

The effect of household income on university enrolment: A systematic literature review

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ABSTRACT

Household income remains one of the strongest predictors of university enrolment worldwide, yet evidence on the mechanisms through which income shapes enrolment decisions remains fragmented across disciplinary and methodological traditions. This study systematically reviews the literature on household income and university enrolment to identify research trends, underlying mechanisms, contextual moderators, and future research priorities. A PRISMA 2020 guided systematic literature review and bibliometric analysis were conducted using 625 peer reviewed articles indexed in Scopus and published between 1968 and 2025. Bibliometric mapping and thematic analysis were performed using the Bibliometrix/Biblioshiny package. The findings reveal a substantial growth in research after 2010, with 83.7% of publications appearing during the last fifteen years. The literature is heavily concentrated in high income countries, particularly the United States, while evidence from Sub Saharan Africa, South Asia, and Latin America remains limited. Quantitative and longitudinal approaches dominate the field. Academic preparation and achievement emerged as the most frequently reported mechanism linking household income to university enrolment. Race/ethnicity, gender, and geographic location were identified as the principal moderators of the income–enrolment relationship, while first generation student status remains underexplored. The review also highlights significant gaps in causal inference research and the limited geographic diversity of existing evidence. The study concludes that university enrolment inequalities are shaped by both financial and non-financial processes, supporting an integrated perspective that combines Human Capital Theory and Social Stratification Theory. Future research should prioritize causal methodologies, underrepresented regions, and the interaction of multiple mechanisms across diverse educational contexts.

Keywords: Bibliometric Analysis, Educational Inequality, Household Income, Higher Education Access, Socioeconomic Status, Systematic Literature Review, University Enrolment

I. INTRODUCTION

Access to university education is widely recognized as a critical determinant of individual socioeconomic mobility, labour market outcomes, and broader patterns of social stratification (Becker, 1964; Blau & Duncan, 1967). Higher education enhances human capital, increases earnings potential, and contributes to national economic development. Despite substantial expansion in higher education systems worldwide over recent decades, inequalities in university participation remain persistent. Students from low-income households continue to enrol in university at significantly lower rates than their counterparts from higher income families, even after accounting for differences in academic achievement and educational aspirations (Belley & Lochner, 2007; Chetty et al., 2020). Recent evidence continues to demonstrate substantial disparities in access to higher education across socioeconomic groups, highlighting the enduring influence of household income on educational opportunities (Cahalan et al., 2024). Understanding the mechanisms through which household income shapes university enrolment therefore remains a central concern in education research and policy.

The relationship between household income and university enrolment has attracted extensive attention across multiple disciplines. Within economics, the dominant explanation emphasizes financial constraints and imperfections in credit markets that limit the ability of low income students to finance higher education investments, even when expected returns are favourable (Kane, 1994; Carneiro & Heckman, 2002; Dynarski, 2003). In contrast, sociological research highlights the role of cultural capital, parental expectations, social networks, and family background in shaping educational trajectories (Bourdieu & Passeron, 1977; Lareau, 2003). Other studies have focused on information barriers, demonstrating that limited knowledge of application procedures, tuition costs, and financial aid opportunities disproportionately affects students from disadvantaged backgrounds, particularly first generation university applicants (Hoxby & Turner, 2013; Avery & Kane, 2013). More recently, psychological perspectives have emphasized the influence of aspirations, self-efficacy, risk perceptions, and identity related factors on educational decision making (Browman et al., 2017; Goux & Maurin, 2005).

Although these studies collectively provide substantial evidence regarding the income enrolment relationship, the literature remains conceptually fragmented. Financial, informational, psychological, institutional, and sociocultural explanations are often examined independently, resulting in limited integration across disciplinary perspectives. Furthermore, the relationship between household income and university enrolment is not uniform across contexts. Existing evidence suggests that its magnitude and direction are moderated by factors such as gender, race and ethnicity, geographic location, parental education, and institutional characteristics. For example, gender differences in university participation have evolved considerably across countries, while rural–urban disparities and variations in educational infrastructure continue to shape access to higher education opportunities (DiPrete & Buchmann, 2013; Frenette, 2006; Unterhalter, 2012). Similarly, parental education and family social resources often amplify or mitigate the influence of household income on enrolment decisions (Lareau, 2003; Haveman & Smeeding, 2006).

1.1 Statement of the Problem

Despite the extensive body of research, several important gaps remain. First, the evidence base is heavily concentrated in high income countries, particularly the United States and the United Kingdom, with comparatively limited evidence from Sub Saharan Africa, South Asia, Southeast Asia, and Latin America (Salmi, 2009). Second, considerable methodological heterogeneity exists in the measurement of household income, operationalization of enrolment outcomes, and identification of causal relationships, making it difficult to synthesize findings across studies. Third, existing reviews have generally focused on specific mechanisms or geographic regions and have rarely attempted to integrate financial, sociological, psychological, informational, and institutional explanations within a unified analytical framework. Consequently, the relative importance of different pathways through which household income influences university enrolment remains insufficiently understood.

To address these limitations, this study conducts a systematic literature review (SLR) combined with bibliometric analysis of peer reviewed research on household income and university enrolment. Guided by the PRISMA 2020 framework, the review synthesizes evidence from 625 articles indexed in Scopus and published between 1968 and 2025. By identifying major research trends, underlying mechanisms, contextual moderators, and emerging research priorities, the study provides a comprehensive and mechanism centered synthesis of the literature. The findings contribute to a deeper understanding of how household income shapes university enrolment and offer evidence based directions for future research and policy interventions aimed at promoting equitable access to higher education.

1.2 Research Questions

- i. What are the temporal trends, methodological approaches, and geographic patterns in research on household income and university enrolment?
- ii. Through which financial, informational, psychological, and institutional mechanisms does household income influence university enrolment decisions?
- iii. What contextual and structural factors moderate the relationship between household income and university enrolment across different settings?
- iv. What key gaps, inconsistencies, and contradictions exist in the literature, and what future research directions can be identified?

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Human Capital Theory

Human Capital Theory, developed principally by Becker (1964) and extended by Mincer (1974), holds that investment in education is a rational economic decision: individuals weigh the expected future returns of university attendance higher lifetime earnings and improved labour market outcomes against its current costs, including tuition, fees, and foregone income. Within this framework, household income is the central enabling or constraining variable. Families with higher incomes are better positioned to finance the direct and indirect costs of university attendance, take on debt with lower risk aversion, and sustain students through longer periods of study. Conversely, lower income households face imperfect capital markets that restrict access to credit, even when the prospective returns to university education are positive (Carneiro & Heckman, 2002). This creates a systematic financial barrier that depresses enrolment among economically disadvantaged students independently of their academic ability or motivation.

Human Capital Theory is directly relevant to the three primary study variables. The independent variable, household income, determines the financial capacity to invest in university education. The dependent variable, university enrolment, represents the observable outcome of that investment decision. Key mechanisms identified in the literature credit constraints, affordability, and the responsiveness of low income students to grant based financial aid (Dynarski, 2003) are all consistent with human capital predictions about how financial resources shape educational investment choices. When interpreting findings on the income–enrolment relationship, Human Capital Theory provides

the conceptual basis for understanding why financial aid interventions, tuition subsidies, and need based grants can reduce enrolment gaps: they lower the effective cost of the investment, shifting the cost–benefit calculation in favour of enrolment for lower income students.

2.2 Social Stratification Theory

Social Stratification Theory, rooted in the foundational work of Blau and Duncan (1967) and elaborated by Bourdieu and Passeron (1977), explains how socioeconomic inequalities are reproduced across generations through educational systems. A core proposition of this perspective is that the advantages associated with higher household income operate not only through financial transfers but also through the transmission of cultural capital, social networks, and differential access to high quality schooling. Families positioned higher in the social hierarchy pass on navigational knowledge, educational expectations, and institutional connections that give their children a cumulative advantage in accessing and succeeding in higher education (Lareau, 2003). These non-financial mechanisms mean that income based inequalities in enrolment persist even when direct costs are reduced or removed.

