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Original Research

Beyond Gender Parity: Postcolonial Language Capital and Intersectional Educational Exclusion in Timor-Leste

Ana Paula Belo[1]✉, Mateus Ximenes[2], Carmelita da Conceição[3]
[1] Department of Tetum Language Education, Universidade Nacional Timor Lorosa'e, Dili, Timor-Leste
[2] Department of Portuguese Language Education, Universidade Nacional Timor Lorosa'e, Dili, Timor-Leste
[3] Department of English Language Education, Universidade Nacional Timor Lorosa'e, Dili, Timor-Leste
✉ anapaulabelo@gmail.com
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Abstract. *Timor-Leste has achieved notable gains in youth literacy and female participation, yet aggregate parity can conceal severe inequalities generated by disability, geography, adolescent motherhood, child labour, migration, and unequal access to multilingual capital. This article examines how these disadvantages intersect within a postcolonial education system organized around Tetun and Portuguese while retaining Indonesian and English as consequential working languages. A secondary quantitative analysis integrates the 2022 Population and Housing Census Thematic Report on Education, the census main report, official population projections, and UNESCO Institute for Statistics metadata and time series. The study re-analyses reported multivariate logistic models and constructs an intersectional penalty matrix, spatial-language ratios, and life-course risk comparisons. Youth literacy reached 87.3%, and females slightly outperformed males in youth literacy and broad attendance. However, literacy among persons with disabilities was only 23.9%, compared with 71.4% among persons without disabilities; attendance among persons aged 5–24 with disabilities was 19.0%, compared with 67.1%. School attendance among adolescent girls aged 15–19 fell from 78.4% for those without a live birth to 18.3% for adolescent mothers. Rural residence halved the adjusted odds of general literacy, while the capacity to read and write all four major languages was 2.43 times more common in urban areas. The findings support a layered exclusion model in which embodied, territorial, life-course, and linguistic disadvantages convert formal parity into unequal capabilities. The article argues for disability-responsive schooling, re-entry guarantees for adolescent mothers, rural multilingual resource strategies, and monitoring systems that move beyond sex parity toward intersectional educational justice.*

Keywords: *Timor-Leste; intersectionality; language-in-education policy; educational inequality; disability; youth literacy*

1. Introduction

Educational progress is commonly assessed through national averages such as literacy, attendance, and gender parity, but these indicators can obscure unequal distributions of opportunity. A system may achieve female–male parity while persons with disabilities remain excluded, rural youth face limited progression, adolescent mothers leave school, and multilingual resources concentrate in urban

areas. The problem is not the validity of aggregate indicators but their tendency to compress heterogeneous life chances into a single value. The commitment to leave no one behind therefore requires attention to who benefits, at which life-course stage, and under what social, spatial, and linguistic conditions (UNDP, 2018; United Nations, 2015). Timor-Leste is an important case because its young, mountainous, multilingual, and post-conflict education system must simultaneously address expansion, nation building, and the legacies of Portuguese colonialism, Indonesian occupation, independence, and global integration. The constitutional recognition of Tetun and Portuguese as official languages and Indonesian and English as working languages shapes access to schooling, administration, higher education, employment, and knowledge (Democratic Republic of Timor-Leste, 2002). Yet these policies are unevenly translated into classrooms because teachers and learners use multilingual repertoires that do not always correspond to official prescriptions (da Costa Cabral, 2021; Taylor-Leech, 2009).

The 2022 Population and Housing Census presents a mixed profile. Youth literacy reached 87.3%, substantially exceeding general literacy, while females recorded modest advantages in attendance and youth literacy. However, severe disadvantages persisted among persons with disabilities, rural residents, adolescent mothers, working children, and NEET youth. This coexistence of aggregate gender progress and concentrated exclusion raises a central question: how can a system appear increasingly equitable by sex while reproducing inequality through disability, geography, motherhood, work, migration, and household conditions? Existing scholarship provides detailed analyses of language policy, multilingual practice, identity, and the political roles of Portuguese and Tetun (da Costa Cabral, 2021; Taylor-Leech, 2008, 2009, 2011, 2013), while official reports document demographic and educational inequalities. These bodies of evidence, however, are rarely integrated. Language studies tend to emphasize discourse and classroom practice, whereas demographic reports present disaggregated statistics without a unified account of cumulative exclusion. This fragmentation also encourages gender parity to be treated as an endpoint despite substantial inequalities within the female population.

