

Why do Students Drop out?

A Correlational Meta-analysis between Academic Integration and University Dropout Rates

The phenomenon of university dropout is a complex, multi-causal one, impacting both the efficiency of higher education systems and the academic and social trajectories of students. The integration of academic disciplines is a pivotal aspect of the educational process, influenced by individual, institutional, and contextual factors that interact dynamically. The objective of this study is to quantitatively synthesise the empirical evidence on the relationship between academic integration and university dropout through a correlational meta-analysis. This study has been developed under the PRISMA 2020 standard to ensure methodological rigor, reproducibility, and analytical traceability. The resulting synthesis indicates that the aggregate relationship does not lend itself to linear or homogeneous interpretations, given the marked conceptual, methodological, and contextual heterogeneity of the primary studies and the consistency of the effect under sensitivity analyses and bias control. The findings of the present study corroborate the efficacy of meta-analysis in synthesising dispersed evidence, whilst concomitantly delineating the limitations of simplistic interpretations of dropout. This underscores the necessity to conceptualise dropout as a multifaceted, evolving, and context-specific phenomenon, necessitating the development of sophisticated analytical frameworks that can elucidate the interplay between theory, methodology, and institutional context.

Keywords: University dropout; Academic integration; Higher education; Correlational meta-analysis; Student retention.

Introduction

The phenomenon of university dropout is a complex and multicausal one, affecting the efficiency of higher education systems and the academic and social trajectories of students (Castro-Montoya et al., 2025; Valencia-Arias et al., 2025). The explanation for this phenomenon is associated with the interaction of individual, institutional, and contextual factors throughout the educational process, including academic, economic, psychosocial, and mental health dimensions (Römhild & Holleder, 2025; Valencia-Arias et al., 2025). Within this set of factors, academic integration is recognised as a central construct, defined as the degree of cognitive, pedagogical, and normative connection of the student with university life and its social systems (Berríos-Riquelme et al., 2025; Castro-Montoya et al., 2025; Grüttner & Koopmann, 2025).

The relationship between academic integration and dropout rates is a pertinent one for the enhancement of explanatory models and the design of institutional strategies focused on retention and academic success, particularly within educational contexts characterised by diversity and inequality (Berríos-Riquelme et al., 2025; Grüttner & Koopmann, 2025). Empirical evidence on the

relationship between academic integration and university dropout rates presents heterogeneous and, in some cases, contradictory results (Nuuyoma, 2025; Stellmacher et al., 2025). A number of studies have identified statistically significant negative associations between higher levels of integration and a lower probability of dropping out. However, other studies have reported weak, non-significant, or conditioned effects based on the institutional context and student profile (Özbağcı et al., 2025; Stellmacher et al., 2025).

These discrepancies are partly attributed to the diversity of methodological designs used, including cross-sectional and longitudinal approaches, as well as the use of non-homogeneous metrics for operationalising academic integration and dropout rates (Özbağcı et al., 2025). Moreover, the research has been conducted in a variety of educational, cultural, and socioeconomic contexts, thereby increasing the variability of the observed results (Delgado-García et al., 2026). As demonstrated in the seminal work of Nuuyoma (2025), previous narrative and systematic reviews have facilitated the conceptual organisation of the extant literature. However, these reviews exhibit methodological limitations by failing to systematically examine heterogeneity, the robustness of findings, or publication bias. Consequently, a robust quantitative synthesis that consistently integrates the available evidence remains lacking.

The extant literature on the relationship between academic integration and university dropout presents substantial gaps, evidenced by the absence of systematic quantitative synthesis procedures comparable to those employed in other fields of research (Xu et al., 2025; Zhu et al., 2025). Firstly, there is an absence of a global and comparable estimate of the effect size that quantitatively integrates the existing evidence. This is in contrast to recent meta-analyses that combine heterogeneous results using random-effects models (Li et al., 2025; Peng et al., 2025). Secondly, the robustness of the results has been assessed only in a limited way, with the application of systematic sensitivity analyses, which are commonplace in contemporary quantitative reviews (Xu et al., 2025). Furthermore, the examination of publication bias is rarely conducted explicitly, which has a detrimental effect on the validity of the conclusions (Zhu et al., 2025).

Finally, the analysis of heterogeneity has been primarily approached descriptively, with limited use of subgroups to explain variability between studies (Li et al., 2025). Therefore, the objective of this research is to quantitatively synthesize the empirical evidence on the relationship between academic integration and university dropout through a correlational meta-analysis. To achieve this objective, a series of questions guide the quantitative synthesis of the available empirical evidence.

1. To what extent are the results of the meta-analysis stable and robust under different sensitivity analyses?
2. Is there evidence of publication bias that could affect the validity of the estimated relationship between academic integration and university dropout?

3. What is the magnitude and direction of the overall estimate of the relationship between academic integration and university dropout?
4. To what extent can the heterogeneity observed in the studies be explained through subgroup analyses?

Methodology

The present research was conducted using the PRISMA 2020 methodology as a standard for the systematic and transparent reporting of the processes of identifying, selecting, and synthesizing studies (Page et al., 2021). The present meta-analysis employs a correlational quantitative approach to integrate empirical evidence on the relationship between academic integration and university dropout. The aim is to ensure methodological rigor, reproducibility, analytical traceability, and quality in the presentation of results, in accordance with international best practices for systematic reviews and meta-analyses.

