



Developing a Community Educational Profiling Framework Using Harmonized Village Administrative Data: A Descriptive Case Study from Indonesia

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Abstract

Community-level educational information is important for place-based educational planning, yet village administrative records are often recorded in heterogeneous categories and remain underutilized for systematic educational analysis. This study proposes and illustrates a Community Educational Profiling Framework (CEPF) for harmonizing village administrative population records and transforming them into a descriptive community educational profile. A cross-sectional descriptive case study was conducted in Manyarsidorukun Village, Gresik Regency, Indonesia. Administrative records were extracted and verified between May and June 2026. The population database contained 3,774 registered residents, of whom 3,773 had valid administrative education records and were included in the analysis. Educational categories were cleaned, harmonized, and mapped into comparable classifications informed by the International Standard Classification of Education. Frequencies, percentages, and descriptive sex-disaggregated tabulations were used to examine the distribution of educational records. Senior secondary education represented the largest category, comprising 1,397 residents (37.02%). A total of 809 residents (21.44%) were administratively recorded as not yet attending or having never attended school, while 246 residents (6.52%) were recorded as having not completed primary education. Tertiary qualifications were recorded for 173 residents (4.58%). Because the administrative category “not yet/never attended school” did not distinguish children below school age from older residents who had never entered formal education, these figures should not be interpreted as direct estimates of educational deprivation. The proposed CEPF demonstrates how village administrative records can be systematically documented and harmonized to support local educational assessment. Further development requires age-disaggregated data, validation across multiple communities, and integration with schooling participation and socioeconomic indicators.

Pengembangan Kerangka Profil Pendidikan Komunitas Menggunakan Data Administratif Desa yang Telah Diharmonisasi: Studi Kasus Deskriptif di Indonesia

Abstrak

Informasi pendidikan pada tingkat komunitas memiliki peran penting dalam perencanaan pendidikan berbasis wilayah. Namun, catatan administratif desa sering kali disusun dalam kategori yang heterogen dan belum dimanfaatkan secara optimal untuk analisis pendidikan yang sistematis. Penelitian ini mengusulkan dan mengilustrasikan Community Educational Profiling Framework (CEPF) sebagai kerangka untuk melakukan harmonisasi terhadap catatan administratif kependudukan desa dan mentransformasikannya menjadi profil pendidikan komunitas yang bersifat deskriptif. Penelitian ini menggunakan desain studi kasus deskriptif cross-sectional yang dilaksanakan di Desa Manyarsidorukun, Kabupaten Gresik, Indonesia. Data administratif diekstraksi dan diverifikasi pada periode Mei hingga Juni 2026. Basis data kependudukan mencakup 3.774 penduduk yang terdaftar, dengan 3.773 penduduk memiliki catatan pendidikan administratif yang valid dan selanjutnya dimasukkan dalam analisis. Kategori pendidikan dibersihkan (cleaned), diharmonisasi, dan dipetakan ke dalam klasifikasi yang dapat diperbandingkan dengan mengacu pada International Standard Classification of Education. Analisis dilakukan menggunakan frekuensi, persentase, serta tabulasi deskriptif yang didisagregasikan berdasarkan jenis kelamin untuk mengidentifikasi distribusi catatan pendidikan penduduk. Pendidikan menengah atas merupakan kategori dengan proporsi terbesar, yaitu 1.397 penduduk (37,02%). Sebanyak 809 penduduk (21,44%) secara administratif tercatat belum atau tidak pernah bersekolah, sedangkan 246 penduduk (6,52%) tercatat belum menyelesaikan pendidikan dasar. Kualifikasi pendidikan tinggi tercatat pada 173 penduduk (4,58%). Namun demikian, kategori administratif “belum/tidak pernah bersekolah” tidak membedakan antara anak-anak yang belum mencapai usia sekolah dan penduduk yang lebih tua yang tidak pernah memasuki pendidikan formal. Oleh karena itu, angka tersebut tidak dapat ditafsirkan secara langsung sebagai estimasi deprivasi pendidikan. CEPF yang diusulkan menunjukkan bahwa catatan administratif desa dapat didokumentasikan dan diharmonisasi secara sistematis untuk mendukung asesmen pendidikan pada tingkat lokal. Pengembangan lebih lanjut memerlukan ketersediaan data yang didisagregasikan berdasarkan kelompok usia, validasi pada berbagai komunitas, serta integrasi dengan indikator partisipasi sekolah dan kondisi sosial ekonomi.

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INTRODUCTION

Educational attainment has become one of the most important indicators for evaluating human capital development and monitoring progress toward sustainable development. Rather than merely representing the highest level of formal education completed by an individual, educational attainment reflects the accumulation of knowledge, cognitive skills, and competencies that shape labour productivity, economic resilience, social mobility, and civic participation. Consequently, educational attainment is increasingly recognised as a strategic development indicator that extends beyond the education sector and supports evidence-based policymaking across economic, labour, and social development agendas. Contemporary research consistently demonstrates that improvements in educational attainment strengthen knowledge capital, enhance long-term economic growth, and increase societies' capacity to adapt to technological and

social transformation (Hanushek & Woessmann, 2020; Gust et al., 2024). At the global level, educational attainment has also become a key indicator for monitoring progress toward Sustainable Development Goal 4 (Quality Education), with international monitoring showing that although educational participation has expanded considerably over the last decade, substantial disparities in educational completion and attainment remain across and within countries (UNESCO, 2024/2025). These persistent disparities have shifted scholarly attention from measuring educational access alone toward understanding the spatial distribution of educational attainment, particularly at the community level where educational outcomes often vary considerably despite similar national policy environments.

