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Operationalising Multidisciplinary Research Methodologies in Higher Education Economics Curricula: A Critical Policy Analysis and Pedagogical Framework under NEP 2020

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Abstract

The National Education Policy (NEP) 2020 mandates a structural departure from mono-disciplinary silos in Indian higher education, prioritising multidisciplinary inquiry, critical reasoning, and early research exposure. Undergraduate and postgraduate economics programs have historically prioritised deductive mathematical models while underemphasising empirical, contextual, and field-based inquiries. This paper undertakes an evidence-based critical analysis of integrating multidisciplinary research methodologies into tertiary economics pedagogy.

Drawing upon official regulatory texts from the University Grants Commission (UGC), longitudinal macro-level educational data from the All India Survey on Higher Education (AISHE 2021–22), national labour statistics from the Periodic Labour Force Survey (PLFS), and published institutional evaluation metrics, this study evaluates the structural feasibility and academic impacts of multidisciplinary research integration. The paper establishes that bridging core economic principles with geospatial tools, public health analytics, environmental assessment frameworks, and mixed-method field protocols directly mitigates the documented gap between abstract economic theory and practical policy literacy. Finally, the analysis details institutional impediments—specifically infrastructural deficits across rural-affiliated colleges and the critical shortage of research-oriented faculty development—and proposes an operational, semester-tiered pedagogical blueprint for university departments.

Keywords: *National Education Policy 2020, Multidisciplinary Pedagogy, Economics Curriculum, Research Methodology, Higher Education, Empirical Policy Analysis.*

Introduction

Tertiary education in India has long been characterised by institutional and intellectual insularity. Under the conventional three-year undergraduate degree architecture, academic disciplines operated inside rigid administrative compartments, preventing meaningful intellectual exchange between the social sciences, natural sciences, and computational fields. Within this rigid environment, economics held an ambiguous position: formally categorised as a social science, yet increasingly reliant on axiomatic mathematical proofs, deductive calculus, and idealised market equilibrium models. While formal mathematical rigour is essential for theoretical consistency, its dominance in tertiary classrooms has frequently divorced student learning from the empirical, localised, and socio-economic realities of developing economies.

The National Education Policy (NEP) 2020 was formulated specifically to address these systemic deficits. By advocating the four-year undergraduate programme (FYUP) with multi-entry and multi-exit options, institutionalising academic credit banks, and mandating undergraduate research dissertations, the policy establishes a regulatory imperative for multidisciplinary integration. Contemporary economic challenges—ranging from persistent rural underemployment and agrarian volatility to climate-induced ecological displacement and informal credit markets—are inherently multi-faceted. Understanding these issues requires an analytical synthesis that combines standard econometric models with qualitative sociology, spatial geography, public health indices, and environmental accounting..

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This study examines how higher education economics curricula can practically operationalise these multidisciplinary research methodologies under the NEP 2020 framework.

Review of Literature and Conceptual Foundations

The pedagogical limitations of mainstream economic education have generated extensive scholarly critique both globally and within India. Sen (1999) argued that economic analysis loses its foundational ethical and human purpose when stripped of institutional context, social justice considerations, and political philosophy. Similarly, Stiglitz (2002) and Colander and McGoldrick (2009) emphasised that the conventional didactic model of teaching economics prioritises formal mechanics over empirical observation, producing graduates proficient in textbook calculus but unable to parse raw economic datasets or formulate policy responses to structural market failures.

In the Indian context, scholarly reviews of NEP 2020 (Tilak, 2021) note that while the policy framework sets ambitious targets—such as raising the Gross Enrolment Ratio (GER) in higher education to 50% by 2035—the quality of educational outcomes depends fundamentally on curriculum modernisation and research orientation. The University Grants Commission's *Curricular Framework and Credit System for Four-Year Undergraduate Programmes* (2022) formalised this by dedicating explicit credit allocations to Value-Added Courses (VAC), Skill Enhancement Courses (SEC), Multidisciplinary Courses (MDC), and a mandatory research project/dissertation in the fourth year (worth 12 credits). Recent applied pedagogical research shows that students exposed early to mixed-methods research tools exhibit higher analytical retention, superior critical thinking, and a better grasp of structural socio-economic realities than those taught through traditional chalk-and-talk lectures.

Objectives of the Study

1. To examine the policy provisions and curricular mandates of NEP 2020 and UGC guidelines regarding multidisciplinary research integration in social sciences, with specific reference to economics.
2. To provide an evidence-based assessment of higher education infrastructure and enrollment metrics in India, using national secondary datasets to evaluate institutional readiness for research-based curricula.
3. To delineate key multidisciplinary intersections—spanning computational analytics, ecological sciences, public health, and sociological methods—that must be embedded within undergraduate economics curricula.
4. To identify operational, financial, and pedagogical constraints faced by higher education institutions, particularly affiliated rural colleges, in institutionalising multidisciplinary research programs.
5. To construct an operational, semester-wise pedagogical model for academic institutions transitioning to the NEP 2020 research framework.

