 population	person	It is calculated based on the data of the National Statistics Committee
19.	Level of drinking water supply	%	It is calculated based on the data of the National Statistics Committee
20.	Sewerage provision in the district center	%	It is calculated based on the data of the National Statistics Committee
21.	Level of housing provision	%	Housing stock per capita
22.	The activity of young men who scored high on international exam systems	%	Number of young men with certificates in foreign languages among the population with internationally recognized certificates *(IELTS, TOEFL, CEFR, etc.)*
23.	The activity of young women who have achieved high scores on international exam systems	%	Number of certificates obtained by young women among the population with internationally recognized foreign language certificates *(IELTS, TOEFL, CEFR, etc.)*
24.	Areas with infrastructure for a healthy lifestyle	number	Number of areas with conditions for walking and sports (green areas)
25.	Poverty level	%	It is calculated based on the data of the National Statistics

T/p	Name of indicators	Unit of measurement	Methodology for calculating indicators / source
			Committee
26.	Number of new jobs created,	number	It is calculated based on the data of the National Statistics Committee
27.	Womenemployment rate	%	It is calculated based on the data of the National Statistics Committee
28.	The share of disabled people with guaranteed employment in the non-state sector	%	Calculated based on data from the National Statistics Committee or the Ministry of Employment
29.	Use of alternative energy	%	Alternative energy capacity (per capita, kW)
30.	Families included in the "Unified Register of Social Protection".	%	The share of families included in the "Unified Register of Social Protection" in the total number of families
31.	Natural gas supply	%	Natural gas supply level
32.	Natural gas supply	%	Natural gas supply level
33.	Number of classes with 31 or more students	yes	Level of drinking water supply
34.	The condition of the educational infrastructure of schools	yes	The number of 2nd and higher shift schools in the region
III. Indicators of the level of development of small and medium-sized businesses			
35.	Entrepreneurial activity of the population	number	small business entity per thousand people
36.	Viability of small business entities	number	The share of the number of small business entities operating for 3 years or more in the total number of operating commercial organizations (tax data)
37.	Necessary conditions for starting a new business	number	Number of master plans developed in the district (city)
38.	Opportunities for entrepreneurship	number	Pilot projects implemented in the district (city).
39.	The number of launched micro-projects	%	The total number of launched microprojects relative to the number of neighborhoods
40.	Attractiveness for foreign investments	number	Number of foreign and joint ventures operating in districts (cities)
41.	Effective use of loans within family business programs	%	Overdue family business loans
IV. Indicators related to improving conditions in neighborhoods and population consolidation			
42.	Share of neighborhoods with improved infrastructure through initiative budgeting	%	the share of neighborhoods whose infrastructure has been improved through the initiative budget in the total number of neighborhoods
43.	Changes in the neighborhood budget	%	Growth rate of the neighborhood budget compared to last year
44.	Share of neighborhoods specialized in industry	%	At least 30 percent of households in the mahalla should engage in industrial activities to generate income and provide employment.
45.	Share of neighborhoods specializing in services	%	At least 30 percent of households in the mahalla should be engaged in services to generate income and provide employment
46.	Level of coverage by entrepreneurship programs	%	The amount of loans allocated within the framework of entrepreneurship programs in the neighborhood
47.	Number of slums with improved water supply	number	Number of most severely affected neighborhoods with water outages
48.	Delivered financial packages	number	Number of financial packages delivered to poor families in each neighborhood
V. Indicators that serve to expand opportunities for future generations and ensure sustainable growth			
49.	Stability of local budget revenues	%	Share of allocated transfers in local budget revenues
50.	Sewerage facilities	%	Level of sanitation
51.	Areas with infrastructure for a healthy lifestyle	number	Areas with infrastructure for a healthy lifestyle (cultural and

T/p	Name of indicators	Unit of measurement	Methodology for calculating indicators / source
			recreational parks)
52.	Poverty level	%	Poverty rate (statistics)
53.	Number of young men with high scores on international exam systems	person	Number of young men with high scores on international exam systems
54.	Number of young women with high scores on international exam systems	person	Number of young women with high scores on international exam systems
55.	Sufficient classrooms in schools	number	number of schools with 36 or more students per class

At the same time, there are 18 survey questions to be conducted among the population and 17 to be conducted with entrepreneurs.

Based on the methodology developed on the basis of the above research and the system of indicators presented, a rating was calculated to assess the inclusive growth of the districts (cities) of the Khorezm region.

The rating results were calculated separately for each direction on 7 generalized indicators (Table 2) and were summarized based on the proposed methodology, and the final result was obtained based on weight.

Based on the result, the provision of inclusive growth in the cities of Khiva, Urganch and Hazorasp district is high, while the provision of inclusive growth in Bogot, Yangibozor and Khiva districts is relatively low.

Accordingly, taking into account the results of the indicators determined based on this methodology, it is advisable to determine practical measures to ensure inclusive growth in the Bogat, Yangibazar, and Khiva districts and organize result-oriented work on this basis.

It is proposed to take measures to increase the income of the population and ensure their employment by increasing tourism as the main driving sector, expanding the conditions for small and medium-sized businesses, supporting the export-oriented and high value added industry, deepening the specialization of neighborhoods, developing human capital, increasing the management potential of the regions and expanding their capabilities.It is necessary to effectivelycombine policies place-based and human development based approaches.

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EFFECTIVENESS OF EDUCATIONAL SERVICES AS AN IMPORTANT FACTOR OF HUMAN CAPITAL DEVELOPMENT

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ABSTRACT

The article focuses on the theoretical analysis of the concept of human capital, and qualitative indicators such as mental and physical ability, education, experience and business acumen of a person are recognized as capital.