Despite substantial progress in expanding educational participation worldwide, disparities in educational attainment continue to persist across countries and within local communities. Over recent decades, many nations have achieved remarkable improvements in school enrolment and completion through expanded access to compulsory education and sustained investment in educational systems. Nevertheless, international evidence indicates that gains in educational participation have not always translated into equitable educational attainment, as considerable differences remain in the highest level of education completed among population groups and geographical areas. These disparities are particularly pronounced in rural and underserved communities, where variations in educational attainment often reflect differences in local educational opportunities, demographic characteristics, and socioeconomic conditions rather than national educational policies alone (United Nations, 2024; UNESCO, 2024). Recent scholarship further argues that understanding educational disparities requires moving beyond aggregate national indicators toward community-level analyses capable of capturing spatial heterogeneity in educational outcomes and identifying local educational needs more accurately (OECD, 2023; World Bank, 2024). However, such localized educational evidence remains limited because educational attainment is still predominantly examined through national surveys and large-scale statistical databases, while educational profiles derived from harmonized administrative population records at the community level remain insufficiently documented in the international literature. This limitation highlights the need for more detailed analyses of educational attainment within local communities to strengthen evidence-based educational planning and support context-sensitive educational development strategies.

Indonesia has made substantial progress in expanding educational access through the implementation of compulsory education policies, increased public investment in education, and long-term human capital development initiatives. These efforts have contributed to sustained improvements in school participation and educational attainment at the national level, reflecting the country's commitment to strengthening educational quality and achieving Sustainable Development Goal 4 (Badan Pusat Statistik, 2024). Nevertheless, national progress has not been accompanied by uniform educational outcomes across all communities. Considerable variation in educational attainment continues to exist among provinces, districts, and villages, indicating that educational development remains geographically uneven despite the implementation of nationwide education policies. Recent studies have argued that such disparities are shaped by local demographic, socioeconomic, and institutional contexts, suggesting that national educational indicators alone are insufficient for understanding educational conditions at the community level (Arshed et al., 2023; Nguyen et al., 2022). In Indonesia, however, empirical evidence describing educational attainment at the village level remains

fragmented because most educational research relies on national household surveys or aggregated regional statistics. Consequently, the distribution of administrative education categories, primary and secondary qualifications, tertiary qualifications, and sex-disaggregated education records at the village level has received comparatively limited scholarly attention. This limitation underscores the importance of developing community-based educational evidence derived from harmonized administrative population records to support more context-sensitive educational planning and local educational development.

Most previous studies have examined educational attainment using nationally representative household surveys, population censuses, or regional educational statistics to investigate educational inequality, school participation, and human capital development. These large-scale datasets have generated substantial evidence regarding socioeconomic disparities in education, regional differences in educational outcomes, and national trends in educational achievement, thereby providing an important foundation for educational policy and international comparisons (Ilie & Rose, 2023; OECD, 2023). Nevertheless, their analytical focus is predominantly directed toward national or regional patterns, offering limited insight into the internal educational composition of individual communities. Consequently, the educational structure of community-level distributions of administrative education records, tertiary qualifications, and sex-disaggregated counts, and tertiary educational attainment is often aggregated into broader administrative units, masking substantial variation that may exist within villages. Moreover, relatively few studies have utilized harmonized administrative population records to analyse educational attainment at the community level, despite the increasing availability of local administrative databases capable of providing broad coverage of registered residents and more detailed educational information. This methodological limitation suggests that current educational research has yet to fully exploit the analytical potential of administrative demographic data for understanding educational attainment within rural communities and informing evidence-based local educational planning.

Existing research has primarily focused on educational participation, school enrolment, educational inequality, or educational accessibility, generating substantial knowledge regarding individual dimensions of educational development but offering only a fragmented understanding of educational conditions at the community level. Recent international studies have emphasized that educational outcomes are shaped by complex interactions among demographic characteristics, spatial inequalities, socioeconomic conditions, and educational opportunities, indicating that no single educational indicator is sufficient to explain variations in community educational development (Tomaszewski et al., 2025; Gao et al., 2025; Bernardi & Ballarino, 2024). Despite these advances, most studies continue to examine educational attainment, administrative education-category distribution, records requiring further verification, primary and secondary qualification distribution, tertiary qualification distribution, and sex-disaggregated descriptive counts, leaving limited attention to the comprehensive mapping of community educational profiles that integrate these interrelated dimensions within a unified analytical framework. Furthermore, although administrative population data are increasingly recognized as valuable resources for educational research because of their comprehensive population coverage and high level of demographic detail, they remain underutilized for constructing integrated educational profiles capable of informing community-level educational planning and policy development (Ye, 2022). This conceptual and methodological limitation indicates the need for a more holistic analytical approach that

simultaneously examines the educational attainment structure, data coverage, administrative education-category distribution, primary and secondary qualification distribution, tertiary qualification distribution, and sex-disaggregated descriptive counts, and tertiary educational attainment of local communities, thereby providing a stronger evidence base for sustainable educational development and place-based educational policy.

