

A Current Perspective on Studies Conducted in Türkiye on Socio Economic Status and Academic Achievement*

Tuğba ALAGÖZ, Ayşe BALCI KARABOĞA

Abstract

This systematic review synthesises empirical studies conducted in Türkiye on the relationship between socioeconomic status (SES) and students' academic achievement. Following a predefined protocol and the PRISMA 2020 reporting framework, a systematic search was conducted in Web of Science, ERIC, Google Scholar, and the Council of Higher Education National Thesis Centre. The search was completed in April 2025 and eligibility was defined a priori to include empirical studies published between 2012 and 2024, written in Turkish or English, based on Turkish samples, and explicitly analysing the SES achievement relationship. Records were screened in two stages, title and abstract screening followed by full text eligibility assessment, and the included studies were synthesised using descriptive content analysis. Methodological quality was appraised with MMAT 2018 through dual independent assessment and criterion level reporting without computing an overall score. Across the included evidence, SES was consistently associated with achievement, while the strength of the association varied by how SES and achievement were operationalised and by whether analyses accounted for school composition and mediating pathways. Findings highlight family level mechanisms such as parental education, occupational status, income related resources and educational resources at home, as well as school level factors including school socioeconomic composition, teacher related conditions, and class size. The synthesis also points to early compensation domains such as preschool participation, early academic support, and remedial learning recovery and identifies resilience related processes associated with motivation, self regulation, and social support in disadvantaged contexts. Overall, the review underscores that SES related achievement gaps in Türkiye reflect multi level mechanisms operating within an examination driven and stratified opportunity structure, and it proposes context sensitive directions for policy and future research.

Keywords: Academic achievement, equal opportunities, resilience, socioeconomic status, systematic review.

INTRODUCTION

Concurrent with transformations in social structure shaped by globalization, societal perspectives on education and related expectations have also shifted. Following the industrial revolution and the expansion of mass schooling, research attention increasingly moved toward understanding why education does not yield equal outcomes for all students and how family background and broader social structures, including the organization of educational institutions, shape achievement and educational attainment (Coleman et al., 1966). Academic achievement, as a key indicator for the development of individuals, societies and nations, therefore needs to be examined in a multifaceted manner due to its implications for personal development, social participation and economic wellbeing. In this respect, promoting success and ensuring equal opportunity in education remain critical for national development and for strengthening social justice. Nevertheless, students' academic achievement levels are profoundly influenced not only by their individual abilities and efforts but also by their socioeconomic conditions. In particular, socioeconomic status has been a subject of extensive discussion in the relevant literature, which has identified it as one of the primary factors influencing students' access to educational opportunities and the subsequent disparities in learning outcomes (Sirin, 2005). Sirin's (2005) comprehensive meta analysis revealed a moderate positive correlation between student achievement and families' socioeconomic characteristics on a global scale. This finding demonstrates that socioeconomically advantaged students demonstrate significantly higher academic performance than their disadvantaged peers. Within the Turkish context, inequalities in education are frequently highlighted by international test results and national studies. In recent years, Türkiye has experienced notable changes in educational participation and performance, as reflected in successive international assessments. At the same time, socioeconomic disparities in learning outcomes have remained pronounced. In PISA 2022, socioeconomically advantaged

* This paper was presented as an oral presentation at the 18th International Congress on Educational Administration.

¹Ministry of National Education, tugbaalagoz87@gmail.com, orcid.org/0000-0003-4300-2076

² Mersin University, aysebalci@gmail.com, orcid.org/ 0000-0003-3958-6582

students who are at the top 25% in ESCS in Türkiye outperformed disadvantaged students who are at the bottom 25% by 82 score points in mathematics, pointing to a persistent SES related achievement gradient. These patterns highlight the continued policy relevance of synthesising empirical evidence on how socioeconomic status is associated with student achievement in the Turkish context (OECD, 2023). This discrepancy is evident not only at the level of individual students but also among educational institutions and across geographical regions. As demonstrated in Ataç's (2017a) study, there is a significant discrepancy in academic achievement between schools in the western and eastern regions of Türkiye. The findings emphasise that these regional disparities in achievement are predominantly attributable to inequalities in socio economic development. Suna and Özer's (2021) analyses of TIMSS data revealed that, although Türkiye's average academic performance has increased over time, the relationship between socio economic characteristics and achievement remains significant. This situation demonstrates that even with general improvements in education, socioeconomically based achievement gaps do not disappear on their own, rather they persist as a permanent and structural problem. Regardingly, the comprehensive identification of the socio economic factors that lead to inequality of opportunity in education in Türkiye and their relationship with academic achievement is of great importance for both the literature and policymakers. In recent years, a number of studies have been conducted in Türkiye on this subject, employing a variety of scales and methods. The synthesis of the findings from these studies to identify general trends and outcomes is valuable for summarising the existing body of knowledge and informing future applications.

THE AIM OF THE STUDY

The objective of this systematic review study is to systematically review the scientific studies on the relationship between socioeconomic status and academic achievement of students in Turkey and to analyse the findings obtained. To address this objective, the PICOS (sample (P), intervention (I), comparison (C), result (O), study design (S)) method was employed to formulate the research problem statement, which read as follows "What effect does socioeconomic status have on students' academic achievement in Türkiye?"

THE IMPORTANCE OF THE STUDY

Education inequalities remain a central concern in Türkiye, with direct implications for educational equity and social mobility. By synthesising empirical evidence on the relationship between SES and academic achievement, this review aims to inform international discussions on how context specific mechanisms shape educational inequality and how policy levers may mitigate SES related achievement gaps. The literature on educational inequality consistently shows that unequal outcomes are produced through the interaction of family resources, school and system level arrangements and broader policy choices rather than being attributable to a single actor. Accordingly, responsibility for reducing educational inequality is shared across individuals and families, educational institutions and the state, because each level contributes to how opportunities are distributed and converted into achievement (Bourdieu & Passeron, 1977; Coleman et al., 1966). In this respect, the education system functions as a core institutional pillar through which states can either reproduce or reduce social inequalities, therefore, systematic and equity oriented reforms to educational governance, resource allocation and school improvement should be treated as a primary strategy for narrowing opportunity gaps and strengthening social justice (Coleman et al., 1966; OECD, 2016). The promotion of equal opportunities in education has been demonstrated to be an effective measure in reducing socioeconomic inequalities between societies. In this regard, the present study considers examining the socio economic situation. Moreover, it is hypothesised that socio economic inequality in education hinders students from disadvantaged groups from achieving their full potential in education, thereby exacerbating inequality of opportunity in education. Consequently, the relationship between socio economic status and academic achievement remains a significant issue. This is particularly the case in a country such as Türkiye, which is undergoing rapid social and economic transformation and is comprised of multiple socio economic segments. Consequently, studies on the source, structure and effects of this relationship are also of great importance in determining and implementing education policies. In this context, the present study reviews the extant literature on the Turkish sample in the field of educational sciences, covering the period from 2012 to 2024. It examines the effect of socioeconomic status on academic achievement and, ultimately, summarises the noteworthy points of these studies, with a view to enlightening and guiding researchers.