Inclusion and exclusion criteria

The eligibility criteria were established with the objective of ensuring the relevance, consistency, and methodological quality of the included studies. The aforementioned criteria encompassed empirical research employing a quantitative approach, with a focus on examining the relationship between academic integration, encompassing related constructs such as academic commitment, and university dropout, abandonment, or retention in higher education students. The studies had to employ correlational designs or equivalent statistical models, explicitly measure both variables, and be published in peer-reviewed scientific journals in English or Spanish within a comparable timeframe. The exclusion process was executed in three sequential phases. Initially, records with indexing errors, conference proceedings, editorials, narrative reviews, and documents irrelevant due to their format were removed. Subsequently, texts without full access that prevented methodological evaluation and data extraction were excluded. Finally, empirical studies that did not report a quantitative measurement of the relationship between academic integration and university dropout were discarded.

Sources of information

The selection of information sources was restricted to Scopus and Web of Science due to their broad multidisciplinary coverage, high standards of editorial quality, and consistency in indexing peer-reviewed scientific literature. The two databases have been shown to provide structured metadata, duplicate control, and rigorous journal selection criteria, thus promoting comparability and traceability of the search process (Culbert et al., 2025). These features ensure rigor and reliability in retrieving relevant studies, in accordance with the available evidence on the coverage and quality of scientific references.

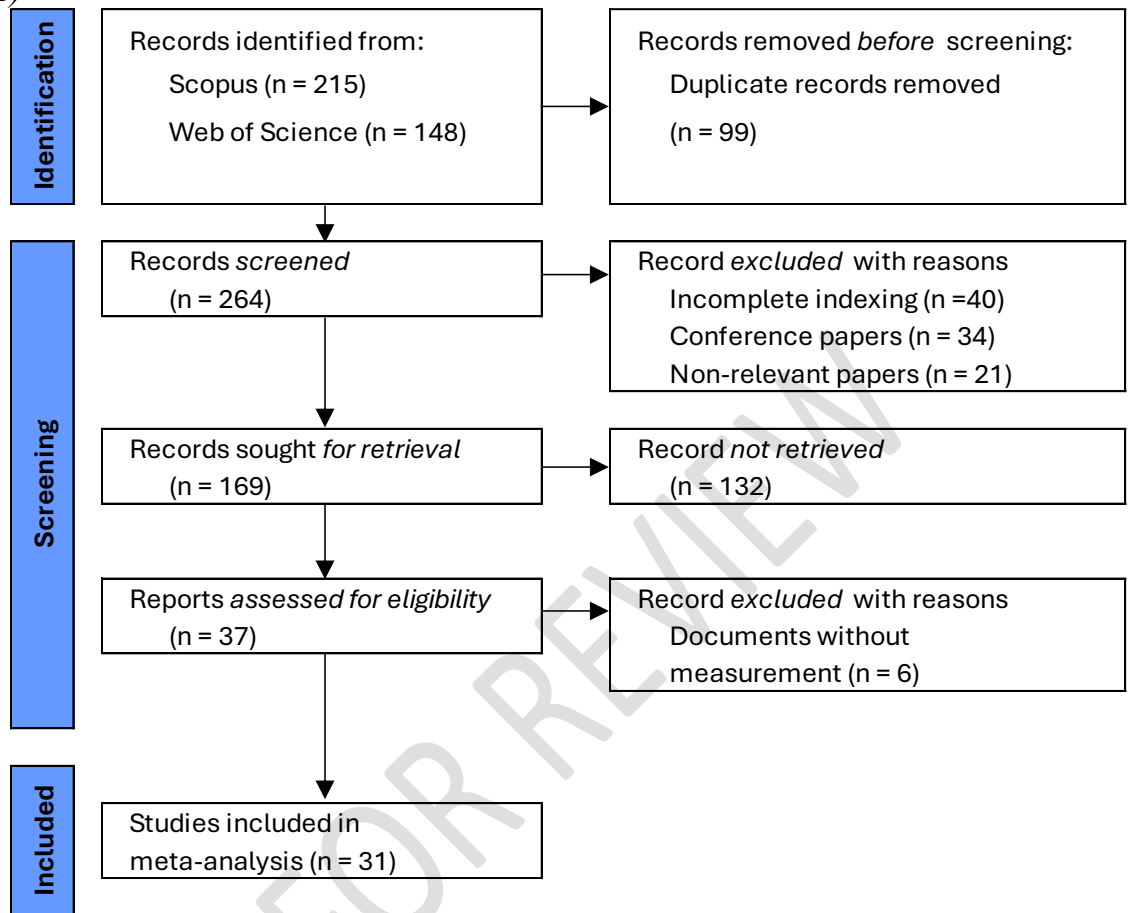
Search strategy

The search strategy was structured using independent equations for each database, derived directly from the inclusion criteria, employing Boolean operators and specific fields to ensure thematic precision. In Scopus, the equation TITLE (“academic integration” OR “student engagement” OR “academic engagement”) AND TITLE-ABS-KEY (dropout OR attrition OR “student retention” OR “university dropout”) was used, while in Web of Science, the corresponding syntactic adaptation TS=(“academic integration” OR “student engagement” OR “academic engagement”) AND TS=(dropout OR attrition OR “student retention” OR “university dropout”) was applied, incorporating the AK= field for author keywords when relevant. This ensured conceptual coherence and equivalent retrieval of studies between both databases.