While previous studies have generated valuable evidence on educational participation, inequality, and educational attainment, their conceptual foundations remain largely fragmented because these educational dimensions are commonly treated as independent indicators rather than as interconnected components of a community educational system. Consequently, existing literature provides limited theoretical guidance for understanding how multiple dimensions of educational attainment collectively represent the educational characteristics of a local population. This fragmentation constrains the development of holistic educational assessments capable of informing community-level educational planning. Addressing this theoretical limitation requires an integrated conceptual perspective in which educational attainment structure, educational vulnerability, schooling composition, tertiary educational attainment, and gender distribution are analysed as complementary dimensions of a single community educational profile.

Building upon these limitations, there is a growing need for a methodological approach capable of producing more comprehensive and context-sensitive evidence on educational attainment at the community level. Such an approach should move beyond conventional survey-based analyses by fully utilizing harmonized village administrative population records, which provide broad coverage of registered residents in the village administrative system and enable detailed examination of educational characteristics within local communities. Unlike nationally aggregated datasets, harmonized administrative records make it possible to integrate multiple dimensions of educational attainment including educational attainment structure, educational vulnerability, schooling composition, gender distribution, and tertiary educational attainment into a single analytical framework that reflects the educational profile of an entire community. By combining these complementary dimensions, the proposed approach offers a more holistic representation of educational conditions than analyses based on isolated educational indicators. Moreover, the resulting community educational profile provides locally grounded evidence that can support educational planning, resource allocation, policy prioritization, and supporting preliminary data verification and the identification of issues requiring further educational assessment. Accordingly, this study proposes a *Community Educational Profiling Framework (CEPF)* that integrates harmonized administrative population data into a comprehensive analytical framework for community-level educational profiling. The framework is designed to generate an integrated educational profile by combining multiple dimensions of educational attainment within a unified methodological approach, thereby providing a potentially transferable procedure for evidence-informed community educational assessment in rural and other local communities. The Community Educational Profiling Framework (CEPF) is conceptualized as an integrated analytical framework that transforms harmonized administrative population records into multidimensional educational evidence for community-level educational assessment. Rather than relying on a single educational indicator, the framework simultaneously incorporates educational attainment structure, educational vulnerability, schooling composition, tertiary educational attainment, and

gender distribution to generate a comprehensive educational profile that supports evidence-informed educational assessment/planning.

Accordingly, this study proposes and illustrates a Community Educational Profiling Framework (CEPF) for organizing, harmonizing, and analysing village administrative education records. The study addresses three research questions: (1) How are administratively recorded education categories distributed among residents with valid education records? (2) How can heterogeneous village education categories be harmonized into a transparent and potentially transferable community educational profile? and (3) What methodological opportunities and limitations arise when village administrative records are used to support local educational planning? The study does not seek to explain the causal determinants of educational attainment or estimate educational inequality; rather, it provides a descriptive methodological illustration of how administrative records may be transformed into locally relevant educational evidence.

METHODS

Research Design

This study employed a cross-sectional descriptive case-study design using secondary village administrative population records. The design was selected to describe the distribution of educational records among registered residents and to illustrate the procedures through which heterogeneous administrative categories could be cleaned and harmonized into a community educational profile. The study did not test causal relationships or estimate the determinants of educational attainment. The resulting percentages therefore describe the administrative population recorded during the study period and should not be interpreted as causal or nationally representative estimates.

Study Area

The study was conducted in Manyarsidorukun Village, Manyar District, Gresik Regency, East Java, Indonesia. The village was purposively selected because educational information was recorded as part of its routine population administration and because the village government supported the verification of the administrative categories. The study should be understood as a single-community methodological case rather than as a representative study of all rural or peri-urban communities in Indonesia.

Data Source and Population

The primary dataset consisted of administrative population records maintained by the Government of Manyarsidorukun Village. The records were extracted, checked, and verified between May and June 2026. At the time of extraction, the database contained 3,774 registered residents, comprising 1,947 males and 1,827 females. A valid administrative education record was available for 3,773 residents. One record with unavailable or unverified educational information was excluded from the educational-attainment distribution but retained in the reported total population count. Accordingly, the denominator for the educational-attainment analysis was 3,773, whereas the total registered village population was 3,774.

The administrative database should not be interpreted as a direct enumeration of all persons physically residing in the village. It represents individuals officially registered in the village population system at the time of extraction. Consequently, although complete enumeration of registered residents avoids sampling variability, the data may remain subject to coverage error, delayed updating, and classification error.

Data Harmonization

The administrative dataset underwent a structured harmonization protocol before analysis. As illustrated in Figure 1, the process transformed village administrative population records into an integrated community educational profile through data verification and cleaning, administrative education-category harmonization, descriptive educational-demographic analysis, and five complementary analytical outputs.