This article addresses the gap by integrating intersectionality, the capability approach, and linguistic-capital theory. It examines which social and spatial characteristics are most strongly associated with attendance and literacy, how disability, adolescent motherhood, child work, and NEET status generate life-course penalties, and how multilingual literacy varies across languages, generations, and urban–rural settings. Rather than re-estimating unavailable census microdata, the study synthesizes official multivariate and disaggregated evidence through a layered exclusion model distinguishing embodied, territorial, life-course, and linguistic mechanisms. The case has wider relevance for post-conflict and postcolonial systems that must expand access, standardize national languages, manage donor-supported reform, and serve geographically dispersed populations while being assessed through common global indicators. Empirically, the article consolidates high-magnitude disparities dispersed across official sources; conceptually, it explains how multiple exclusionary mechanisms interact; and

methodologically, it demonstrates how a census-based intersectional audit can move beyond parity indices without claiming causal identification. The findings position gender parity as a minimum threshold rather than the endpoint of educational justice.

2. Theoretical framework

Intersectionality emerged as a critique of frameworks that separated gender and race and therefore obscured experiences produced at their intersection (Crenshaw, 1989). It now examines how relations of power are mutually constitutive rather than merely additive (Cho et al., 2013; Collins & Bilge, 2020). In education, this perspective asks not only whether girls and boys participate equally, but which learners benefit, under what conditions, and through which institutional resources. Following Hancock's (2007) distinction between unitary, multiple, and intersectional analysis, this study treats disability, residence, motherhood, age, language, and poverty as conditions that reshape the meaning of gender rather than as isolated variables. The capability approach strengthens this interpretation by distinguishing formal resources from real educational freedoms (Sen, 1999). Because personal, social, and environmental conversion factors determine whether a school place becomes meaningful participation (Robeyns, 2005), disability gaps should be understood as institutional accessibility deficits rather than inevitable effects of impairment. Cross-national evidence similarly shows that limited infrastructure, assistive materials, early identification, and teacher preparation systematically reduce schooling opportunities for children with disabilities (Filmer, 2008; Mizunoya et al., 2018; World Health Organization & World Bank, 2011).

Linguistic-capital theory adds a further conversion mechanism by showing that institutions assign unequal value to linguistic repertoires (Bourdieu, 1991). In Timor-Leste, Tetun provides broad national communication, Portuguese connects learners to state and Lusophone institutions, Indonesian remains linked to older generations and regional exchange, and English offers access to global higher education, technology, and employment. Yet language policy operates through beliefs, practices, management, and institutional mechanisms rather than through formal declaration alone (Spolsky, 2004; Shohamy, 2006). Official bilingualism is therefore mediated by teacher competence, textbooks, local languages, translanguaging, and generational repertoires, producing gaps between national policy and classroom practice (da Costa Cabral, 2021). Translanguaging may support comprehension, but it does not automatically equalize access to languages rewarded by examinations and institutions (García & Li Wei, 2014; Tollefson & Pérez-Milans, 2018). This postcolonial linguistic order remains historically layered and politically contested (Taylor-Leech, 2009), although evidence indicates that familiar-language instruction can strengthen participation and learning when transitions to additional languages are adequately supported (Ball, 2011; Benson, 2004; Cummins, 2000; UNESCO, 2016). Accordingly, horizontal inequality concerns unequal access to the same language resources, whereas vertical inequality concerns the unequal institutional value assigned to different languages; when high-value languages are concentrated in urban areas, spatial advantage becomes credential advantage.

These perspectives are integrated into a layered exclusion model comprising embodied, territorial, life-course, and linguistic conversion. Embodied conversion concerns disability and institutional accessibility; territorial conversion concerns residence, transport, municipality, and institutional density; life-course conversion concerns adolescent motherhood, child work, delayed progression, and NEET status; and linguistic conversion concerns access to literacy in Tetun, Portuguese, Indonesian, and English. Gender intersects with every layer but does not predetermine disadvantage, allowing a national female advantage to coexist with severe exclusion among adolescent mothers, disabled girls, or rural women. The model generates four expectations: disability and rural penalties should remain substantial after sex and household characteristics are considered; life-course disruptions should produce larger attendance gaps than national female–male differences; language literacy should show generational substitution rather than uniform expansion; and multilingual portfolios should be concentrated in urban areas where educational institutions, administration, media, and higher education are denser. These expectations guide the empirical analysis of how formal educational rights are converted—or fail to be converted—into substantive capability.

3. Data and methods

The study employed a secondary quantitative design using anonymized aggregate statistics and reported regression results from the *Timor-Leste Population and Housing Census 2022 Thematic Report on Education* (INETL, 2024a), supplemented by the Census Main Report, official population projections, and UNESCO Institute for Statistics documentation for demographic context, SDG 4 alignment, and indicator interpretation (INETL, 2023, 2024b; UIS, 2026). Units of analysis varied by indicator: general literacy covered persons aged five years and over, youth literacy those aged 15–24, disability comparisons persons aged 5–24, child work children aged 10–17, adolescent motherhood girls aged 15–19, and NEET youth aged 15–24. Because these denominators are not interchangeable, all comparisons were interpreted within their stated populations. Three analytical procedures were applied. First, reported logistic-regression odds ratios were reorganized into a determinant matrix and converted, where useful, into proportional differences in adjusted odds; for example, OR = 0.320 was interpreted as 68.0% lower adjusted odds rather than a percentage-point decline in probability. Second, paired percentages were used to calculate absolute penalties and compatible adverse-rate ratios, including the NEET–non-NEET illiteracy ratio of 28.3/6.2 = 4.56. Third, a linguistic-capital profile distinguished individual-language literacy from four-language portfolio capacity, yielding an urban–rural ratio of 21.4/8.8 = 2.43, while age patterns were interpreted as generational transitions rather than synthetic cohort estimates.