Selection process

The selection of studies was conducted in accordance with the PRISMA 2020 methodology guidelines, utilising a sequential approach that encompassed the phases of identification, screening, and selection. The identification of records in the selected databases was the initial phase of the process, which was followed by the removal of duplicates and the screening of titles and abstracts. The full text of potentially eligible studies was then evaluated through the systematic application of exclusion criteria, a process graphically represented in Figure 1, corresponding to the PRISMA 2020 flow diagram.

1 **figure 1.** PRISMA flow diagram. Prepared by the author based on (Page et al.,
2 2021)



3 Data processing and statistical analysis

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5 The data processing was conducted through a systematic procedure
6 involving the recording, cleansing, and coding of the information extracted from
7 the included studies in a structured manner, utilising Microsoft Excel.
8 Subsequent to this, a statistical analysis of the meta-analysis was conducted in
9 RStudio, utilising dedicated packages for effect size estimation and
10 heterogeneity assessment. Standardised graphical representations, including
11 forest plots, funnel plots, and influence analyses, were generated to facilitate the
12 interpretation and verification of the results.
13

14 Evaluation of methodological quality

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16 The methodological quality of the included studies was evaluated by
17 applying the AMSTAR-2 tool to systematically describe the criteria of
18 methodological rigor, transparency and consistency in the design and reporting
19 of the analysed studies. The results of these studies are presented descriptively
20 in Table 1, without establishing interpretive classifications or comparisons
21 between the studies.
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1 **Table 1.** *Evaluation with AMSTAR-2. Own elaboration*

Authors	Design	Sample	Measure	Overall
(Randall & Jaynes, 2022)	Yes	Yes	No	Moderate
(Almohammadi, 2025)	Yes	Yes	Yes	High
(Harker, 2023)	Yes	No	No	Low
(Kayande & Kukreja, 2025)	Yes	Yes	Yes	High
(Parra-Pérez et al., 2023)	Yes	Yes	Yes	High
(Merhi et al., 2025)	Yes	Yes	Yes	High
(Garzón et al., 2022)	Yes	Yes	No	Moderate
(Resch et al., 2023)	Yes	Yes	Yes	High
(Shehzad & Charles, 2023)	Yes	Moderate	No	Moderate
(Chen et al., 2021)	Yes	Yes	No	Moderate
(James et al., 2025)	Yes	Yes	Yes	High
(Vo & Ho, 2024)	Yes	Yes	Yes	High
(Yaban & Gaschler, 2025)	Yes	Yes	Yes	High
(Hahn et al., 2025)	Yes	Yes	Yes	High
(Bernardo et al., 2022)	Yes	Yes	Yes	High
(Grewe & Gie, 2023)	Yes	No	No	Low
(Mogavi et al., 2021)	Yes	Yes	Yes	High
(Tualaulelei et al., 2025)	Yes	Moderate	No	Moderate
(Hajedris, 2021)	Yes	Yes	Yes	High
(Alturaiki et al., 2025)	Yes	Yes	Yes	High
(Spitzer et al., 2021)	Yes	Yes	Yes	High
(Chong & Sin Soo, 2021)	Yes	Yes	No	Moderate
(Ghasemloonia & Singh, 2021)	Yes	Yes	No	Moderate
(Okwuduba et al., 2022)	Yes	Yes	Yes	High
(Ndu, 2023)	Yes	Moderate	No	Moderate
(Wakjira & Bhattacharya, 2021)	Yes	Yes	Yes	High
(Cheyroux et al., 2023)	Yes	Yes	Yes	High
(Carneiro & Pedreira, 2021)	Yes	Yes	Yes	High
(Bélanger et al., 2023)	Yes	Yes	Yes	High
(Prabowo et al., 2022)	Yes	Yes	Yes	High
(Szabó et al., 2024)	Yes	Yes	Yes	High
(Gil-López et al., 2023)	Yes	Yes	No	Moderate
(Emiru & Berhanu, 2025b)	Yes	Yes	Yes	High
(Santos et al., 2023)	Yes	Yes	Yes	High

Furthermore, a risk of bias assessment was conducted, considering aspects related to study design, variable measurement, data processing, and the clarity of the results report, in order to identify potential sources of bias that could affect the quantitative analysis.

Results

The studies included in this research, presented in Table 2, comprise diverse empirical approaches that examine the relationship between multiple dimensions of academic integration and associated constructs such as commitment,

belonging, and faculty support with dropout, retention, or proxy variables for abandonment. The majority of these studies were conducted in higher education settings, predominantly with undergraduate samples and employing correlational quantitative designs.