Social Stratification Theory is essential for explaining the study's key moderating variables and interpreting findings that cannot be accounted for by financial constraints alone. The moderating roles of race and ethnicity, parental education, first generation student status, and geographic location all identified as significant conditioning factors in this review are theoretically grounded in stratification processes through which social position is reproduced. For instance, the documented gap in educational aspirations between lower and higher income students (Browman et al., 2017), the concentration of lower income students in less selective institutions (Alexander et al., 2007), and the role of cultural capital and parental involvement in shaping college going behaviour (Sandefur et al., 2006) are all consistent with the stratification perspective. This theory also explains why income based enrolment gaps persist across diverse national systems, since stratification is a structural phenomenon that operates independently of any single policy design.

2.3 Integration of the Two Frameworks

Neither theory alone is sufficient to explain the full range of mechanisms through which household income influences university enrolment. Human Capital Theory accounts well for the financial dimension credit constraints, affordability, and the sensitivity of enrolment to income shocks and aid programmes but are less equipped to explain why enrolment gaps persist even when financial barriers are substantially reduced. Social Stratification Theory addresses this limitation by situating the enrolment decision within a broader structure of inherited social positions, cultural resources, and institutional inequalities. Together, the two frameworks generate a richer and more complete explanatory account.

In practice, the integrated framework operates as follows. Household income (the independent variable) influences university enrolment (the dependent variable) through two classes of mechanisms. Financial mechanisms credit constraints, direct costs, and financial aid are explained by Human Capital Theory. Non-financial mechanisms academic preparation, aspirations and expectations, cultural and social capital, information access, and school quality are explained by Social Stratification Theory. Contextual moderators such as race and ethnicity, gender, geographic location, parental education, and first generation student status condition the strength and direction of these mechanisms across different settings. This integrated structure is illustrated schematically in Figure A, which maps the theoretical pathways connecting the study's key variables.

This dual framework approach is consistent with a growing body of scholarship that argues for theoretically pluralist approaches to the study of educational inequality (Haveman & Smeeding, 2006). It is also methodologically consequential: a purely financial lens would direct attention only toward affordability and aid, while a purely stratification lens might underestimate the significance of direct financial constraints in resource poor contexts. By holding both frameworks in view simultaneously, this review is positioned to interpret findings that span disciplinary traditions, identify mechanisms that cut across financial and cultural domains, and generate conclusions relevant to diverse national and institutional contexts.

III. METHODOLOGY

This study employs a dual method approach integrating a Systematic Literature Review (SLR) with bibliometric analysis to map and synthesize the scholarly landscape on household income and university enrolment. Rather than simply cataloguing prior studies, the methodology is designed to reveal publication trajectories, thematic structures, and intellectual linkages that have shaped this field across several decades. To organize this analytical process, the study adopts the Thematic–Conceptual Map (TCM) framework as implemented in Biblioshiny, the graphical user interface of the Bibliometrix R package (Version 4.3.2) (Aria & Cuccurullo, 2017; Donthu et al., 2021). The TCM framework provides an integrative perspective for understanding how research on income related educational access has developed both conceptually and methodologically over time, sorting themes into four quadrants motor, basic, niche, and emerging or declining based on their centrality within the field and their internal density of development (Paul et al., 2021).

The systematic review component adheres to the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta Analyses) protocol (Page et al., 2021), which standardizes the sequential stages of identification, screening, eligibility assessment, and inclusion. This protocol strengthens methodological transparency and reproducibility, which are prerequisites for publication in Q1 peer reviewed journals. The combined approach integrating bibliometric mapping, thematic analysis, and PRISMA compliant documentation balances quantitative precision with conceptual depth, enabling a multidimensional understanding of how research at the nexus of household income and higher education access has grown and evolved (Aria & Cuccurullo, 2017; Paul et al., 2021).

3.1 Database Selection and Rationale

Data were retrieved exclusively from Scopus, selected for its extensive multidisciplinary coverage, rigorous citation indexing, and global reach across social science, economics, psychology, and education research. Scopus provides access to the TITLE ABS KEY field, enabling simultaneous keyword searches across article titles, abstracts, and author assigned keywords, thereby maximizing retrieval sensitivity without sacrificing specificity (Mongeon & Paul-Hus, 2016). The choice of a single database was deliberate: it ensures full control over the reproducibility of the search string and the screening procedure, mitigates the risk of inconsistent record duplication that arises when merging heterogeneous databases, and aligns with established practice in bibliometric SLR studies that prioritize depth of indexing over breadth of source coverage (Donthu et al., 2021). The final dataset was retrieved and locked on 24 September 2025, which constitutes the explicit data cutoff date for this study. All publications indexed after this date were excluded to maintain analytical integrity.

The search string was developed iteratively through a pilot testing process, progressively refining terminology to balance inclusivity and precision. Two conceptual blocks were constructed using Boolean operators; the two blocks were combined with the Boolean AND operator to ensure that retrieved records addressed both constructs simultaneously. The complete, verified search string applied in Scopus was as follows:

TITLE ABS KEY (("household income" OR "family income" OR "parental income" OR "household earnings" OR "family earnings" OR "annual household income" OR "annual family income" OR "household wealth" OR "family wealth" OR "disposable household income" OR "household financial resources" OR "family financial resources" OR "socioeconomic status" OR "SES" OR "socioeconomic background" OR "economic disadvantage" OR "economic status" OR "income inequality" OR "income disparity" OR "income gap" OR "wealth inequality" OR "wealth disparity" OR "economic inequality" OR "economic disparity") AND ("university enrolment" OR "university enrollment" OR "college enrolment" OR "college enrollment" OR "higher education enrolment" OR "higher education enrollment" OR "postsecondary enrolment" OR "postsecondary enrollment" OR "tertiary education participation" OR "higher education participation" OR "university attendance" OR "college attendance" OR "higher education attendance" OR "university access" OR "college access" OR "access to higher education" OR "entry into university" OR "entry to university" OR "entry into higher education" OR "transition to higher education" OR "college going" OR "college going" OR "university admission" OR "college admission" OR "tertiary enrolment" OR "tertiary enrollment" OR "postsecondary access" OR "postsecondary participation")) AND (EXCLUDE (PUBYEAR , "2026")) AND (LIMIT TO (SUBJAREA , "ARTS") OR LIMIT TO (SUBJAREA , "PSYC") OR LIMIT TO (SUBJAREA , "SOCI") OR LIMIT TO (SUBJAREA , "ECON")) AND (LIMIT TO (DOCTYPE , "ar")) AND (LIMIT TO (LANGUAGE , "English")) AND (LIMIT TO (SRCTYPE , "j")) AND (LIMIT TO (PUBSTAGE , "final"))).

3.2. Eligibility Criteria, Screening and Selection Procedure.

Inclusion and exclusion criteria were defined *a priori* and applied consistently across all screening stages. These criteria were operationalized through Scopus database specific filters and manual review of titles, abstracts, and keywords. Publications were included if they: addressed the relationship between household income, family income, socioeconomic status, or related financial variables and university or higher education enrolment, access, or participation; were published as full journal articles; were written in English; appeared in Scopus indexed journals; were assigned to the subject areas of Arts and Humanities, Psychology, Social Sciences, or Economics, Econometrics and Finance; and had reached the final publication stage.

Screening proceeded through six sequential filtering stages, each applied as a formal database constraint within Scopus. Figure 1 presents the full decision trail, detailing the number of records retained and excluded at each stage together with the operational justification for each exclusion criterion. The initial search returned 906 records. Following the systematic application of the eligibility filters described above, the final analytic sample comprised 625 publications.