Validation involved cross-checking values against official tables and narratives, recalculating derived percentages, and confirming reference categories to prevent reversed interpretation. This was especially important for migration because children who had always lived in the same suco had 3.086 times the attendance odds

of those who had lived elsewhere, indicating an advantage for non-migrant children rather than a higher risk. Evidence was interpreted hierarchically: multivariate coefficients provided the strongest conditional evidence, paired percentages offered direct but composition-sensitive contrasts, and spatial or generational language profiles provided pattern evidence. The analysis remained explicitly non-causal because omitted variables, reverse causality, measurement error, and model specification could affect the observed associations; accordingly, the study used terms such as *penalty*, *association*, and *exclusionary configuration* rather than causal impact. Census limitations included probable underreporting of disability, self- or proxy-reported literacy, language measures that did not capture oral or academic proficiency, broad urban–rural classifications, and binary sex categories. Nevertheless, the census remains the most comprehensive national source for analysing intersecting educational inequalities. Ethical approval was unnecessary because only publicly available, aggregated, anonymized data were used, and all derived measures, reference categories, and analytical decisions were reported to support reproducibility.

4. Results

Gender parity and intersectional equality diverged sharply. Across the school-attendance population aged 3–34, female attendance was 50.2%, compared with 48.7% for males, while youth literacy reached 88.3% for females and 86.4% for males. Multivariate models likewise showed 16.4% higher adjusted attendance odds and 14.9% higher youth-literacy odds for females, indicating a genuine reversal of aggregate female disadvantage. However, this pattern was generational rather than universal. Among the population aged five and over, females had 20.6% lower adjusted odds of general literacy than males (OR = 0.794), suggesting that younger women benefited from post-independence educational expansion while older cohorts retained the effects of historical exclusion. Aggregated parity indicators can therefore conceal two distinct educational histories: a younger female cohort with a modest advantage and older women with persistent literacy deficits.

Territorial, household, and mobility factors produced much larger inequalities. Rural residents had 19.4% lower adjusted attendance odds than urban residents (OR = 0.806) and only about half the adjusted odds of both general and youth literacy (OR = 0.494 and 0.492), confirming that spatial disadvantage persists among post-independence cohorts. Municipal variation was also substantial: relative to Aileu, attendance odds were particularly low in Oecusse (0.183), Baucau (0.270), Dili (0.395), Covalima (0.378), and Ermera (0.379), but higher in Atauro (1.720); for general literacy, Dili (1.488) and Manufahi (1.506) exceeded the reference, whereas Oecusse, Ermera, and Bobonaro remained below it. These differences indicate that geography reflects more than an urban–rural divide, incorporating infrastructure, settlement, migration, age structure, and local educational history. Material deprivation and mobility further intensified exclusion: serious, moderate, and minor housing repair needs reduced attendance odds to 0.572, 0.652, and 0.752, respectively, while children who had always lived in the same suco had 3.086 times the attendance odds of those who had lived elsewhere, suggesting that insecure

housing and mobility disrupt enrolment, documentation, school familiarity, and social support.

Table 1. *Selected adjusted odds ratios for attendance and literacy*

Predictor (reference)	Attendance OR	General literacy OR	Youth literacy OR	Interpretation
Female (male)	1.164	0.794	1.149	Younger female advantage coexists with older-cohort literacy deficit
Rural (urban)	0.806	0.494	0.492	Persistent territorial penalty, strongest for literacy
Disability (no disability)	—	0.320	0.098	Largest adjusted exclusion, especially among youth
Serious dwelling repair (no repair)	0.572	0.652	—	Material deprivation lowers participation and literacy
Lived entire life in same suco (lived elsewhere)	3.086	—	—	Residential stability strongly associated with attendance
Dili (Aileu)	0.395	1.488	—	Municipal effects differ by outcome
Oecusse (Aileu)	0.183	0.485	—	Severe place-based disadvantage in both models

Note. OR = odds ratio. Values are reproduced from the official census thematic report's binary logistic models. An OR below 1 indicates lower adjusted odds of the positive outcome relative to the stated reference category.