Table 2. *Characteristics of the included studies*

Authors	Dependent variable	Independent variable	ni	ri	Variable
(Randall & Jaynes, 2022)	Academic Integration	University Dropout	842	- 0,34	Pregrado
(Almohammadi, 2025)	Academic Engagement	Student Attrition	1215	- 0,27	Pregrado
(Harker, 2023)	Institutional Integration	Student Persistence (inverted)	496	- 0,24	Pregrado
(Kayande & Kukreja, 2025)	Academic Adjustment	Dropout Intention	368	- 0,21	Pregrado
(Parra-Pérez et al., 2023)	Sense of Academic Belonging	Retention (inverted)	1032	- 0,13	Pregrado
(Resch et al., 2023)	Instructor social presence	Student engagement / Attrition	30	0,35	Pregrado
(Shehzad & Charles, 2023)	Course clarity / Task relevance / Teacher support (integration proxies)	Student engagement / Retention (dropout risk)	351	0,3	Pregrado
(Chen et al., 2021)	Gamified mobile app use (integration via technology)	Retention / Persistence	300	0,28	Pregrado
(James et al., 2025)	Formative assessment (frequent tasks/quizzes)	Engagement / Learning outcomes (dropout prevention proxy)	49	0,42	Pregrado
(Vo & Ho, 2024)	Instructor social presence	Student engagement / Attrition	30	0,35	Mixto
(Yaban & Gaschler, 2025)	Student engagement moods (challenge/interest/joy/non-seeker)	Dropout prediction (attrition in QP websites)	9941	0,32	Pregrado
(Hahn et al., 2025)	Virtual reality use (integration via immersive edtech)	Student engagement / Pass rate (dropout prevention proxy)	36	0,45	Pregrado
(Bernardo et al., 2022)	Satisfaction, SRL strategies, Engagement	Intention to drop out (degree/university)	877	- 0,27	Pregrado
(Grewe & Gie, 2023)	Study demands/resources, Resilience, Engagement	Dropout intention (pandemic vs post-pandemic)	943	- 0,25	Mixto
(Mogavi et al., 2021)	Goal focus (process vs outcome)	Academic engagement (proxy for dropout risk)	1324	0,39	Pregrado
(Tualaulelei et al., 2025)	Student engagement domains (Academic, Online, Peer, etc.)	Student development / Retention (first-year transition)	142	0,69	Pregrado

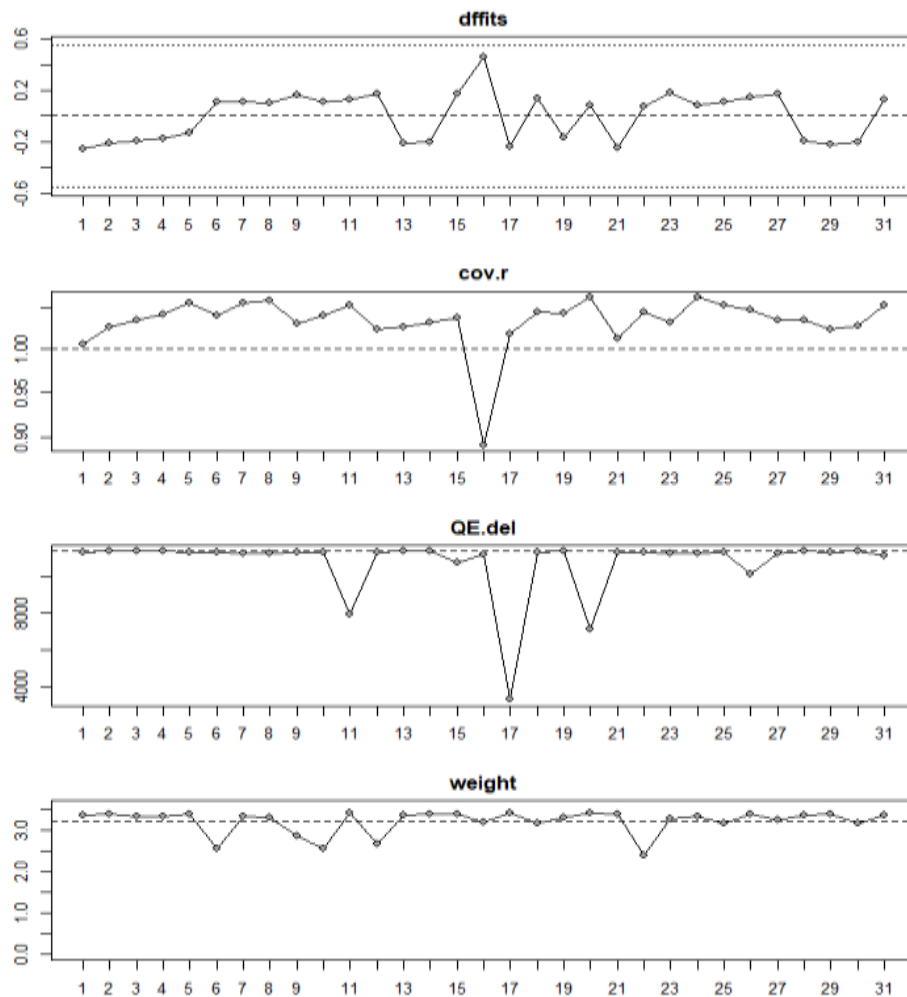
(Hajedris, 2021)	Online engagement with Bettermarks (COVID closures)	Dropout / Persistence (survival time)	300000	-0,3	Pregrado
(Alturaiki et al., 2025)	Gamified teaching (quizzes + puzzles)	Class engagement / Critical thinking	121	0,35	Pregrado
(Spitzer et al., 2021)	Sudden shift to e-learning (COVID)	Student engagement (traditional vs online)	339	-0,2	Pregrado
(Chong & Sin Soo, 2021)	Interactive technologies (Padlet, Google Docs, video quizzes)	Online student engagement (cognitive, behavioural, emotional, collaborative, social)	15823	0,25	Posgrado
(Ghasemloonia & Singh, 2021)	Engagement trajectories (High/Stable vs Low/Decreasing)	Dropout intentions (first-year nursing)	2515	-0,32	Pregrado
(Okwuduba et al., 2022)	Behavioral, collaboration, emotional factors (prediction model)	Student engagement (online attrition risk)	24	0,28	Pregrado
(Wakjira & Bhattacharya, 2021)	Learning support (teacher, peer, parent) + Student engagement	Science success (remedial placement exam)	216	0,41	Pregrado
(Cheyroux et al., 2023)	Online teaching techniques (Engineering Dynamics)	Student engagement / Retention (course outcomes)	496	0,25	Pregrado
(Carneiro & Pedreira, 2021)	Teacher competence + Classroom planning	Student engagement (secondary dropout risk)	116	0,3	Pregrado
(Bélanger et al., 2023)	Student engagement dimensions (affective, cognitive, behavioral, academic)	Dropout risk (performance proxy)	3230	0,35	Pregrado
(Prabowo et al., 2022)	Service, system, information quality (LMS)	Student engagement / Satisfaction (dropout challenge)	206	0,4	Pregrado
(Szabó et al., 2024)	Peer victimization → Student engagement (affective, cognitive, behavioral)	Achievement (proxy for dropout risk)	683	-0,24	Pregrado
(Gil-López et al., 2023)	Student engagement modes (curricular, extracurricular, social)	Persistence / Dropout (7-year follow-up)	3416	-0,28	Pregrado
(Emiru & Berhanu, 2025a)	Student engagement (plus resilience, perception of school success)	Truancy (school absenteeism)	118	-0,27	Pregrado
(Santos et al., 2023)	Distributed leadership (school principals)	Student engagement (mediated by teacher organizational commitment)	714	0,32	Pregrado