The first stage involved data verification and cleaning. The number of registered residents was compared with the number of available education records to distinguish the registered population from the valid analytical population. Records were examined for completeness, duplication, internal inconsistency, unavailable values, and coding irregularities. Duplicate or inconsistent entries were reviewed using the village administrative identification system. This procedure identified 3,774 registered residents, of whom 3,773 had valid administrative education records and were included in the analysis.

The second stage involved administrative education-category harmonization. Spelling variations, equivalent labels, and inconsistent codes were standardized without changing their original meaning. Indonesian education labels were organized into comparable categories informed by the International Standard Classification of Education. Ambiguous source categories were retained rather than forced into inappropriate classifications. The category *tidak/belum sekolah* was therefore retained as “not yet/never attended school” because the data did not distinguish children who had not yet entered school from older residents who may never have attended formal education. Likewise, *belum tamat SD/ sederajat* was retained as “incomplete primary education” because the records did not distinguish current primary-school pupils from individuals who had permanently left school before completion.

The third stage consisted of descriptive educational-demographic analysis. Frequencies and percentages were calculated using 3,773 valid records as the denominator. Sex-disaggregated descriptive tabulations were also produced for selected categories, but were not interpreted as evidence of inequality because age-specific and category-specific prevalence estimates were unavailable.

The analysis generated five outputs: administrative education-category distribution; records requiring further verification; primary and secondary qualification distribution; tertiary qualification distribution; and sex-disaggregated descriptive counts. These outputs were integrated into a Community Educational Profile and used to support evidence-informed educational assessment and further data verification. The protocol improves transparency by clearly distinguishing valid records, ambiguous categories, analytical denominators, and interpretive limitations.

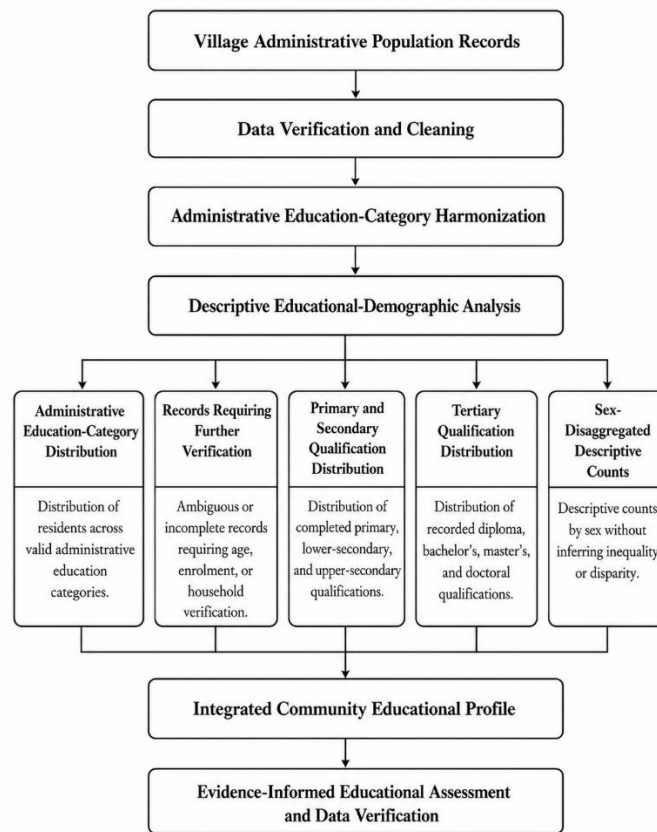


Figure 1. Proposed Community Educational Profiling Framework (CEPF) for harmonizing village administrative education records and supporting evidence-informed educational assessment.

The framework transforms village administrative population records through data verification and cleaning, administrative education-category harmonization, descriptive educational-demographic analysis, and five complementary analytical outputs. These outputs are integrated into a community educational profile to support evidence-informed educational assessment and further data verification.

Table 1. Data Harmonization Protocol

Stage	Procedure	Purpose	Output
1	Village administrative population records	Establish the source population and identify available education records	Registered population database
2	Data verification and cleaning	Verify completeness and consistency; identify duplicate, unavailable, or inconsistent records	Clean and verified administrative dataset
3	Administrative education-category harmonization	Standardize locally recorded education labels and organize valid records into comparable categories informed by ISCED	Harmonized administrative education categories
4	Descriptive educational-demographic analysis	Calculate frequencies, percentages, and sex-disaggregated descriptive tabulations	Descriptive analytical results

5a	Administrative education-category distribution	Describe the distribution of residents across valid administrative education categories	Category-distribution profile
5b	Records requiring further verification	Identify ambiguous or incomplete records requiring age, enrolment, or household verification	Data-verification priorities
5c	Primary and secondary qualification distribution	Describe completed primary, lower-secondary, and upper-secondary qualifications	Primary and secondary qualification profile
5d	Tertiary qualification distribution	Describe recorded diploma, bachelor's, master's, and doctoral qualifications	Tertiary qualification profile
5e	Sex-disaggregated descriptive counts	Present descriptive counts by sex without inferring inequality or disparity	Sex-disaggregated descriptive profile
6	Integrated community educational profile	Combine the five analytical outputs into a coherent community profile	Integrated educational profile
7	Evidence-informed educational assessment and data verification	Support preliminary planning, identify data gaps, and guide further verification	Evidence-informed assessment and verification priorities

Variables and Operational Definitions

The principal analytical variable was the administratively recorded education category. Completed educational attainment was interpreted only for categories representing completed qualifications. To facilitate interpretation, educational categories were harmonized into broader analytical classifications following the logic of the *International Standard Classification of Education* (ISCED), while retaining the original administrative categories for reporting purposes.