Disability generated the largest adjusted literacy penalty. Persons with disabilities had a general-literacy odds ratio of 0.320 relative to persons without disabilities, equivalent to 68.0% lower adjusted odds. In the youth-literacy model, the odds ratio fell to 0.098, indicating 90.2% lower adjusted odds. The descriptive percentages are equally stark. Only 23.9% of persons with disabilities were literate, compared with 71.4% of persons without disabilities, a 47.5-point gap. Among persons aged 5–24, attendance was 19.0% for those with disabilities and 67.1% for those without, a 48.1-point gap.

The combined determinant profile also reveals that exclusion is not reducible to household poverty. Dwelling condition is important, yet rural residence, disability, municipality, and migration remain associated with outcomes in the reported models. This pattern indicates multiple pathways: resource scarcity, inaccessible environments, administrative discontinuity, limited institutional supply, and uneven language exposure. A poverty-targeted transfer could alleviate some constraints but would not by itself create accessible classrooms, portable records, nearby secondary provision, or multilingual teaching capacity.

The disability results differ qualitatively from the small national gender gaps. The ratio of literacy among persons with and without disabilities was approximately 0.33, and the attendance ratio was approximately 0.28. Put differently, formal

expansion reached persons with disabilities at less than one-third of the rate observed among the comparison population. Because disability is likely under-identified in a household census, these values may not capture the full scale or diversity of exclusion. Nevertheless, no other measured axis produced a comparable collapse across both attendance and literacy.

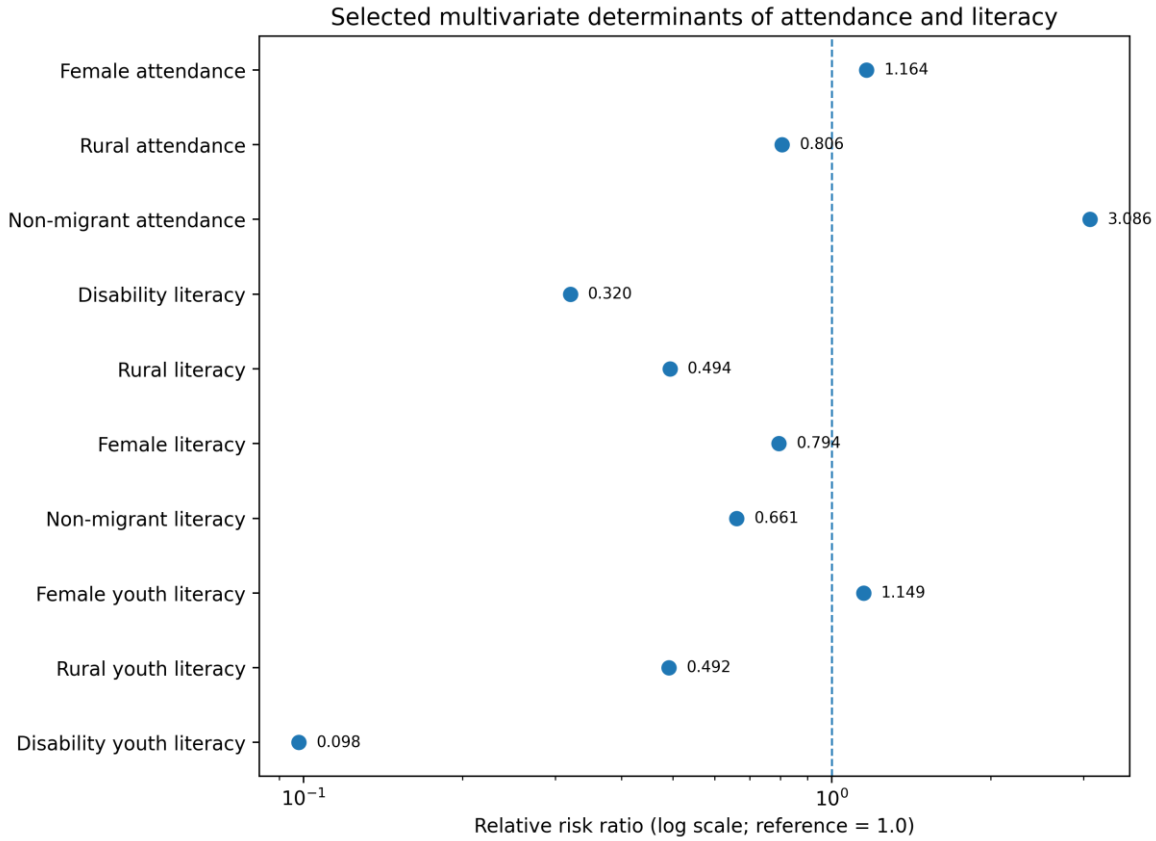

Figure 1. *Selected adjusted odds ratios for educational participation and literacy*
Note. Odds ratios below 1 indicate lower adjusted odds relative to the official model's reference category. Source: INETL (2024a).

