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Educational Discontinuity and Human Capital Loss: A Systematic Literature Review of Early Marriage Consequences in Developing Contexts

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Abstract: Early marriage remains a critical barrier to adolescent development, with consequences extending beyond immediate health concerns to educational attainment, professional development, and long-term human resource quality. This study systematically synthesizes evidence on how early marriage affects educational continuity, professional skill development, and economic independence, and examines its implications for human resource development. A systematic literature review (SLR) was conducted following PRISMA guidelines, with literature retrieved from Scopus, ProQuest, and Google Scholar. Studies were selected through identification, screening, eligibility assessment, and inclusion based on predefined criteria. Thematic content analysis synthesized evidence from 12 eligible studies. The findings reveal four interrelated pathways: (1) early marriage disrupts educational continuity and increases school dropout risk; (2) educational disruption limits professional and vocational skill development, creating a skills gap; (3) limited qualifications restrict career opportunities and increase economic dependency; and (4) these consequences cumulatively constrain human resource quality. Economic pressure, cultural norms, parental influence, limited educational access, and unintended pregnancy were identified as recurring contributing factors. The review demonstrates that early marriage consequences constitute an interconnected developmental trajectory from educational discontinuity to reduced human resource potential. These findings highlight the need for integrated interventions combining early-marriage prevention with educational retention, vocational development, career preparation, and economic empowerment.

Keywords: Career Development; Early Marriage; Educational Continuity; Human Resources Development

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A. Introduction

Adolescence is a critical developmental period in which individuals acquire education, develop competencies, establish aspirations, and prepare for the transition to adulthood and future participation in social and economic life (Coyne-Beasley et al., 2024). Education during this period is particularly important because it provides adolescents with opportunities to develop knowledge, skills, qualifications, and career aspirations that contribute to their future independence and productivity. When these developmental opportunities are interrupted, the consequences may extend beyond adolescence and influence individuals' educational attainment, employment prospects, economic independence, and contribution to society (Solang et al., 2024).

One major factor that can interrupt this developmental trajectory is early marriage or child marriage. Child marriage refers to a formal marriage or informal union involving a person under the age of 18 (Pourtaheri et al., 2023). Despite international commitments to eliminate the practice, child marriage remains widespread. Current estimates indicate that more than 640 million girls and women alive today were married before reaching the age of 18, while approximately 12 million adolescent girls enter marriage each year. Child marriage is associated with multiple forms of deprivation, including interruption of education, reduced socioeconomic opportunities, and limitations on girls' ability to exercise autonomy and achieve their developmental potential (Priyadharshini & Karthiga, 2026).

The educational consequences of early marriage are particularly important because marriage and schooling frequently become competing roles during adolescence (Nhampoca & Maritz, 2024). Marriage may introduce domestic responsibilities, pregnancy, childcare, and economic obligations that make continued participation in formal education difficult. Evidence from international organizations indicates that child marriage is closely associated with school discontinuation, while limited access to education can itself increase vulnerability to early marriage. Thus, the relationship between education and child marriage may operate in both directions: educational disadvantage can increase the likelihood of early marriage, while early marriage can further restrict educational attainment.

The consequences, however, do not necessarily end with educational discontinuity. Education is an important foundation for the acquisition of professional and vocational competencies, career preparation, and economic participation. When adolescents leave education prematurely, they may lose opportunities to develop the academic, technical, interpersonal, and adaptive skills required by contemporary labor markets. This can subsequently narrow their employment options and increase their vulnerability to low-skilled or informal employment. International evidence also indicates that improving girls' education and reducing child marriage are closely connected to greater labor-market participation, higher earnings, and broader economic development (Chandel et al., 2025). From this perspective, early marriage can be understood not only as a social or cultural issue but also as a human resource development issue. Human resource quality depends partly on individuals'

opportunities to acquire education, develop competencies, participate productively in the workforce, and achieve economic independence. When early marriage interrupts these processes, the effects may accumulate over time. Educational discontinuity may limit skill development; limited skills may constrain career opportunities; restricted employment opportunities may increase economic dependency; and these conditions may ultimately affect individuals' contribution to human capital development. This broader perspective is important because the consequences of early marriage may therefore extend from individual wellbeing to families, communities, and national development (Vettriselvan et al., 2025).