1 Prepared by the authors

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A sensitivity and robustness analysis was performed to assess the stability of the results in relation to analytical decisions using a random-effects model with REML estimation ($k = 31$). The combined effect size was 0.0998 ($SE = 0.0617$), with a 95% confidence interval ranging from -0.0212 to 0.2208 and a p-value of 0.1058, which did not attain statistical significance. The influence analysis did not identify any studies with a disproportionate impact on the overall estimate, and the model parameters remained consistent after successive eliminations (see Figure 2, which presents the model's influence and stability diagnoses).

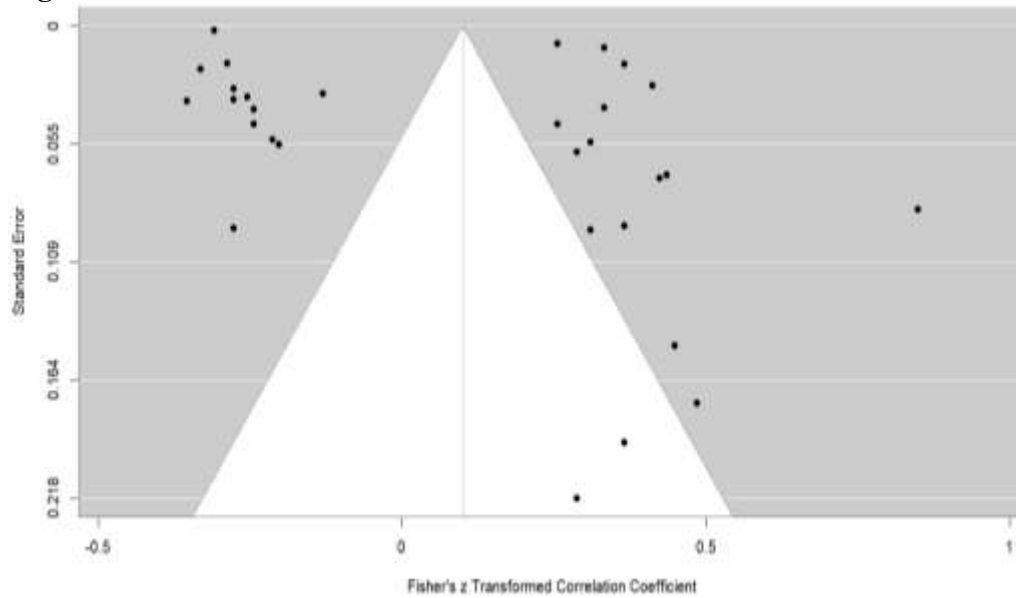
Figure 2. *Sensitivity and robustness analysis*