Life-course disruptions produced educational penalties far larger than the national gender gap. Among girls aged 15–19, attendance fell from 78.4% among those without a live birth to 18.3% among adolescent mothers, a 60.1-point difference and the largest paired attendance gap in the analysis. This pattern suggests that childcare responsibilities, stigma, health effects, pregnancy timing, and institutional re-entry barriers can transform a modest national female advantage into severe subgroup exclusion, although the cross-sectional data cannot isolate their individual effects (Grant & Hallman, 2008; Lloyd & Mensch, 2008; UNFPA, 2022). Child work also reduced participation: attendance was 67.9% among working children aged 10–17 compared with 85.1% among non-working children, while literacy differed only slightly, at 83.8% and 86.6%, respectively. The smaller literacy gap suggests that many working children acquire basic skills before entering work or remain intermittently connected to school, but their 17.2-point attendance deficit threatens progression, completion, and advanced learning (International Labour Organization [ILO], 2019).

NEET status further concentrated educational disadvantage among youth. With a national NEET rate of 29.3%, illiteracy affected 28.3% of NEET youth but only 6.2% of non-NEET youth, producing a 22.1-point gap and an adverse-rate ratio of 4.56. Although the relationship may be bidirectional—limited literacy can restrict access to education, training, and employment, while prolonged disengagement can erode skills—the result identifies a substantial population facing overlapping educational and labour-market exclusion and confirms the need to treat NEET as a heterogeneous policy category (Elder, 2015). The ordering of effects is therefore instructive: national sex differences were below two points, compared with 17.2 points for child-work attendance, 22.1 points for NEET illiteracy, nearly 50 points for disability, and more than 60 points for adolescent motherhood. Although these measures cover different outcomes and age groups, their scale demonstrates that the most consequential inequalities occur within gender categories and cannot be captured by parity indicators alone.

Table 2. *Intersectional educational penalties across the life course*

Comparison	Disadvantaged group	Reference group	Absolute gap	Risk interpretation
Literacy: disability	23.9%	71.4%	−47.5 pp	Literacy level about one-third of the reference group
Attendance age 5–24: disability	19.0%	67.1%	−48.1 pp	Attendance level about 28% of the reference group
Attendance age 15–19: adolescent motherhood	18.3%	78.4%	−60.1 pp	Largest observed attendance discontinuity
Attendance age 10–17: child work	67.9%	85.1%	−17.2 pp	Work competes with sustained participation
Illiteracy age 15–24: NEET status	28.3%	6.2%	+22.1 pp	Illiteracy 4.56 times as prevalent

Note. Age ranges and outcomes differ; gaps should not be ranked as estimates of a common causal effect. pp = percentage points; NEET = not in employment, education, or training. Source: INETL (2024a); derived contrasts by the authors.

The second major finding concerns the architecture of multilingual literacy. Tetun had the highest literacy prevalence among the population aged five and over, at 70.1%. Portuguese literacy reached 40.0%, Bahasa Indonesia 30.4%, and English 15.3%. These values are not mutually exclusive because individuals may be literate in multiple languages. The distribution forms a linguistic hierarchy: Tetun functions as the broadest national written medium; Portuguese is a substantial but selective institutional language; Indonesian retains a large historical footprint; and English remains scarce.