The first filter excluded 40 records published in 2026, since these would represent an incomplete and potentially unstable publication year relative to the September 2025 data lock. The subject area restriction reduced the dataset from 866 to 772 records, removing publications primarily indexed under natural sciences, medicine, and engineering. The document type filter excluded all non-article document types including review articles, book chapters, conference papers, and editorials reducing the sample to 672 records. Language and source type filters further refined the corpus to 637 and 633 records, respectively, removing non English publications and non-journal sources such as conference

proceedings. The final filter on publication stage excluded 8 in press or non-final records, yielding the confirmed analytic sample of 625 publications.

Following the data lock, titles, abstracts, and author assigned keywords of the 625 retained records were manually reviewed to confirm substantive relevance to the household income–university enrolment relationship. This additional qualitative verification step, consistent with best practices in systematic review design (Paul et al., 2021; Snyder, 2019), ensured that records retrieved primarily due to peripheral keyword overlap were not inadvertently included in the bibliometric analysis.

IV. FINDINGS & DISCUSSION

4.1 Finding

4.1.1 Temporal, Methodological, and Geographic Trends (RQ1)

This section presents the findings for Research Question 1, which asks: What are the temporal, methodological, and geographic trends in research on household income and university enrolment? Overview of the Literature: As shown in Figure 2, the bibliometric landscape comprises 625 peer reviewed journal articles published between 1968 and 2025 across 322 journals, with contributions from 1,366 unique authors. The field exhibits moderate collaboration, with an average of 2.48 co-authors per paper, and a relatively low but meaningful level of international co authorship (17.12%). The corpus contains 64,732 references, with an average document age of 9.85 years, indicating engagement with both contemporary and foundational literature. Citation distribution is highly skewed, with a mean of 26.79 citations per article, consistent with Bradford's Law, where a small number of publications receive disproportionate scholarly attention. Overall, the dataset reflects a mature and steadily expanding research field, supported by a sustained annual growth rate of 6.82% (Bradford, 1934).



Figure 2

Main Bibliometric Characteristics of the Retrieved Literature Corpus (N = 625).

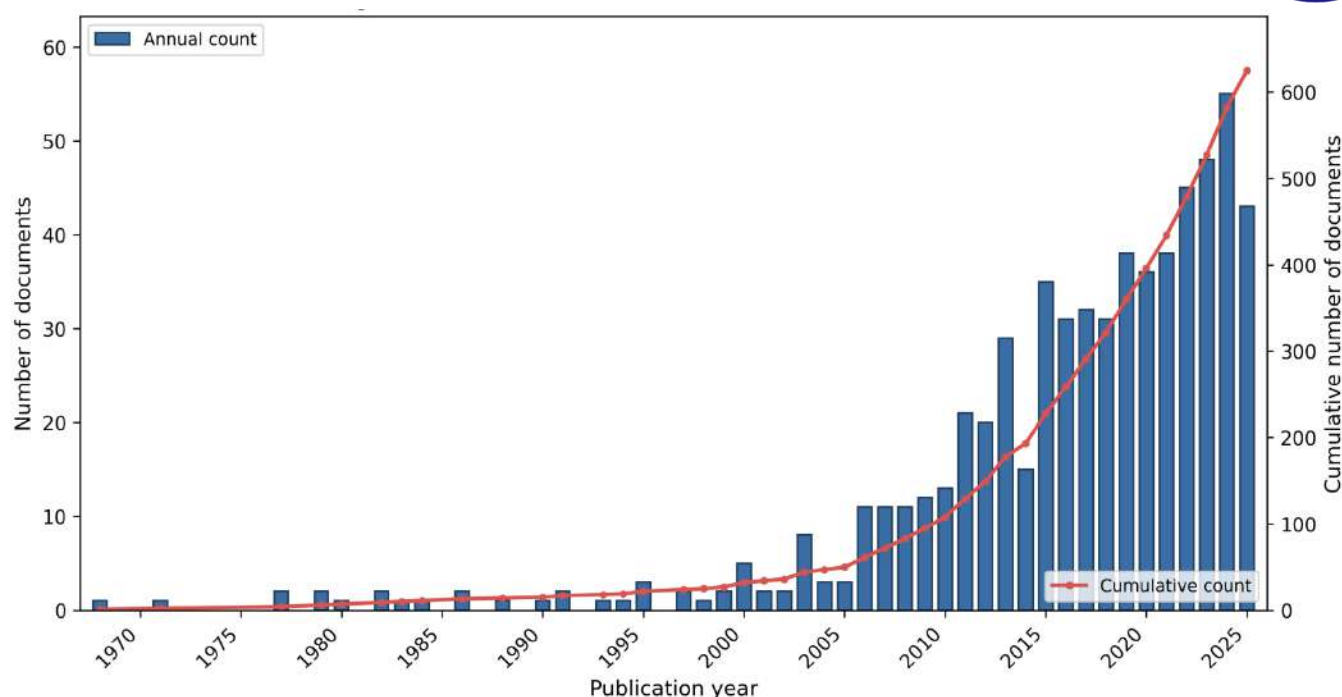


Figure 3
Annual Distribution of Publications on Household Income and University Enrolment, 1968–2025

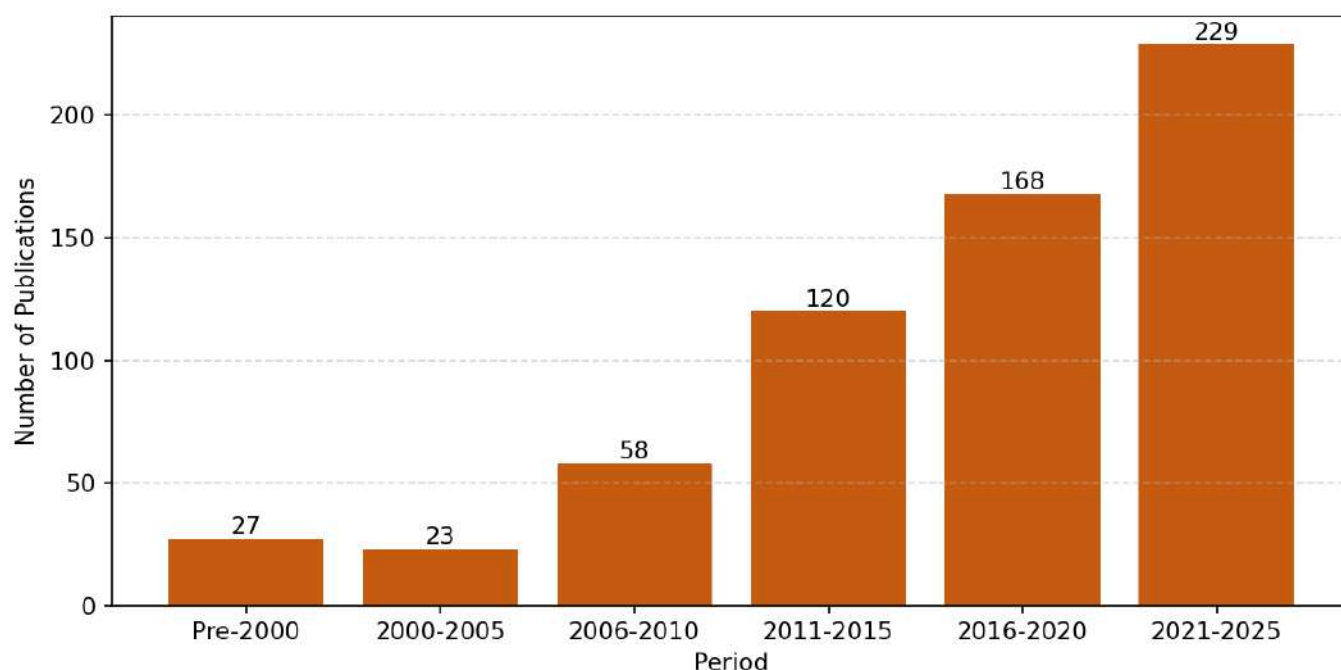


Figure 4
Growth in Publication Volume by Five Year Period, 1968–2025

The annual production curve (Figure 3) reveals a distinctly phased growth trajectory. Across the pre 2000 period, the corpus contains only 27 articles spanning more than three decades (1968–1999), with several years recording zero or a single publication. This sparse early output reflects the marginal position of household income as an explanatory variable in higher education access research before the expansion of large scale longitudinal student datasets in the United States and the United Kingdom. The 2000–2010 windows shows a modest but steady increase, rising from 23 articles in 2000–2005 to 58 articles in 2006–2010. This acceleration coincides with the proliferation of national longitudinal studies of youth (e.g., the U.S. National Longitudinal Survey of Youth and the UK Youth Cohort Study), which for the first time enabled researchers to link household level income data to subsequent enrolment outcomes at scale.