Table 2. Variables and Operational Definitions

Variable	Administrative indicator	Operational definition	Interpretive limitation
Registered population	Male; female	Residents registered in the village population database in May–June 2026	May differ from the number of persons physically residing in the village
Administrative education record.	Original education category in the administrative record	The highest educational category recorded for each resident	Accuracy depends on household reporting and record updating
Not yet/never attended school	Tidak/belum sekolah	Residents recorded under the combined administrative category “not yet/never attended school”	Does not distinguish children below school age from older persons who never entered school

Incomplete primary education	Belum tamat SD/ sederajat	Residents recorded as not having completed primary education	Does not distinguish current primary pupils from persons who permanently left school
Primary education	Tamat SD/ sederajat	Residents recorded as having completed primary school or equivalent	Does not indicate current schooling participation
Lower secondary education	SLTP/ sederajat	Residents recorded as having completed junior secondary education or equivalent	Based on administrative reporting
Upper secondary education	SLTA/ sederajat	Residents recorded as having completed senior secondary education or equivalent	Based on administrative reporting
Tertiary education	Diploma I/II, Diploma III, D4/S1, S2, S3	Residents recorded as having completed a tertiary qualification	Professional qualifications should be separately defined when included
Sex	Male; female	Sex recorded in the administrative database	Should not be interpreted as a gender-inequality measure without sex-specific denominators and age controls

Data Analysis

Data were analysed using descriptive educational-demographic procedures. Frequencies and percentages were calculated for each administrative education category using 3,773 valid educational records as the denominator. Percentages were calculated using the formula:

$$P_i = \frac{n_i}{N} \times 100 \quad N = 3,773$$

where n_i represents the number of residents in educational category i . Sex-disaggregated counts were used only to describe the composition of selected categories. They were not interpreted as evidence of sex or gender disparity because the available dataset did not provide age-standardized, category-specific prevalence estimates. No inferential statistical tests were performed because the study aimed to describe the registered administrative population rather than estimate parameters from a probability sample.

Research Ethics

The study used secondary administrative data that contained no personally identifiable information. Before analysis, all individual identifiers were removed to ensure anonymity and confidentiality. Data were analysed and reported exclusively in aggregate form, preventing the identification of individual residents. Permission to use

the administrative records was obtained from the Village Government of Manyarsidorukun, and the dataset was used solely for academic research purposes in accordance with applicable principles of research ethics and data confidentiality.

RESULT AND DISCUSSION

Distribution of Administrative Education Records

At the time of data extraction, the village administrative database contained 3,774 registered residents, comprising 1,947 males and 1,827 females. Educational information was available and analytically valid for 3,773 residents, representing 99.97% of the registered population. One resident had unavailable or unverified educational information and was therefore excluded from the educational-distribution analysis.

Table 3 presents the educational attainment profile of residents in Manyarsidorukun Village based on the harmonized village demographic dataset.

Table 3. Distribution of Administrative Records of Highest Completed Education

Educational Attainment	Frequency	Percentage (%)
Not yet/never attended school	809	21.44
Incomplete primary school	246	6.52
Primary school (SD/Equivalent)	595	15.79
Junior secondary school (SLTP/Equivalent)	553	14.65
Senior secondary school (SLTA/Equivalent)	1,397	37.02
Diploma I/II	3	0.08
Diploma III	10	0.26
Bachelor's degree (D4/S1)	150	3.97
Master's degree (S2)	9	0.24
Doctoral degree (S3)	1	0.03
Total	3,773	100

Table 3 shows that senior secondary education was the largest administrative education category, accounting for 1,397 residents or 37.02% of valid educational records. Primary and junior secondary education accounted for 15.79% and 14.65%, respectively. A total of 809 residents, representing 21.44% of valid records, were classified under the combined administrative category “not yet/never attended school”, while 246 residents or 6.52% were recorded as having incomplete primary education. Because age and current enrolment status were unavailable, these two categories cannot be interpreted as direct measures of school exclusion or educational deprivation.

Records Categorised as Not Yet/Never Attended School and Incomplete Primary Education

The two administrative categories requiring further verification are presented in Table 4.

Table 4. Records Categorised as Not Yet/Never Attended School and Incomplete Primary Education

Educational Category	Frequency	Percentage (%)
Not yet/never attended school	809	21.44
Incomplete primary school	246	6.52

Combined total of the two administrative categories	1,055	27.96
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As shown in Table 4, The two administrative categories contained 1,055 records or 27.96% of valid education records. This combined percentage is presented descriptively and does not represent an estimate of educational deprivation.

