

Constructing Children's Legal Identity amid Socio-Economic and Demographic Transitions in Nepal

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Abstract

Nepal is in the midst of a rapid demographic transition from an excess of children (ages 0-17) to a low population, with implications for children's legal identity. While birth registration is constitutionally guaranteed and forms of Sustainable Development Goal target 16.9, existing literature has not explored the links with provincial wealth, infrastructure, and institutional capacity in achieving this goal. The analysis is based on demographic transition theory and human capital theory, featuring descriptive statistics, provincial comparison, wealth-quintile based inequality analysis and trend analysis based on statistical data from the 2001 and 2011 National Population and Housing Census projected for 2031 and 2051. Findings show the child population share declined from 45.7% in 2001 to 33.8% in 2021, projected to fall to 21.9% by 2051. However, this decrease has not led to a reduction in inequalities with regard to birth registration. Interestingly, even though Bagmati is the wealthiest province, the poorest province of Karnali has the highest under 5 under-registration rate (87.3%) and the highest wealthier, the lowest (67.3%) indicating institutional factors other than wealth play a role in under 5 under-registration rates. Other differences are the gender imbalance at birth (87 girls to 100 boys) and limited access to piped water in households with children (32.8%). The results indicate that legal inclusion is not a direct consequence of poverty, and highlight the need for specific policies at the province level at the time of the demographic dividend. As data are cross-sectional, causal inference is limited; longitudinal research is recommended.

Keywords: Nepal, legal identity, human capital, child demography, birth registration

Introduction

The population growth involves a shift in its structure which is one of the most important paradigms shifts that will create opportunities and challenges for socio-economic development in Nepal. The status of children is a sensitive indicator that can serve as an indicator of the performance of the institutions in the context of Nepal's road towards Sustainable Development Goal (SDGs) in terms of poverty eradication (SDG 1), reduced inequalities (SDG 10) and legal identity for all (SDG 16.9). The youth population (ages 15 to 24) also shows a downward trend, from 45.7% of the total population in 2001 to 33.8% in 2021 (NSO, 2021). Nepal does have a Constitution that guarantees children rights to identity, health and exploitation; still, children are affected by the existence of a huge socio-economic gap between provinces and wealth groups.

This is taking place amidst the rapid and unequal urbanization in the country of Nepal, where there is a special tension between the urban and rural regarding access to welfare, as the urban areas have more administrative capacity to provide legal and social inclusion, while a large number of urban developments are taking place in the peri-urban municipalities, which are also growing fast and might not have enough institutional support to provide the welfare. 41.8% of children low access of the service density that is available in a typical city, as well as the informal safety nets available in a typical rural village, which means they are at greater risk of labour market entry, school dropout and child marriage (NSO, 2021) (Ellis and Roberts, 2016). This is further emphasized as a result of the spatial imbalance: 42.4% of children in Nepal live in Tarai regions, while Madhesh is the provinces with the lowest human development index (NPC, 2020) which can be explained through the structural aspects of investments in the Tarai regions over the years compared with the rest of the country (Bird et al., 2002).

These inequalities have been exacerbated by a very short window of opportunity for the human capital dividend, as we can expect a shrinking population of children during the coming years, from 21.9% in 2051 (Bloom et al., 2003; Gribble and Bremner, 2012). Children's households that have piped water have lower early learning (Heckman, 2006) and low poverty (Koolwal and van de Walle, 2013). Children under five years have a birth registration rate of approximately 1 in 4, though, and only the poorest province in Nepal (Karnali) has a relatively high birth registration rate: the

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

wealthier provinces do not (Hagen-Zanker et al., 2020).

The opposite of the prevailing view, that legal inclusion grows with GDP (Karnali Paradox, UNICEF 2024), suggests that institutional design can have a greater impact than market-based inclusion. The existing literature, however, focuses primarily on three aspects of children's legal identity separately: demographic transition, legal identity, and socio-economic inequality and provides no single study integrated at the province level on how these three forces contribute to the children's legal identity in the context of Nepal. This study addresses this gap by using the baseline data obtained from the NPHC-2021 to show that the Karnali Paradox is supported by the baseline data, to unpack the relationship between the Karnali Paradox and the theory of demographic transition, and the human capital theory, and to propose peri-urbanization as an under-theorized geography of child vulnerability.