METHOD

METHODOLOGY OF THE RESEARCH

This study constitutes a systematic review that has been conducted using a qualitative research synthesis approach. A systematic review constitutes a research design that involves the planned and transparent screening of extant literature within the framework of a specific research question, followed by the selection, evaluation and synthesis of appropriate studies (Al-Khabori & Rasool, 2022). This design facilitated the integration of findings from multiple studies, thereby enabling the formulation of more comprehensive inferences. The review process was planned and reported in accordance with international recommendations. The PRISMA guidelines were particularly relevant in the context of the screening and reporting stages (Moher et al., 2009). The identification, selection and synthesis of studies were conducted in accordance with the updated PRISMA 2020 checklist (Page et al., 2021), ensuring a transparent and systematic approach. In addition, this research has been registered in the International Database of Systematic Reviews in Education (IDESR.org) with the registration number IDESR000208. This database contains abstract records of published systematic reviews in the field of education, as well as protocols of unpublished and in progress reviews.

INCLUSION and EXCLUSION CRITERIA

This The following is a list of the steps of a systematic review, as outlined by Higgins and Green (2011):

It is imperative that a clearly defined set of criteria and objectives for study eligibility is established.

The methodology must be both clear and reproducible.

A systematic search was conducted to identify all studies that met the established eligibility criteria.

The present study aims to undertake a rigorous evaluation of the validity of the findings derived from the included studies. The following presentation and synthesis of the characteristics and findings of the included studies is intended to be systematic in nature. Accordingly, the objective of the present research is to provide a clear definition of the selection criteria, search terms and evaluation processes for studies to be included in the research, with a view to increasing the reliability and validity of the findings. Following the identification of studies to be included in the synthesis, the analysis process has been completed and the reporting stage has commenced. The selection criteria outlined in Table 1 have been meticulously delineated for the purpose of inclusivity in this research study, which is designed to undertake a systematic review of studies examining the relationship between socio economic status and academic achievement in Türkiye.

Table 1. Inclusion Criteria

Inclusion Criteria	Exclusion criteria
Based on a Turkish sample	Studies that are interpretative, theoretical or review in nature
Establishing a relationship between socio economic status and academic achievement	Publications whose full text is not accessible
Quantitative, qualitative or mixed research	Studies that present socioeconomic status only as contextual data but do not analyse it
Articles published in peer reviewed journals, master's/doctoral theses or conference proceedings	Published before 2012 or after 2024
Studies in Turkish and English	

DATA SOURCESS

The data sources for the research were obtained from the Web of Science search engine in the education related categories of SSCI (Social Sciences Citation Index), master's and doctoral theses on socio economic status and academic achievement in Türkiye obtained from the Higher Education Council (YÖK) National Thesis Centre database and articles in the education, educational management and educational psychology subcategories of the social sciences category of ERIC and Google Scholar Metrics. The search was conducted in April 2025 to capture all potentially eligible records available up to that date. However, the

eligibility criterion for publication year was defined a priori as 2012-2024 to focus on the contemporary evidence base and ensure comparability across the reviewed studies. Accordingly, only studies published between January 2012 and December 2024 were included in the synthesis. Therefore, all postgraduate theses and articles that meet the criteria have been included in the study. The search process was completed in April 2025. The aim was to access as many suitable studies published up to this date as possible.

DATA COLLECTION

Search terms related to the research topic, as listed in Table 2, have been determined in order to access studies from databases that meet the suitability criteria.

Table 2. Search terms

Database	Search Terms
Google Scholar	"Sosyoekonomik durum" VE "Akademik *başarı"
ERIC	"Socioeconomic* status" AND "Academic *achievement" AND Turkey
Higher Education Council National Thesis Center	"Sosyoekonomik" ve "başarı"
Web of Science	((("socioeconomic" OR "socio-economic" OR "inequality") AND ("achievement" OR "success" OR "pisa") AND ("Turkish" OR "Turkey"))

The PRISMA flow diagram, developed by Moher et al. (2009) and updated by Page et al. (2021), as shown in Figure 1, was utilised to ensure a comprehensive and transparent review of the studies identified in the database search.