The persistence of early marriage cannot be explained by a single factor. Previous research has identified economic vulnerability, cultural and social norms, parental influence, limited access to education, social environment, and unintended pregnancy among the factors associated with the practice (Pourtaheri et al., 2024). In some contexts, families may perceive marriage as a means of reducing household economic responsibilities or protecting family reputation (Kalam et al., 2026). However, this perceived short-term solution may generate longer-term disadvantages by limiting adolescents' education, employment opportunities, and economic independence. The interaction between these factors demonstrates that early marriage is embedded within broader social and structural conditions rather than being solely an individual decision.

The educational dimension is particularly important in this context. International evidence shows that improving access to quality education can reduce the likelihood of child marriage while also strengthening girls' future economic opportunities (Hailu & Beyene, 2025). UNICEF emphasizes that education and decent work are important pathways for breaking the cycle of poverty and intergenerational child marriage (De Schutter et al., 2023). Similarly, the World Bank identifies investment in girls' education, vocational opportunities, and economic empowerment as important strategies for strengthening human capital and reducing the socioeconomic consequences associated with child marriage (Ngoobi et al., 2026). Although previous studies have documented the relationship between early marriage, education, health, poverty, and employment, the evidence remains fragmented across different domains. Some studies focus primarily on educational discontinuity, while others emphasize health, economic dependency, cultural determinants, or employment outcomes. Consequently, there remains a need for a systematic synthesis that connects these consequences into a broader developmental framework, particularly one that considers the relationship between educational continuity, professional skill development, career opportunities, economic independence, and long-term human resource quality. The existing literature also varies in geographical context and methodological approach, making it necessary to synthesize the available evidence systematically rather than relying on individual studies.

This study therefore addresses this gap by conducting a Systematic Literature Review (SLR) of research examining the implications of early marriage for adolescents' educational continuity, professional and vocational skill development, career

opportunities, economic independence, and human resource quality (Lame, 2019). Rather than examining these outcomes as isolated consequences, the review seeks to identify the patterns and relationships connecting them. In particular, the review addresses two questions: (1) How does early marriage affect adolescents' educational continuity and professional skill development? and (2) What are the long-term implications of early marriage for economic independence, career opportunities, and human resource quality? Based on these research questions, this study has two objectives: (1) to systematically analyze the impact of early marriage on adolescents' educational continuity and professional skill development; and (2) to examine the long-term implications of early marriage for adolescents' economic independence and human resource quality in the context of the modern workforce. By synthesizing evidence across these domains, this review aims to contribute a more integrated understanding of early marriage as a developmental and human resource issue. The resulting synthesis is expected to provide a conceptual basis for understanding how educational disruption may develop into longer-term limitations in skills, career opportunities, and economic independence, while also identifying implications for policies and interventions designed to retain adolescents in education and strengthen their transition to productive adulthood.

B. Methods

This study employed a Systematic Literature Review (SLR) to identify, evaluate, and synthesize previous research concerning the impact of early marriage on educational continuity, professional skill development, economic independence, and human resource quality (Lame, 2019). The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure a systematic, transparent, and reproducible review process (Page et al., 2021). Relevant literature was identified through searches of Scopus, ProQuest, and Google Scholar. The search strategy combined keywords representing the major concepts investigated in this review, including "early marriage," "child marriage," "adolescent," "education," "educational continuity," "school dropout," "human resource development," "skill development," "career development," and "economic independence." Boolean operators AND and OR were applied to combine the search terms. A representative search string was: ("early marriage" OR "child marriage") AND ("adolescent" OR "youth") AND ("education" OR "educational continuity" OR "school dropout") AND ("human resource development" OR "skill development" OR "career development" OR "economic independence").

The selection of studies followed the PRISMA 2020 process, consisting of identification, screening, eligibility assessment, and inclusion. During the identification stage, potentially relevant records were retrieved from the selected databases using the predetermined search terms. Duplicate records were removed before screening. Titles and abstracts were subsequently examined to exclude publications that did not correspond to the scope and research questions. The remaining articles were assessed through full-text review to determine their eligibility based on the predefined inclusion and exclusion criteria.