Given this, the study explores how the demographic transition in Nepal (2001-2051) will affect child population size and distribution; the relationship between provincial wealth and birth registration; the role of institutional mechanisms in birth registration versus that of wealth; and how the effect of sex-ratio distortion and infrastructural deprivation compounded this inequality, that is, how children's legal identity is affected by socio-economic and demographic transition, and how this is related to the paper's title and content?

Literature Review

The review is structured in three analytical domains that structure the study: demographic transition, legal identity and socio-economic inequality, and ends with a synthesis of the necessity to analyze all three analytical domains together, into which this paper fits.

Demographic Transition and Demographic Dividend

The concept of demographic transition is that there would be a high level of fertility and mortality at the initial stage of social development, and a low level of fertility and mortality at the final stage (Caldwell, 2006). In Nepal, the proportion of child population has been on the decline, thus moving forward in this transition. The first half of a period of more working-age people than dependent is a demographic dividend, which is the "time of opportunity" when the lower dependency ratios can

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

result in an increase in per-capita productivity, if managed properly (Bloom et al., 2003). It is crucial, however, that in the South Asian context a dividend is not assumed but is possible only with state support for investing in human capital despite the reduction in youth numbers, (Gietel-Basten et al., 2019) conclude.

The theoretical basis for this is that the present study will be using the Demographic Transition theory not only to explain the population change, but that it would be a risk in itself because the provision of services, such as the Ministry of Education's policy to merge schools with small numbers of pupils, are also diminishing during this time (NSO, 2021). This risk is very much articulated by Gribble and Bremner (2012) who argue that the absence of an educational opportunity may effectively be zero if the opportunity is not provided until too late and as the population taking advantage of it shrinks. Regional inequalities can be accentuated. Demographic transition theory, in this sense, gives a rationale for a policy sensitive emphasis on the reduction of children in Nepal as opposed to its policy irrelevant side of self-resolution.

Legal Identity and Birth Registration

Birth registration is a 'foundational' right as it is a prerequisite for healthcare, education and social protection and is essential for citizenship (UNICEF, 2024). SDG target 16.9 will have made progress towards universal legal identity by 2030. The overall cross-national results are that poverty and rurality both negatively relate to registration and administrative complexity and distance negatively relate to poor and marginalised households (Dugarova, 2019). The expectation is complicated due to the data from the census given in 2021 in Nepal. Theoretically, it is supported by Barrientos (2013) who shows that effective non-contributory social assistance programs can be important tools of administrative inclusion as long as they are not dependent upon household resources, but they are made to encourage participation in the state. It is argued in practice by Hagen-Zanker et al. (2020) that Cash Transfer registration in this zone in Nepal has been made conditional on documentation.

Human Capital Theory and Environmental Deprivation

Since the human capital theory, the growth of the national economy can be sum of the investment in health, nutrition and education at the individual level (Becker, 1964). This is especially true in early childhood because the early years of life are the

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

most "plastic", that is, most malleable time period of life with a correspondingly high long-term return. This study highlights water as a developmental disadvantage, and draws on the human capital theory to examine the process of infrastructural deprivation, defined as the process of demographic and economic disadvantage turning into developmental disadvantage. Water away from home contributes to time poverty as it deprives children, usually older children, of time at home providing care to others, and time in school, as Koolwal and van de Walle (2013) have found. Pickering and Davis (2012) also noted a direct link between WSD and childhood stunting and SD, and Subedi (2023) found that WSD burden is greater in the poorest wealth quintiles and in girls compared to boys in Nepal. The human capital theory is therefore not applied in general terms as an infrastructure statistic but specifically to argue that access to piped water (Section 4) of 32.8 per cent of individuals, is a constraint on early childhood development outcomes.