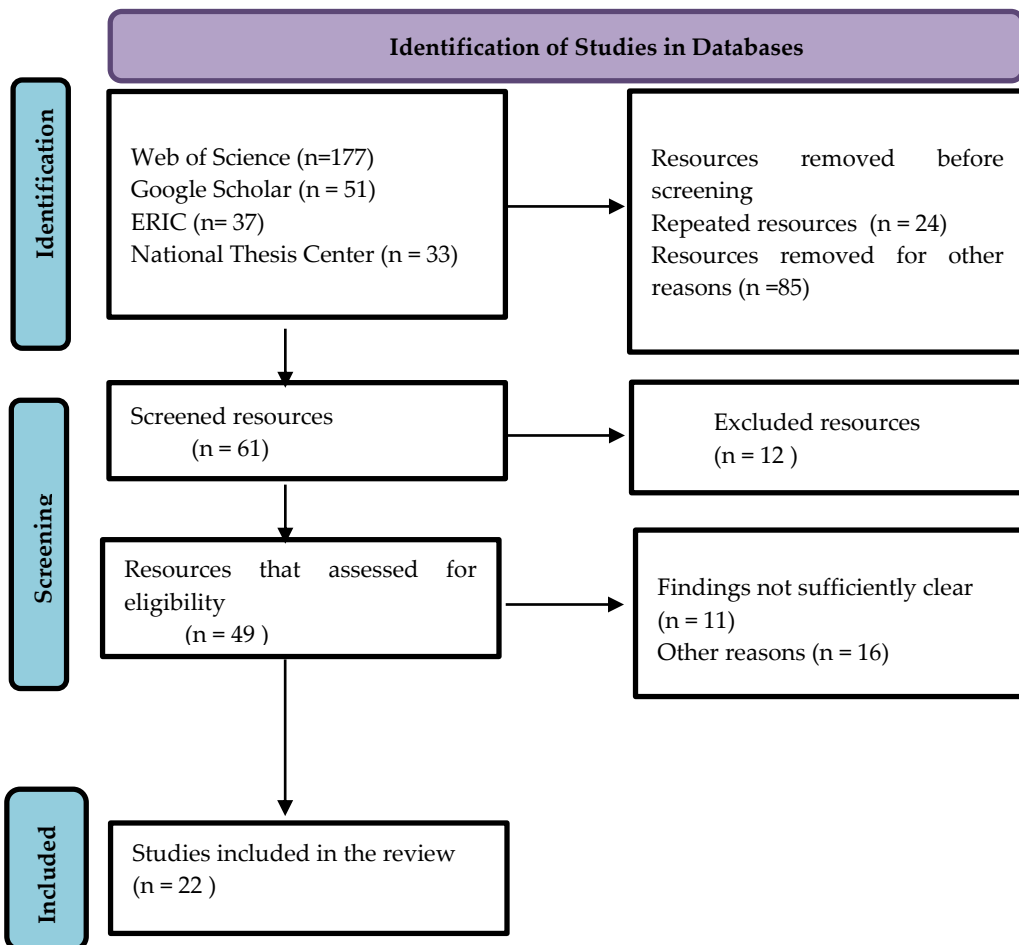


Figure 1. Systematic Steps Followed in The Literature Review Process

The Web of Science (n=177), Google Scholar (n=51), ERIC (n=37) and Higher Education Council National Thesis Centre (n=33) databases were utilised in the present study. Initially, 298 records were reviewed. Fulltext reports were excluded primarily for non empirical designs (n=29), not analysing SES as an explanatory variable (context only; n=21), not using a Turkish sample (n=10), or inaccessible full texts (n=17). Additional exclusions were due to other specified reasons (n=8). Also after removing duplicate records and those that did not meet the inclusion criteria, 22 studies, 13 of which in English and 9 of which were in Turkish, were included in the systematic review.

QUALITY APPRAISAL

Quality appraisal was conducted using the Mixed Methods Appraisal Tool version 2018 (Hong et al., 2018). The MMAT is designed for systematic reviews that include qualitative, quantitative and mixed methods studies and provides distinct criteria sets for different study categories. First, all studies were screened using the two MMAT screening questions. These questions evaluate whether the study has clear research questions and whether the collected data allow addressing those questions. Studies that did not meet the screening requirements were not eligible for further appraisal with MMAT. Second, each included study was classified into the most appropriate MMAT category based on its design and methods. The review primarily included quantitative non randomized studies and quantitative descriptive studies, with a small number of qualitative and mixed methods studies. Each study was then appraised against the five criteria of its corresponding MMAT category, using the response options “Yes”, “No” and “Can’t tell”. Two reviewers independently conducted the appraisal, as recommended for judgment based critical appraisal. Disagreements were resolved through discussion and a final consensus rating was recorded for each criterion. Consistent with MMAT guidance, an overall numerical quality score was not computed. Instead, the criterion level ratings to provide a transparent quality profile of the included evidence and to inform interpretation of findings are reported as presented in Table 3.

Table 3. Quality Appraisal

Study ID	MMAT category		S1	S2	C1	C2	C3	C4	C5
Suna & Özer, 2021	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
Pourfeiza & Behjoob, 2013	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Can't tell
Suna et al., 2021	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	No	Yes
Ataç, 2017	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Yes
Yıldırım, 2019	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
Pehlivan, 2021	Quantitative descriptive		Yes	Yes	Yes	Yes	Yes	Can't tell	Yes
Dindaroğlu, 2022	Quantitative descriptive		Yes	Yes	Yes	Yes	Yes	Can't tell	Can't tell
Akben, 2018	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
Borkan & Bakis, 2016	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
Suna & Özer, 2022	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
Ergezen, 2023	Qualitative		Yes	Yes	Yes	Yes	Yes	Can't tell	Yes
Sarıavcı, 2024	Quantitative descriptive		Yes	Yes	Yes	Yes	Yes	Can't tell	Can't tell
Polat, 2020	Quantitative randomized	non-	Yes	Yes	No	Yes	Can't tell	No	Yes
Suphi & Yaratın, 2012	Quantitative randomized	non-	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Can't tell
Yüksel & Yüksel, 2012	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes
Yalcın, 2017	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Yes
Koban Koç, 2016	Quantitative descriptive		Yes	Yes	Can't tell	Can't tell	Yes	Can't tell	Yes
Şahin & Çoban, 2020	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Yes
Cihangir, 2023	Qualitative		Yes	Yes	Yes	Yes	Yes	Can't tell	Yes
Niehues et al., 2020	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kılıç & Haşiloğlu, 2017	Quantitative randomized	non-	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Yes
Yelgün & Karaman, 2015	Qualitative		Yes	Yes	Yes	Yes	Yes	Can't tell	Yes

DATA ANALYSIS

Prior to the analysis process, the studies examined were systematically recorded by the researchers in a “Research Information Form”. The form in question comprised headings such as search terms, keywords, source citation, database accessed, research purpose, method and design, participant group, data collection tools used and key findings for each study. The primary objective of the research was to ascertain the relationship between socioeconomic status and academic achievement in Türkiye in a multifaceted manner. To this end, the data obtained were systematically analysed using descriptive content analysis.

VALIDITY AND RELIABILITY

To ensure the validity of the research, inclusion and exclusion criteria were clearly defined prior to the data collection process and the methodological qualities of the selected studies were carefully evaluated. To ensure the process was conducted systematically, the PRISMA Statement checklist was used from the outset of the study and all steps were visually presented using the PRISMA flow diagram, clearly outlining the search strategy followed. To support reliability, both reviewers appraised each MMAT criterion independently. Inter reviewer agreement was calculated on the basis of criterion level decisions. Discrepancies were discussed until consensus was achieved and the consensus ratings were used in the final reporting.

FINDINGS

METHODOLOGICAL QUALITY OF INCLUDED STUDIES

Methodological quality was assessed with MMAT 2018 and is presented at criterion level. Overall, the most consistently met criteria concerned the clarity of research questions and the suitability of the collected data for addressing those questions. Across quantitative non randomized studies, common limitations were related to representativeness of participants and the extent to which confounders were accounted for in the design and analysis. In quantitative descriptive studies, limitations were most often observed in sampling strategy justification, nonresponse bias reporting and the appropriateness of the statistical analysis for the stated research question. These quality patterns were considered when interpreting variations across findings. Studies with clearer confounder control and stronger measurement reporting tended to produce more stable estimates of the SES achievement relationship, whereas studies with limited reporting or weaker control of alternative explanations required more cautious interpretation.