The development of human capital depends first of all on the state and effectiveness of educational services in the country, the intangible wealth created by educational services is embodied in human abilities, it is possible to include intellectual potential, experience and creative ability of a person among such wealth. It is also stated that the time and money spent on education are investments in human capital, and the knowledge and skills formed as a result of them represent the physical, mental and spiritual qualities and abilities of a person.

It is emphasized that educational services: preschool education, general secondary education, vocational education and higher education serve the formation and development of a person as a person, the expanded reproduction of the labor force, the standard of living of the population, the content and conditions of their work, the living environment, and the effective organization of their free time. The concept of human capital determines the demand for educational services. As a result of efforts to develop human capital in Uzbekistan, the expected duration of education has increased from 12.6 years in 2015 to 14.3 years in 2023.

Keywords: Physical And Mental Abilities Embodied In A Person, Educational System, Interdependence, Factor, Intellectual Potential, State And Effectiveness Of Educational Services, Time And Money Spent On Education, People With Deep Thinking And High Level Of Knowledge, Expected Duration Of Education.

I. INTRODUCTION

A person's ability to work, education, experience, resourcefulness, business acumen, and physical fitness, as well as mental qualities, can be viewed as capital. Human capital is an important measure of the productive capacity inherent in a person.

Historically, the development of the society shows that the society has always been interested in the work of healthy, educated and professionally trained citizens. In this regard, the concept of human capital, on the one hand, defines the demand for its development.

The number of workers available for work in a society is a quantitative measure. Their qualitative aspect consists of the skills, knowledge, and experience of these workers. The wealth that is inseparable from a person is his labor force. This is the ability embodied in his body. This ability, growing, creates new values. Accordingly, it is called human capital. [3]

The processes taking place in the world economy clearly show that the ratio between the factors

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affecting the socio-economic development of the country is changing. Instead of traditional factors, science and education, that is, the intelligence of the nation, are coming to the fore.

According to World Bank experts, the share of physical capital in the national wealth of all countries of the world is on average 16 percent, natural capital is 20 percent, and human capital is 64 percent. Even in some highly developed economies, it reaches 80 percent. Because in developed countries, human capital is considered an important factor in economic development and ensuring economic growth. The transition from raw materials to innovative sources of economic growth is emerging as a primary factor in increasing national wealth, becoming the main resource for creating added value. An important condition for ensuring the accumulation and enrichment of human capital is continuous education, improvement of professional skills and experience throughout a person's life.

II. LITERATURE REVIEW

The following scholars have considered effectiveness of educational services as an important factor of human capital development in their research: Zhumaev Ch. Safarov N. [3], Rajabov U.D. [4], [5], Slezinger G.A. [6], Umarov U. [7], Yuldasheva U. [8].

III. RESEARCH METHODOLOGY

We used methods of logical analysis and synthesis, economic, logical, scientific abstraction, comparative analysis, monographic research, study in dynamics, data grouping, induction and deduction, statistical methods in the research.

IV. ANALYSIS AND RESULTS

In the current modern conditions, the development of human capital is no longer important in a narrow sense - within enterprises and institutions, but is becoming the main content of the entire society. The development of human capital, capable of unlimited possibilities, is proving to be beneficial for the current and future prosperity of enterprises and organizations. Especially in the current economic climate, structural changes effective management of human capital is recognized as an important factor in the survival and success of the enterprise.

It is known that the sustainable development of the economy largely depends on the movement of economic resources and their effective use. However, human resources have their own characteristics and are formed under the influence of several conditions, such as spiritual and legal (Figure 1).

The development of human capital largely depends on the state and effectiveness of educational services in the country. The services provided by the employees of the education sector are considered a social product and are included in the intangible assets. They are reflected in the level of development of the sphere of social services in the country's intangible assets and the level of their use by the population.

Time and money spent on social activities are investments in human capital. The knowledge and skills formed as a result of investments reflect the physical, mental, and spiritual qualities and abilities of a person. [6]

Investments in human capital are based on the interests of the individual, the state, and society as a whole. Investments in human capital are currently among the most effective and quickly payback investments for the economy .
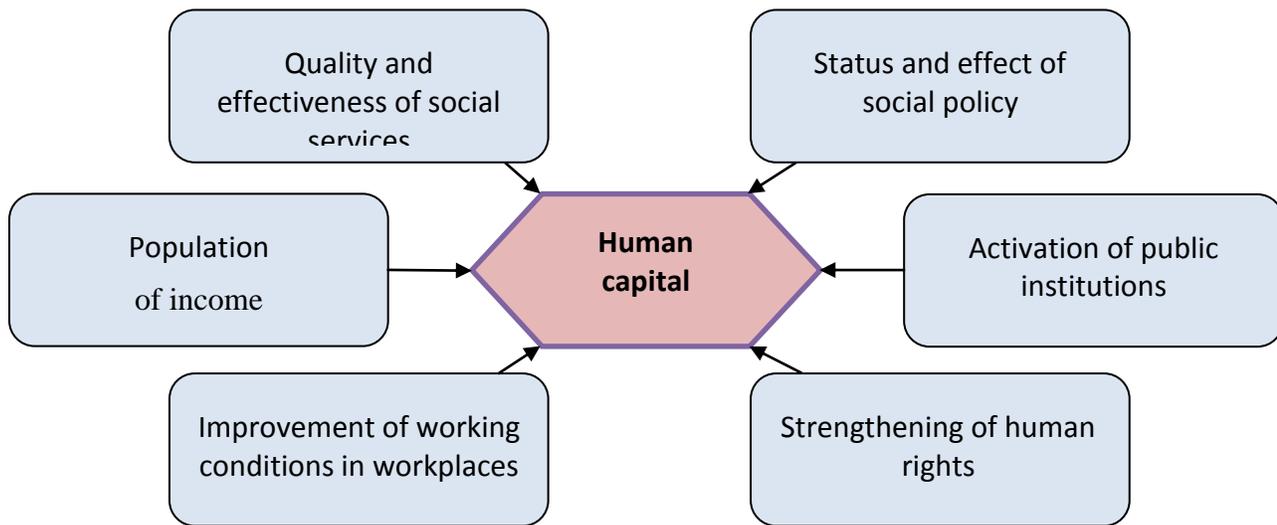
Figure 1. Factors affecting the formation and development of human capital [5]

