

Building a child-centered social sustainability framework by integrating ecological systems theory into child and youth studies

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ABSTRACT

This study presents a conceptual framework that places children and youth at the center of social sustainability discourse by integrating principles of sustainable development with Bronfenbrenner's Ecological Systems Theory. Although global sustainability agendas increasingly emphasize social, economic, and environmental well-being, the rights, needs, perspectives, and agency of children and youth remain insufficiently represented in policy and scholarly discussions. The proposed framework addresses this gap by positioning children as active participants within interconnected ecological systems that influence their development and well-being, including the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Drawing on interdisciplinary scholarship in Child and Youth Studies, sustainability science, and ecological systems theory, the framework examines how social sustainability can be embedded within children's everyday relationships and experiences, institutional structures, community environments, and long-term developmental trajectories. It further identifies opportunities for educators, policymakers, families, and community leaders to create environments that promote equity, inclusion, participation, resilience, and intergenerational well-being. By integrating sustainability with an ecological understanding of development, the framework extends conventional approaches that often treat children primarily as beneficiaries of sustainable development initiatives. Instead, it conceptualizes children and youth as active agents and co-constructors of socially sustainable communities and futures. The study contributes a child-centered perspective to sustainability scholarship while offering a conceptual foundation for designing policies, practices, and learning environments that support children's participation, agency, and capacity to contribute to just, inclusive, and resilient societies.

Keywords: *Bronfenbrenner, Child and youth development, Ecological systems theory, Interdisciplinary framework, Resilience, Social sustainability, Sustainable development.*

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Highlights of this paper

- Centers children and youth as active agents and co-constructors of socially sustainable futures rather than passive recipients of services.
- Integrates sustainable development principles with Bronfenbrenner's Ecological Systems Theory to examine how interconnected social systems influence children's development, well-being, and agency.
- Provides a child-centered framework for educators, policymakers, and communities to advance equitable, inclusive, resilient, and socially sustainable environments.

1. INTRODUCTION

Social sustainability constitutes a pivotal yet frequently underemphasized dimension of sustainable development. It focuses on the long-term well-being, social inclusion, cultural continuity, and equitable access to resources and opportunities necessary for individuals and communities to thrive (Missimer, Robèrt, & Broman, 2017; Vallance, Perkins, & Dixon, 2011). Although global sustainability discourse has historically emphasized environmental conservation and economic development, the social dimensions of sustainability—particularly the experiences, rights, and agency of children and youth—remain insufficiently examined and integrated into theoretical and policy frameworks. This omission represents both an ethical concern and a practical challenge, as children and young people are not merely passive recipients of social investments and protective measures but active participants and agents in shaping the social and ecological futures of their communities and societies (Hart & Brando, 2018; UNICEF, 2013a).

Child and Youth Studies (CYS), as an inherently interdisciplinary field that intersects developmental psychology, education, sociology, anthropology, and children's rights perspectives, provides a critical foundation for examining and advancing social sustainability principles (Corsaro, 2015; Percy-Smith & Thomas, 2009). The field's emphasis on child agency, participation, identity formation, and contextual development offers important insights into how social systems influence young people's opportunities and life trajectories. However, despite these theoretical contributions, CYS lacks a comprehensive and integrative framework that explicitly connects ecological theories of child development with the broader conceptual dimensions of social sustainability. Such a framework is necessary to examine the complex, interconnected environments that shape children's lives and to develop holistic approaches that promote equitable, inclusive, and sustainable developmental pathways for younger populations.

To address this conceptual gap, the present study proposes a novel framework that integrates (Bronfenbrenner, 1979, 2005) with core principles of social sustainability, including equity, inclusion, justice, participation, and cultural continuity (Hart & Brando, 2018; Missimer et al., 2017). By aligning the multiple ecological levels of child development—microsystem, mesosystem, exosystem, macrosystem, and chronosystem—with social sustainability imperatives, this framework provides a multidimensional and context-sensitive lens for understanding how institutions, communities, and broader social structures influence children's well-being and developmental opportunities. Ultimately, the framework seeks to inform research, policy, and practice in Child and Youth Studies by advancing transformative approaches that position children and youth as active contributors to the creation of just, inclusive, and resilient societies.

1.1. Research Objectives

This study pursues the following objectives:

1. To critically examine how key principles of social sustainability intersect with and manifest within each level of Bronfenbrenner's Ecological Systems Theory, spanning the microsystem to the chronosystem.
2. To identify structural gaps, barriers, and leverage points across ecological systems that either impede or facilitate social sustainability in children's developmental contexts.