DESCRIPTIVE RESULTS

A total of 22 studies conducted in Türkiye on socio economic status and academic achievement were included in the analysis. As illustrated in Figure 2, the publication year of these scientific publications is presented in summary form.

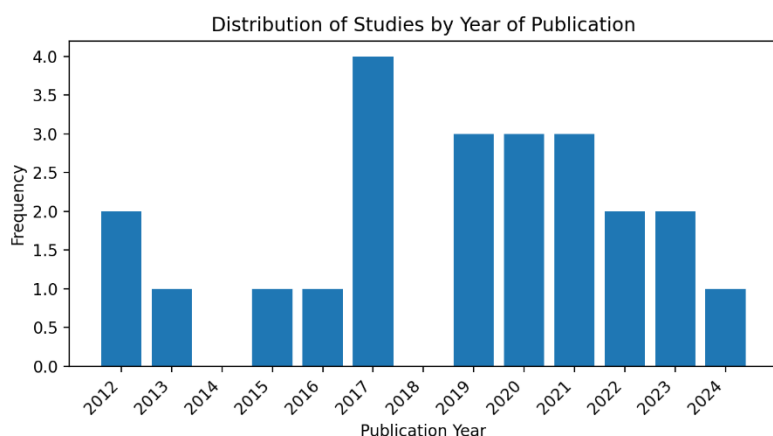


Figure 2. Distribution of Studies by Year of Publication

An examination of the publication trends depicted in Figure 2 reveals a paucity of studies between 2012 and 2014. However, a significant escalation is evident from 2016, with a peak of four studies in 2017. This

increase can be attributed to the growing interest in socioeconomic inequalities in education following the release of the PISA 2015 results in Türkiye. Despite a minor decrease in 2018, a resurgence in momentum was observed after 2019. The number of studies published between 2020 and 2022 remained stable (n=3), indicating that the effects of socioeconomic differences on education were researched more intensively, particularly during the pandemic. A decline in the number of studies is evident in 2023 and 2024, suggesting that research in this area continues, albeit with a greater degree of selectivity compared to previous years. The word cloud illustrating the keywords utilised in the examined studies is displayed in Figure 3.

Figure 3. The Word Cloud Displaying The Keywords

Table 4. Research models

The findings presented in Table 4 indicate a predominant reliance on quantitative research methodologies within the selected studies. In particular, quantitative approaches such as multilevel modelling (f=9) and descriptive scanning models (f=5) are frequently preferred. Conversely, the extensive utilisation of the correlational analysis method (f=5) underscores the significance of statistically evaluating the direct and indirect relationships between SES and success. In contrast, qualitative research models have been used to a limited extent (f=3). The utilisation of qualitative methodologies, encompassing case studies (f=1), narrative research (f=1) and interview based basic qualitative study (f=1), facilitates a more profound comprehension of the impact of SES on students' experiences. The subjects investigated in the studies reviewed in the systematic review of the relationship between socioeconomic status and academic achievement are enumerated in Table 5.

Table 5. Related subjects

Theme	Sub-themes	Frequency
School Factors	Success factors	1
	Self sabotage behaviors	1
	School climate	1
Preschool Education	Participation and achievement	1
Distance Education	Access and achievement effect	1
Disadvantaged Groups	Low SES students	2
	Disadvantaged students	2
Student Characteristics	Study habits	1
	Personality and motivation	2
	Self efficacy and focus of control	1
	Psychological and social needs	1
PISA Results	2012 Analysis	1
	2018 Analysis	1
Socioeconomic Status	Differences among schools	1
	Geographical differences	1
	Relationship with academic achievement	8

According to Table 5, the studies examined cluster around topics such as student characteristics, school factors, socioeconomic status, PISA results and disadvantaged groups. In particular, the relationship between socio-economic status and academic achievement stands out as the most intensively examined theme in eight studies. The PISA 2012 and 2018 analyses provide a fundamental reference point for understanding how socioeconomic inequalities contribute to differences in academic achievement. Under the heading of student characteristics, individual factors such as personality, motivation, self-efficacy and psychosocial needs come to the fore, while under school factors, the impact of structural elements such as school climate, preschool education and distance learning is emphasised. Furthermore, students with low SES and disadvantaged backgrounds draw attention due to barriers to accessing educational opportunities and differences in academic performance.

EVALUATIVE RESULTS

The results of the 22 studies included in the analysis are indicative of the fact that SES exerts an influence on academic achievement through a multi layered mechanism. Therefore, in order to conduct a more detailed assessment, the following themes were examined as “The General Relationship Between Socioeconomic Status and Achievement”, “School Level Socioeconomic Factors Affecting Achievement”, “Mediating Factors in the Effect of Socioeconomic Status on Achievement”, “The Need for Early Compensation for Socioeconomic Disadvantages” and “Students Who Demonstrate Resilience in Academic Achievement”. Findings regarding the evaluative results are presented in Table 6.

Table 6. Themes and Sub-themes Regarding Evaluative Results

Themes	Sub-themes
The General Relationship Between Socioeconomic Status and Achievement	Overall positive association between SES and achievement
	Direct SES influence on student achievement outcomes
	Between school achievement differences linked to socioeconomic stratification
School Level Socioeconomic Factors Affecting Achievement	School socioeconomic composition and resource level
	Teacher seniority and professional preparation
	Class size and school size
Mediating Factors in the Effect of Socioeconomic Status on Achievement	Parental education and occupation
	Educational resources at home
	Cultural richness and communication environment
	Student motivation and goal orientation as a pathway
The Need for Early Compensation for Socioeconomic Disadvantages	Preschool education as an early equalising opportunity
	Early academic support programs
	Remedial programs and structured learning recovery
Students Who Demonstrate Resilience in Academic Achievement	Aspirational orientation and persistence under disadvantage
	Social support from teachers family and peers
	Intrinsic motivation and self awareness
	Cognitive flexibility and stress management

Methodological quality was appraised using MMAT 2018 at criterion level. The included evidence base is dominated by quantitative observational research, supported by a smaller set of qualitative studies that focus on disadvantage and academic resilience. Across the corpus, most studies present clear research questions and use data that can address those questions. This supports confidence in the overall conclusion that socioeconomic status is associated with academic achievement in Türkiye.

The appraisal also highlights quality features that help explain why the reported strength of the SES achievement relationship varies from study to study. The most common issues are incomplete reporting on missing data and response rates and limited transparency about how alternative explanations were handled in the analysis. When missingness is socially patterned or when key contextual factors are not modelled, the SES estimate can appear stronger or weaker than it would under more explicit modelling. As a result, variation in magnitude across studies should be interpreted as meaningful heterogeneity that reflects differences in measurement, sample coverage and modelling, rather than as simple disagreement in the evidence.