Author's own elaboration

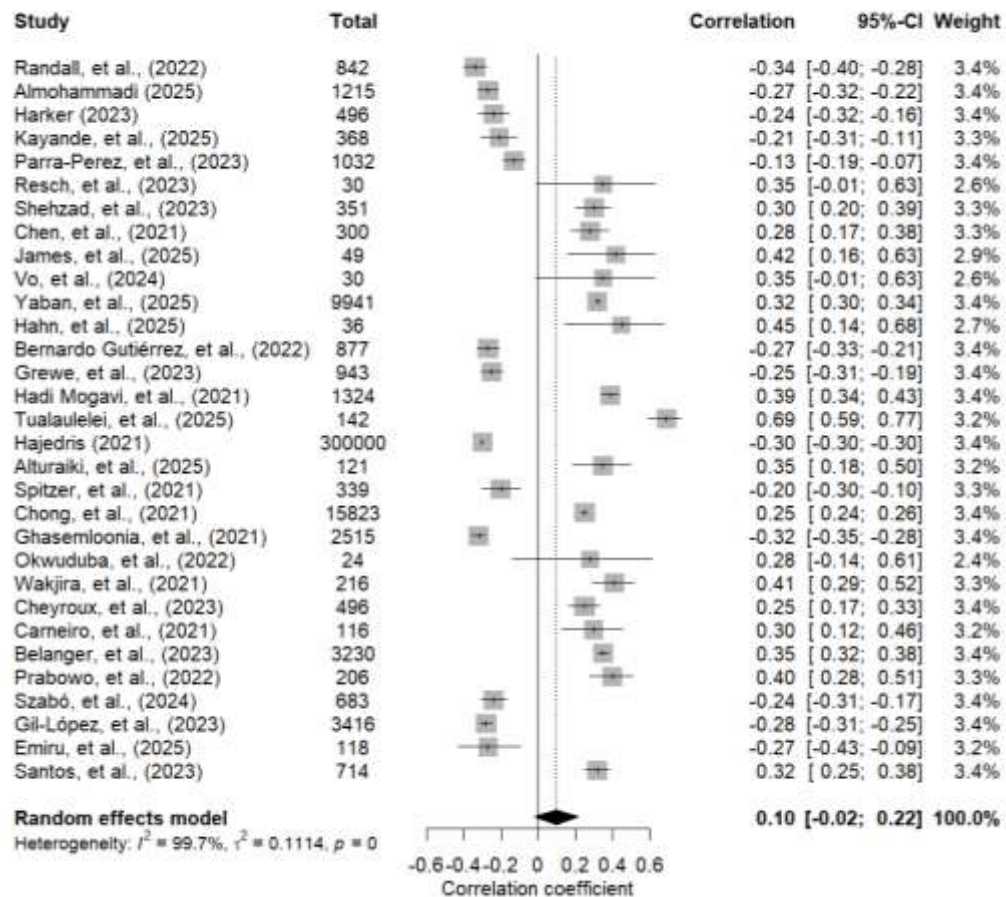
The analysis of potential publication bias was performed using a funnel plot, presented in Figure 3, constructed from 31 studies included in the meta-analysis. The plot in question focused on a Fisher's transformed correlation coefficient close to 0.10, with 95% confidence intervals between -0.0212 and 0.2208 , and effect sizes approximately between -0.45 and 0.95 , associated with standard errors between 0.02 and 0.22.

1 **Figure 3.** *Publication bias.*



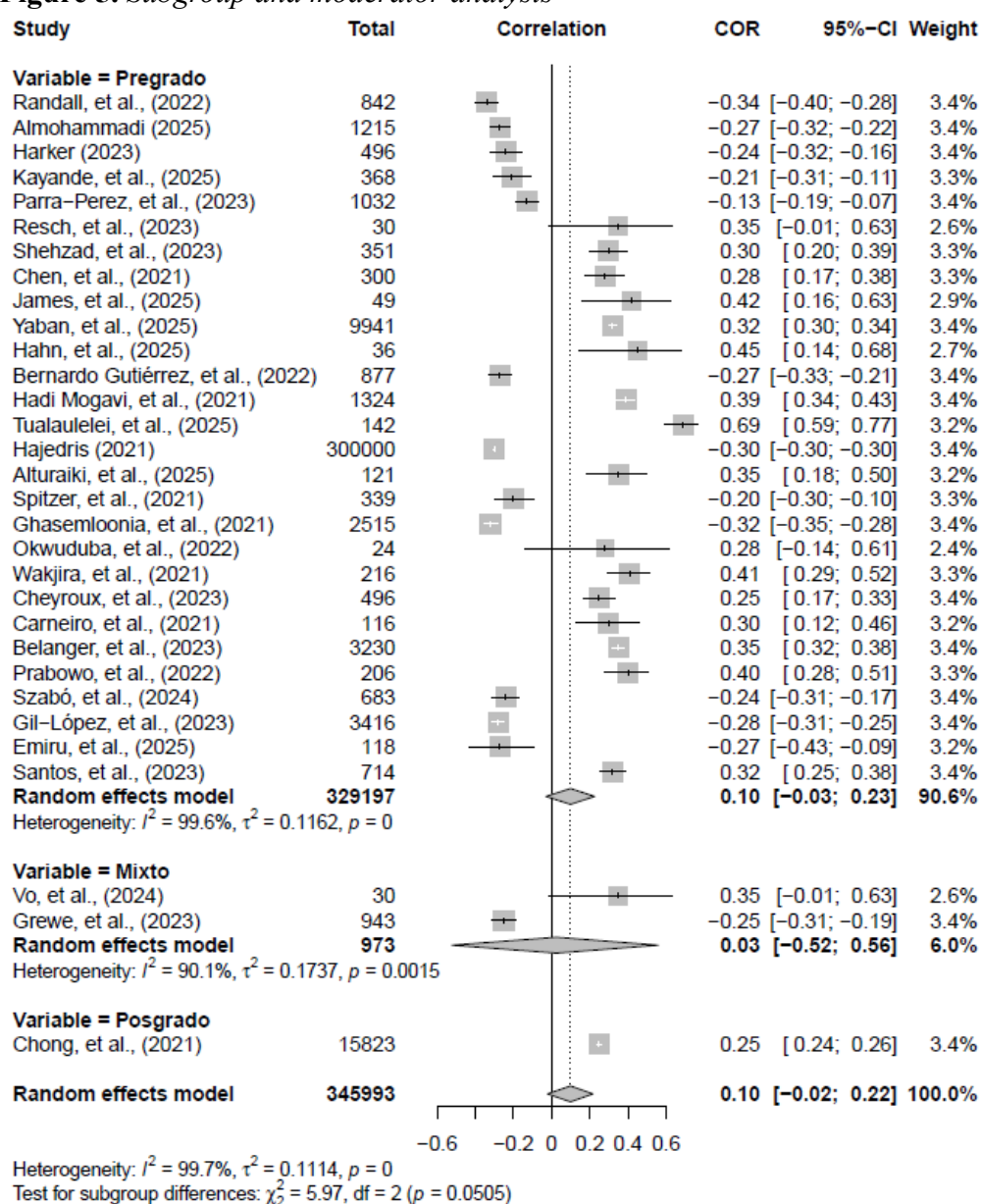
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3 Author's own elaboration