3. To develop an integrative framework that fuses ecological systems thinking with social sustainability theory to enhance developmental trajectories and equitable outcomes for children and youth.
4. To recommend evidence-informed, actionable strategies for educators, policymakers, and community stakeholders aimed at fostering sustainable and child-centered environments.

1.2. Research Questions

Guided by these objectives, the study seeks to answer the following research questions:

1. How can Bronfenbrenner's ecological model be applied to assess the presence or absence of social sustainability principles across the multiple systems influencing children and youth?
2. In what ways do existing social structures and institutional arrangements support or hinder the realization of social sustainability at various ecological levels?
3. What targeted interventions and strategies can enhance social sustainability within children's immediate and extended environments?
4. How can an integrated ecological-sustainability framework inform policies and practices designed to advance equity, inclusion, and well-being for children and youth?

2. LITERATURE REVIEW

The concept of social sustainability has evolved considerably over recent decades, shifting from a peripheral concern within broader sustainable development frameworks to a core dimension essential for fostering long-term societal well-being and resilience. Social sustainability, as defined by [Colantonio \(2010b\)](#) encompasses a constellation of normative values including equity, human rights, cultural identity, and participatory governance, underscoring the moral and ethical imperatives required to sustain cohesive and just societies. Similarly, [Littig and Griessler \(2005\)](#) characterize social sustainability as the capacity of societies to develop in ways that ensure the well-being of current populations while safeguarding the rights and opportunities of future generations, thus emphasizing its fundamentally intergenerational character. However, despite growing attention to social sustainability across academic and policy domains, critical gaps remain, particularly concerning its applicability to children and youth. [Magis and Shinn \(2009\)](#) identify a persistent neglect of young populations in sustainability discourse, calling for more deliberate integration of child rights and equity principles. [UNICEF \(2013a\)](#) further advocates embedding children's rights, equity, and participation as foundational components within sustainable development frameworks, arguing that such inclusion is vital to achieving truly sustainable societies.

Child and Youth Studies (CYS) has emerged as an interdisciplinary field that actively challenges traditional views of children as passive recipients of care and protection, instead positioning them as capable social agents and cultural actors ([James & James, 2012](#)). [Corsaro \(2015\)](#) elaborates on this by highlighting how children actively engage in the interpretive reproduction of culture, shaping and reshaping their social worlds through everyday interactions. Yet, despite these theoretical advancements, the lived experiences and perspectives of children and youth are frequently marginalized within institutional and policy frameworks. [Daly \(2020\)](#) critiques contemporary social policy for its failure to meaningfully incorporate children's voices, a deficit echoed by [Bessell \(2009\)](#) who documents widespread tendencies among service providers to undervalue and overlook children's participation in decision-making processes. [Hart and Brando \(2018\)](#) foreground the capability approach as a vital theoretical lens that shifts focus toward children's well-being and agency, urging sustainability scholars and practitioners to reconceptualize children as active contributors to sustainable futures rather than passive beneficiaries.

Bronfenbrenner (1979) and Bronfenbrenner (2005) offers a powerful conceptual framework for situating child development within a nested, multilayered system of interacting social contexts. The microsystem involves the child's immediate environments: family, peers, schools, where direct interpersonal interactions occur. The mesosystem describes the interrelations between these microsystems, such as the connections between home and school settings. The ecosystem includes broader social settings that indirectly impact the child, for example, parental workplaces or neighborhood institutions. The macrosystem refers to overarching cultural values, ideologies, laws, and economic systems that shape the other layers. Finally, the chronosystem captures the dimension of time, reflecting how historical events and developmental timing influence child outcomes. This ecological perspective has evolved into a bioecological model that emphasizes proximal processes which are the reciprocal interactions between individuals and their environments and the temporal nature of development (Rosa & Tudge, 2013; Tudge, Mokrova, Hatfield, & Karnik, 2009). Neal and Neal (2013) further argue for conceptualizing ecological systems not as static layers but as flexible, interconnected networks, a view that is particularly useful in analyzing complex and dynamic phenomena like social sustainability.