THE GENERAL RELATIONSHIP BETWEEN SOCIOECONOMIC STATUS AND ACHIEVEMENT

Across the reviewed studies, the direction of the association is consistent. Students from more advantaged socioeconomic backgrounds tend to show higher achievement. What differs across studies is how that relationship is distributed across levels and mechanisms.

Studies that rely on large scale datasets and multilevel modelling tend to show that the SES achievement relationship is partly produced through between school differences, not only through family level resources. For instance, Suna & Özer (2021) used TIMSS cycles and multilevel regression to examine the link between student socioeconomic level, between school achievement differences and achievement outcomes. This type of design makes it easier to separate the student level SES signal from school level stratification, which often reduces the size of a single direct SES coefficient while making school composition and school differences more visible.

By contrast, studies using local samples or school based measures often report a steeper association because family SES and school context are more tightly coupled and are less likely to be separated analytically. Kılıç & Haşiloğlu (2017) examined seventh grade Turkish and science achievement and linked performance to family income and parent education, as well as indicators such as kindergarten attendance, participation in private courses and access to a computer. Findings of this kind illustrate how SES can accumulate through multiple linked advantages in daily learning conditions, which can make the relationship appear particularly strong in certain contexts.

SCHOOL LEVEL SOCIOECONOMIC FACTORS AFFECTING ACHIEVEMENT

Evidence under this theme is strongest when school level socioeconomic composition and school conditions are modelled explicitly. When the school level is treated as a distinct layer, the interpretation becomes clearer because the analysis can distinguish who students are from which schools they attend.

Suna & Özer (2021) is an example of this approach, highlighting that between school achievement differences are part of how SES relates to outcomes. Yıldırım (2019) provides another clear example. Using TIMSS 2011 Türkiye data with multilevel analyses, Yıldırım (2019) reported that SES components such as educational resources at home and school structure positively predict mathematics achievement and that parent involvement and self confidence operate as linked pathways. Together, these studies support an evaluative interpretation in which school context functions as an opportunity structure that can amplify or buffer family disadvantage.

The appraisal also shows why school level findings may look inconsistent across studies. When school context is described but not modelled at the appropriate level, school effects can be absorbed into the family SES estimate, creating the appearance of very large family effects. In contrast, studies that model school composition directly often redistribute the relationship across student and school layers. These are not contradictory findings. They are different views of the same mechanism, produced by different analytic choices.

MEDIATING FACTORS IN THE EFFECT OF SOCIOECONOMIC STATUS ON ACHIEVEMENT

The mediating theme explains a central nuance raised by reviewers. Some studies report smaller direct SES effects because they model the pathway through which SES operates, rather than estimating a single total association.

Niehues et al. (2020) provides a clear example from PISA based evidence. Their results indicate that the link between family SES and mathematics achievement operates strongly through schools performance level and students competence beliefs. This shows how the SES achievement relationship can be channelled through school context and student motivational beliefs at the same time. Similarly, Yıldırım (2019) framed SES influences as both direct and indirect, with parent involvement and self confidence contributing to how SES relates to mathematics achievement.

From an evaluative perspective, these mediation findings are plausible and conceptually coherent across studies, but they require careful interpretation. Most designs are cross sectional, so mediation should be framed as an explanatory pathway rather than a confirmed causal chain. Studies with clearer reporting of measurement, model specification and missing data handling provide stronger grounds for interpreting indirect routes.

THE NEED FOR EARLY COMPENSATION FOR SOCIOECONOMIC DISADVANTAGES

Evidence in this theme points to early divergence in opportunity and to the social patterning of access to compensatory supports. A key evaluative point is that early compensation is often presented as a solution, but the evidence shows that access to early supports is itself shaped by SES.

Suna & Özer (2022) examined preschool attendance, academic achievement and SES in Türkiye. Their results indicate that the association between preschool attendance and achievement decreases when SES is controlled. Evaluatively, this is important because it implies that preschool is linked with achievement, but access and participation are also socially patterned. In other words, early supports can reduce gaps only when disadvantaged students can access them with sufficient quality and continuity.

Kılıç & Haşıloğlu (2017) complements this pattern at the school level. In their context, kindergarten attendance and participation in private courses were associated with higher course outcomes, reinforcing the idea that early and supplementary supports can function as compensatory resources, but are often unevenly distributed.

STUDENTS WHO DEMONSTRATE RESILIENCE IN ACADEMIC ACHIEVEMENT

The resilience theme strengthens the synthesis by showing that SES does not operate deterministically. The qualitative evidence is particularly valuable here because it describes protective processes in detail and helps avoid overly mechanical interpretations of quantitative gradients.

Ergezen (2023) examined socioeconomically disadvantaged but academically successful high school students and identified interacting protective factors. The study reports patterns such as planned study habits, persistence and a strong orientation toward effort, alongside supportive relationships. Yelgün & Karaman (2015) studied a low SES primary school context and identified multiple barriers linked with low achievement, including family socioeconomic conditions and school context factors, while also highlighting the role of teacher and school processes in shaping learning conditions.

Evaluatively, these studies indicate that protective factors are most meaningful when they are understood as processes that interact with opportunity structures. Resilience should not be read as an individual substitute for equity, but as evidence that supportive environments and strong learning routines can partially buffer disadvantage under certain conditions.

INTEGRATIVE INTERPRETATION OF HETEROGENEITY

Taken together, the evaluative synthesis shows that the reviewed studies converge strongly on direction, while differing in magnitude for understandable reasons. Studies that model school composition and use multilevel approaches tend to distribute the SES achievement relationship across student and school layers. Studies that include mediators such as competence beliefs, parent involvement and home learning resources tend to show smaller direct SES coefficients because indirect pathways become visible. Studies based on local samples and less explicit confounder handling can produce larger SES estimates because the coefficient may capture multiple correlated disadvantages at once.

These evaluative insights explain why the results should not be read as a simple list of findings. The literature is better understood as a set of complementary lenses that reveal different parts of the same multi-layered mechanism. This interpretation provides a stronger foundation for the Discussion section, where Türkiye specific opportunity structures and school stratification can be used to explain how and why SES gradients are produced and maintained.

RESULTS, DISCUSSION, and SUGGESTIONS

This systematic review synthesised evidence from 22 studies on the relationship between socioeconomic status and academic achievement in Türkiye. Across the corpus, the direction of the relationship is consistent with international evidence, indicating that socioeconomic advantage is systematically associated with higher academic outcomes (OECD, 2016; Sirin, 2005). From an interpretive standpoint, the review strengthens the conclusion that SES operates in Türkiye as a stable gradient rather than as a context bound or intermittent association.