The most substantial growth occurs from 2011 onward. The 2011–2015 period contains 120 articles, the 2016–2020 period contains 168 articles, and the 2021–2025 period alone accounts for 229 articles, or 36.6% of the entire dataset (Figure 4). Taken together, the post 2010 periods (2011–2025) account for 83.7% of all publications, indicating that the overwhelming majority of scholarly attention to the household income–university enrolment relationship has emerged within the last decade and a half. This pattern is consistent with the growing global policy salience of equity in higher education access, the expansion of open access publishing infrastructure, and renewed attention to socioeconomic disparities in college enrolment following economic shocks such as the 2008 global financial crisis and the COVID 19 pandemic.

Geographic Distribution of Research Production

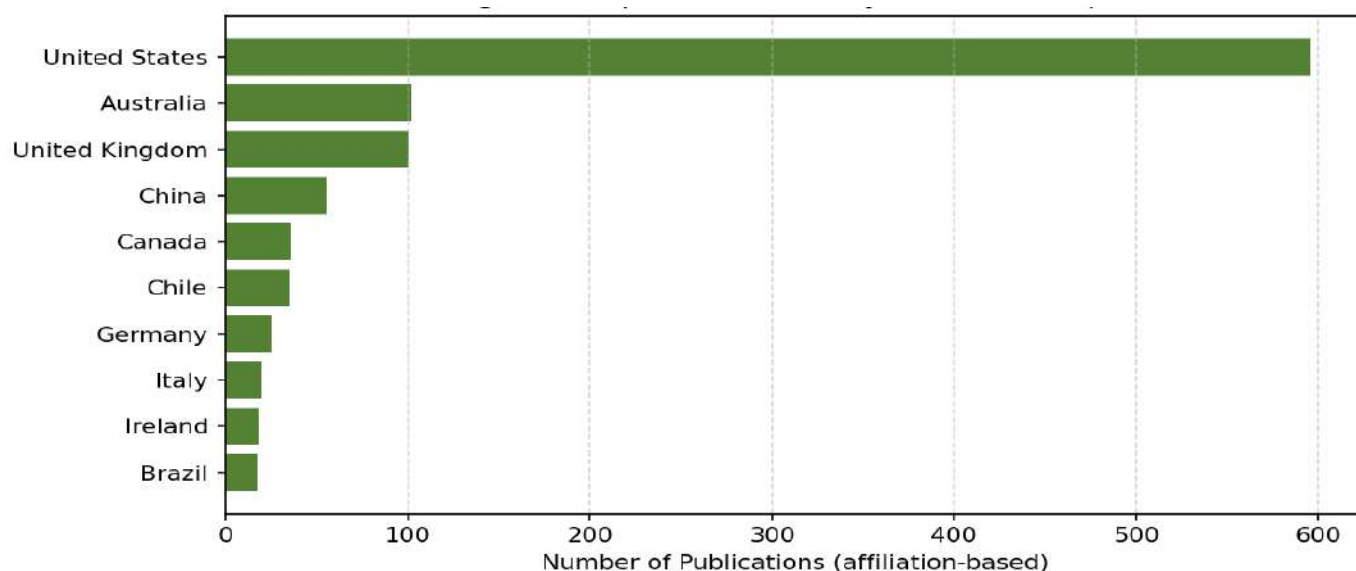


Figure 5

Top 10 countries by research output, based on author affiliation instances (Scopus, 1968–2025, N = 625).

Note. Counts reflect all co-author affiliations per article and therefore exceed the total number of articles (N = 625) due to multi country co authorship. The geographic analysis as shown on Figure 5, reveals a pronounced concentration of research output in the United States, which accounts for 596 affiliation instances, more than five times the combined total of the next three countries. Australia (102), the United Kingdom (100), and China (55) form a secondary tier of productive nations, followed by Canada (36), Chile (35), Germany (25), Italy (20), Ireland (18), and Brazil (17).

The dominance of the United States reflects the scale and accessibility of national longitudinal student datasets such as the National Education Longitudinal Study, the Education Longitudinal Study, and administrative records from the College Board and ACT, which have provided a uniquely rich evidentiary base for examining household income effects on enrolment. The presence of Chile within the top six is notable given its comparatively small population, and likely reflects the country's distinctive higher education financing reforms and associated policy evaluation literature. By contrast, regions such as Sub Saharan Africa, the Middle East, and most of South Asia and Latin America remain marginally represented a pattern that mirrors broader asymmetries in global knowledge production in education research.

Table 1

Methodological Approaches Identified in the Corpus

Methodological Approach	Articles	% of Corpus
Quantitative/regression analysis	173	27.7%
Longitudinal/panel data	134	21.4%
Survey based	132	21.1%
Qualitative/case study	81	13.0%
Quasi experimental (IV, RDD, DiD)	26	4.2%
Administrative/national datasets	20	3.2%
Systematic review/meta-analysis	5	0.8%

Note. Categories are derived from text mining of titles, abstracts, and author keywords and are not mutually exclusive; a single article may employ multiple methodological approaches. From table 1 the methodological landscape is

dominated by quantitative regression based analysis, which appears in 173 articles, reflecting the discipline's strong reliance on multivariate modelling to estimate the association between household income and enrolment outcomes while controlling for confounders. Longitudinal or panel data designs 134 articles, and survey based research 132 articles, Qualitative and case study approaches account for 81 articles, representing a substantial but secondary tradition that foregrounds lived experience and institutional context over statistical generalization. By contrast, only 26 articles employ quasi experimental or causal inference designs (instrumental variables, regression discontinuity, difference in differences, or natural experiments), and just 20 articles draw on administrative or national census linked datasets. Most strikingly, systematic reviews and meta analyses represent only 5 articles of the corpus, indicating that evidence synthesis in this field remains markedly underdeveloped.