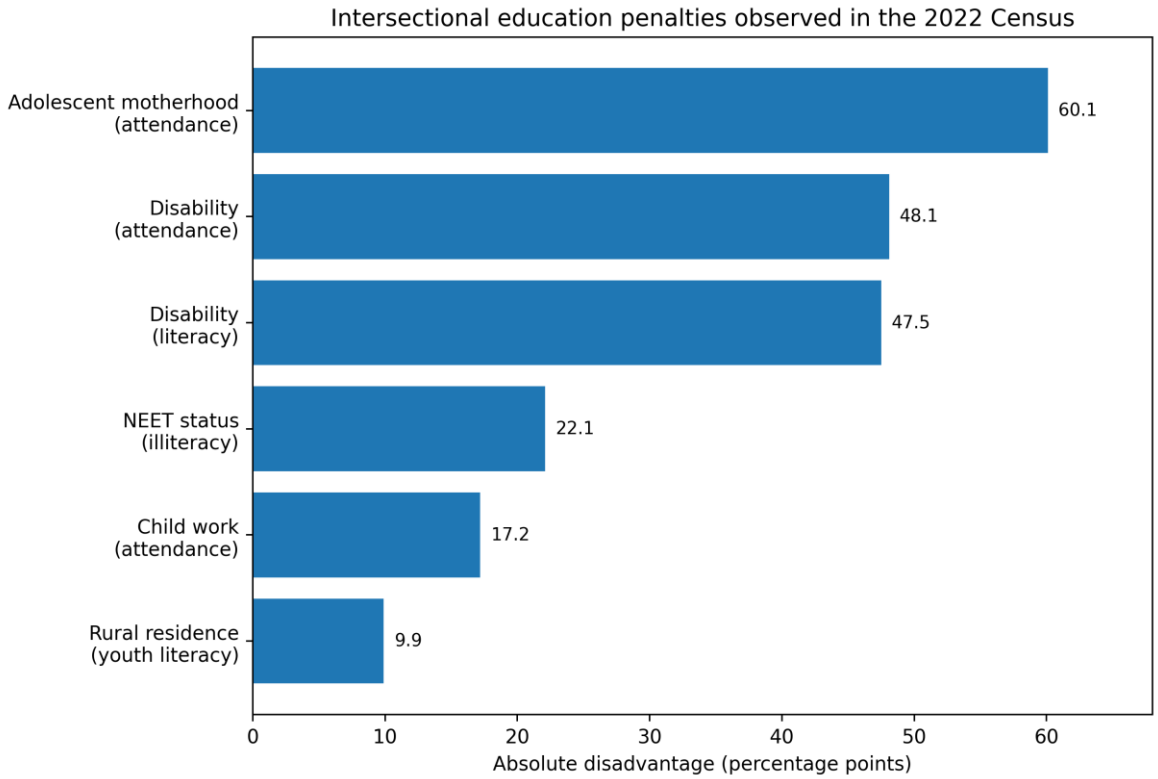

Figure 2. *Absolute educational penalties among selected marginalized groups*
Note. Gaps concern different outcomes and age ranges and are descriptive rather than causal.
Source: INETL (2024a); calculations by the authors.

Age profiles show generational substitution rather than simple accumulation. Tetun literacy is much stronger among younger groups than among older adults, reflecting its institutional consolidation after independence. Portuguese also peaks among younger cohorts, consistent with its insertion into the post-independence education system. Bahasa Indonesia follows the opposite direction: it is stronger among cohorts educated during the occupation and declines among younger groups. English improves modestly among youth but remains low across the population. Postcolonial language transition is therefore visible as a redistribution of literacy across generations.

The language transition also has a spatial structure. The percentage able to read and write all four major languages was 21.4% in urban areas and 8.8% in rural areas. Urban residents were thus 2.43 times as likely to possess the full multilingual portfolio. The gap cannot be interpreted solely as individual motivation. Urban areas concentrate secondary schools, universities, public administration, media, commercial services, and teachers with higher levels of formal training. These institutions create repeated opportunities to acquire and use Portuguese and English in addition to Tetun and Indonesian.

Table 3. *Postcolonial language-literacy profile*

Language / portfolio	Literacy prevalence	Generational pattern	Institutional significance
Tetun	70.1%	Strongest among younger cohorts	National communication and expanding written standard
Portuguese	40.0%	Higher among post-independence youth	State, curriculum, law, and Lusophone networks
Bahasa Indonesia	30.4%	Stronger among older and middle cohorts	Historical schooling, regional media, and exchange
English	15.3%	Low, with modest youth improvement	Global higher education, technology, and employment
All four languages	Urban 21.4%; rural 8.8%	Portfolio concentrated in urban areas	Urban/rural ratio = 2.43

Note. Language percentages are non-exclusive because respondents may be literate in more than one language. Source: INETL (2024a); urban/rural ratio derived by the authors.

A final cross-cutting pattern concerns the difference between basic literacy and opportunity-generating literacy. Working children showed only a modest literacy deficit but a much larger attendance deficit, while urban residents were far more likely to hold the full four-language portfolio. These findings indicate that the ability to read and write a simple sentence is an essential threshold but not a sufficient measure of educational inclusion. Advanced progression depends on sustained attendance, academic language, digital access, and the capacity to use literacy across institutional settings. Monitoring should therefore distinguish foundational literacy, language-specific literacy, and functional access to secondary, tertiary, and labour-market pathways.