Many economists and analysts emphasize that in the 21st century, the sustainable development of industry will primarily be led by intellectual potential, physical and mental abilities, as an important resource of production. Currently, in developed countries, 70 to 85 percent of GDP growth is achieved due to the absorption of new knowledge and technologies. [7]

Investment in human capital is considered the most profitable and most reasonable way from a strategic point of view. The state's focus on human capital leads to increased labor productivity and high economic development.

However, if the importance of human capital in a country decreases and the population becomes poorer, that country will lag behind in development.

Involvement of private investments in the field of educational services ensures its stable and effective development.

For example, some economists show that one dollar of investment in the education system is 3.5 times more effective. [8]

The effectiveness of investing in education is also given in the World Bank report, according to a study conducted by international experts, it is stated that 1 dollar of investment in education will bring 3-6 dollars of profit to the country in the future.

Like "ordinary" capital, human capital, while not physically exhausted, can become morally obsolete due to the acceleration of scientific and technological development, the obsolescence of existing knowledge, skills, and qualifications, and the temporary loss of human health. [9]

The Development Strategy of New Uzbekistan for 2022-2026 includes issues related to human capital as a separate section. [1] The President of the Republic of Uzbekistan, Sh.M. Mirziyoyev, set the task of "In developed countries, great importance is attached to investing in the full cycle of education, that is, investing in the upbringing of a child from 3 to 22 years of age, since this investment brings 15-17 times the benefit to society, and in our country this figure is 4 times, so in the future we must increase our attention to

human capital and mobilize all opportunities for this." [2]

In the provision of educational services, the human factor is improved, developed, and expanded reproduction is realized. The human factor is the main factor among production resources, unifying and mobilizing all resources.

Since the 1960 s, developed countries have begun to transition to the post-industrial information age. From this period starting gradually with humanity radical changes in civilization dream These fundamental changes occurred with the discovery of new technologies that could transform the biosocial nature of humans as a result of the increasing importance of knowledge in the economy .

Education has a two-sided description, on the one hand, it satisfies the spiritual and cultural needs of the population, and on the other hand, it is considered to be a field that supplies qualified labor to the labor market. It is through the formation of a qualified labor force and its quality that it allows the economic growth of the country. Innovations in education are created and economic growth is achieved through implementation in production.

The process of providing educational services is simultaneously a process of consumption, in which a large part of society participates. Economic relations in it are not immediately apparent. Limiting economic relations only to the scope of exchange of services does not allow us to fully reveal its content as an economic category. Recently, the state and non-state sectors have been involved in the provision of educational services, representing a separate market. Also, like other types of markets, demand, supply, competition and price are being formed. It is the market mechanism that forms economic relations between the subjects of educational institutions through demand, supply, competition and price.

Taking into account the role and importance of the education sector in the national economy, many positive steps are being taken in Uzbekistan to rapidly develop this sector. These steps are being implemented in accordance with the following conditions:

- That issues of educational development have risen to the level of state policy;
- The establishment of organizational and legal foundations aimed at the development of education;
- Availability of favorable socio-economic conditions for the development of the education sector in the country;
- Growing demand for quality educational services among the population;
- In the republic foreign countries with strong of communication formed.

In Uzbekistan education system to develop and citizens education to take was constitutional rights protection to be done provided in case , the population education and your upbringing all shapes with beneficiary to be big attention is being given.

In particular, the development of the preschool education system has become a priority. The preschool education system is the primary, most important link in continuous education. According to scientific conclusions of experts, 70 percent of all the information and knowledge a person receives throughout his life is received by the age of 5.

Indeed, although the number of preschool educational institutions has been decreasing over the past short period of time with the development of market relations , since the reforms, their number and the number of children educated in them have increased dramatically.

In his address to the Oliy Majlis, the President of the Republic of Uzbekistan, Sh.M. Mirziyoyev, stated: "In Uzbekistan, the coverage of graduates of higher and secondary specialized educational institutions with higher education has been at the level of 9-10 percent in the past. Thanks to the measures taken in the last two years, we have managed to increase this figure to 15 percent.

But it is still not enough. Because if we look at the experience of developed countries in the world, they say that this indicator is 60-70 percent." [2]

As part of reforms aimed at developing human capital in Uzbekistan, the coverage of children aged 3-6 in preschool education increased from 20.8% in 2015 to more than 70% in 2023. The number of higher education institutions increased from 65 to 219. Of these, 31 are branches of prestigious foreign higher education institutions. Due to the effectiveness of consistent reforms in the education system, a competitive environment has emerged between state and non-state institutions. (Table 1).