Gender, Sex Ratios and the “Modernization of Patriarchy”

A tilted sex ratio at birth is a known indicator of son preference, and sex selection and differential neglect are well-known indicators of son preference (Sen, 1990). Patriarchy and kinship and inheritance systems in South Asia have been linked to high son preference in the past (Pande and Malhotra, 2011; Niraula and Lawoti, 2014). A major theoretical advance in the context of this study has been the research by Guilmoto (2012) that urbanization and rising literacy do not necessarily correlate to a decline in son preference, but rather a deterioration in sex ratio as a result of the increased availability of the technology for sex selection. The contemporary notion of Nepal's skewed sex-ratio which is not associated with the lowest provinces of the country, but with relatively high Human Development Index scores in Bagmati and Koshi provinces (NSO, 2021) can directly be attributed to the “modernization of patriarchy” hypothesis. Although this type of census data is representative of the age-sex ratio of surviving infants, it is not of the sex ratio at birth as determined clinically using data from birth registers or birth facilities, this study treats it accordingly.

The Vulnerability of the Peri-Urban Population

The geographical pattern of childhood poverty in Nepal reflects the general pattern that density of population is associated with decreased human development

capacity at the provincial level (Bird et al., 2002; NPC, 2020). The concept of peri-urbanization, as proposed by Ellis and Roberts (2016) is applicable to certain, transitional municipalities that expand rapidly, but not yet within the formal boundaries of the city and not yet within the informal rural safety nets. This literature is not only used to find out the reasons behind the changing trend of the children's residence from rural to peri-urban in Nepal, but also to explain it as a phenomenon rather than as a literal term.

Synthesis and Research Gap

The literatures converge to four propositions: first, the demographic transition is increasing the pressure on human capital investment in Nepal, at least in the short term; second, institutional designs are important avenues for advancing legal inclusion more effectively than household wealth; third, a lack of infrastructure is negatively impacting early childhood outcomes; and fourth, urbanization can exacerbate gender and space inequality rather than resolve it. This is what the literature has not been able to do so far, namely to link these propositions into an integrated empirical account of the process of demographic transition in Nepal and how it constitutes a process of change in the conditions for child legalization. Firstly, no study has tested the Karnali Paradox using data on the provincial levels of the wealth quintiles from the entire NPHC 2021 data, and no study has correlated the peri-urbanization pattern that Ellis and Roberts (2016) observed with the results of registration and welfare for the age group of 0-17 in Nepal.

Methods and Materials

For this study, quantitative research approach and descriptive-comparative research and cross-sectional research design were used and the secondary analysis of NPHC 2021 was done in Nepal. The children (0-17 years) reported by the National Statistics Office (NSO) are the study population. The main units of analysis are the seven provinces in Nepal (Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali and Sudurpashchim) ranging from the highly urbanized and prosperous Bagmati to the geographically remote and economically disadvantaged Karnali. The NPHC 2021 (Thematic Report XVIII: Status of Children in Nepal) was selected as the primary source of data because it offered the best data at provincial level for the birth registration and wealth quintiles/residential classification of children aged 0-17. The

data was analyzed at three levels: firstly, descriptive analysis at national level, secondly, stratified comparative analysis (cross tabulations) for finding regional outliers and revealing the welfare-based gradients and thirdly, analysis of longitudinal trends with data from past census (2001, 2011) and future projection (2031 to 2051) to put the findings in context of Nepal's demographic transition. This is an aggregate tabulation study, so no microdata is available to analyze, and no inferences are made based on statistical tests.

Results and Discussion

National Trends and Projection of Child Population

The findings are presented in four themes, consistent with the conceptual framework outlined in Section 3.4: Long-term demographic transition, Provincial distribution of the child population, Gender stratification, Intersection of urbanization, wealth and legal identity. Where figures are not otherwise stated in the table they are percentages of the relevant population.