The predefined eligibility criteria were used to determine the studies included in the review. Studies were included if they: (1) were published in peer-reviewed scientific journals or credible research reports; (2) were published within the ten-year period specified for this review; (3) examined early or child marriage among adolescents or young people; (4) addressed at least one outcome related to educational continuity, skill acquisition, career development, economic independence, or human resource quality; and (5) provided sufficient empirical information relevant to the research questions. Studies were excluded if they focused exclusively on reproductive or maternal health without examining educational, economic, career, or human-resource outcomes; did not examine early marriage as a central phenomenon; were non-research publications; were duplicates; or did not provide sufficient information for analysis.

A total of 12 studies met the eligibility criteria and were included in the final qualitative synthesis. Data from the eligible studies were extracted using a structured data-extraction matrix. The information extracted included author and year of publication, research method, research context, study focus or objective, factors associated with early marriage, and key findings concerning education and human resource development. The extracted data were analyzed using thematic content analysis, with findings categorized according to recurring patterns and relationships relevant to the research questions.

C. Results and Discussion

Results

1. Study Selection and Characteristics

The systematic search identified relevant literature from Scopus, ProQuest, and Google Scholar using predefined keywords related to early marriage, education, skill development, career development, economic independence, and human resource development. The study selection process followed the PRISMA 2020 framework, consisting of identification, screening, eligibility assessment, and inclusion. After removing duplicate records, titles and abstracts were screened based on the predefined eligibility criteria, followed by full-text assessment of potentially relevant studies. A total of 12 studies met the eligibility criteria and were included in the final synthesis.

The included studies employed different research approaches and examined early marriage from educational, social, economic, and developmental perspectives. The reviewed literature included qualitative studies, literature reviews, field studies, and other empirical approaches. Despite differences in research settings and methodological approaches, the studies consistently addressed one or more consequences of early marriage related to educational continuity, professional and vocational skill development, career opportunities, economic independence, or human resource development. The characteristics of the included studies were organized according to the authors and publication year, research method, research

context, research focus, factors associated with early marriage, and major findings related to education and human resource development. The extracted evidence was subsequently synthesized thematically to identify recurring patterns across the studies.

2. Thematic Synthesis

Thematic content analysis of the 12 included studies identified four interrelated themes concerning the consequences of early marriage. These themes were: (1) disruption of educational continuity; (2) limitations in professional skill development; (3) economic dependency and restricted career opportunities; and (4) long-term implications for human resource quality. The synthesis indicates that these themes should not be understood as independent consequences. Rather, they represent a cumulative developmental pathway. Early marriage may interrupt adolescents' educational participation, which subsequently limits opportunities to develop professional and vocational competencies. Reduced competencies can restrict career opportunities and increase economic dependency, ultimately affecting the development of human resources. Thus, the reviewed evidence suggests a sequential relationship between educational disruption and longer-term socioeconomic consequences.

3. Disruption of Educational Continuity

The first and most consistently identified theme concerns the disruption of educational continuity. The reviewed studies indicate that early marriage frequently interrupts adolescents' participation in formal education. Marriage introduces new domestic, family, and economic responsibilities that may conflict with adolescents' educational roles. Consequently, some adolescents discontinue their education before completing secondary or higher levels of schooling (Kumar et al., 2023). The evidence further indicates that educational discontinuity is influenced by broader socioeconomic and cultural conditions rather than individual decisions alone. Economic vulnerability, limited educational opportunities, parental influence, and cultural expectations were repeatedly identified as factors associated with early marriage. In some communities, marriage may be perceived as a strategy for reducing family economic responsibilities or fulfilling established cultural expectations (Tabkhi et al., 2025).

The reviewed literature also suggests a reciprocal relationship between educational disadvantage and early marriage. Limited access to education may increase adolescents' vulnerability to early marriage, while marriage itself can further restrict opportunities to continue education. Early marriage may therefore reinforce an existing cycle of educational disadvantage (Chandel et al., 2025). From a human resource development perspective, this finding is significant because formal education provides opportunities not only to obtain academic qualifications but also to develop cognitive, social, and professional competencies. When education is interrupted during adolescence, these developmental opportunities may be substantially reduced (Altherr et al., 2023).