Table 1 Main indicators of educational institutions in Uzbekistan [10]

Indicators	Years			
	2010	2015	2020	2023
Preschool number of educational institutions (total)	5375.0	5126.0	7753.0	35973.0
Number of students in preschool educational institutions (thousands of people)	522945.0	634052.0	1196421.0	2169500.0
Private preschool number of educational institutions (total)	-	198.0	1670.0	1826.0
Private preschool number of students in educational institutions (total)	-	12716.0	98057.0	151339.0
Number of general education institutions (total)	9806.0	9720.0	10181.0	10943.0
Number of students in general education institutions (total)	4695337.0	4670685.0	6287885.0	6645119.0
Non-state general education institutions (total)	-	26	102	194
Non-state general education institutions (total)	-	8444.0	21042.0	45927.0
Number of vocational education institutions (total)	1539.0	1567.0	818.0	819.0
Number of students in vocational education institutions (total)	1623.1	1498.6	229.9	407.5
Number of higher education institutions (total)	65	69	127	219.0
Number of students in higher education institutions (total)	286222.0	264291.0	571512.0	1314542.0
Number of private higher education institutions (total)	-	-	5.0	90.0
Number of students of non-state higher education institutions (total)	-	-	9.4	343.6
Number of foreign higher education institutions (total)	6	7	18	31

As a result of the development of market relations in Uzbekistan, the emergence of highly scientific industries, and integration into the world economy, attention has been paid to qualitative rather than quantitative indicators in the training of specialists.

Traditionally, the annual naming of the year and the State Program adopted in this regard, in terms of content, essence and significance, are a reliable guarantee of the achievement of high goals by our state, serving as a guideline for raising a well-rounded generation with independent thinking, strong-willed, deeply knowledgeable, and no less capable than anyone else.

As a result, the expected duration of education has increased from 12.6 years in 2015 to 14.3 years in 2023 (Table 2).

Table 2 Expected duration of education (years) [10]

Indicators	2015 year	2016 year	2017 year	2018 year	2019 year	2020 year	2021 year	2022 year	2023 year
Republic of Uzbekistan	12.6	12.6	13.0	13.4	13.3	13.4	14.0	14.5	4.3

V. CONCLUSION/RECOMMENDATIONS

In the context of structural changes in the economy, it is necessary to look at the problems arising in various sectors of the economy not only from an economic point of view, but also from the point of view of social development . The fact that the effective functioning of economic sectors largely depends on people and their potential is being proven in real life. Human potential is inextricably linked to the state of education and the effectiveness of social policy.

In the system of economic relations, each type of labor is devoted to the creation of a specific product or some part of it . In the provision of social services, services are directly aimed at a person, at his well-being. Therefore, in Uzbekistan, the issues of human capital development have now been raised to the level of state policy and systematic measures are being implemented. The essence of the social policy pursued in Uzbekistan is also aimed at the development of human capital.

Human capital development is not a one-time process. It requires time, money, and a government-led structure, and the following measures should be implemented:

- When investing in human capital, it is necessary to base it on criteria such as the characteristics of the regions, the demographic situation of the population, their location, and proximity to large cities;

- It is necessary to increase reading and knowledge choices among young people and adults.

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CORPORATE SOCIAL RESPONSIBILITY IN INDIA: THEORETICAL FOUNDATIONS AND EVOLVING FRAMEWORK

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ABSTRACT

Corporate Social Responsibility (CSR) has evolved from a philanthropic endeavour to a strategic and regulatory mandate, particularly in the Indian context following the enactment of Section 135 of the Companies Act, 2013. This conceptual paper explores the development of CSR in India by examining its theoretical foundations, legislative history, and significant policy amendments that have shaped its modern framework. The study also delves into international voluntary codes and standards such as GRI, OECD Guidelines, SA8000, UN PRI, Equator Principles, ILO Conventions, and ISO 26000, which collectively set benchmarks for responsible business conduct globally. These frameworks highlight the importance of accountability, transparency, and sustainable development, providing a useful reference for aligning India's CSR mandate with global practices. The paper outlines key provisions of CSR applicability, the composition and role of the CSR Committee, and a detailed account of Schedule VII activities. Through a synthesis of national mandates and international guidelines, the paper emphasizes the growing expectation for businesses to contribute meaningfully to societal welfare while maintaining compliance and competitive advantage. It concludes by highlighting the need for region-specific studies to assess CSR implementation effectiveness and refine policies for inclusive development.

***Keyword**s: Corporate Social Responsibility (CSR), Companies Act 2013, CSR Policy, CSR Committee, Schedule VII, International CSR Standards, Sustainable Development, Business Ethics.*

Introduction:

The concept of corporate philanthropy and Corporate Social Responsibility (CSR) is deeply rooted in Indian culture and history. Traditions such as *daan*, *seva*, and *zakaat* have long exemplified the relationship between the privileged and the underprivileged in Indian society. India has historically been recognized as a nation of givers. As early as the time of Kautilya, ethical and principled business practices were emphasized. Various religions in India have promoted giving: Hinduism introduced *dharmada*, a system where sellers charged an additional amount from buyers to be used for charitable purposes; Islam practiced *zakaat*, which mandated a portion of earnings to be given to the poor; and Sikhism advocated for *daashat*, based on equality and service to others (Ayilavarapu, 2020). Historically, much of this philanthropy was directed towards religious institutions.

By the 19th century, corporate philanthropy in India began to take a more structured form through trusts and endowments established by business families (Cantegreil& Chanana, 2013). Following World War I and especially after India's independence, corporate involvement in social development increased. However, persistent societal challenges such as poverty led to public dissatisfaction, prompting a shift in expectations from the private sector. The liberalization ushered in by the New Economic Policy of 1991 transformed the corporate landscape—while fostering economic growth, it also contributed to rising inequalities. This duality

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necessitated a stronger governmental focus on corporate accountability and philanthropic engagement (Sheth & Sridharan, 2022).