Educational Composition by Schooling Level

The distribution of residents who completed primary and secondary education is presented in Table 5.

Table 5. Educational Composition by Schooling Level

Educational Level	Frequency	Percentage (%)
Primary school (SD/Equivalent)	595	15.79
Junior secondary school (SLTP/Equivalent)	553	14.65
Senior secondary school (SLTA/Equivalent)	1,397	37.02
Total	2,545	67.46

Table 5 indicates that 2,545 residents (67.46%) had completed primary to secondary education. Among these educational levels, senior secondary education represented the largest category (37.02%), followed by primary education (15.79%) and junior secondary education (14.65%). The three categories remain analytically distinct and are not treated as a homogeneous educational group.

Tertiary Educational Attainment

The distribution of residents who completed tertiary education is summarized in Table 6.

Table 6. Distribution of Tertiary Educational Attainment

Educational Level	Frequency	Percentage (%)
Diploma I/II	3	0.08
Diploma III	10	0.26
Bachelor's degree (D4/S1)	150	3.97
Master's degree (S2)	9	0.24
Doctoral degree (S3)	1	0.03
Total	173	4.58

As presented in Table 6, tertiary qualifications were recorded for 173 residents, representing 4.58% of valid educational records. The majority of these records were at the D4/Bachelor's level, comprising 150 residents or 3.97% of the analytical population. Diploma I/II and Diploma III qualifications were recorded for 13 residents, while ten residents held postgraduate qualifications. The percentage describes the stock of qualifications recorded in the administrative system and should not be interpreted as a tertiary participation or transition rate.

Sex Composition of Selected Administrative Categories

The sex composition of the two selected administrative education categories is presented in Table 7.

Table 7. Sex Composition of Selected Administrative Education Categories.

Educational Category	Male	Female	Total
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Not yet/never attended school	428	381	809
Incomplete primary school	121	125	246
Total	549	506	1,055

Within the category “not yet/never attended school”, 428 records were male and 381 were female. In the incomplete-primary category, 121 records were male and 125 were female. Overall, the two categories contained 549 male and 506 female records. These figures describe the sex composition of the administrative categories. They do not establish a sex disparity because age distributions and sex-specific prevalence denominators were not available.

Discussion

Educational Attainment Structure of Village Residents

The administrative educational profile of Manyarsidorukun Village shows that senior secondary education was the most frequently recorded completed educational category, accounting for 1,397 residents or 37.02% of the 3,773 valid educational records. Primary education and junior secondary education accounted for 15.79% and 14.65%, respectively, while tertiary qualifications were recorded for 4.58% of the analysed records. These findings describe the distribution of educational qualifications recorded in the village administrative system during May–June 2026. However, the distribution should be interpreted as a cross-sectional profile of registered residents across different age groups rather than as an indicator of current school participation or educational progression. Because the dataset included children, working-age adults, and older residents, differences across educational categories may partly reflect differences in age cohort and historical access to education.

The predominance of senior secondary qualifications indicates that upper-secondary education constitutes an important component of the village’s recorded educational stock. From a human capital perspective, completed secondary education may represent an educational foundation for participation in employment, further education, and community development. Nevertheless, the present data do not identify when residents completed their education, whether they are currently enrolled, or the factors influencing educational progression. The findings should therefore be understood as a description of accumulated educational qualifications rather than as evidence of individual educational transitions. Likewise, Human Capital Theory argues that the highest educational qualification attained is associated with the accumulation of knowledge, competencies, and productive capabilities that support socioeconomic development (Li et al., 2022; Shi & Qamruzzaman, 2022). Therefore, the educational profile identified in this study reflects not only the distribution of educational attainment but also the overall structure through which human capital is accumulated within the village population.

Unlike most recent studies that examine educational attainment using national household surveys or regional educational statistics, this study provides evidence derived from harmonized village-level administrative data, enabling a more detailed examination of educational composition at the community level. Rather than generalising the findings to rural populations, the present study demonstrates how the complete distribution of educational records within one village can be organised into a transparent community-level profile. This perspective provides a community-level description of recorded educational qualifications while avoiding causal or population-wide generalisation.

Distribution of Records Categorised as Not Yet/Never Attended School and Incomplete Primary Education

The administrative records contained 809 residents, or 21.44% of valid educational records, in the combined category “not yet/never attended school”, while 246 residents, or 6.52%, were recorded as having incomplete primary education. Together, these two administrative categories comprised 1,055 records. However, they should not automatically be interpreted as a population with low educational attainment. The category “not yet/never attended school” may include children who had not reached school age, children who had not yet entered formal schooling, and older residents who may never have attended school. Similarly, the incomplete-primary category may include children who were still attending primary school as well as individuals who had permanently left school before completion.

The distinction among these groups is important for educational planning because each condition requires a different policy response. Children below school age do not represent educational exclusion, whereas school-age children who are not enrolled may require school-participation interventions. Adults who did not complete primary education may require literacy, equivalency, or lifelong-learning programmes. Because age, current enrolment status, and reasons for non-completion were unavailable in the administrative dataset, the present study cannot determine how many residents belong to each of these groups.