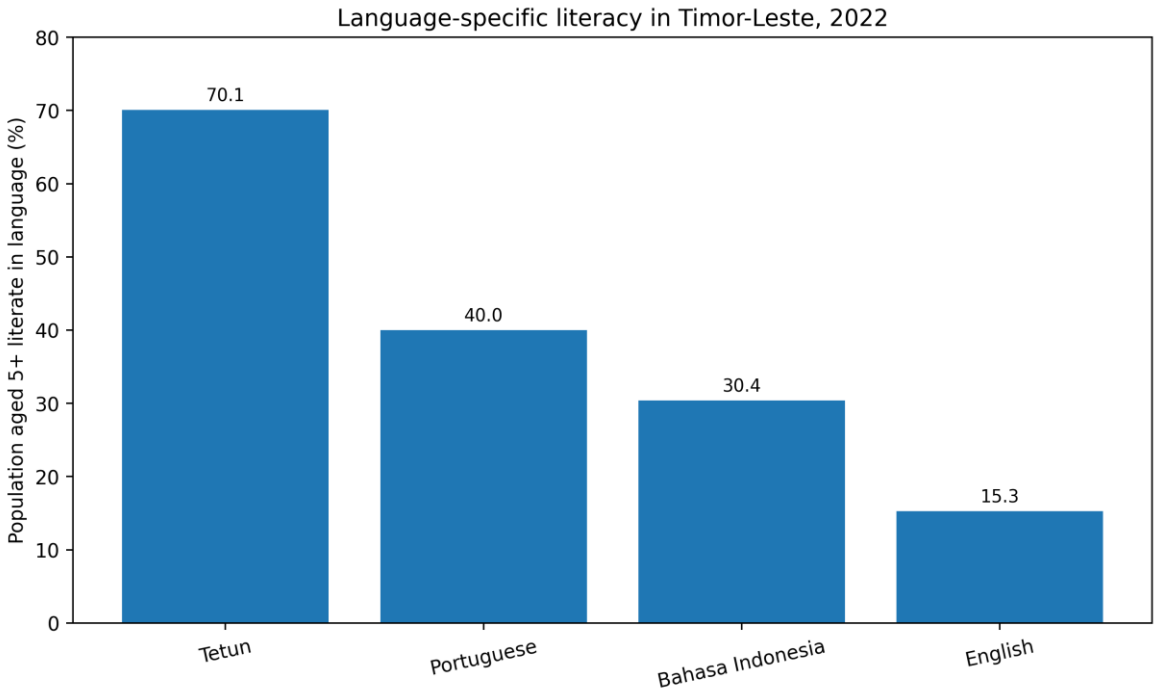

Figure 3. *Literacy prevalence across Timor-Leste's four major written languages*
Note. Percentages are non-exclusive. Source: INETL (2024a). Figure prepared by the authors.

Figure-based comparison shows that the most socially valuable language portfolio is also the least evenly distributed. Tetun literacy offers the widest communicative base, but access to the languages that connect learners to higher education, state employment, regional exchange, and global knowledge is narrower. A rural learner may therefore be literate in a nationally meaningful language while possessing less of the multilingual capital rewarded at later educational and occupational transitions. This is not a deficit in local language competence; it is a mismatch between available repertoires and institutional valuation.

Taken together, the results support the layered exclusion model. Embodied exclusion is visible in the disability gaps. Territorial exclusion appears in rural and municipality coefficients and in the multilingual portfolio ratio. Life-course exclusion is visible in adolescent motherhood, child work, and NEET status. Linguistic exclusion appears in the unequal distribution of Portuguese and English and in generational differences across the four languages. Gender intersects with these layers but does not operate as a uniform disadvantage. The empirical structure is therefore more complex than a binary parity narrative.

5. Discussion

Gender parity in Timor-Leste is a necessary achievement but remains an insufficient measure of educational equity. The 1.5-point female attendance advantage is substantively smaller than the 60.1-point penalty associated with adolescent motherhood and the 48.1-point disability gap, showing that aggregate parity can conceal severe exclusion within female subgroups. This supports intersectionality's critique of treating women as a homogeneous beneficiary

category. Adolescent mothers require enforceable re-entry rights, confidential procedures, flexible schedules, childcare referrals, protection from stigma, and coordination with reproductive-health services (Grant & Hallman, 2008; Wodon et al., 2017). Equity monitoring should therefore follow pregnancy-related interruption, return, and completion across the life course rather than assume that early female advantage persists. Male underrepresentation at later levels also warrants investigation, but policy should remain non-zero-sum by protecting girls while providing mentoring, vocational articulation, and re-engagement pathways for boys affected by work, migration, or weak perceived returns to schooling.

Disability and territorial location produce deeper disadvantages than gender alone. Persistently low attendance and literacy among disabled learners, even after controlling for residence, sex, and household conditions, indicate that inclusion cannot be achieved through general enrolment campaigns. Accessible infrastructure, assistive technologies, adapted materials, trained teachers, family support, and referral systems must be financed as core educational functions (Filmer, 2008; Mizunoya et al., 2018; UNESCO, 2020; UNICEF, 2019). A functional-access dashboard should record support needs, available adaptations, attendance, progression, and completion without exposing learners to stigma. Rural literacy odds of approximately 0.5 further show that territorial exclusion reflects interacting constraints involving distance, transport, safety, teacher supply, electricity, connectivity, information, and language exposure. Territorial packages should therefore combine satellite provision, transport or boarding support, teacher incentives, connectivity, and mobile specialist services rather than rely on school construction alone.