4. Limitations in Professional Skill Development

The second theme concerns the limitations in professional and vocational skill development resulting from educational disruption. The reviewed studies indicate that adolescents who discontinue their education have fewer opportunities to participate in formal learning, vocational education, professional training, and other activities that contribute to workforce competency development (Holtmann & Solga, 2023). The consequences therefore extend beyond school dropout itself. Early termination of education may create a skills gap because adolescents lose opportunities to develop technical, communication, problem-solving, adaptive, and other competencies required in contemporary labor markets (Mancaniello & Lavanga, 2024). Individuals who remain in education generally have greater opportunities to develop these competencies through formal education and professional preparation. The synthesis also indicates that adolescence is an important developmental period for exploring educational interests, establishing career aspirations, and preparing for future occupational roles (Negru-Subtirica, 2024). Early marriage may redirect these developmental priorities toward domestic and family responsibilities. As a result, adolescents may have fewer opportunities to acquire the competencies necessary for successful participation in an increasingly competitive and technology-oriented labor market. Thus, educational discontinuity functions as an important mechanism through which early marriage may limit the development of professional and vocational capabilities.

5. Economic Dependency and Restricted Career Opportunities

The third theme concerns economic dependency and restricted career opportunities. The reviewed evidence indicates that early marriage, particularly when accompanied by educational discontinuity, can result in lower educational qualifications and limited professional competencies (Puro et al., 2026). These conditions subsequently restrict access to formal employment and career development. Limited educational attainment and professional skills may narrow the range of occupations available to individuals and increase their likelihood of entering low-skilled, informal, or low-wage employment. In some cases, restricted employment opportunities increase financial dependence on spouses or other family members. Economic dependency therefore represents a potential long-term consequence of educational disruption rather than merely an immediate consequence of early marriage (Vettriselvan et al., 2025).

An important finding emerging from the synthesis is the paradoxical relationship between economic hardship and early marriage (Kalam et al., 2026). Economic vulnerability is frequently identified as a factor encouraging early marriage, as families may perceive marriage as a means of reducing household economic burdens. However, the long-term consequences may be the opposite: early marriage can restrict education, limit skill development, reduce employment competitiveness, and ultimately reproduce economic vulnerability. Accordingly, the economic consequences of early marriage need to be understood within a broader

developmental pathway linking education, skills, employment, and economic independence.

6. Long-Term Implications for Human Resource Quality

The fourth theme concerns the long-term implications of early marriage for human resource quality. The synthesis demonstrates that the consequences of early marriage extend beyond individual educational and economic outcomes. They may also affect the broader development of human resources by limiting opportunities to acquire education, develop competencies, participate productively in the workforce, and achieve economic independence. The reviewed evidence suggests an interconnected pathway in which educational discontinuity limits professional and vocational skill development; limited competencies subsequently restrict career opportunities; and restricted employment opportunities may increase economic dependency (Opoku et al., 2026). These processes cumulatively influence individuals' capacity to participate productively in the labor market and contribute to human capital development. The synthesis also identifies several contextual factors associated with this pathway, including economic pressure, cultural traditions, parental influence, limited educational access, social environment, lack of knowledge concerning the consequences of early marriage, and unintended pregnancy. These factors indicate that early marriage cannot be adequately understood as an isolated individual or family decision (Zulfa et al., 2024). Rather, it is embedded within broader social, economic, educational, and cultural environments.

Discussion

1. Interpretation and Synthesis

The findings of this systematic literature review indicate that early marriage has consequences that extend beyond the immediate transition from adolescence to marriage (Yoosefi Lebni et al., 2023). Across the reviewed literature, four interconnected consequences consistently emerged: disruption of educational continuity, limitations in professional skill development, economic dependency and restricted career opportunities, and long-term implications for human resource quality. These findings suggest that early marriage should be understood as a developmental process that can alter adolescents' educational, professional, and economic trajectories rather than as an isolated social or family event.