A first source of variation across studies concerns how SES is defined and measured. Some studies rely on single indicators such as parental education or household income, while others construct broader indices that include home educational resources. Broader operationalisations tend to yield stronger associations because they capture multiple dimensions of advantage simultaneously (Alesina & Giuliano, 2015; Davis-Kean, 2005; OECD, 2019). In analytic terms, a larger estimated relationship in such studies reflects a more comprehensive representation of socioeconomic advantage rather than a fundamentally different empirical pattern.

A second source of variation concerns how achievement is measured. School grades, central examination scores and international large scale assessments do not represent identical constructs and differ in standardisation and sensitivity to local practices (OECD, 2016; OECD, 2022). Consequently, differences in estimated magnitudes should be read as partially measurement contingent, given that each outcome captures different mixtures of curriculum-aligned attainment and broader competencies.

A third source of variation is modelling strategy and the extent to which school level stratification is represented. Studies using multilevel approaches and explicitly modelling school socioeconomic composition distribute inequality across student and school layers, which typically reduces the direct student level SES coefficient while making between school differences more visible (Coleman et al., 1966; Suna & Özer, 2021; Yıldırım, 2019). Interpreting the body of evidence as a whole therefore requires treating student level SES and school compositional SES as distinct mechanisms, not interchangeable proxies of the same construct.

A fourth source of variation concerns whether studies model pathways that translate SES into achievement. Several studies indicate that motivation, competence beliefs, parental involvement and home resources operate as plausible mediating mechanisms (Bronfenbrenner, 1979; Eccles & Wigfield, 2002; Niehues et al., 2020; Suphi & Yaratan, 2012; Yıldırım, 2019). In this sense, smaller direct SES coefficients in mediation models do not weaken the SES gradient, rather they shift explanatory emphasis from association to mechanism by reallocating variance to theoretically meaningful pathways.

Methodological heterogeneity has particular significance in Türkiye because the SES achievement relationship is shaped by system design. Türkiye's centralised governance and examination driven transitions make achievement a gatekeeping mechanism for access to selective pathways. OECD policy analysis emphasises that selection processes and school differentiation can intensify inequality when opportunity structures are closely tied to examination performance (OECD, 2020). Under these conditions, SES becomes a predictor not only of learning resources but also of how effectively families can navigate institutional transition points.

A closely related mechanism is the shadow education channel. In high stakes environments, private tutoring and test preparation tend to expand and inequality deepens when access is stratified by income and information (Bray, 2007). Evidence from Türkiye links private tutoring expenditures to household resources and parental education in the context of competitive examinations (Tansel & Bircan, 2006). The reviewed evidence, read against this background, indicates that market based preparation functions as an additional stratifying layer that can reinforce school sorting and widen achievement gaps.

International benchmarks show that inequality remains durable. In PISA 2022, socioeconomically advantaged students in Türkiye outperformed disadvantaged students by 82 score points in mathematics and the gap remained stable between 2012 and 2022 (OECD, 2023). OECD analyses focused on Türkiye also highlight the role of school composition and school level conditions in shaping learning opportunities (OECD, 2022; OECD, 2023). The stability of these gaps supports an interpretation of SES inequality as structurally reproduced over time, rather than as a short term fluctuation linked to a particular cohort or assessment cycle.

The reviewed studies also reflect conceptual tensions that are important for interpretation. One tension concerns whether SES is treated as a background descriptor or as a mechanism that allocates opportunity. Another concerns whether school effects are framed as mediators of family SES or as independent sources of inequality through peer composition and resource distributions (Coleman et al., 1966). In this review, these tensions converge on a central interpretive point as in stratified systems, SES should be conceptualised as a multilevel allocator operating through both household resources and institutional sorting processes.

A further tension concerns resilience and agency. Qualitative studies show that disadvantaged students can succeed through protective processes such as persistence, structured routines and supportive relationships, aligning with motivational and resilience frameworks (Cihangir, 2023; Eccles & Wigfield, 2002; Ergezen, 2023; Masten, 2014). Ecological perspectives emphasise that protective processes operate within opportunity structures rather than replacing them (Bronfenbrenner, 1979). Accordingly, resilience is best treated as a conditional outcome of supportive environments and personal regulation capacities, not as evidence that structural inequality is negligible.

Taken together, the evidence supports an integrative explanation. This review proposes a Centralised Selection and Ecological Mediation Model for Türkiye. In this model, SES shapes achievement through home learning resources and competence-related beliefs, school sorting concentrates advantage and disadvantage across schools and examination driven transitions intensify the payoff of private resources and market based preparation (Alesina & Giuliano, 2015; Bray, 2007; Bronfenbrenner, 1979; Coleman et al., 1966; Davis-Kean, 2005; Eccles & Wigfield, 2002; OECD, 2020; Suna & Özer, 2021; Tansel & Bircan, 2006; Yıldırım, 2019). Conceptually, the model frames heterogeneity in reported magnitudes as an expected property of studies that capture different segments of the same multilayered mechanism through different designs and analytic decompositions.

As conclusion, this review confirms a durable SES and achievement gradient in Türkiye, consistent with international evidence (OECD, 2016; Sirin, 2005). Variation in reported magnitudes across studies is largely interpretable through differences in SES operationalisation, outcome measurement, sample coverage and modelling choices, particularly the extent to which school composition and mediating pathways are explicitly represented (Niehues et al., 2020; Suna & Özer, 2021; Yıldırım, 2019). The overall pattern indicates convergence on direction with predictable heterogeneity in magnitude, rather than inconsistency in the underlying empirical relationship.

Most importantly, the synthesis indicates that the SES and achievement relationship in Türkiye is amplified by a centralised and examination driven opportunity structure in which school sorting and shadow education increase the payoff of private resources (Bray, 2007; OECD, 2020; Tansel & Bircan, 2006). Interpreting the evidence in this way locates SES inequality not only in household conditions but also in system level mechanisms that shape access to instructional quality and competitive preparation.

SUGGESTIONS

Reducing SES related achievement gaps in Türkiye requires strategies that directly target the pathways identified in the reviewed evidence and the system level mechanisms highlighted in the synthesis. One priority is strengthening instructional capacity in disadvantaged schools through equity focused teacher allocation and retention. Teacher quality and experience are high leverage factors and equity depends in part on how skilled teachers are distributed and supported across schools (Darling-Hammond, 2000; Hanushek & Rivkin, 2010; OECD, 2022). A policy implication of this evidence is that teacher deployment and retention should be treated as a distributive equity lever, not only as a general quality improvement concern.