By linking social sustainability with ecological systems theory, researchers gain a nuanced understanding of how child development intersects with sustainable practices across multiple systemic levels. At the microsystem level, social sustainability is enacted through nurturing families, trauma-informed educational settings, and culturally sustaining pedagogies that affirm children's identities and support holistic well-being (Goldfeld et al., 2018; Souto-Otero & Beneito-Montagut, 2016). The mesosystem involves the coordination and integration of services, such as school-community partnerships that provide comprehensive support for children's development (Dearing, Kreider, Simpkins, & Weiss, 2006). The exosystem includes policy domains like housing, healthcare, and parental leave that indirectly influence children's living conditions and opportunities (Sampson, Morenoff, & Gannon-Rowley, 2002). The macrosystem captures societal structures such as systemic racism, neoliberal economic policies, and dominant national ideologies that influence resource distribution and institutional responsiveness (Giroux, 2011; Harvey, 2005). The chronosystem situates children's experiences within larger temporal contexts, including global phenomena such as climate change, the COVID-19 pandemic, and social justice movements, all of which significantly affect developmental trajectories and sustainability outcomes (Hulme, Dessai, Lorenzoni, & Nelson, 2009; Masten, 2014). Leach, Scoones, and Stirling (2018) advocate for "dynamic sustainabilities," which acknowledge the interconnectedness, complexity, and continual evolution of social and ecological systems. Holden, Linnerud, and Banister (2014) revisit the Brundtland Commission's foundational call for intergenerational equity, emphasizing that transformative structural changes are essential to achieve just and enduring sustainability.

A persistent critique within social sustainability literature concerns the predominance of Global North paradigms that often marginalize or overlook the lived realities and knowledge systems of children and youth in the Global South and Indigenous communities. Bessell (2009) stresses that children's participation in social and political processes is deeply mediated by cultural and contextual factors, necessitating locally grounded and culturally responsive approaches. Percy-Smith and Thomas (2009) similarly advocate for participatory methodologies informed by Indigenous epistemologies and culturally specific frameworks to ensure authentic youth engagement. Lundy (2007) critiques tokenistic practices that offer superficial youth participation, calling instead for structured opportunities that grant children genuine influence over decisions affecting their lives. Hart and Brando (2018) incorporate the capability approach to demonstrate how education systems may either constrain or expand children's freedoms, depending on their design and implementation, thus influencing their ability to contribute to sustainable development. Global institutions such as UNICEF (2013b) and the United Nations (2015) have elevated child-

centered sustainability as a critical cross-sectoral priority, articulating children's rights, participation, and protection as integral to the realization of the Sustainable Development Goals (SDGs).

Intersecting with social and cultural dimensions, mental health and resilience emerge as pivotal themes within the literature addressing children, youth, and sustainability. Resilience is conceptualized both as a dynamic process and an adaptive outcome shaped by the quality of social environments and systemic supports (Luthar, Cicchetti, & Becker, 2000). E. McCrea, Brunzell, and Stokes (2021) advocate for a systemic approach to fostering early childhood resilience, emphasizing the interconnected roles of family, educational settings, and community resources. Missimer, Robèrt, Broman, and Sverdrup (2010) call for integrating psychosocial dimensions into sustainability science, arguing that mental well-being and social inclusion are indispensable components of sustainable social development. Goldfeld et al. (2018) emphasizes the necessity of interdisciplinary collaborations between health and education sectors to promote holistic child development, resilience, and equity. Such partnerships are crucial for addressing the complex and multifaceted challenges facing children and youth in the pursuit of sustainable futures.

Collectively, this extensive body of literature underscores the urgent need for integrated, context-sensitive frameworks that center children and youth within social sustainability discourses. The convergence of ecological systems theory with social sustainability principles offers a comprehensive and flexible approach that acknowledges the complexity of developmental contexts while advancing justice, meaningful participation, and well-being. This synthesis bridges critical theoretical gaps and provides actionable insights for policy and practice aimed at transforming educational, social, and institutional systems to be more inclusive, equitable, and responsive to the diverse needs of younger generations in a rapidly changing world.

3. THEORETICAL FRAMEWORK

This study adopts a dual-theoretical framework that synthesizes Bronfenbrenner (1979) and its subsequent bioecological refinement by Bronfenbrenner and Morris (2006) with core principles of social sustainability (Hart & Brando, 2018; Missimer et al., 2010). This integrated framework enables a multidimensional analysis of child and youth development by examining the reciprocal relationships among individuals, families, institutions, communities, and broader social, cultural, economic, and environmental systems. By reconceptualizing Bronfenbrenner's nested ecological model through a social sustainability lens, the framework provides a holistic pathway for designing interventions that promote equity, inclusion, cultural responsiveness, and long-term developmental well-being. The incorporation of the bioecological perspective further emphasizes the importance of proximal processes, human agency, and the dynamic interactions between children and their environments, strengthening the framework's capacity to address the complexity of contemporary developmental contexts (Bronfenbrenner & Morris, 2006).