Educational discontinuity appears to be the initial and most critical mechanism in this process. Early marriage introduces domestic, family, and economic responsibilities that may conflict with adolescents' educational roles, increasing the likelihood of leaving formal education before completing secondary or higher education. Importantly, the relationship is not necessarily unidirectional. Limited educational opportunities and socioeconomic vulnerability may increase the likelihood of early marriage, while marriage itself can subsequently further restrict educational participation. This reciprocal relationship indicates that early marriage may reinforce pre-existing educational disadvantage (Chandel et al., 2025).

The disruption of education subsequently limits opportunities for professional and vocational skill development. Adolescence represents an important period for acquiring academic qualifications, technical competencies, communication skills, problem-solving abilities, and career-related capabilities. When education is interrupted, adolescents have fewer opportunities to participate in formal education, vocational training, and professional preparation. Consequently, the effects of early marriage may extend beyond school dropout to the broader development of workforce competencies (Chandel et al., 2025).

The third theme demonstrates that these educational and competency-related consequences can subsequently influence economic independence. Lower educational qualifications and limited professional competencies may reduce access to formal employment and constrain career development. Individuals may therefore become more dependent on spouses or other family members and may have greater difficulty accessing stable and adequately compensated employment. The findings also reveal an important paradox: economic hardship may encourage early marriage because marriage is perceived as a way to reduce family economic burdens, yet early marriage may subsequently reproduce economic vulnerability by restricting education and employment opportunities (Ngidi et al., 2025). The synthesis also demonstrates that early marriage is embedded within broader contextual conditions, including economic pressure, cultural traditions, parental influence, limited educational access, social environment, lack of knowledge regarding its consequences, and unintended pregnancy (Chandel et al., 2025). Therefore, interventions focused solely on preventing marriage may be insufficient. Preventive strategies need to be accompanied by educational retention, vocational development, career preparation, and economic empowerment.

2. Theoretical Implications

The findings have important implications for understanding early marriage from a Human Capital Theory (Sweetland, 1996) and Life Course Theory (Elder Jr, 1998) perspective. From the human capital perspective, education and skill development constitute important investments that enhance individuals' productivity, employability, and economic independence. The present synthesis suggests that early marriage can interrupt this investment process by reducing adolescents' opportunities to acquire education and develop competencies required for future employment. The findings also support a life-course perspective because the consequences of early marriage appear to accumulate over time. An early transition into marriage may initially produce educational disruption, which subsequently affects skill development, career opportunities, and economic independence. The resulting disadvantages may therefore extend into adulthood rather than remaining limited to the period immediately following marriage.

Based on this synthesis, the present review proposes a developmental pathway framework in which educational continuity functions as a critical mechanism linking early marriage to long-term human resource outcomes. The framework extends the interpretation of early marriage beyond reproductive, health, or family-related

consequences by positioning it as an issue of education, employability, economic independence, and human capital development. This theoretical interpretation also highlights the importance of education as a protective pathway. Maintaining adolescents' participation in education provides opportunities for knowledge acquisition, professional skill development, career exploration, and preparation for economic participation. Consequently, educational retention should be considered not merely an educational policy objective but also a strategic intervention point for protecting long-term human resource potential.

3. Comparison with Prior Research

The findings of this review are broadly consistent with previous research demonstrating that early marriage is associated with educational disruption. Previous studies have reported difficulties in maintaining formal education among adolescents who marry early, particularly when marriage introduces new domestic and family responsibilities (Nhampoca & Maritz, 2024). The present review extends these findings by demonstrating that educational discontinuity represents the first stage of a broader developmental pathway rather than an isolated consequence.

The findings are also consistent with research linking early marriage to limitations in professional and vocational development (Ebohon, 2025). Previous studies have emphasized that adolescents who leave education prematurely have fewer opportunities to acquire the knowledge and competencies required for participation in increasingly competitive labor markets. The present synthesis further connects this limitation to career trajectories and economic independence, thereby demonstrating how educational disruption may translate into longer-term socioeconomic consequences.