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5 As illustrated in Figure 4, the forest plot of the meta-analysis incorporates a
6 total of 31 studies, each with distinct sample sizes and individual correlation
7 coefficients, accompanied by their respective 95% confidence intervals. The
8 combined effect of the random-effects model is 0.10, with a range between -0.02
9 and 0.22, along with high heterogeneity ($I^2 = 99.7\%$, $\tau^2 = 0.1114$). This indicates
10 significant variability between studies and justifies the subsequent application of
11 subgroup analyses for further exploration.

1 **Figure 4. Overall estimate of the relationship**

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3 Own elaboration

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5 Figure 5 presents the forest plot corresponding to the subgroup analysis,
6 organised according to the educational level of the sample. This includes
7 undergraduate, remedial undergraduate, postgraduate, mixed (higher education
8 in the UAE), and mixed (Bachelor's + Master's + State Exam). Each subgroup
9 displays estimates derived from random-effects models, accompanied by their
10 respective sample sizes, correlation coefficients, and 95% confidence intervals.
11 The heterogeneity of the studies is significant, with I^2 values ranging from 87.6%
12 ($\tau^2 = 0.1414$) in undergraduate studies to 99.6% ($\tau^2 = 0.1298$) in the primary
13 group.
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1 **Figure 5. Subgroup and moderator analysis**

Author's own elaboration.

The division of the population into subgroups does not provide a satisfactory explanation for the observed heterogeneity, as I^2 values remain high across the various educational levels and τ^2 estimates remain elevated. Despite the identification of variations in effect sizes by subgroup, residual variability persists following stratification, indicating that overall heterogeneity is not appreciably reduced by this classification.

Discussion

The discussion section focuses on the interpretation and problematisation of the meta-analysis findings, based on a critical examination of the results, their contrast with existing evidence, the formulation of a future research agenda, and the identification of theoretical, political, and practical implications, along with the main methodological and empirical limitations of the study.

Interpretive synthesis of the results

The meta-analysis demonstrates a weak and non-statistically significant overall association between academic integration and university dropout, despite the existence of numerous individual studies that present a consistent direction of the effect. This finding does not suggest an absence of relationship, but rather highlights considerable conceptual, methodological, and contextual heterogeneity in defining, measuring, and associating academic integration with dropout. The simultaneous presence of negative, positive, and null effects indicates that integration does not operate as a single, direct, and homogeneous predictor, but as a construct conditioned by pedagogical, institutional, technological, and motivational factors. The elevated heterogeneity observed, in conjunction with the stability of the overall effect in the sensitivity analyses, suggests that the variability is not attributable to isolated influential studies, but rather to a complex structure wherein integration mechanisms function differently depending on the context, the educational stage, and the student's profile.

In this sense, the results reveal a limitation in the theoretical simplification implicit in estimating a single average effect for highly diverse educational realities. The extant literature facilitates comprehension of this heterogeneity by conceptualising academic integration as a set of interrelated processes rather than as an isolated variable. Research has focused on specific pedagogical practices, such as frequent formative assessment and the use of interactive technologies. Such practices have been shown to have a clear effect on engagement and retention (Chen et al., 2021; Randall & Jaynes, 2022). This suggests that integration is activated through concrete instructional devices that structure student participation. Conversely, studies employing person-centered approaches have revealed the existence of varied profiles of academic engagement, which are associated with distinct identity styles and motivational orientations. This finding provides a rationale for the attenuation of the effect when heterogeneous subpopulations are aggregated into a single global estimator (Almohammadi, 2025).

From a curricular and sociocultural perspective, integration is strengthened when academic content is articulated with the student's sociocultural experience and facilitates meaningful epistemological access, especially in contexts characterised by structural inequality, where dropout rates stem from mismatches between curriculum, institutional culture, and student expectations (Harker, 2023). In the context of digital and distance learning modalities, a body

of evidence has emerged that suggests a mediating role for the teacher's social presence, the clarity of the course material, the relevance of assignments, and technological support in the relationship between integration and retention (Resch et al., 2023; Shehzad & Charles, 2023; Vo & Ho, 2024). Recent studies that have employed computational approaches have served to reinforce this interpretation by demonstrating that integration is a dynamic and multimodal phenomenon, shaped by the interaction of behavioural, emotional, and cognitive patterns, and difficult to capture using simple correlational models (Kayande & Kukreja, 2025). Finally, the extant evidence on academic goals and self-regulation in distance education indicates that nonlinear configurations, such as the incongruence between process and outcome goals, may be associated with higher levels of engagement under specific motivational conditions, challenging linear interpretations of the link between integration and dropout (Yaban & Gaschler, 2025).