3.1. Ecological Systems Theory: A Developmental-Contextual Scaffold

Urie Bronfenbrenner (1979) Ecological Systems Theory provides the foundational structure for understanding how individual development is influenced by the interaction of multiple environmental systems. These include:

- **Microsystem:** The immediate environments in which children interact. These include home, school, and community spaces. When reinterpreted through a sustainability lens, the microsystem emphasizes rights-based early education, emotional security, and the provision of nurturing relationships as a cornerstone of development (Bessell, 2009; Hart & Brando, 2018).
- **Mesosystem:** The interrelations among microsystems, such as parent-teacher communication or healthcare collaboration with schools. In the sustainability context, this level advocates for cross-sector collaboration

across education, health, child protection, and social welfare systems to support holistic child well-being (Bronfenbrenner, 1979; Missimer et al., 2010).

- **Exosystem:** Broader systems that indirectly affect children, such as parental employment policies, local governance, and housing availability. Here, the framework prioritizes responsive labor, social protection, and housing policies that are attuned to the lived realities of families and communities (Hart & Brando, 2018).
- **Macrosystem:** The overarching ideologies, values, and policies that shape social structures. In a sustainability framework, this includes equity-promoting ideologies, inclusive governance, cultural continuity, and institutional decolonization (Bessell, 2009; Missimer et al., 2010).
- **Chronosystem:** Temporal dimensions that influence development, including historical contexts and future transitions. This level engages with generational shifts, the effects of climate change, technological disruptions, and evolving global justice movements, calling for adaptive and forward-looking educational and policy strategies (Bronfenbrenner, 1979; Missimer et al., 2010).

3.2. Social Sustainability: Justice and Continuity

Social sustainability, as conceptualized by Missimer et al. (2010) is concerned with creating resilient societies through the promotion of trust, inclusion, equity, and participation. Hart and Brando (2018) expand this understanding by emphasizing children's capabilities, their rights to participate in societal processes, and the ethical obligations of institutions to uphold justice across generations. When applied to Child and Youth Studies, these principles underscore the need for structural transformation that prioritizes intergenerational equity, cultural relevance, and participatory governance.

By merging Bronfenbrenner's ecological systems with the normative goals of social sustainability, this theoretical framework enables a system-sensitive analysis that is both developmentally appropriate and socially just. It provides a conceptual lens through which to examine institutional, pedagogical, and policy reforms that place children and youth at the center of social transformation.

3.3. Implications for Child and Youth Studies

This dual-theoretical framework yields critical implications for research, pedagogy, policy, and community engagement in Child and Youth Studies.

- **Pedagogy:** Educational curricula must incorporate cultural identity, sustainability values, and children's participatory rights. This aligns with a rights-based approach that values child agency, environmental stewardship, and place-based learning.
- **Policy:** Policies should be evidence-based and address the social determinants of development, including food security, safe housing, inclusive education, and access to health care. Interventions must be co-designed with children and families and must dismantle systemic barriers to equity and participation.
- **Community Practice:** Effective community interventions should embrace trauma-informed, inclusive, and culturally sensitive programming. Practitioners must collaborate with families and local organizations to build protective environments that buffer children from systemic harms.
- **Children as Stakeholders:** Children must be seen not merely as passive recipients of services, but as active agents in planning, evaluating, and leading initiatives that affect their lives. Their participation is not only a right but a vital resource for innovative, resilient social design (Bessell, 2009; Hart & Brando, 2018).

4. METHODOLOGY

This study adopts a qualitative multiple case synthesis methodology to systematically investigate how principles of social sustainability are operationalized within child and youth development contexts. Given the complexity and multidimensionality of social sustainability, especially as it intersects with developmental processes across diverse ecological systems, this approach allows for a comprehensive analysis of varied institutional and sociocultural settings through existing secondary data. By focusing on the synthesis of qualitative and mixed-methods findings drawn from a wide array of scholarly and policy literature, the study circumvents the need for primary data collection while maximizing analytical depth and contextual sensitivity. This approach is particularly valuable for constructing an integrative theoretical framework that aligns Bronfenbrenner's Ecological Systems Theory with foundational principles of social sustainability, thus advancing child-centered, systemic understandings relevant to research, policy, and practice.

4.1. Research Design

This research employed a qualitative multiple case synthesis approach grounded exclusively in secondary data sources. The data corpus consisted of a comprehensive range of peer-reviewed journal articles, policy briefs, curriculum frameworks, NGO reports, and published case studies. The multiple case synthesis methodology, as conceptualized by Yin (2018) and extended by Stake (2006) facilitates the rigorous comparison and integration of findings derived from heterogeneous cases situated within varied institutional, cultural, and sociopolitical contexts. This approach is particularly effective for examining complex phenomena such as social sustainability in child and youth development without requiring direct fieldwork or primary data generation.