Multilingual inequality adds a less visible territorial barrier. Although the national curriculum is formally bilingual, sustained access to Portuguese and English depends on trained teachers, learning materials, media exposure, and opportunities for use that remain concentrated in urban centres. The 2.43 urban–rural ratio in four-language literacy therefore reflects unequal institutional opportunity rather than rural linguistic deficiency. Language policy should avoid both monolingual assimilation, which marginalizes familiar languages, and romanticized localization, which reserves institutionally valued languages for privileged learners. A staged model should use Tetun and locally familiar languages for early comprehension, introduce Portuguese through sequenced support, recognize Indonesian as a continuing regional resource, and develop English progressively rather than use it as an early gatekeeping mechanism. Assessment should also distinguish subject knowledge from language access by documenting home, instructional, and testing languages. Digital resources, offline materials, public terminology, translation, and low-resource language technologies can widen access, but only when connectivity, teacher mediation, and evaluation by Timorese language experts are secured.

Migration, housing deprivation, child work, and NEET status demonstrate that exclusion extends beyond school availability. Mobile children face disrupted records, uncertain placement, and weakened local support, requiring portable identifiers, rapid transfer procedures, flexible residence requirements, and privacy-

protected links between civil registration and EMIS. Poor housing similarly converts insecure shelter, limited study space, sanitation deficits, disaster exposure, and financial stress into lower attendance and literacy, making school grants, meals, transport, and social protection essential complements to educational policy. Working children may retain basic literacy while disengaging from school, so labour regulation must be combined with income support and flexible recovery pathways. For NEET youth, the 4.56-fold illiteracy difference relative to non-NEET peers indicates that employment programmes must integrate literacy remediation, vocational preparation, career guidance, and recognized second-chance credentials. Monitoring systems should consequently retain sex parity while adding intersections with disability, residence, motherhood, work, migration, and age to identify how institutional rules convert social differences into predictable educational losses.

The layered exclusion model clarifies that embodied barriers require accessibility, territorial barriers require proximity and transport, life-course barriers require re-entry pathways, and linguistic barriers require both comprehension and access to institutionally valued languages. These interventions are interdependent: an accessible school remains exclusionary when instruction is incomprehensible, while a multilingual curriculum remains ineffective when learners cannot reach it. The study contributes to comparative education by showing that postcolonial language hierarchies, disability, territory, and gender transitions jointly structure educational capability rather than operate as separate policy sectors. Future research should use accessible microdata, interaction models, predicted probabilities, multilingual reading assessments, and qualitative tracking of disabled learners, adolescent mothers, mobile households, and rural multilingual students. Interpretation remains cautious because the indicators cover different age groups, language measures do not capture proficiency or frequency of use, and reported odds ratios depend on official model specifications. Nevertheless, the convergence of descriptive and multivariate evidence indicates that the observed gaps are patterned forms of institutional exclusion rather than random variations around national parity.

6. Conclusion

Timor-Leste has achieved meaningful educational progress, particularly in youth literacy and the slight female advantage in several participation and literacy indicators. These gains should be protected, but sex parity alone does not constitute substantive equity because disability, rural residence, adolescent motherhood, child work, mobility, and NEET status produce much larger educational penalties. Multilingual inequality further reveals the postcolonial and territorial structure of opportunity: Tetun has become the most widely written language, Portuguese is expanding among younger cohorts, Indonesian remains stronger among older generations, and English literacy is still limited. The ability to read and write all four languages is more than twice as common in urban areas, indicating that multilingual capital remains historically stratified and spatially concentrated.

The layered exclusion model shows that educational capability depends on four conversion conditions: bodily accommodation, geographical reachability, re-entry after life-course disruption, and access to institutionally valued languages. Equity policy should therefore move beyond a single gender-parity index toward disability-responsive provision, guaranteed re-entry for adolescent mothers, child-work prevention supported by social protection, second-chance pathways for NEET youth, and rural multilingual resource strategies. Future research should use secure census microdata and linked administrative records to estimate intersectional risks for specific learner profiles, although the magnitude of the present gaps already justifies targeted interventions with transparent monitoring. The decisive measure of inclusion is not whether national averages rise, but whether formal educational rights become usable freedoms for the groups facing the greatest conversion barriers. Timor-Leste's next reform phase must therefore embed these conditions in budgeting, school standards, teacher development, language planning, and data governance so that multilingual nation-building and SDG 4 advance substantive educational justice.

Declarations

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Ethics statement: Ethical approval and informed consent were not required because the study used publicly available, anonymized, aggregate data.

Data availability: All source data are available in the cited official census and UNESCO Institute for Statistics publications. Derived indicators are reported in the tables and methods.

Use of generative AI: Generative AI tools were used only for language editing and document formatting. The authors verified all data, interpretations, citations, and references and remain fully accountable for the manuscript.

Author Contributions

Ana Paula Belo: Conceptualization, Methodology, Formal analysis, Writing—original draft. **Mateus Ximenes:** Data curation, Investigation, Validation, Writing—review and editing. **Carmelita da Conceição:** Visualization, Comparative analysis, Validation, Project administration, Writing—review and editing.

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