Accordingly, the two administrative categories are retained in the CEPF as categories requiring further verification rather than as direct indicators of educational vulnerability. Future applications of the framework should integrate age, current schooling participation, previous educational participation, disability status, and socioeconomic information before identifying residents or groups as educationally vulnerable. This procedural distinction reduces the risk of misclassification and supports more accurately targeted educational planning.

Educational Composition by Schooling Level

The administrative data show that 595 residents (15.79%) were recorded as primary-school graduates, 553 residents (14.65%) as junior-secondary graduates, and 1,397 residents (37.02%) as senior-secondary graduates. Although these categories collectively accounted for 67.46% of valid educational records, they represent substantively different levels of completed education and should therefore remain disaggregated in the main interpretation. Senior secondary education was the largest of the three categories, indicating that upper-secondary qualifications formed the most prominent component of the village’s recorded educational profile.

The predominance of primary and secondary education is consistent with Educational Expansion Theory, which explains that educational development generally begins with broadening participation in compulsory and upper-secondary education before substantial expansion occurs at the tertiary level. Recent international evidence similarly indicates that educational expansion in rural communities has primarily strengthened completion of basic and secondary education, thereby increasing the educational capacity of local populations (Zhang et al., 2022; UNESCO, 2023). This pattern is further supported by Human Capital Theory, which considers primary and secondary education as the stage where individuals acquire essential literacy, numeracy, cognitive skills, and social competencies that form the basis for subsequent learning and

productive participation in society (Li et al., 2022). Consequently, the predominance of residents completing primary and secondary education reflects the accumulation of the educational competencies required to support future human capital development.

Rather than introducing a new conceptual category, the present findings reinforce the notion of foundational human capital, whereby primary and secondary education represent the essential educational base upon which more advanced competencies and qualifications can subsequently be developed. While previous international studies have largely examined educational attainment using national or regional datasets, this study demonstrates that harmonized village-level demographic data can reveal how foundational human capital is distributed within the studied community. This community-level perspective complements existing literature by showing that educational composition is not merely a demographic characteristic but also an important indicator of the educational resources available to support long-term human capital development and evidence-based educational planning at the local level.

The findings do not indicate the quality of learning, literacy proficiency, employment competence, or current participation in education. Therefore, completed educational level should be interpreted as one component of community human capital rather than as a comprehensive measure of residents' knowledge and skills.

Tertiary Educational Attainment

Tertiary qualifications were recorded for 173 residents, representing 4.58% of the 3,773 valid educational records. These records comprised 3 Diploma I/II qualifications, 10 Diploma III qualifications, 150 D4/Bachelor's qualifications, 9 Master's qualifications, and 1 Doctoral qualification. The D4/Bachelor's category therefore constituted the largest component of the village's recorded tertiary-education profile. The 4.58% figure represents the stock of tertiary qualifications recorded across the entire registered population and should not be interpreted as a tertiary enrolment rate, participation rate, or transition rate.

Completed tertiary education provides information about the accumulated advanced qualifications recorded within a population. However, comparisons with district, provincial, national, or international educational-attainment statistics require equivalent age restrictions and category definitions. The present percentage includes residents from different age groups, whereas many international indicators of adult educational attainment are calculated for populations aged 25 years and older. Consequently, the finding should not be described as comparatively low or limited until age-standardised and definitionally comparable reference data are available. Recent studies have emphasized that analyses of completed tertiary education complement enrolment-based indicators by describing the accumulated stock of advanced educational qualifications within a population (Marginson, 2022; Ilie & Rose, 2023). From this perspective, the findings of the present study illustrate the position of tertiary education within the overall educational composition of the village without inferring the determinants of participation beyond those observed in the demographic data.

Compared with previous international studies that predominantly rely on national educational surveys or higher education enrolment statistics, this study contributes evidence derived from harmonized village-level administrative data, enabling tertiary educational attainment to be examined as a characteristic of community educational composition. Rather than focusing solely on participation in higher education, the present findings illustrate the value of analysing completed tertiary qualifications as part of a

community-level administrative profile. This perspective complements existing literature by showing that village demographic data can provide a detailed empirical basis for understanding local educational composition and for supporting future investigations of educational progression and higher education development in other community-level administrative contexts..

Sex Composition of Selected Administrative Education Categories

The sex-disaggregated counts show that the combined administrative categories of “not yet/never attended school” and incomplete primary education contained 549 male and 506 female records. Within the “not yet/never attended school” category, 428 records were male and 381 were female, whereas the incomplete-primary category comprised 121 male and 125 female records. These figures describe the numerical composition of the two administrative categories and do not, by themselves, demonstrate educational inequality between males and females.

Interpretation of sex differences requires category-specific denominators. The village population consisted of 1,947 male and 1,827 female residents, but the available analysis did not provide age-specific denominators or distinguish residents who were still within the expected schooling period. Absolute differences may therefore reflect differences in the size and age structure of the male and female populations rather than unequal educational opportunity. For this reason, the present study does not claim the existence of a sex-based educational disparity.