Data Sources and Methodological Framework

This study utilises a qualitative and secondary quantitative policy-research design. The analytical framework relies entirely on authentic, publicly available administrative and institutional datasets, avoiding simulated or localised trial data.
The quantitative and policy evidence is drawn from the following primary sources:

- All India Survey on Higher Education (AISHE 2021–22, Ministry of Education): Analysed for student enrollment trends in social sciences versus STEM, faculty-student ratios, distribution of undergraduate versus postgraduate research programs, and spatial distribution of colleges (rural versus urban).
- Periodic Labour Force Survey (PLFS) Annual Reports (2021–22 and 2022–23, Ministry of Statistics and Programme Implementation): Utilised to assess youth and graduate unemployment dynamics, highlighting the mismatch between traditional theoretical degree holders and the industry demand for empirical data-analytic skills.
- Curricular Framework and Credit System for Four-Year Undergraduate Programme (UGC, December 2022): Used to map out credit architecture, research internship requirements, and multidisciplinary subject distributions.
- National Institutional Ranking Framework (NIRF) Evaluation Parameters: Examined specifically for "Research and Professional Practice" (RPC) metrics across state-affiliated versus centrally funded higher education institutions.

The qualitative dimension applies systematic content analysis and comparative curricular mapping to evaluate how economics syllabi can be structured to satisfy both UGC compliance and empirical rigour.

Structural Realities and Institutional Preparedness: Evidence from Secondary Datasets

To evaluate the operational context of NEP 2020, it is critical to examine the structural realities of Indian tertiary education using authentic national metrics:

AISHE 2021–22 Structural Indicators

According to the All India Survey on Higher Education (AISHE 2021–22):

- Total student enrollment in higher education stood at approximately 4.33 crore (43.3

million), reflecting continuous quantitative expansion.

- The Bachelor of Arts (B.A.) program remains the largest undergraduate degree track in India, enrolling over 1.13 crore students (roughly 34% of all undergraduate enrollments). Economics represents one of the most widely subscribed subject choices within the B.A. stream.
- About 61.4% of colleges in India are in rural areas, and 78.9% are privately managed (aided or unaided). Affiliated colleges account for the overwhelming majority of undergraduate education, yet fewer than 5% offer dedicated, active research facilities or post-doctoral environments.
- PhD enrollment nationwide stood at 2.12 lakh students, representing less than 0.5% of total higher education enrollment. This confirms that structured research exposure has historically been deferred entirely to post-master's study, leaving undergraduate education purely pedagogical and exam-driven.

PLFS Graduate Employability and Skills Gap

Data from the Periodic Labour Force Survey (PLFS) shows that while general literacy and educational attainment have expanded, the unemployment rate among formally educated youth holding graduate degrees remains elevated (fluctuating between 13% and 15% across recent survey rounds). Industrial surveys and economic think-tank assessments consistently identify an "employability deficit" among social science graduates. While employers demand competencies in data cleaning, applied statistical analysis, survey administration, and evidence-based policy drafting, conventional economics curricula continue to graduate students whose preparation is limited to reciting classical economic doctrines, with little exposure to modern statistical software or primary survey tools.

NIRF Research Performance Disparities

An examination of NIRF metrics indicates a steep divide in "Research and Professional Practice" (RPC) scores. Central universities and specialised institutes of national importance systematically capture the highest research percentiles. In contrast, non-autonomous state-affiliated colleges—which educate over 80% of economics undergraduates—often score below 10 out of 100 on research indicators because they receive no formal budget allocations for student research, library database subscriptions, or computational lab infrastructure.

Curricular Integration: Core Multidisciplinary Intersections in Economics Pedagogy

Bridging economic theory with allied disciplines under the NEP 2020 framework requires intentional syllabus design. Economics must integrate the following applied disciplines into its core methodological coursework:

Quantitative Econometrics and Computational Science

Economics can no longer be taught without direct exposure to computational tools. Under the NEP 2020 skill enhancement provisions, economics departments must embed open-source statistical platforms (R, Python, Gretl) alongside traditional mathematical economics. Students should be trained to query public micro-data repositories, such as:

- *Periodic Labour Force Survey (PLFS)* for informal and formal wage and employment patterns;
- *National Family Health Survey (NFHS-5)* for multidimensional poverty, maternal nutrition, and health equity;
- *All India Debt and Investment Survey (AIDIS)* for rural asset ownership, debt-to-income distributions, and institutional credit access. Moving away from hypothetical classroom textbook numbers to actual large-scale national datasets equips students with the empirical capabilities needed for applied social research.

Environmental Sciences, Climate Economics, and Resource Accounting

Neoclassical models typically treat environmental impacts as peripheral externalities. Under a multidisciplinary structure, economics students must be grounded in environmental science methodologies, including carbon accounting, life cycle assessment (LCA), watershed management evaluation, and natural resource budgeting. For agricultural economics in states like Maharashtra, understanding groundwater depletion, drought vulnerability indices, and crop diversification requires an equal grounding in hydrological data and microeconomic production theory.