While CSR as a concept is not new to India, its evolution from voluntary charity to a statutory obligation marks a significant shift. India's rapidly growing economy and expanding corporate presence presented both opportunities and societal challenges. In response, the Companies Act of 2013 introduced a formal CSR policy, mandating that eligible companies contribute to societal development. This legal shift redefined CSR—not merely as philanthropy but as a core corporate responsibility. The underlying principle is that corporations, like governments, share accountability for societal well-being, as they operate within society, depend on its resources, and influence its ecosystems (Gupta, 2014).

Today, CSR in India is seen as a strategic tool that contributes to sustainable development, addressing the social, economic, and environmental dimensions of growth (Laxmi, 2022). The activities outlined under India's CSR mandate closely align with the Sustainable Development Goals (SDGs), reinforcing the idea that corporate responsibility can drive inclusive progress. In the present context, CSR is a subject of growing interest among government bodies, corporate leaders, and civil society alike. However, as Deo (2015) notes, "there remains a gap between our intentions and our actions in community engagement," highlighting the urgent need for impact-oriented, measurable CSR initiatives that truly uplift communities and foster long-term societal transformation.

Review of Literature

Corporate Social Responsibility (CSR) has evolved as a multidimensional concept involving economic, legal, ethical, and philanthropic commitments by businesses. **Carroll's Pyramid of CSR** provides a foundational theoretical model, suggesting that businesses must first be profitable, then obey the law, act ethically, and contribute voluntarily to society (Carroll, 1991). **Elkington's Triple Bottom Line** adds another layer by promoting sustainability through the integration of social, environmental, and financial performance (Elkington, 1997). Likewise, **Stakeholder Theory** emphasizes the need for corporations to address the interests of all stakeholders—not just shareholders—for long-term value creation (Freeman, 1984).

In the Indian context, CSR was largely voluntary and driven by business ethics and philanthropy until the enactment of the **Companies Act, 2013**, which introduced **Section 135**, making CSR spending mandatory for certain companies. This legislative move positioned India as the first country in the world to legally mandate CSR. According to the policy, companies meeting specified thresholds of net worth, turnover, or profit are required to spend at least 2% of their average net profits of the preceding three years on CSR activities (Ministry of Corporate Affairs, 2013). The **CSR Rules, 2014** outlined the operational framework, while further amendments in 2019 and 2020 made CSR obligations more stringent, introducing penalties for non-compliance, mandatory transfer of unspent funds, impact assessment, and compulsory registration of implementing agencies (Gupta & Sharma, 2021).

The evolution of CSR policy in India has been extensively studied. Singh and Agarwal (2016) observed that while legal enforcement has increased CSR accountability, gaps still exist in monitoring, impact measurement, and strategic alignment. Bansal and Kaur (2020) highlighted the need for Indian CSR policy to better align with global standards to ensure consistency and international credibility.

On the global front, **international voluntary standards** continue to shape corporate behavior. The **Global Reporting Initiative (GRI)** provides a comprehensive sustainability reporting framework (GRI, 2021), while the **OECD Guidelines for Multinational Enterprises** promote responsible business conduct across sectors (OECD, 2011). **SA8000**, developed by Social Accountability International, focuses on labor

conditions and human rights. The **UN Principles for Responsible Investment (UN PRI)** and **Equator Principles** offer ESG frameworks for investors and financial institutions respectively. **ISO 26000** provides guidelines for social responsibility, and the **International Labour Organization (ILO)** sets universal labor standards.These global frameworks serve as benchmarks that influence national CSR policies and practices.

There is growing academic interest in harmonizing India's mandatory CSR regime with these international voluntary norms to promote transparency, ethical conduct, and sustainable development (Kumar, 2022). Such integration can strengthen India's CSR landscape both domestically and in the global arena.

Objectives of the Study

1. To examine the theoretical models of Corporate Social Responsibility (CSR).

2. To explore the historical development of CSR legislation in India.

3. To analyse the key amendments and recent developments in India's CSR regulations.

4. To study prominent international voluntary codes and standards of CSR.

Research Methodology

This research adopts a conceptual and qualitative design, primarily based on the review of secondary data sources such as scholarly literature, government publications, legal provisions, and international CSR frameworks. The study uses a descriptive approach to explain the evolution of CSR models and the historical development of CSR legislation in India. It further applies an analytical lens to examine recent amendments to CSR rules in India and evaluate their practical implications. Key references include Section 135 of the Companies Act, 2013, MCA notifications, and international standards such as GRI, SA8000, UN PRI, OECD Guidelines, ISO 26000, and ILO Conventions. Conceptual CSR models like Carroll's Pyramid, Stakeholder Theory, and the Triple Bottom Line are also reviewed. This methodology enables a comprehensive understanding of CSR as a multidimensional concept and supports the development of theoretical insights and policy-level recommendations.

Models of CSR

1. Carroll's CSR Pyramid

One of the most enduring and widely accepted models of CSR, Carroll's Pyramid, was introduced by Archie B. Carroll in 1991. It provides a structured framework that outlines how and why corporations should fulfill their social responsibilities. According to Carroll, CSR encompasses four types of responsibilities that are arranged in a hierarchical pyramid: Economic, Legal, Ethical, and Philanthropic responsibilities.

(Source: Compiled by the author)

a. Economic Responsibility

This forms the foundation of the pyramid. The primary responsibility of a business is to be profitable—without financial success, a company cannot sustain itself or contribute to society. Profitability ensures that businesses can reward shareholders, pay employees, satisfy customers, and reinvest in operations. Hence, economic responsibility is essential for enabling other forms of social responsibility.

b. Legal Responsibility

Once economically stable, businesses must comply with the laws and regulations governing their operations. Legal responsibilities ensure that companies function within the legal framework of the country, from taxation to labor laws, safety standards, and environmental norms.

c. Ethical Responsibility

Ethical responsibilities go beyond legal compliance, focusing on moral principles and societal expectations. This level encourages companies to operate fairly, avoid harm to stakeholders, and uphold integrity in all dealings—even where the law may not mandate specific actions.

d. Philanthropic Responsibility

At the top of the pyramid lies philanthropic responsibility, which reflects the voluntary desire of companies to contribute to the betterment of society. This includes charitable donations, community service, education support, and healthcare initiatives. However, Carroll emphasized that businesses should only engage in philanthropy after meeting their economic, legal, and ethical obligations.