4.1.2 Mechanisms Linking Household Income to University Enrolment (RQ2)

This section presents the findings for Research Question 2, which asks: Through which mechanisms does household income affect university enrolment? Mechanism categories were identified using a structured keyword dictionary and are not mutually exclusive, as a single article may invoke multiple pathways simultaneously. Overview of the Mechanistic Literature

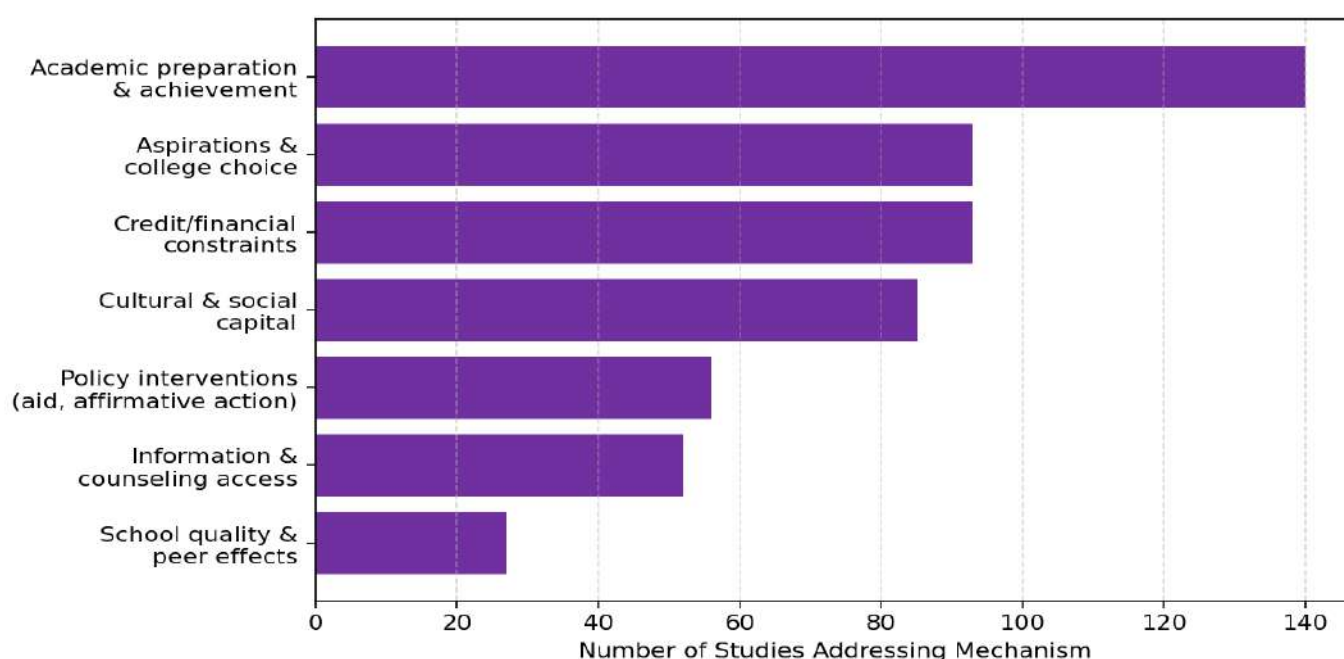


Figure 6

Frequency of Mechanisms through which Household Income is Theorized to Affect University Enrolment (Scopus, 1968–2025, N = 625). Bars represent the number of articles addressing each mechanism category; categories are not mutually exclusive.

Figure 6 summarizes the frequency with which the seven mechanism categories appear across the corpus. Academic preparation and achievement is the most frequently invoked mechanism 140 articles, followed by credit and financial constraints 93 articles, and aspirations, expectations, and college choice also 93 articles. Cultural and social capital appears in 85 articles, while policy interventions, information and counseling access, and school quality/peer effects are comparatively less frequently addressed 56, 52, and 27 articles respectively. Credit and Financial Constraints / Affordability: Credit and financial constraints constitute the second most commonly documented mechanism 93 articles, and represent the most direct theoretical pathway connecting household income to enrolment: households with insufficient liquidity or limited access to credit markets may be unable to finance the direct costs of tuition, fees, and living expenses, or the opportunity costs of forgone earnings, irrespective of a student's academic qualifications.

The foundational and most influential treatment of this mechanism in the corpus is Carneiro and Heckman (2002), the single most cited article in the dataset (513 citations), which distinguishes short run credit constraints, which affect the timing of college entry, from long run constraints, which operate through the cumulative effect of family resources on skill formation throughout childhood. This distinction is theoretically consequential: it implies that policies addressing only the immediate financial barrier may fail to address the deeper, accumulated disadvantage embedded in long run constraints, which is more closely aligned with the academic preparation mechanism. Academic Preparation and Achievement: Academic preparation and achievement is the most pervasive mechanism in the corpus, appearing in 140 articles. This mechanism operationalizes the long run constraint identified by Carneiro and Heckman (2002):

household income shapes enrolment indirectly, by influencing the academic resources, test preparation, and cumulative skill development that determine a student's competitiveness for college admission, well before the point of application.

Goldrick-Rab (2006), the most cited article within this category (294 citations), traces social class differences in college pathways and demonstrates that lower income students are disproportionately diverted into non degree or part time enrolment trajectories even when they possess comparable initial academic aspirations to their higher income peers, indicating that the academic preparation mechanism operates cumulatively across the schooling pipeline rather than at a single decision point. Bozick et al. (2010) extend this logic by revisiting the role of educational expectations within the status attainment model, finding that early formed expectations, themselves shaped by family socioeconomic status, are strong predictors of subsequent enrolment net of measured academic ability.

Aspirations, Expectations, and College Choice: Aspirations, expectations, and college choice processes appear in 93 articles, representing a mechanism that operates through the psychological and decision making dimensions of the enrolment process rather than through academic qualification or financial capacity per se. This mechanism is closely related to, but conceptually distinct from, academic preparation: two students with identical academic records may form markedly different enrolment intentions depending on the aspirations cultivated within their household environment. Mahoney et al. (2003), the most cited study addressing this mechanism (344 citations), demonstrates that participation in extracurricular activities, which is itself patterned by household income through fees, transportation, and parental time availability, promotes interpersonal competence and is associated with improved educational outcomes including postsecondary enrolment. Marsh and Kleitman (2003) similarly find that school athletic participation is associated with positive educational outcomes with little offsetting cost, reinforcing the proposition that income linked extracurricular access functions as an aspiration shaping mechanism.

Cultural and Social Capital / Parental Involvement: Cultural and social capital, encompassing parental involvement, family background, and the navigational knowledge required to successfully traverse the college application process, appears in 85 articles. This mechanism draws on Bourdieu's (1986) concept of cultural capital and Coleman's (1988) concept of social capital, both of which theorize that resources embedded in family relationships and social networks, resources that are themselves correlated with household income, translate into educational advantage independent of formal financial transfers. Sandefur et al. (2006) provide direct empirical support for this mechanism, demonstrating that family resources and social capital jointly and significantly predict college attendance, with social capital exerting effects above and beyond financial resources alone. Jerrim and Macmillan (2015) extend this analysis cross nationally, examining the relationship between income inequality, intergenerational mobility, and education, and find that the strength of the income education gradient varies systematically with the degree of income inequality in a society, a finding with direct relevance to the moderating factors examined under RQ3. **Policy Interventions: Financial Aid and Affirmative Action:** Policy interventions, including need based financial aid, grant programmes, and affirmative action in admissions, appear in 56 articles (9.0%). This mechanism category differs from the others in that it represents a deliberate, externally introduced moderator of the income enrolment relationship rather than a naturally occurring pathway, and it therefore provides the clearest evidence regarding the malleability of income effects on enrolment.

Krueger et al. (2006) directly evaluate the long run trajectory of race and income based admissions policy, providing an empirical benchmark against which subsequent affirmative action research is assessed. Francis and Tannuri-Pianto (2012) extend this line of inquiry to the Brazilian context, examining the redistributive equity of affirmative action policies and the interacting roles of race and socioeconomic status in determining who benefits from preferential admission. **Information and Guidance/Counseling Access:** Information and counseling access appears in 52 articles and represents a mechanism through which household income shapes the quality and accuracy of information available to prospective students regarding college costs, application procedures, and financial aid eligibility. As noted by Grodsky and Jones (2007) that perceptions of college cost diverge systematically from actual net price, with the gap most pronounced among lower income families, an information failure that this mechanism category addresses directly.