Nevertheless, sex-disaggregated administrative records remain useful as an initial screening tool. Future applications of the CEPF should calculate the proportion of each educational category within the male and female populations and further disaggregate the analysis by age group and current schooling status. Such analysis would provide a more valid basis for examining whether sex-related differences exist within particular educational cohorts. This perspective complements the existing literature by demonstrating that ex-disaggregated records demographic information can enrich the understanding of local educational composition beyond conventional participation indicators. Consequently, the findings provide an empirical basis for future studies that seek to examine sex-related educational outcomes using more comprehensive analytical approaches, including longitudinal or inferential analyses, while maintaining the value of descriptive demographic evidence for community-level educational planning.

Community Educational Profiling Framework

The Community Educational Profiling Framework (CEPF) illustrates how village administrative records can be transformed into a transparent community educational profile. The framework combines data verification and cleaning, harmonisation of locally recorded education categories, descriptive educational-demographic analysis, identification of records requiring further verification, distribution of primary, secondary, and tertiary qualifications, and sex-disaggregated descriptive counts. These components are integrated to support evidence-informed educational assessment and further data verification.

The CEPF should not be interpreted as a direct instrument for diagnosing educational vulnerability, inequality, or deprivation. Several administrative categories contain residents with different educational circumstances. For example, the category “not yet/never attended school” may include children below school age, children who have not yet entered formal education, and older residents who may never have attended

school. Similarly, the incomplete-primary category may include current primary-school pupils as well as individuals who permanently left school before completion. Therefore, these categories should be retained in their original administrative form until additional information is available.

The framework also distinguishes between the total registered population and the valid analytical population. In this study, the village database contained 3,774 registered residents, while 3,773 residents had valid education records. This distinction is important because registered residents may not always correspond to all persons physically residing in the village. Administrative records may also be affected by delayed updates, incomplete entries, coding inconsistencies, and differences between official residence and actual residence.

Methodological Contribution

The contribution of the CEPF lies not in introducing new statistical techniques, but in providing a structured workflow for converting heterogeneous administrative records into an interpretable educational profile. The framework requires researchers to document data coverage, clean and standardize categories, clarify analytical denominators, and report interpretive limitations before drawing substantive conclusions.

A key methodological feature is the treatment of ambiguous records. Rather than automatically grouping residents into categories such as low educational attainment or educational vulnerability, the CEPF identifies records that require further verification. This reduces the risk of treating children below school age, currently enrolled pupils, school leavers, and adults with limited education as one homogeneous group. However, the framework was applied in only one village, and its broader transferability requires testing in other administrative settings and validation against updated household or individual-level data.

Implications for Educational Planning

The first priority for local educational planning should be the verification of administrative education records. The 809 residents recorded as “not yet/never attended school” and the 246 residents recorded as having incomplete primary education cannot immediately be classified as educationally disadvantaged. Village verification should distinguish children below school age, school-age children who are enrolled, school-age children who are not enrolled, adults who did not complete primary education, and older residents who may require literacy or equivalency support.

After these groups are identified, interventions can be designed more accurately. Non-enrolled school-age children may require family outreach, enrolment assistance, transportation, or financial support. Adults with incomplete basic education may benefit from literacy, equivalency, vocational, or lifelong-learning programs. Residents with secondary qualifications may require information about scholarships, vocational colleges, or alternative post-secondary pathways. Tertiary-educated residents may also represent potential local resources, although further information on occupation, expertise, and willingness to participate is required.

Limitations

The study was limited by the absence of age, current schooling status, socioeconomic information, disability status, and reasons for leaving education. The

cross-sectional records collected during May–June 2026 cannot explain educational change, transition, or causality. Sex-disaggregated results were limited to descriptive counts and cannot establish educational inequality. In addition, the use of one village limits generalization. Future research should incorporate longitudinal data, validate administrative categories, and apply the CEPF across multiple communities.

CONCLUSION

This study proposed and illustrated the Community Educational Profiling Framework (CEPF) using village administrative population records collected and verified in Manyarsidorukun Village during May–June 2026. Of the 3,774 registered residents, 3,773 had valid administrative education records and were included in the analysis. Senior secondary education was the largest recorded category, accounting for 37.02% of valid records, while tertiary qualifications represented 4.58%. In addition, 21.44% of residents were recorded as “not yet/never attended school” and 6.52% as having incomplete primary education. These two categories should not be interpreted directly as educational deprivation because the dataset did not distinguish children who had not yet entered school from older residents who had never attended or completed formal education. The CEPF contributes a structured procedure for verifying, harmonizing, organizing, and interpreting heterogeneous administrative education records while clarifying analytical denominators and interpretive limits.

The study is limited by its cross-sectional design, single-village setting, absence of age and current enrolment data, and reliance on administrative records that may be affected by delayed updating, incomplete reporting, or classification inconsistencies. Sex-disaggregated counts also cannot establish educational inequality without age-specific and category-specific prevalence estimates. Future research should incorporate age, schooling participation, socioeconomic characteristics, and reasons for educational non-completion, validate administrative categories against household- or individual-level records, and apply the CEPF across multiple communities. Such extensions would strengthen the framework’s transferability and usefulness for evidence-informed educational assessment and local planning.

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