2. Ackerman's Model of CSR

Proposed prior to the formalization of CSR priorities, the Ackerman Model emphasizes the proactive internal planning required for addressing social issues. Rather than viewing CSR as a reactive duty, this model presents it as a strategic process, comprising four sequential stages:
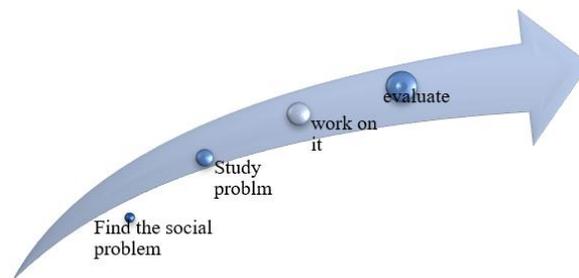
(Source: Compiled by the author)

1. Issue Identification: Company leaders are responsible for identifying relevant social issues impacted by or related to the business.

2. Problem Analysis: Conduct a thorough assessment and understanding of the identified problem, including its societal implications.

3. Action Implementation: Design and execute CSR programs aimed at resolving the issue.

4. Impact Evaluation: Assess the effectiveness of CSR initiatives by measuring outcomes and identifying areas for improvement.

Ackerman's model encourages a structured, problem-solving approach to CSR, urging businesses to integrate social responsibility into their internal management processes.

3. Friedman's Shareholder Theory

In contrast to stakeholder-centric models, Milton Friedman, an eminent economist, argued in a 1970 *New York Times* article that "The social responsibility of business is to increase its profits." According to Friedman, a corporation's sole responsibility is to generate wealth for its shareholders, and any attempt to address social issues should be the role of governments or nonprofits.

Friedman's view later evolved into the Shareholder Theory, which suggests that businesses contribute to society indirectly—through job creation, tax payments, and consumer welfare—by focusing on profit maximization. While this model has faced criticism for overlooking ethical and environmental concerns, it remains influential in discussions around economic liberalism and market-driven responsibility.

4. Corporate Citizenship Model

The Corporate Citizenship Model views companies as integral members of society, with responsibilities that go beyond compliance and profitability. It promotes a holistic perspective where businesses actively engage with social, environmental, and economic systems to enhance the well-being of the communities in which they operate.

To be considered good corporate citizens, firms must demonstrate:

- Consistently satisfactory and sustainable economic performance
- Ethical behavior across all business practices
- Long-term engagement in community development
- Balanced attention to both shareholder interests and societal needs

Corporate citizenship is not an overnight achievement; it requires continuous improvement, relationship building, and value alignment with broader societal goals. The ultimate aim is to raise the standard of living and quality of life, while still ensuring business viability.

5. Business Ethics Theory of CSR

The Business Ethics Theory of CSR emphasizes that corporate responsibility should be grounded in moral values rather than just profit or compliance. This theory promotes the idea that CSR must extend beyond charity or regulatory obligations and instead reflect an ethical commitment to the well-being of society.

(Source: Compiled by the author)

The model integrates three dimensions of ethical engagement:

- Acceptance of social change and adaptation to emerging societal needs
- Commitment to intrinsic values, such as fairness, justice, and honesty
- Respect for universal human rights and equitable treatment of all stakeholders

This theory urges corporations to internalize ethical behavior as a core business philosophy, ensuring that profit-making activities are aligned with social justice, sustainability, and long-term community welfare.

Legal Framework of CSR Policy

The enactment of the Companies Act, 2013 marked a significant milestone in the Indian corporate governance landscape. Replacing the Companies Act of 1956, the new legislation introduced several progressive reforms—most notably, the mandatory implementation of Corporate Social Responsibility (CSR). This policy positioned India as the first country in the world to legally mandate CSR contributions for eligible companies.

Built on the principle of reciprocity, CSR in India follows the philosophy of "give and take"—suggesting that corporations profiting from the country's natural and societal resources must, in return, contribute to the development and well-being of that society. With the implementation of Section 135 of the Companies Act, which came into effect on 1st April 2014, CSR became a statutory obligation for qualifying businesses.

Under Section 135 of the Companies Act, 2013, and the Corporate Social Responsibility Rules, 2014, the Ministry of Corporate Affairs (MCA) laid out a comprehensive CSR framework. It includes Schedule VII, which specifies the list of permissible CSR activities, along with procedures for planning, implementing, and reporting CSR initiatives.

According to the United Nations Industrial Development Organization (UNIDO), CSR is a mechanism through which businesses integrate economic, environmental, and social objectives—commonly referred to as the Triple Bottom Line approach—while addressing stakeholder expectations and ensuring sustainable development.

Historical Perspective on CSR Legislation in India

India's transition from voluntary philanthropy to mandated CSR compliance was a result of a gradual evolution in governance and corporate responsibility, as outlined below:

Time Period	Economic Context	Corporate CSR Approach
1850–1914	Industrialization	Dynastic charity by business families
1914–1947	Trade barriers, nationalist movements	Support for freedom struggle, community welfare
1947–1960	Post-independence socialism and protectionism	Establishment of trusts, rural development initiatives
1960–1990	Rigid state regulation	Corporate and family-run trusts to fulfill social responsibilities
1991–2013	Economic liberalization (LPG reforms)	NGO partnerships and social investments
2013–Present	Globalization and legal compliance	Mandated CSR under Companies Act, 2013

(Source: Compiled by the author)

This legislative journey included key milestones such as:

- 2009: Introduction of Voluntary CSR Guidelines by the Ministry of Corporate Affairs.