The synthesis focused on three prominent developmental domains recurrently emphasized within academic and policy discourse.

- Public school systems that incorporate trauma-informed pedagogy and culturally responsive curricula tailored to address the social-emotional and cultural needs of diverse student populations.
- Community-based after-school programs that prioritize youth civic engagement, leadership cultivation, and participatory governance as mechanisms for empowerment and social inclusion.
- Early childhood education centers serving multilingual children and migrant families, employing intentional inclusion practices aimed at fostering linguistic diversity and preserving cultural heritage.

This design enabled the aggregation and critical interpretation of empirical and theoretical insights to formulate a robust, integrative framework linking (Bronfenbrenner, 1979, 2005) with foundational social sustainability principles (Hart & Brando, 2018; Missimer et al., 2010).

4.2. Data Sources and Selection Criteria

A systematic and exhaustive literature search was conducted using academic databases including JSTOR, ERIC, Scopus, and Google Scholar, ensuring comprehensive coverage and relevance. The selection of secondary sources was guided by stringent inclusion criteria.

- Publication in peer-reviewed journals or credible institutional outlets between 2005 and 2024, ensuring currency and scholarly rigor.
- Thematic alignment with Child and Youth Studies, education, social policy, or developmental psychology.
- Explicit or implicit engagement with one or more levels of Bronfenbrenner's ecological systems framework (Microsystem, mesosystem, exosystem, macrosystem, chronosystem).

- Examination of at least one dimension of social sustainability, including but not limited to social inclusion, equity, participation, intergenerational justice, or cultural continuity.

Following iterative screening, appraisal, and quality assessment, a total of 62 sources were selected for in-depth qualitative synthesis. These sources comprised qualitative empirical studies, systematic reviews, theoretical treatises, and policy analyses, collectively providing rich, multidimensional insights into the intersection of child development and social sustainability.

4.3. Data Analysis

The analysis employed a modified thematic synthesis methodology adapted from [Thomas and Harden \(2008\)](#) facilitating the integration and coherent interpretation of diverse qualitative findings into an overarching thematic framework. The analytic process was executed through multiple iterative stages.

1. **Deductive Coding:** Initial coding categories were derived a priori, based on Bronfenbrenner's five ecological system levels—microsystem, mesosystem, exosystem, macrosystem, and chronosystem—and core social sustainability principles identified in the literature (e.g., equity, participation, cultural continuity).
2. **Inductive Coding:** An open coding process enabled the identification of emergent themes and nuanced discourses, such as resistance to hierarchical educational reforms, tensions between policy rhetoric and lived experiences, and the enactment of children's agency within constrained systems.
3. **Cross-Case Synthesis:** Codes and thematic patterns were systematically compared and contrasted across the three focal domains (public schools, after-school programs, early childhood centers) to discern points of convergence, divergence, and contextual specificity regarding the operationalization of social sustainability.
4. **Critical Reflexivity:** Reflexive memoing was maintained throughout the analytic process to recognize and mitigate potential researcher biases and to contextualize findings within broader sociopolitical, cultural, and historical frameworks.

This multilayered, rigorous synthesis culminated in the articulation of a comprehensive conceptual framework elucidating the dynamic interplay between ecological systems and social sustainability principles within child-centered developmental contexts. The resultant framework provides significant implications for advancing theoretical understanding, informing policy development, and guiding practical interventions.

5. RESEARCH FINDINGS

This study advances theoretical and applied scholarship in Child and Youth Studies by integrating Bronfenbrenner's ecological systems theory with the foundational principles of social sustainability. Through an integrative thematic synthesis of interdisciplinary literature spanning Child and Youth Studies, sustainability science, educational policy, developmental psychology, and critical childhood studies, the analysis reconceptualizes the ecological model not merely as a descriptive framework of child development but as a normative lens for examining how social systems can either enable or constrain children's well-being, agency, and participation. The synthesis reveals that children's developmental experiences are shaped by interconnected ecological systems, each representing both opportunities for empowerment and potential sites of inequality.

At the microsystem level, the analysis identified family relationships, classrooms, peer networks, and immediate community environments as foundational contexts for children's emotional security, identity formation, cultural affirmation, and psychosocial development. The literature suggests that microsystems characterized by trauma-informed practices, culturally sustaining pedagogies, multilingual supports, and participatory learning environments contribute to conditions that support engagement, resilience, and holistic development ([Bessell, 2009](#); [Goldfeld et al.,](#)

2018; McCrea, Ehrich, & Freeman, 2021). Viewed through a social sustainability lens, the microsystem represents a critical space where children's rights, identities, and voices can be recognized and nurtured. Such environments challenge deficit-based approaches and emphasize the importance of relationships, belonging, and dignity in children's developmental trajectories (Hart & Brando, 2018; Lundy, 2007).