Comparison with other studies

The findings of this meta-analysis demonstrate partial consistency with preceding reviews that analyse university dropout from associated factors. However, it presents notable discrepancies in the magnitude and stability of the estimated effects. In contrast to the findings of meta-analyses that have identified strong associations between dropout and specific variables, such as substance use or mental health, with moderate to large effect sizes (Xu et al., 2025; Zhu et al., 2025), the aggregate relationship between academic integration and dropout is estimated to be weak and not significant. This discrepancy suggests that academic integration functions in an indirect manner and is contingent on context, in contrast to other risk factors that are more clearly delineated. In related domains, such as AI-mediated pedagogical interventions or educational technologies, diminished overall impacts are observed, which only become salient in specific subgroups or under particular implementation conditions (Li et al., 2025). Furthermore, the elevated heterogeneity observed in this study aligns with the findings of meta-analyses conducted in disparate fields, where inconsistency persists despite the implementation of subgroup stratification, underscoring the necessity for more sophisticated analytical methodologies (Peng et al., 2025).

Research agenda

The evidence synthesised in this meta-analysis highlights the necessity for a future research agenda focused on overcoming aggregated approaches that have contributed to the previously identified conceptual and methodological fragmentation and persistent unexplained heterogeneity. The development of more refined theoretical and methodological subgroups that distinguish between formative stages, educational modalities, socio-academic profiles, and differentiated risk trajectories is a priority. The purpose of this is to correct the tendency to use broad classifications that dilute substantive effects and

reproduce inconsistent operational definitions of academic integration. The establishment of these subgroups should be derived from explicit conceptual frameworks, rather than being limited by the availability of variables in primary studies.

Conversely, there is a necessity for a transition towards longitudinal and multilevel designs in order to analyse academic integration as a dynamic and contextualised process, with the capacity to capture the interaction between individual, institutional and structural levels. This approach would overcome the limitations of the cross-sectional correlational models that have been predominant in the literature to date, and which contribute to the instability of estimated effects. In addition, it is imperative that future research systematically integrates institutional, pedagogical, and contextual variables. Such variables may include support policies, teaching practices, curriculum design, technological resources, and socioeconomic conditions. This integration is necessary in order to address the gap between student-centered explanations and the organisational frameworks in which dropout occurs. In this context, the incorporation of advanced models, such as multivariate meta-regressions, hierarchical Bayesian approaches, and the use of longitudinal administrative data, becomes essential to explain persistent heterogeneity and move towards more coherent, cumulative, and theoretically informed explanations of university dropout.

Implications

The theoretical implications of this meta-analysis call into question the linear and unidimensional approaches that are prevalent in models of academic integration and university dropout. The evidence indicates that integration does not function as a direct or stable predictor, but rather as a relational, contingent, and mediated construct whose influence depends on specific pedagogical, institutional, and contextual configurations. This necessitates a shift in theoretical frameworks toward processual and multilevel models that recognise heterogeneous integration trajectories and the interaction between individual, organisational and structural factors. This move is required to move beyond simplistic interpretations and align explanations with the observed empirical complexity. In the domain of educational policy, the outcomes of this study have significant implications for retention strategies that are predicated on aggregate indicators or standardized interventions. The findings underscore the necessity for differentiated approaches that are tailored to the specific level of education, in light of the pronounced heterogeneity that has been observed.

The educational modality and the student profile imply the necessity of strengthening longitudinal information systems, linking academic support policies with well-being and equity initiatives, and avoiding accountability schemes that attribute dropout to individual shortcomings without considering the institutional conditions that generate or intensify it. From an institutional practice perspective, the implications are significant, as evidence indicates that academic integration is facilitated by specific pedagogical mechanisms,

including structured teaching practices, formative assessment, meaningful academic presence, and curricular designs that are consistent with real-world trajectories. Consequently, academic institutions are required to transition from generic support programmes to integrated strategies that link teaching, curriculum, and academic support at critical moments in the educational cycle. Furthermore, it is imperative that they enhance the early identification of risks and the design of flexible, contextualised, and sustained interventions, acknowledging retention as an organisational phenomenon and not solely as a result of individual effort.

Limitations

The study is subject to certain limitations that must be taken into account when interpreting the results. The significant heterogeneity observed among the included studies has a detrimental effect on the generalisability of the aggregate effect, thereby highlighting considerable variability in contexts, samples, and analytical decisions. The utilisation of observational studies imposes limitations on causal inference and perpetuates the potential for uncontrolled residual biases. The heterogeneity in the operationalisation of academic integration and dropout introduces conceptual and metric inconsistencies that affect the comparability of the effects. Furthermore, restrictions associated with the databases consulted and the language of publication may have reduced the coverage of relevant evidence.

Conclusions

The conclusions of this study corroborate the pertinence of meta-analysis as a methodology for synthesising dispersed evidence on the relationship between academic integration and university dropout, while concomitantly delineating the scope of simplified interpretations of the phenomenon. The research provides a coherent response to the questions posed and demonstrates that the validity of the synthesis is based less on isolated statistical stability and more on understanding the theoretical and contextual complexity of the construct examined.

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