Nielsen et al. (2010) provide quasi experimental evidence on the effect of student aid on enrolment using a government grant scheme, finding that the salience and clarity of aid information, not merely its objective generosity, materially affects take up among income eligible students. Klasik (2012) systematically decomposes the "college application gauntlet" into discrete steps (test taking, application submission, financial aid application, enrolment confirmation), demonstrating that lower income students experience disproportionate attrition at each successive step, with cumulative information and procedural barriers compounding across the pipeline. **School Quality and Neighborhood/Peer Effects:** School quality and neighbourhood or peer effects represent the least frequently documented mechanism in the corpus (27 articles, 4.3%), despite their theoretical centrality to explanations of how household income becomes embedded in unequal academic preparation (Section 4.1.2.3) well before the point of college application.

Jennings et al. (2015) directly interrogate the magnitude of school quality effects relative to prior assumptions, finding that differences in school quality matter more for educational outcomes than earlier research had estimated, a finding with direct implications for income based residential sorting into school catchment areas. Tam and Jiang (2015) document divergent urban rural trends in college attendance, attributing these in part to structural exclusion embedded in state level policy and school resourcing patterns that disproportionately disadvantage rural, lower income households.

4.1.3 Contextual and Structural Moderators of the Household Income–University Enrolment Relationship (RQ3)

This section presents the findings for Research Question 3, which asks: What contextual and structural factors moderate the relationship between household income and university enrolment? Moderator categories are not mutually exclusive, as a single article may examine more than one contextual or structural factor. Overview of Moderating Factors

Table 2

Contextual and Structural Moderators of the Income–Enrolment Relationship

Moderator Category	Articles	% of Corpus	Level of Operation
Race/ethnicity	173	27.7%	Individual/group
Gender	137	21.9%	Individual
Geographic location (rural/urban, cross country)	133	21.3%	Community/national
Education policy and system structure	132	21.1%	Institutional/national
Institution type (selectivity, public/private)	109	17.4%	Institutional
Family structure and parental education	35	5.6%	Household
First generation status	19	3.0%	Individual/household

Note. Percentages are computed relative to the total corpus (N = 625) and do not sum to 100% because moderator categories are not mutually exclusive. Table 2 reports the frequency with which seven moderator categories appear across the corpus. Race/ethnicity is the most frequently examined moderator (173 articles, 27.7%), followed closely by gender (137 articles, 21.9%), geographic location (133 articles, 21.3%), and education policy/system structure (132 articles, 21.1%). Institution type is addressed in 109 articles (17.4%), while family structure/parental education and first generation status appear less frequently, in 35 articles (5.6%) and 19 articles (3.0%), respectively.

Race and Ethnicity: Race and ethnicity is the most frequently examined moderating factor in the corpus (173 articles, 27.7%). Studies in this category typically examine whether the magnitude or form of the income enrolment relationship differs across racial or ethnic groups, or whether income operates as a mediator of observed racial enrolment gaps. Cameron and Heckman (2001) provide a foundational treatment, modelling educational attainment trajectories separately for Black, Hispanic, and White males and demonstrating that family income differentials account for a substantial share of observed racial gaps in educational attainment, though residual gaps persist after income is controlled. Alexander et al. (2007) examine the cumulative effect of the “summer learning gap”, documenting that out of school learning loss during summer months disproportionately affects lower income children and contributes to widening achievement gaps that correlate with race in the U.S. context.

Gender: Gender is the second most frequently examined moderator (137 articles, 21.9%). These studies typically assess whether the income enrolment relationship differs in strength or direction for male and female students, or whether income interacts with gender to produce differential enrolment patterns in specific fields of study. Marsh and Kleitman (2003, 2005) report gender differences in the educational consequences of extracurricular participation and part time employment during high school, with the latter study finding that the academic consequences of term time employment, itself an income related behavior, vary by gender. Across this category, gender is most often examined as an interacting rather than an independently sufficient moderator, typically in combination with race/ethnicity or field of study.

Geographic Location: Rural/Urban and Cross National Context: Geographic location, encompassing both rural/urban disparities within countries and cross national comparisons, is addressed in 133 articles (21.3%). This category captures moderating factors operating at the community and national level rather than at the level of the individual student.

Byun et al. (2012) directly examine rural non rural disparities in postsecondary educational attainment, finding that rural students from lower income households face compounded disadvantages relative to their non-rural low income counterparts, indicating an interaction between geographic location and household income. Koricich et al. (2018) extend this analysis by jointly modelling the effects of rurality and socioeconomic status on college attendance and institutional choice, reporting that rural location moderates not only whether students enroll but also the type of institution they enroll in. Jerrim et al. (2015) provide a cross country comparative perspective, examining socioeconomic inequality in access to high status colleges across multiple national systems and reporting substantial cross national variation in the strength of the income access gradient, indicating that national education system characteristics function as a macro level moderator of the income enrolment relationship.

Education Policy and System Structure: Education policy and system structure is addressed in 132 articles and encompasses moderators operating through admissions systems, tracking structures, tuition policy regimes, and broader welfare state arrangements that shape how household income translates into enrolment outcomes within a given national or institutional system. Wei et al. (2013) demonstrate that institutional and programme level policy structures shape enrolment patterns for income disadvantaged subgroups within specific fields. Sandefur et al. (2006) situate the income enrolment relationship within the broader institutional context of family resources and social capital, indicating that

policy and system level structures interact with household level resources rather than operating as independent determinants of enrolment.

Institution Type: Selectivity and Sector: Institution type, including the selectivity of the institution and the distinction between public, private, two years, and four year sectors, is addressed in 109 articles. Studies in this category examine whether the income enrolment relationship differs according to the type of institution into which students enroll, conditional on having enrolled at all.

Brewer et al. (1999) directly examine cross cohort evidence on the effects of attending an elite private college, providing a benchmark for subsequent research on whether income based access to selective institutions confers differential returns. Alexander et al. (2007) document that the cumulative effects of income related academic disadvantage are unevenly distributed across the institutional landscape, with lower income students disproportionately represented in less selective institutions.

Family Structure and Parental Education: Family structure and parental education are addressed in 35 articles (5.6%). These studies examine whether the income enrolment relationship is moderated by household composition or by the educational attainment of parents, independent of household income itself. Sandefur et al. (2006) report that family resources, including both income and parental education, jointly predict college attendance, with parental education exerting an effect that is partially but not fully accounted for by household income. Wu et al. (2020) examine higher education expansion and inequality of educational opportunity in China, reporting that parental education remains a significant moderator of the income enrolment relationship even under conditions of substantial system wide expansion in enrolment capacity.

First Generation Student Status: First generation student status, defined as enrolment by a student whose parents did not complete a postsecondary degree, is the least frequently examined moderator in the corpus 19 articles. Harrell and Forney (2003) examine retention of Hispanic and first generation students in postsecondary education, reporting that first generation status interacts with both income and ethnicity to produce compounded retention risk. Athanases et al. (2016) examine the role of college going culture within schools serving predominantly first generation populations, reporting that institutional culture functions as a moderating factor that can attenuate or amplify the income enrolment relationship for first generation students specifically.

4.1.4 Gaps, Contradictions, and Emerging Research Directions (RQ4)

This section presents the findings for Research Question 4: What are the key gaps and contradictions in the literature, and what future research priorities emerge? The results are based on patterns identified in Sections 4.1.1–4.1.3, supplemented by analyses of keyword evolution and normalized thematic frequency trajectories across the 625 articles in the corpus. Table 3 displays the ten most frequent author keywords for three publication cohorts: 1968–2010 (n = 108), 2011–2020 (n = 288), and 2021–2025 (n = 229).