A second priority is expanding school based academic support to reduce dependence on market based exam preparation. In high stakes systems, private tutoring expands and inequality grows when access is stratified by income and information (Bray, 2007; Tansel & Bircan, 2006). In practical terms, the reviewed evidence supports institutionalising free, structured and exam aligned support programmes within schools serving disadvantaged populations, particularly at key transition points.

A third priority is institutionalising resilience supportive school routines through mentoring and guidance. Protective processes identified in qualitative studies align with established resilience and motivation frameworks and point to the importance of stable relational and self regulation supports (Cihangir, 2023; Eccles & Wigfield, 2002; Ergezen, 2023; Masten, 2014). An actionable interpretation is that resilience should be supported as an organisational practice through systematic mentoring and guidance structures, rather than addressed as an individual attribute.

A fourth priority is designing early compensation as targeted, high quality access and continuity for disadvantaged students rather than broad participation growth alone. Early opportunities reduce gaps when they are accessible and sustained for the students who most need them and international evidence supports long term returns to early investment (Heckman, 2006; OECD, 2023). The reviewed evidence therefore supports targeting quality preschool and early supports to low SES districts and ensuring continuity into the early primary grades.

Finally, future research should strengthen reporting transparency on missing data and confounding and expand multilevel and longitudinal designs that separate selection from mediation (Bronfenbrenner, 1979; Coleman et al., 1966; OECD, 2022). Methodologically, this would enable more precise testing of the model

proposed in this review and improve the identification of context specific leverage points for reducing inequality in Türkiye. **Declarations**

Conflict of Interest

No potential conflicts of interest were disclosed by the author(s) with respect to the research, authorship, or publication of this article.

Ethics Approval

It should be noted that, given the nature of this study as a systematic review, approval by the relevant ethics committee has not been obtained.

Funding

This research received no specific grant from public, commercial, or not-for-profit funding organizations.

Contribution Rates of Authors to the Article

1st author contributed 50%, 2nd author 50%.

REFERENCES

- Akben, E. (2018). Personality, motivation, and math achievement among Turkish students: Evidence from PISA data. *Perceptual and Motor Skills*, 0 (0), 1-17. <https://doi.org/10.1177/0031512516686505>
- Alesina, A., & Giuliano, P. (2015). Culture and institutions. *Journal of Economic Literature*, 53(4), 898-944. <https://doi.org/10.1257/jel.53.4.898>
- Ataç, E. (2017a). Reading educational inequality in Turkey: Statistics and geographical distributions. *Eğitim ve Bilim [Education and Science]*, 42(192), 59-86. <https://doi.org/10.15390/EB.2017.7124>
- Blatchford, P., Bassett, P., & Brown, P. (2011). Examining the effect of class size on classroom engagement and teacher-pupil interaction: Differences in relation to pupil prior attainment and primary vs. secondary schools. *Learning and Instruction*, 21(6), 715-730. <https://doi.org/10.1016/j.learninstruc.2011.04.001>
- Borkan, B., & Bakış, O. (2016). Determinants of Academic Achievement of Middle Schoolers in Turkey. *Journal of Education and Practice*, 7(15), 1-10. <https://doi.org/10.12738/estp.2016.6.0227>
- Bourdieu, P., & Passeron, J.-C. (1977). *Reproduction in education, society and culture*. Sage.
- Bray, M. (2007). *The shadow education system: Private tutoring and its implications for planners* (2nd ed.). UNESCO International Institute for Educational Planning.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Cihangir, M. (2023). *Socioeconomically disadvantaged students' achievement stories: a narrative research* (Thesis No. 806420) [Master's thesis, Necmettin Erbakan University]. Council of Higher Education National Thesis Center. https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=j_Fjwp4JS4mk97Puqti8rppgFNhtXKLvPZpzEBaP_ANDI3gcgl sne0MJN5o8t55o
- Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. (1966). *Equality of educational opportunity*. U.S. Government Printing Office.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1-44. <https://epaa.asu.edu/ojs/article/view/392>
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology*, 19(2), 294-304. <https://doi.org/10.1037/0893-3200.19.2.294>
- Dindaroğlu, T. (2022). The effect of the family's socioeconomic level on the child's academic success and distance education: The case of Diyarbakır Çınar (Thesis No. 756119) (Master's thesis, Dicle University). Council of Higher Education National Thesis Center.

<https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=RsTBl6RWK25OBMIKtIgYYVRlvKYyvH6KdOG0eZq8gLivxpPMh1JPtGkfW2iirzAK>

- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values and goals. *Annual Review of Psychology*, 53, 109-132. <https://doi.org/10.1146/annurev.psych.53.100901.135153>
- Ergezen, D. (2023). *The role of protective factors in the success of socioeconomic disadvantaged high school students demonstrating academic resilience* (Thesis No. 792024) [Master's thesis, Ankara University]. Council of Higher Education National Thesis Center. https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=G_oJ1rKE4SgJUkomyAKpR4dIUPPYxmworNfboUB4fwRDH6cMLTTgJba-lnoGeR6o
- Hanushek, E. A., & Rivkin, S. G. (2010). Generalizations about using value-added measures of teacher quality. *American Economic Review*, 100(2), 267-271. <https://doi.org/10.1257/aer.100.2.267>
- Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312(5782), 1900-1902. <https://doi.org/10.1126/science.1128898>
- Al-Khabori, M., & Rasool, W. (2022). Introduction to systematic reviews and meta-analyses of therapeutic studies. *Oman medical journal*, 37(5), e428. <https://doi.org/10.5001/omj.2022.42>
- Higgins, J. P. T., & Green, S. (Eds.). (2011). *Cochrane handbook for systematic reviews of interventions* (Version 5.1.0). The Cochrane Collaboration. <https://www.cochrane.org/authors/handbooks-and-manuals/handbook/archive/v5.1.0>
- Hong, Q. N., Gonzalez-Reyes, A., & Pluye, P. (2018). Improving the usefulness of a tool for appraising the quality of qualitative, quantitative and mixed methods studies, the Mixed Methods Appraisal Tool (MMAT). *Journal of Evaluation in Clinical Practice*, 24(3), 459-467. <https://doi.org/10.1111/jep.12884>
- Kılıç, Y., & Haşiloğlu, M. A. (2017). Sosyoekonomik durumun öğrenci başarısına etkisi: 7. sınıf Türkçe ve fen bilimleri dersleri örnekleme. *YYU Journal of Education faculty*, 14(1), 1025-1049. <http://dx.doi.org/10.23891/efdyyu.2017.38>
- Koban Koç, D. (2016). The effects of socio-economic status on prospective english language teachers' academic achievement. *Novitas-ROYAL (Research on Youth and Language)*, 10(2), 100-112. <https://files.eric.ed.gov/fulltext/EJ1167209.pdf>
- Masten, A. S. (2014). *Ordinary magic: Resilience in development*. Guilford Press.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). Reprint—Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. *Physical Therapy*, 89(9), 873-880. <https://doi.org/10.1093/ptj/89.9.873>
- Niehues, W., Kisbu-Sakarya, Y., & Selcuk, B. (2020) Motivation and maths achievement in Turkish students: are they linked with socio-economic status?. *Educational Psychology*, 40(8), 981-1001, <https://doi.org/10.1080/01443410.2020.1724887>
- OECD. (2016). *PISA 2015 results (Vol. I): Excellence and equity in education*. OECD Publishing. <https://doi.org/10.1787/9789264266490-en>
- OECD. (2019). *PISA 2018 results (Vol. III): What school life means for students' lives*. OECD Publishing. <https://doi.org/10.1787/acd78851-en>
- OECD. (2020). *Education policy outlook in Turkey*. OECD Publishing. https://www.oecd.org/en/publications/education-policy-outlook-in-turkey_b7c69f4c-en.html
- OECD. (2022). *Student achievement in Türkiye: Findings from PISA and TIMSS international assessments*. OECD Publishing. <https://doi.org/10.1787/c8a84283-en>
- OECD. (2023). *PISA 2022 results (Volume I): The state of learning and equity in education*. OECD Publishing. <https://doi.org/10.1787/53f23881-en>