The mesosystem emerged as a critical mechanism through which connections among children's immediate environments—including families, schools, healthcare providers, and community organizations—shape developmental opportunities. The synthesis highlights the importance of cross-sector collaboration, including wraparound services and community-based educational models, in promoting coordinated support systems for children and families (Dryfoos, 2005; Weiss, Lopez, & Rosenberg, 2010). However, the literature also identifies institutional fragmentation, bureaucratic barriers, and competing policy priorities as challenges that limit effective collaboration. A socially sustainable mesosystem requires relational trust, shared responsibility, and coordinated structures that recognize children's development as a collective societal responsibility (Bronfenbrenner, 1979; Hart & Brando, 2018).

At the exosystem level, the synthesis demonstrates the significant influence of broader institutional, economic, and policy structures that indirectly shape children's everyday experiences. Employment policies, housing conditions, healthcare access, and social protection systems emerged as important determinants of developmental opportunity and social equity. The literature further highlights tensions between policies emphasizing market competition, standardization, and individual responsibility and those promoting collective investment and social inclusion (Apple, 2006; Connell, 2013). These findings suggest that the exosystem functions simultaneously as a potential source of structural disadvantage and as a mechanism for advancing social sustainability when policies prioritize equity, accessibility, and family well-being (Baines & Slutsky, 2019; OECD, 2022).

The macrosystem analysis revealed the importance of cultural values, ideological frameworks, and societal narratives in shaping institutions and defining children's social positions. The literature indicates that dominant educational and policy paradigms grounded in market-oriented accountability, Eurocentric knowledge systems, and hierarchical structures may reproduce inequities and marginalize alternative ways of knowing (Apple, 2006; Tikly, 2019). Conversely, approaches grounded in cultural pluralism, participatory governance, children's rights, and social justice provide opportunities for more inclusive and sustainable systems (Colantonio, 2010a; Hart & Brando, 2018; Vallance et al., 2011). The macrosystem therefore represents a critical arena in which societies negotiate competing visions of childhood, citizenship, and sustainability.

The chronosystem highlights the significance of historical, temporal, and societal transformations in shaping contemporary childhood experiences. The synthesis identifies climate change, digital transformation, artificial intelligence, economic uncertainty, and global social movements as emerging forces influencing children's identities, opportunities, and participation (Livingstone et al., 2017; O'Brien, Cairns, & Hall, 2018). These developments underscore the importance of recognizing children and youth as active participants in addressing contemporary challenges rather than merely as populations requiring protection. A socially sustainable chronosystem requires policies and educational approaches that are adaptive, future-oriented, and committed to intergenerational justice (UNICEF, 2013a; United Nations, 2015).

A significant contribution of this synthesis is the recognition that informal learning environments and community-based educational spaces represent important extensions of traditional developmental contexts. Youth organizations, civic engagement initiatives, maker spaces, alternative learning communities, and intergenerational knowledge-sharing platforms provide opportunities for participation, creativity, cultural expression, and social innovation (Corsaro, 2015; James & James, 2012; Leach et al., 2018). These spaces expand conventional

understandings of education by highlighting learning as a relational, community-based, and socially embedded process.

The synthesis further indicates that resilience should be understood not solely as an individual characteristic but as a relational and systemic capacity produced through supportive ecological environments. Research on childhood resilience emphasizes the importance of equitable access to supportive relationships, educational opportunities, and community resources (Hart & Brando, 2018; McCrea et al., 2021). From this perspective, resilience is strengthened not through expectations of individual adaptation alone but through the transformation of systems that create conditions for children and youth to thrive.

Collectively, these findings support the theoretical contribution of an ecological-social sustainability framework that positions children as active participants and co-constructors of sustainable futures. Each ecological domain—micro, meso, exo, macro, and chrono—represents both a potential source of risk and an opportunity for transformative action. The framework emphasizes that children's developmental trajectories cannot be separated from the social, cultural, political, and ecological systems in which they are embedded.

Ultimately, this synthesis positions ecological systems theory, enriched by social sustainability principles, as a conceptual framework for advancing child-centered research, policy, and practice. By centering children's rights, agency, participation, and well-being within broader institutional and societal structures, the framework provides a foundation for reimagining education, community engagement, and social policy in ways that promote equity, inclusion, resilience, and sustainability across generations.