Sociology and Primary Field Research Methodologies

Macro-level econometric models often miss localised social hierarchies that mediate market access. By borrowing qualitative research techniques from sociology and anthropology—such as Participatory Rural Appraisal (PRA), structured ethnography, key informant interviews, and focus group discussions (FGDs)—economics students learn to recognise how caste, gender, tribal identity, and regional power structures dictate economic behaviour, credit terms, and labour mobility.

Law, Institutional Economics, and Policy Governance

Economic transactions depend on legal institutions and property rights frameworks. Integrating legal studies allows economics students to analyse how land acquisition statutes, intellectual property provisions, the Insolvency and Bankruptcy Code (IBC), and labour law reforms

directly alter enterprise investment decisions and employment contracts.

Institutional Bottlenecks in Implementation

Despite the policy strengths of NEP 2020, institutionalising genuine research at the undergraduate level faces structural obstacles:

- Faculty Specialisation and Pedagogical Inertia: The existing professoriate in affiliated colleges was trained primarily through mono-disciplinary lecture delivery. Many college faculty members have had limited formal exposure to modern econometric software, spatial data tools, or mixed-methods project design, leaving them hesitant to guide multidisciplinary student dissertations.
- Severe Financial and Infrastructural Constraints: Conducting empirical research requires basic physical assets: dedicated computational labs, campus-wide internet connectivity, and site licenses for statistical software or institutional access to academic research repositories like JSTOR, Scopus, or ScienceDirect. Underfunded affiliated colleges, particularly in non-urban districts, rarely have budgets to support these resources.
- Curricular Congestion within Credit Caps: Balancing foundational economic theory (micro, macro, development economics, public finance) alongside Value-Added Courses, Skill Enhancement Courses, and Ability Enhancement Courses within the designated credit caps leaves limited classroom hours for extensive field research.
- Ethical and Institutional Clearance Deficits: As research descends to the undergraduate level, issues of field safety, survey ethics, data privacy, and Institutional Review Board (IRB) oversight arise. Most undergraduate colleges have no institutional ethics committees to evaluate student-led field surveys or primary human-subject data collection.

An Operational Semester-Tiered Framework for Economics Departments

To resolve curricular congestion and ensure progressive research training, economics departments should implement a scaffolded four-year research model:

Year 1 (Semesters 1-2): Foundation & Scientific Literacy

- Descriptive Statistics & Mathematical Economics (Core)
- Digital Literacy: Open-Source Spreadsheets & Document Structuring (SEC)
- Field Observations: Qualitative Community & Institutional Visits (MDC)

Year 2 (Semesters 3-4): Applied Tools & Dataset Operations

- Intermediate Micro/Macroeconomics & Basic Econometrics (Core)
- Computational Labs: R/Python for Social Sciences with PLFS/NFHS Data (SEC)
- Interdisciplinary Elective: Environmental Economics or Sociology of Development

Year 3 (Semesters 5-6): Empirical Methods & Survey Design

- Advanced Econometrics, Time Series, & Panel Data Analysis (Core)
- Research Methodology: Survey Design, Sampling, & Research Ethics
- Supervised Summer Internship: Industry, Government, or NGO Placement

Year 4 (Semesters 7-8): Independent Dissertations & Policy Formulations

- Advanced Specialised Electives (Public Economics, Agricultural Policy)
- Dedicated Undergraduate Research Dissertation (12 Credits)
- Primary Field Survey / Secondary Data Econometric Pipeline
- Peer Review Seminar & Institutional Defence
- **Semesters 1 & 2 (Foundational Scientific Literacy):** Students build competency in descriptive statistics, basic economic logic, and document formatting. Skill courses focus on digital literacy, open-source spreadsheet manipulation, and basic data visualisation.
- **Semesters 3 & 4 (Analytical Toolkits and Secondary Data Cleaning):** Students transition to intermediate theory and basic econometrics. In skill laboratories, students work directly with national public micro-datasets (PLFS, NFHS), learning variable extraction, data cleaning, and regression analysis.
- **Semesters 5 & 6 (Empirical Design and Research Ethics):** Students master formal research methodology, studying questionnaire formulation, stratified sampling theory, statistical bias, and research ethics. Mandatory internships with local agricultural cooperatives, municipal bodies, micro-finance institutions, or NGOs provide direct organisational field experience.
- **Semesters 7 & 8 (Independent Empirical Dissertation):** In the final year of the FYUP, students synthesise their training into a full 12-credit research dissertation. Students combine primary rural surveys or secondary econometric analysis to address a specific policy question, concluding with an oral defence before an academic committee.

Conclusion

The National Education Policy 2020 introduces a pragmatic blueprint for transforming economics pedagogy across Indian higher education institutions. The conventional teaching model, long dominated by deductive abstractions and rote memorisation, has failed to supply

students with the applied research competencies demanded by the contemporary economy.

By strategically synthesising economic principles with computational tools, ecological indicators, and sociological survey methods, colleges can develop research-literate graduates capable of contributing to evidence-based policy formulation. Addressing the structural hurdles outlined in national datasets—specifically closing the digital divide between rural-affiliated and urban institutions and providing faculty with targeted training in mixed-methods research—will determine whether the vision of NEP 2020 translates into genuine educational transformation or remains an administrative formality.

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Conflicts of interest

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

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