Table 3

Most Frequent Author Keywords by Publication Cohort

Rank	1968–2010 (n = 108)	2011–2020 (n = 288)	2021–2025 (n = 229)
1	Higher education (8)	Higher education (37)	Higher education (50)
2	College access (4)	Education (17)	Socioeconomic status (15)
3	College choice (3)	College access (17)	Gender (14)
4	Affirmative action (2)	Socioeconomic status (16)	College access (9)
5	Access (2)	College enrollment (15)	Equity (8)
6	Students (2)	Equity (12)	Access (8)
7	Equity (2)	Educational attainment (12)	Affirmative action (7)
8	Educational attainment (2)	Inequality (10)	Inequality (7)
9	Inequality (2)	College admissions (10)	Human capital (6)
10	University access (2)	Widening participation (8)	Social mobility (6)

Note. Values in parentheses indicate the number of articles in which the keyword appears within the corresponding cohort.

Across the three cohorts, higher education remains the most frequent keyword, increasing in absolute frequency from 8 to 37 to 50 articles as the overall size of each cohort increases. College access and equity / inequality appear in all three cohorts. Socioeconomic status enters the top ten in the 2011–2020 cohort (16 articles) and remains present in 2021–2025 (15 articles). Gender and social mobility appear in the top ten only in the 2021–2025 cohort (14 and 6 articles, respectively), while widening participation and college admissions appear in the top ten only in the 2011–2020 cohort. Across all three cohorts, neither credit constraint nor causal inference, quasi experimental, or related methodological terms appear among the ten most frequent keywords, despite credit/financial constraints being identified in Section 4.1.2.2 as the second most frequently addressed mechanism category (93 articles, 14.9%) and quasi

experimental designs being identified in Section 4.1.1.4 as the least common methodological approach after systematic reviews (26 articles, 4.2%). Emerging Thematic Trajectories, 2000–2025

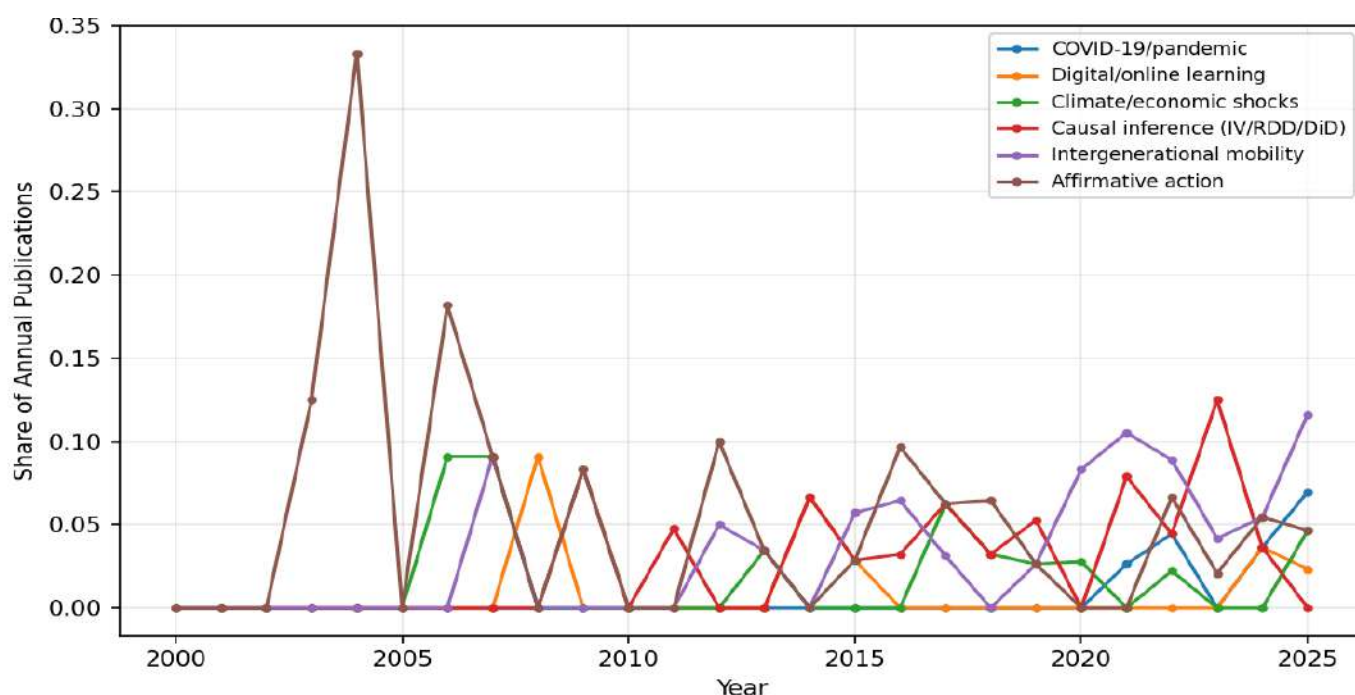


Figure 7

Normalized Frequency Trajectories of Six Thematic Keyword Categories as a Share of Annual Publication Volume (Scopus, 2000–2025, N = 625).

Figure 7 presents normalized frequency trajectories for six thematic categories: COVID 19/pandemic, digital/online learning, climate/economic shocks, causal inference (instrumental variables, regression discontinuity, difference in differences, or natural experiments), intergenerational mobility, and affirmative action. Normalization expresses each category's frequency as a share of total publications in a given year, allowing comparison of trajectory shape independent of overall corpus growth.

Intergenerational mobility appears in 31 articles across the full observation window and shows an increasing trajectory in the most recent years. Affirmative action appears in 27 articles, with frequency fluctuating across the observation window rather than following a monotonic trend, consistent with its recurrence as a policy topic tied to specific legal and political events rather than a steadily accumulating research programme. Causal inference designs appear in 23 articles, distributed across the observation window without a clear directional trend. COVID 19/pandemic terminology appears in 8 articles, concentrated in 2021–2025, consistent with the timing of the pandemic itself. Climate/economic shocks appear in 11 articles and digital/online learning in 6 articles, both with low absolute frequencies across the full window.

4.1.4.3 Geographic Distribution and International Collaboration

Building on the country level findings reported in Section 4.1.1.3 (figure 5), Table 4 reports the number of articles with at least one author affiliation in each of three world regions, alongside the corpus wide rate of international co authorship.

Table 4*Regional Representation and International Co authorship*

Indicator	Articles	% of Corpus
Articles with at least one Sub Saharan African affiliation (South Africa, Nigeria)	9	1.4%
Articles with at least one Latin American affiliation (Brazil, Chile, Colombia, Argentina, Mexico, Peru)	37	5.9%
Articles with at least one South Asian affiliation (India, Pakistan)	10	1.6%
Articles with multi country (international) co authorship	94	15.0%

As reported in Section 4.1.1.3, the United States accounts for 596 of the affiliation instances identified across the corpus, compared with 9 articles featuring a Sub Saharan African affiliation (limited to South Africa and Nigeria among the countries identified), 10 articles featuring a South Asian affiliation (India and Pakistan), and 37 articles featuring a Latin American affiliation. International co authorship, defined as articles with affiliations spanning more than one of the 40 countries identified in Section 4.1.1.3, occurs in 94 articles. Cross Cutting Patterns across RQ1–RQ3 Findings: Table 5 consolidates frequency figures reported separately in Sections 4.1.1–4.1.3 to summarize the relative representation of methodological approaches, mechanism categories, and moderator categories within the corpus.

Table 5*Consolidated Frequency Summary across RQ1–RQ3 Categories*

Category Type	Most Frequent (n, %)	Least Frequent (n, %)
Methodological approach	Quantitative/regression analysis (173, 27.7%)	Systematic review/meta-analysis (5, 0.8%)
Mechanism	Academic preparation and achievement (140, 22.4%)	School quality and neighborhood/peer effects (27, 4.3%)
Moderator	Race/ethnicity (173, 27.7%)	First generation status (19, 3.0%)

Table 5 shows that, within each of the three classification schemes reported in Sections 4.1.1, 4.1.2, and 4.1.3, the most frequent category exceeds 20% of the corpus while the least frequent category falls below 5%. Quasi experimental and causal inference designs (26 articles, 4.2%, Table 5) and systematic reviews/meta analyses (5 articles, 0.8%, Table 5) together represent 31 articles, fewer than the count for first generation status alone as a moderator category (19 articles) when considered relative to the corpus, but smaller in absolute terms than the most frequent mechanism (academic preparation and achievement, 140 articles) and moderator (race/ethnicity, 173 articles) categories.