6. VALIDITY AND RELIABILITY

The rigor of this qualitative multiple case synthesis is reinforced through several strategies aimed at ensuring validity and reliability. Validity was pursued through methodological triangulation by synthesizing a wide range of secondary sources spanning empirical studies, policy documents, and theoretical literature from diverse geographical and institutional contexts. This breadth allowed for comprehensive cross-validation of findings and reduced the risk of singular contextual biases. Additionally, the iterative thematic coding process included both deductive and inductive approaches, enhancing construct validity by aligning codes with established theoretical frameworks (Bronfenbrenner's ecological levels and social sustainability principles) while remaining open to emergent, context-specific themes that captured complex realities.

Reliability was strengthened through systematic documentation of the analytic process, including detailed coding schemes and reflexive memoing that tracked interpretative decisions and researcher positionality. Cross-case synthesis procedures involved multiple rounds of code comparison and thematic refinement to ensure consistency and transparency. Moreover, the critical reflexivity embedded throughout the analysis served to mitigate potential subjectivity inherent in qualitative synthesis, bolstering trustworthiness and confirmability of the results.

Future empirical research should aim to further validate this framework through primary data collection and mixed-methods designs, incorporating participatory approaches to corroborate and extend these findings. Such research would provide additional evidence of the framework's applicability and reliability across different cultural and developmental contexts.

Future empirical research is crucial to validate and refine this integrated framework across diverse sociocultural and geopolitical contexts. Longitudinal, mixed-methods, and participatory research approaches that center children's perspectives will be particularly valuable for examining how the model operates in practice, how it can be adapted to specific community needs, and how it influences developmental outcomes and social sustainability indicators. Moreover, investigating the roles of emerging phenomena such as digital youth activism, climate justice engagement,

and culturally embedded knowledge systems will enhance the framework's relevance and responsiveness to contemporary global challenges.

In conclusion, this study calls for a paradigmatic shift from fragmented, protectionist, and adult-centric models toward a holistic, child-centered vision of sustainable development. By situating children at the nexus of ecological and social sustainability, it advocates for systemic reconfigurations that not only protect but also empower young generations to shape equitable, inclusive, and resilient futures. This transformative approach is essential for addressing the complex, intersecting crises of our time and for realizing the promise of sustainable development that honors the dignity and potential of every child, today and for generations to come.

7. LIMITATIONS OF THE STUDY

Although this study contributes a theoretically informed framework for integrating ecological systems theory with social sustainability in Child and Youth Studies, several limitations should be acknowledged. First, the framework is primarily conceptual and has not yet been empirically validated across diverse populations, cultural contexts, or developmental settings. While the synthesis provides a comprehensive theoretical foundation, future empirical investigations are necessary to examine its applicability, effectiveness, and relevance in real-world contexts.

Second, the study relies exclusively on secondary sources, including peer-reviewed scholarship, policy documents, institutional reports, and published case studies. Although this approach enables broad interdisciplinary synthesis, it limits direct engagement with the lived experiences of children, youth, families, and practitioners. The absence of primary data may constrain the ability to capture emerging perspectives, localized practices, and community-based understandings of social sustainability that are not adequately represented in existing literature.

Third, despite efforts to incorporate diverse international perspectives, the reviewed literature may reflect structural limitations within academic knowledge production, including the overrepresentation of Global North perspectives and the underrepresentation of marginalized, Indigenous, and non-Western knowledge systems. Social sustainability is deeply shaped by historical, cultural, political, and economic contexts; therefore, broad theoretical synthesis may not fully capture the complexity of locally situated approaches to childhood, community, and sustainability.

Fourth, the use of thematic synthesis as the primary analytic strategy, while appropriate for identifying patterns across diverse sources, may reduce the complexity and contextual specificity of individual cases. Synthesizing findings across different institutional settings, demographic groups, and intervention models creates the possibility of overlooking tensions, contradictions, and unique contextual factors that influence how ecological systems operate within specific communities. Consequently, further refinement is required to translate broad theoretical constructs into measurable indicators and context-specific interventions.

Fifth, the rapidly changing nature of contemporary challenges affecting children and youth—including digital transformation, artificial intelligence, algorithmic decision-making, climate change, and youth-led social movements—presents an ongoing challenge for any literature-based framework. Because scholarly publication cycles often lag behind emerging social phenomena, some recent developments may not be fully represented within the reviewed literature. Continuous refinement of the framework will therefore be necessary to ensure its relevance in evolving social, technological, and ecological contexts.

Finally, although systematic coding procedures and reflexive practices were employed to strengthen analytical rigor, qualitative synthesis remains influenced by researcher interpretation. Decisions regarding source selection, thematic categorization, and theoretical integration may introduce potential biases. Future validation efforts should

therefore include collaborative, interdisciplinary approaches that incorporate the perspectives of children and youth as active knowledge producers rather than solely as subjects of research.