- 2011: Adoption of United Nations Guiding Principles on Business and Human Rights; integration of National Voluntary Guidelines (NVGs).

- 2012: SEBI made it mandatory for the top 100 listed companies to file Business Responsibility Reports (BRRs).

- 2013: Enactment of the Companies Act, 2013.

- 2014: Formal introduction of CSR provisions under Section 135.

- 2015 onward: Constitution of High-Level Committees to review CSR implementation.

- 2019: Introduction of the Companies (Amendment) Bill, 2019, with further refinements to CSR provisions.

Applicability and Framework of CSR in India

Under Section 135 of the Companies Act, 2013, CSR provisions apply to companies meeting any of the following criteria in a financial year:

- Net worth Rs. 500 crore, or

- Turnover Rs. 1,000 crore, or

- Net profit Rs. 5 crore

Eligible companies must:

- Constitute a CSR Committee,

- Formulate a CSR Policy, and

- Spend at least 2% of their average net profits (of the past three years) on CSR activities listed in Schedule VII.

CSR Activities under Schedule VII

CSR activities aim to address critical social, economic, and environmental challenges. They include:

- Eradicating hunger, poverty, and malnutrition

- Promoting education, gender equality, and women empowerment

- Environmental sustainability and heritage preservation

- Support for armed forces, rural development, disaster management

- Technology incubators, healthcare, sports, and relief funds

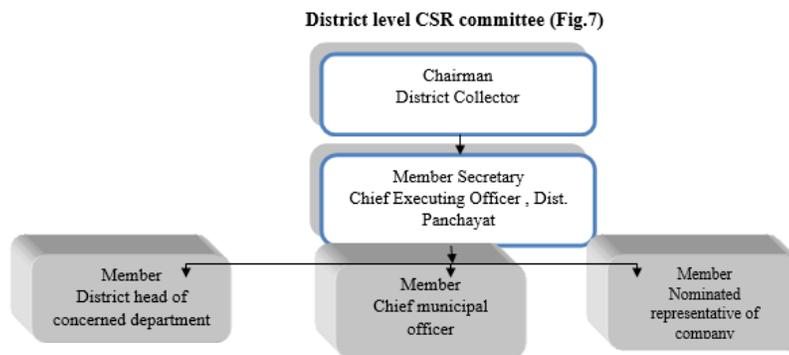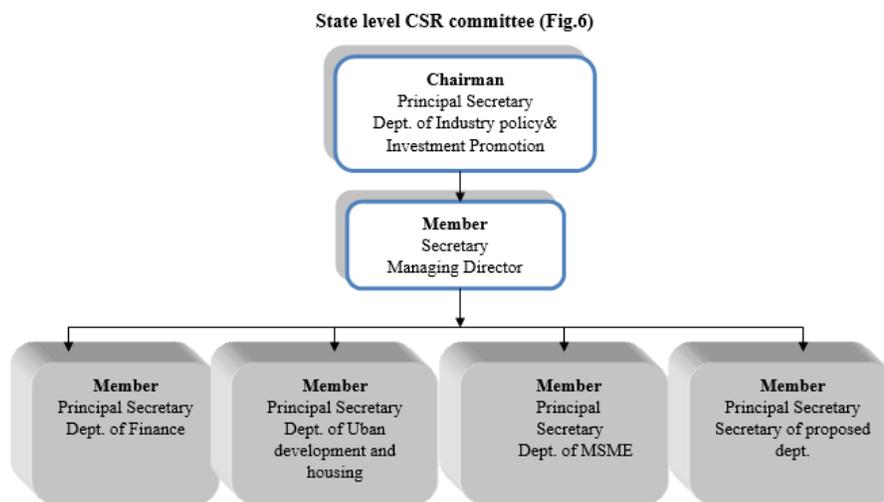**CSR Committee: Composition and Role**

- Public Companies: 3 directors (including 1 independent)

- Private Companies: 2 directors

- Foreign Companies: 2 persons (1 resident of India)

Key Responsibilities:

- Formulate and recommend CSR policy to the Board

- Suggest activities and allocate budgets

- Monitor, evaluate, and report CSR project outcomes

The CSR Committee ensures that corporate social investments are strategic, compliant, and aligned with the company's values and community needs..

State level CSR committee (Fig.6)

Chairman
Principal Secretary
Dept. of Industry policy&
Investment Promotion

Member
Secretary
Managing Director

Member
Principal Secretary
Dept. of Finance

Member
Principal Secretary
Dept. of Uban
development and
housing

Member
Principal
Secretary
Dept. of MSME

Member
Principal Secretary
Secretary of proposed
dept.

District level CSR committee (Fig.7)

Chairman
District Collector

Member Secretary
Chief Executing Officer , Dist.
Panchayat

Member
District head of
concerned department

Member
Chief municipal
officer

Member
Nominated
representative of
company

(Source: Compiled by the author)

CSR Amendments in India: Key Highlights

The Companies (Amendment) Act, 2019, and subsequent notifications by the Ministry ofCorporate Affairs (MCA) have introduced significant revisions to the CSR provisions under Section 135 of the

Companies Act, 2013. These amendments aim to enhance accountability, ensure timely utilization of CSR funds, and provide clarity on obligations, especially for newly incorporated companies.