4.2 Discussion**4.2.1 Temporal, Methodological, and Geographic Trends (RQ1)**

The findings show a substantial increase in research on household income and university enrolment after 2010, reflecting growing concerns about educational inequality and access to higher education (Bradford, 1934). However, the literature remains heavily concentrated in high-income countries, particularly the United States, limiting the generalizability of findings to low- and middle-income contexts (Jerrim & Macmillan, 2015). Methodologically, the field is dominated by quantitative and longitudinal studies, indicating a strong interest in estimating income effects on enrolment (Brewer et al., 1999; Byun et al., 2012). Nevertheless, the limited use of quasi-experimental designs and systematic reviews suggests that evidence remains largely associational, restricting robust causal conclusions (Carneiro & Heckman, 2002; Krueger et al., 2006; Nielsen et al., 2010).

4.2.2 Mechanisms Linking Household Income to University Enrolment (RQ2)

The review demonstrates that household income influences university enrolment through multiple interconnected pathways. Academic preparation emerged as the most frequently reported mechanism, suggesting that income-related inequalities accumulate throughout the educational trajectory long before university entry (Carneiro & Heckman, 2002; Goldrick-Rab, 2006; Bozick et al., 2010). Financial constraints remain an important barrier, but evidence also highlights the role of information gaps, aspirations, and cultural capital (Mahoney et al., 2003; Marsh & Kleitman, 2003, 2005; Grodsky & Jones, 2007; Bourdieu, 1986; Coleman, 1988; Sandefur et al., 2006). These findings indicate that enrolment disparities cannot be explained solely by affordability concerns; rather, they reflect broader socioeconomic processes that shape educational opportunities and expectations over time.

4.2.3 Contextual and Structural Moderators (RQ3)

The relationship between household income and university enrolment is strongly conditioned by contextual factors. Race/ethnicity, gender, and geographic location were the most commonly examined moderators, demonstrating that income effects vary across social and institutional contexts (Cameron & Heckman, 2001; Alexander et al., 2007; Marsh & Kleitman, 2003, 2005; Jerrim & Macmillan, 2015; Koricich et al., 2018; Byun et al., 2012; Wei et al., 2013).

Rural students, disadvantaged ethnic groups, and students from less supportive educational environments often experience compounded barriers to higher education participation (Sandefur et al., 2006; Tam & Jiang, 2015). In contrast, first-generation status remains underexplored despite evidence suggesting that it amplifies the effects of income disadvantage through reduced access to information, guidance, and social capital (Harrell & Forney, 2003; Athanases et al., 2016; Wu et al., 2020).

4.2.4 Gaps and Future Research Priorities (RQ4)

Several important gaps remain in the literature. First, the limited use of causal research designs constrains understanding of whether observed associations reflect genuine income effects or underlying confounding factors (Carneiro & Heckman, 2002; Krueger et al., 2006; Nielsen et al., 2010). Second, the strong concentration of studies in high-income countries highlights the need for more research in underrepresented regions, particularly Sub-Saharan Africa and South Asia (Jerrim & Macmillan, 2015; Tam & Jiang, 2015). Third, relatively little attention has been given to first-generation students and school quality, despite their theoretical importance in shaping educational outcomes (Harrell & Forney, 2003; Jennings et al., 2015). Future studies should adopt stronger causal methodologies, expand geographical coverage, and examine how financial and non-financial mechanisms interact across diverse contexts.

4.2.5 Theoretical Implications

The findings support an integrated understanding of university enrolment that combines economic and sociological perspectives. Consistent with Human Capital Theory, household income influences educational decisions through financial resources and expected returns to education (Becker, 1964; Carneiro & Heckman, 2002). However, the prominence of academic preparation, aspirations, cultural capital, and informational barriers demonstrates that enrolment inequalities are also shaped by broader processes of social stratification (Bourdieu, 1986; Coleman, 1988; Goldrick-Rab, 2006; Sandefur et al., 2006). Therefore, understanding university enrolment requires a framework that jointly considers financial and non-financial mechanisms operating throughout the educational life course.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This systematic review synthesized 625 peer reviewed studies published between 1968 and 2025 to provide a comprehensive understanding of how household income influences university enrolment. The findings demonstrate that the relationship extends beyond financial resources and operates through multiple interconnected mechanisms, including academic preparation and achievement, financial constraints, aspirations and college choice processes, and cultural and social capital. These mechanisms accumulate across the educational trajectory and are further shaped by contextual factors such as race and ethnicity, gender, geographic location, and institutional characteristics. By integrating Human Capital Theory and Social Stratification perspectives, this review offers a comprehensive framework for understanding how financial and non-financial factors jointly reproduce inequalities in higher education access.

The review also identifies important gaps in the literature, including the dominance of evidence from high income countries, limited use of causal research designs, and insufficient attention to first generation student status and school quality. Future research should expand evidence from underrepresented regions, particularly Sub Saharan Africa, South Asia, and Latin America, while employing stronger causal methodologies to examine the interaction of financial and non-financial mechanisms. Addressing these gaps is essential for informing effective policies and interventions aimed at reducing persistent enrolment inequalities between students from high and low income households.

5.2 Recommendation

Based on the findings of this systematic review, the following recommendations are directed at researchers, policymakers, and higher education institutions with the aim of reducing persistent inequalities in university enrolment.

Expand Research in Underrepresented Regions: Future research should substantially increase the evidence base from Sub-Saharan Africa, South Asia, Southeast Asia, and Latin America, where fewer than 10% of the corpus studies were conducted. Researchers in these regions should be supported through international collaborative grants, open-access publishing initiatives, and capacity-building programmes that facilitate large-scale longitudinal data collection on household income and enrolment outcomes.

Prioritise Causal Research Designs: Only 4.2% of studies employed quasi-experimental or causal-inference designs. Funding agencies and journal editors should incentivise the use of instrumental variables, regression discontinuity, and difference-in-differences approaches, and natural experiments arising from policy reforms should be systematically exploited to establish causal estimates of income effects on enrolment. Without such designs, it remains difficult to distinguish genuine income effects from confounding by family background.

Address Non-Financial Barriers alongside Financial Aid: Policymakers should recognise that financial aid alone is insufficient to close enrolment gaps. Interventions targeting academic preparation from early childhood, improving

information and guidance quality for first-generation applicants, and building aspirations and college-going culture in low-income communities are equally important. Integrated support programmes that combine financial, informational, and mentoring components are more likely to produce sustained reductions in income-based enrolment inequalities than financial subsidies alone.

Strengthen Attention to First-Generation Students and School Quality: First-generation student status was examined in only 3.0% of studies, despite its theoretical importance as an amplifier of income disadvantage. Institutions and governments should invest in dedicated outreach, early alert, and retention programmes specifically designed for first-generation students. Simultaneously, policy efforts to reduce school quality disparities between high- and low-income catchment areas are essential, as these structural inequalities constrain academic preparation well before university application.

Develop Systematic Reviews and Cross-Disciplinary Synthesis: Systematic reviews and meta-analyses represent only 0.8% of the corpus, indicating a critical gap in evidence synthesis. Funders and research consortia should commission multi-disciplinary synthesis studies that integrate economic, sociological, psychological, and institutional perspectives on the income–enrolment relationship. Such synthesis research would accelerate the translation of empirical findings into actionable policy guidance across diverse national contexts.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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