- Özer, M., & Suna, E. (2023). The relationship between school socioeconomic composition and academic achievement in Türkiye. *Journal of Economy Culture and Society*, 66, 17-27. <https://doi.org/10.26650/JECS2022-1116979>
- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ*, 372, n160. <https://doi.org/10.1136/bmj.n160>
- Pehlivan, O.C. (2021). *Investigation of socio-cultural and socioeconomic factors affecting the academic achievement of the PISA 2018 Turkey sample* (Thesis No. 677205) [Master's thesis, Gazi University]. Council of Higher Education National Thesis Center. https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=8tbPippmWV_b-Irrn9YEAIZIRUzjVK7Yu251q5_Wgm-hIrrdJ4VknjIjBmMhNDq6E
- Polat, M. (2020). Identifying, measuring and addressing language learners' needs. *International Journal of Curriculum and Instruction*, 12(2), 421-435. <https://scispace.com/pdf/identifying-measuring-and-addressing-language-learners-needs-4xnry3r239.pdf>
- Pourfeiza, S., & Behjoob, S. (2013). A study of academic achievement among Turkish ELT students. *Procedia - Social and Behavioral Sciences* 70 (2013) 1216 - 1223. <https://doi.org/10.1016/j.sbspro.2013.01.180>
- Sarıavcı, K. (2024). Equality of educational opportunity: A socio-economic study of students attaining anatolian high schools and vocational high schools. (Thesis No. 845346) [Master's thesis, Düzce University]. Council of Higher Education National Thesis Center. <https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=weFMBHaUra8rsS5wi2bmHPcQx636kT0gPUbt3fc1xAcCmsyJlqM4cme1XnuZSpfQ>
- Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, 75(3), 417-453. <https://doi.org/10.3102/00346543075003417>
- Suna, H. E., & Özer, M. (2021). The achievement gap between schools and the relationship between socioeconomic status and academic achievement in Turkey. *Journal of Measurement and Evaluation in Education and Psychology*, 12(1), 55-71. <https://doi.org/10.21031/epod.860431>
- Suna, H. E., & Özer, M. (2022). The relationship of preschool attendance with academic achievement and socioeconomic status in Turkey: Evidence from TIMSS 2019. *Journal of Measurement and Evaluation in Education and Psychology*, 13(1), 54-68. <https://doi.org/10.21031/epod.1060460>
- Suna, H. E., Özer, M., Sensoy, S., Gür, B. S., Gelbal, S., & Aşkar, P. (2021). Determinants of academic achievement in Turkey. *Journal of Economy Culture and Society*, 64, 143-162. <https://doi.org/10.26650/JECS2021-934211>
- Suna, H. E. & Özer, M. (2022). The Relationship of preschool attendance with academic achievement and socioeconomic status in Turkey. *Journal of Measurement and Evaluation in Education and Psychology*, 13(1), 54-68. <https://doi.org/10.21031/epod.1060460>
- Suphi, N., & Yaratan, H. (2012). Effects of learning approaches, locus of control, socio-economic status and self-efficacy on academic achievement: a Turkish perspective. *Educational Studies*, 38(4), 419-431, <https://doi.org/10.1080/03055698.2011.643107>
- Şahin, S., & Çoban, A. (2020). Effect of School Climate, Students 'Self-Handicapping Behaviors and Demographic Characteristics on Students' Achievement. *İ.e.:Inquiry in education*, 12(3), 1-20. <https://digitalcommons.nl.edu/ie/vol12/iss2/6/>
- Tansel, A., & Bircan, F. (2006). Demand for education in Turkey: A tobit analysis of private tutoring expenditures. *Economics of Education Review*, 25(3), 303-313. <https://doi.org/10.1016/j.econedurev.2005.02.003>

- UNESCO. (2021). *Education in a post-COVID world: Nine ideas for public action*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000373717/PDF/373717eng.pdf.multi>
- UNESCO. (2025). *Regulating private tutoring for public good*. UNESCO. <https://www.unesco.org/en/articles/regulating-private-tutoring-public-good>
- Yalcin, S. (2017). Determining the relationships between selected variables and latent classes in students' PISA achievement. *International Journal of Research in Education and Science (IJRES)*, 3(2), 589-603. <https://doi.org/10.21890/ijres.328089>
- Yelgün, A., & Karaman, İb. (2015). What are the factors reducing the academic achievement in a primary school located in a neighborhood with a low socioeconomic status?. *Education and Science*, 40(179), 251-268. <https://doi.org/10.15390/EB.2015.2331>
- Yıldırım, S. (2019). Predicting math achievement: the role of socioeconomic status, parental involvement, and self-confidence. *Educatio and Science*, 44(198), 99-113. <https://doi.org/10.15390/EB.2019.7868>
- Yüksel, A., & Yüksel, S. (2012). Cooling out in the process of track placement of students (an example of Fatih/ Istanbul). *Educational Sciences: Theory and Practice*, 12(4), 2455-2460. <http://files.eric.ed.gov/fulltext/EJ1002857.pdf>