Similarly, the finding concerning economic dependency is consistent with previous literature showing that limited educational attainment and professional competencies can restrict access to formal employment and career advancement. However, the present review highlights the paradoxical relationship between poverty and early marriage. Economic vulnerability may encourage families to perceive marriage as an immediate solution to financial pressures, while the resulting educational and occupational disadvantages may contribute to longer-term economic dependency. The present synthesis also complements previous research that identifies cultural norms, parental influence, social environments, and limited educational access as important contextual factors. These findings indicate that early marriage cannot be adequately explained through individual decision-making alone. Rather, decisions concerning marriage are shaped by interconnected economic, cultural, family, and educational conditions.

The main contribution of the present review is therefore not the identification of individual consequences that have never been reported previously. Rather, its contribution lies in integrating previously fragmented findings into a cumulative developmental pathway connecting early marriage with educational discontinuity,

skill limitations, career restriction, economic dependency, and human resource quality.

4. Quality of Evidence

The evidence synthesized in this review demonstrates relatively consistent patterns across the four major themes; however, the strength of the conclusions should be interpreted cautiously. The included studies were conducted in different geographical and socioeconomic contexts and employed different methodological approaches. This methodological heterogeneity provides a broad perspective on the consequences of early marriage but also limits direct comparison across studies. A further limitation concerns the predominance of cross-sectional research, which restricts the ability to establish causal relationships. Although the thematic synthesis supports a developmental sequence from early marriage to educational disruption, skill limitations, career restrictions, and economic dependency, the evidence should not be interpreted as demonstrating a definitive causal pathway. Longitudinal research is needed to establish temporal relationships and determine the extent to which early marriage directly contributes to each subsequent outcome.

The geographical concentration of the reviewed literature, particularly in Southeast Asia and Sub-Saharan Africa, also limits the generalizability of the findings to other cultural and socioeconomic contexts. In addition, the restriction to studies published in English and Indonesian may have resulted in the exclusion of relevant evidence published in other languages. Despite these limitations, the consistency of the four themes across studies with different contexts and methodological approaches provides a reasonable basis for identifying early marriage as an important educational and human resource development issue. Future research should prioritize longitudinal designs, stronger comparative approaches, and intervention studies to test the proposed developmental pathway and determine which interventions are most effective in maintaining educational continuity and strengthening adolescents' long-term human capital.

D. Conclusions

This systematic literature review concludes that early marriage constitutes a significant barrier to human resource development through an interconnected developmental pathway: educational discontinuity → limited professional skill development → restricted career opportunities → economic dependency → reduced human resource quality. The synthesis demonstrates that educational interruption serves as the critical mechanism linking early marriage to long-term human capital loss. This review makes three contributions. Theoretically, it advances a developmental pathway framework that integrates Human Capital Theory and Life Course Theory, demonstrating how early transitions create cumulative disadvantages. Methodologically, it provides a systematic synthesis of previously fragmented evidence across educational, economic, and human resource domains. Practically, it identifies educational retention as a critical intervention point for preventing the cascading consequences of early marriage. There are four limitations.

First, the review is limited to studies published in English or Indonesian, potentially excluding relevant research in other languages. Second, the predominance of cross-sectional studies limits causal inference. Third, the review did not conduct a formal meta-analysis, precluding quantitative synthesis of effect sizes. Fourth, the geographical concentration of studies (primarily Southeast Asia and Sub-Saharan Africa) limits generalizability. For policymakers, early-marriage prevention must be integrated with educational retention, vocational development, career preparation, and economic empowerment. For educators, maintaining adolescents' participation in education is critical for safeguarding future human resource potential. For researchers, future studies should employ longitudinal designs to establish causal pathways, examine mediating and moderating mechanisms, and investigate intervention effectiveness. Future research should: (1) employ longitudinal designs to establish temporal ordering; (2) examine whether educational retention programs mitigate the long-term effects of early marriage; (3) investigate vocational training as an alternative pathway for human resource development; and (4) compare intervention effectiveness across different socio-cultural contexts.

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F. Author Contributions

Nairi Sa'adah contributed to the design and implementation of the research, analysis of the results, and writing of the final manuscript.

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H. Data availability

All data generated or analysed during this study are included in this published article.

I. Declarations

Ethics approval

The study was approved by the Ethics Committee of the Universitas Islam Tebo, Jambi, Indonesia. No participants in this study.

J. Competing Interests

The author declares no competing interests

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