Unspent CSR Amount:

If a company fails to spend the mandated CSR amount in a given financial year, it must transfer the unspent funds to a separate bank account titled "Unspent CSR Account" within 30 days from the end of the financial year. These funds must be utilized for eligible CSR activities within three financial years. If the company is still unable to use the funds within this period, the remaining amount must be transferred to a fund specified under Schedule VII, such as the Prime Minister's National Relief Fund, within 30 days after the end of the third financial year.

Penal Provisions for Non-Compliance:

The 2019 amendment introduced strict penal provisions for companies and their officers in case of CSR non-compliance. Companies failing to meet CSR obligations can face penalties ranging from □50,000 to □25,00,000. In addition, the officers responsible for the default may be penalized with a fine, imprisonment for up to three years, or both, depending on the seriousness of the violation.

CSR Provisions for New Companies:

For companies that have not completed three financial years since incorporation, CSR obligations are not calculated on the basis of average profits over the past three years. Instead, such companies are required to spend 2% of the net profits earned in the immediately preceding financial year on CSR activities. This amendment ensures that new and fast-growing companies start integrating CSR practices early in their business models.

Registration of Implementing Agencies:

To enhance transparency and accountability, it has been made mandatory for NGOs and other implementing partners to register with the Ministry of Corporate Affairs (MCA). These agencies must obtain a unique CSR Registration Number, which enables better monitoring and ensures that only qualified entities are entrusted with CSR project implementation.

Impact Assessment Requirement:

Companies that have had CSR obligations of □10 crore or more in any of the three immediately preceding financial years are required to conduct impact assessments of their CSR projects. This step ensures that large-scale CSR spending translates into measurable and meaningful outcomes, allowing stakeholders to evaluate the effectiveness of CSR initiatives.

Surplus Management:

If any surplus arises from the implementation of CSR activities, it must be reinvested into CSR projects. Companies are not allowed to include such surpluses in their own profits, thus maintaining the integrity of CSR efforts and ensuring that the benefits remain within the scope of social development.

Set-off of Excess CSR Spending:

In case a company spends more than the required CSR amount in a financial year, the excess expenditure can be carried forward and adjusted against the CSR obligation of the succeeding financial

years. This provision is valid for up to three financial years, providing flexibility while also encouraging generous CSR contributions.

Objective of the Amendments:

These CSR amendments and regulatory changes reflect the government's clear intention to move CSR beyond voluntary philanthropy. The aim is to embed CSR into the corporate governance framework, making it a disciplined, transparent, and impact-driven obligation that contributes to sustainable societal development.

International voluntary codes and standards

Several international voluntary codes and standards have been developed to guide organizations in adopting socially responsible practices, ensuring accountability, transparency, and sustainability in their operations. The Global Reporting Initiative (GRI) is one of the most widely adopted frameworks for sustainability reporting, offering comprehensive guidelines that help businesses assess their environmental, social, and economic impacts, with dedicated indicators for areas such as human rights (GRI, 2021). The Organisation for Economic Co-operation and Development (OECD) provides non-binding guidelines for multinational enterprises, promoting principles related to human rights, environmental stewardship, taxation, consumer protection, and technological standards to foster sustainable economic development (OECD, 2011). Social Accountability 8000 (SA8000), developed by Social Accountability International, is a globally recognized certification standard based on international human rights norms and labor laws, covering aspects like child and forced labor, health and safety, freedom of association, and fair compensation (Social Accountability International, 2014). The United Nations Principles for Responsible Investment (UN PRI) is another key initiative encouraging institutional investors to integrate environmental, social, and governance (ESG) factors into their investment strategies, promoting a responsible and sustainable global financial system (UN PRI, 2023). The Equator Principles (EP), adopted by leading financial institutions, serve as a risk management framework to assess and manage environmental and social risks in large-scale industrial and infrastructure projects, aligning with IFC Performance Standards to ensure responsible financing (Equator Principles Association, 2020). The International Labour Organization (ILO), a specialized UN agency, sets international labor standards and promotes fundamental rights at work, providing guidelines on fair wages, safe working conditions, and freedom of association (ILO, 2019). Finally, ISO 26000, published by the International Organization for Standardization, offers a voluntary guidance framework for businesses to act ethically and responsibly, emphasizing areas like human rights, stakeholder engagement, labor practices, environmental responsibility, and fair operating procedures, although it is not a certifiable standard (ISO, 2010). These global frameworks together create a robust foundation for responsible business conduct and serve as complementary references to India's statutory CSR framework under the Companies Act, 2013.

Conclusion:

The corporate sector today is increasingly recognized for its responsibility toward societal and environmental development, beyond mere financial performance. The formalization of Corporate Social Responsibility (CSR) under Section 135 of the Companies Act, 2013 marked a major shift—turning voluntary philanthropy into a mandatory and strategic obligation. CSR is now a core component of corporate governance, requiring structured attention to social, environmental, and ethical concerns.

Grounded in theories like Carroll's Pyramid, the Triple Bottom Line, and Stakeholder Theory, CSR emphasizes the integration of business goals with social equity and sustainability. The Indian policy framework, supported by recent amendments—such as penal provisions, mandatory fund transfers, and impact assessments—has enhanced the enforceability and accountability of CSR practices.

Globally, voluntary standards like GRI, ISO 26000, SA8000, and OECD Guidelines offer best practices for ethical and transparent CSR, encouraging Indian companies to align with international norms. While this alignment brings challenges, it is vital for global credibility and long-term value creation.

This paper has provided a comprehensive overview of CSR's conceptual and legal evolution, offering a foundation for examining its local implementation in regions like Madhya Pradesh, and contributing to policy refinement and effective corporate engagement with development goals.

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