Future research should prioritize empirical studies using mixed-methods, longitudinal, and participatory approaches to evaluate the framework across diverse sociocultural and geopolitical contexts. In particular, child-led and youth-centered methodologies will be essential for ensuring that sustainability frameworks reflect the lived realities, aspirations, and agency of younger generations. Such research can strengthen the ecological validity of the framework while contributing to the development of more equitable, inclusive, and resilient developmental systems for children and youth worldwide.

8. CONCLUSION

This study advances a novel, interdisciplinary, and child-centered conceptual framework that integrates Bronfenbrenner (1979) and Bronfenbrenner (2005). Ecological Systems Theory with foundational principles of social sustainability (Hart & Brando, 2018; Missimer et al., 2010). This integrative model provides a comprehensive lens for understanding and operationalizing systemic transformation in child and youth development, emphasizing the dynamic and reciprocal relationships among children, institutions, and socio-environmental contexts. By foregrounding equity, justice, participation, and ecological consciousness as indispensable pillars of development, the framework transcends traditional silos of environmental or economic sustainability and reframes sustainable development as a deeply social, cultural, and intergenerational imperative.

The findings underscore that fostering sustainable futures necessitates embedding relational and justice-oriented principles within the microsystem, mesosystem, exosystem, macrosystem, and chronosystem levels that shape children's lived realities. This reframing challenges dominant neoliberal paradigms that prioritize efficiency and market-driven outcomes, instead advocating for educational systems that are inclusive, culturally responsive, and participatory; policy environments that are equitable, transparent, and accountable; and societal norms that recognize children and youth as active agents and co-creators in the construction of sustainable societies.

Significantly, this study contributes to the evolving scholarship in Child and Youth Studies by bridging ecological systems theory with social sustainability in a manner that elevates child agency and intergenerational equity as core drivers of systemic change. It highlights the urgency of cross-sectoral collaboration, community engagement, and context-sensitive interventions that amplify children's voices and recognize their diverse cultural identities and experiences. By rooting governance, pedagogy, and social services within this comprehensive framework, practitioners and policymakers are better positioned to design and implement transformative approaches that address structural inequities, foster resilience, and promote holistic well-being.

9. RECOMMENDATIONS

Based on the integrative framework and findings of this study, several key recommendations are proposed to support its translation into practice:

First, educational institutions should intentionally embed ecological systems thinking and social sustainability principles across curricula, ensuring that children and youth are not only exposed to sustainability concepts but are also actively engaged in problem-solving, civic participation, and community-based learning experiences. This requires a shift toward pedagogical approaches that prioritize experiential, interdisciplinary, and place-based learning.

Second, policymakers should adopt multi-level governance strategies that reflect the interconnected nature of children's developmental environments. Policies should be designed to align interventions across microsystem, mesosystem, exosystem, and macrosystem levels, ensuring coherence between schools, families, community

organizations, and broader social systems. Particular attention should be given to equity-driven resource allocation and the reduction of systemic barriers affecting marginalized children and youth.

Third, practitioners working in child and youth development fields should implement participatory and co-design approaches that position children as legitimate stakeholders in decision-making processes. This includes integrating youth advisory structures within schools, community programs, and service organizations to ensure that interventions reflect lived experiences and contextual realities.

Fourth, cross-sector partnerships between education systems, social services, environmental organizations, and community stakeholders should be strengthened to promote holistic and coordinated responses to complex developmental challenges. Such collaboration is essential for addressing the intertwined social, ecological, and economic dimensions of sustainability.

Future empirical research is crucial to validate and refine this integrated framework across diverse sociocultural and geopolitical contexts. Longitudinal, mixed-methods, and participatory research approaches that center children's perspectives will be particularly valuable for examining how the model operates in practice, how it can be adapted to specific community needs, and how it influences developmental outcomes and social sustainability indicators. Moreover, investigating the roles of emerging phenomena such as digital youth activism, climate justice engagement, and culturally embedded knowledge systems will enhance the framework's relevance and responsiveness to contemporary global challenges.

In conclusion, this study calls for a paradigmatic shift from fragmented, protectionist, and adult-centric models toward a holistic, child-centered vision of sustainable development. By situating children at the nexus of ecological and social sustainability, it advocates for systemic reconfigurations that not only protect but also empower young generations to shape equitable, inclusive, and resilient futures. This transformative approach is essential for addressing the complex, intersecting crises of our time and for realizing the promise of sustainable development that honors the dignity and potential of every child, today and for generations to come.

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