Table 1

National Trends and Projections of Child Population (2001–2051)

Census Year	Status	Child population (0-17)
1001	Observed	45.7
2011	Observed	41.8
2021	Projected	33.8
2031	Projected	30.2
2041	Projected	26.2
2051	Projected	21.9

Between 2001 and 2021, the percentage of children among all residents of Nepal decrease by 11.9 percentage points (from 45.7% to 33.8%) and is expected to drop another 11.9 percentage points to 21.9% by 2051. The overall trend is along the lines of the later phases of the Caldwell demographic transition model, reflecting a growing window of opportunity for accelerating the demographic dividend identified by Bloom et al. (2003), but one that needs a continued level of investment in infrastructure around education and health for each child in order to be sustained.

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

Province-wise Children and Household Prevalence

The overall national trend is decreasing child population, but not among all the federations in Nepal. The provincial distribution of children and child-rearing at the household level are displayed in Table 2. It is evident from these figures that the demographic problem of child bearing is not uniform across the provinces as there exists “mismatch” between the density of child bearing and the province's Human Development Index.

Table 2

Distribution of Children and Household Prevalence by Province

Province	Total Child Population %	HH with Children %	Avg. Children per HH	Note
Madhesh	24.3%	80.3	2.1	-
Lumbini	18.1%	Not reported	1.6	See note 1
Bagmati	17.1%	61.5%	1.1	-
Koshi	15.9%	Not reported	1.1	-
Sudurpashcim	10.3%	Not reported	1.8	See note 1
Gandaki	7.4%	62.0%	1.1	-
Karnali	6.9%	80.0%	1.8	-
Total	100.0	71.3%	1.5	-

Note 1: the child population in Nepal will decrease from 45.7% in 2001 to 21.9% in 2051. This is a late stage of the demographic transition (Caldwell 2006) and a narrowing of the demographic dividend (Bloom et al. 2003) that requires increased human capital investment efforts.

The population of Madhesh is the densest with 24.3% of children in the country and the lowest is in Bagmati and Gandaki with an average of 1.1 children per household with children. If available, this pattern is similar to provincial mismatch between child-rearing burden and provincial human development capacity: Madhesh and Karnali, which together account for an excessive child-rearing burden compared to their ranking in terms of human development index (NPC, 2020), are discussed further in Section 5.

Gender Stratification and Age Sex Ratio

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

The sex ratio has been taken as an indicator here of gender-differentiated demographic outcomes. It is worth noting that the data in Table 3 represent age-sex ratios derived from census populations of the surviving children at the time of the census, and thus are more of a proxy indicator than an actual measure, of sex-selective practices; they should therefore be interpreted accordingly.

Table 3

Sex Ratio by Province and Age Group

Province	Age (0-1)	Age (16-17)	Age (overall 0-17)
Koshi	83	94	91
Madhesh	88	105	96
Bagmati	89	93	91
Gandaki	88	96	91
Lumbini	92	92	95
Karnali	85	109	95
Sudurpachhim	90	102	94
Nepal	87	98	93

The age 0-1 sex ratio is 87 at national level and lowest in Koshi (83) province. This is far from the biological sex ratio at birth, which has been taken as around 105 boys per 100 girls (Sen, 1990) and is in line with the literature regarding son-preference in South Asia (Pande and Malhotra, 2011). The ratio turns around in the age group 16-17, especially in Karnali (109) and Madhesh (105) where girls outstrip boys. Although the census data do not contain migration records, this difference between male and female outmigration and the existing literature on the subject is discussed in Section 5.

Urbanization and Wealth Disparity

Province-wise socio-economic stratification of Nepal is greatly affected by the provincial geography and level of urbanization. The percentage of children by municipality type and by lowest and highest wealth quintiles is summarized in Table 4. The data gives a baseline understanding of the "peri-urbanization" of young people and the large income disparities that still exist between the seven provinces.

Table 4*Percentage of Children by Residence Type and Wealth Quintile*

Province	Urban	Pre-Urban	Rural	Lowest Quintile	Highest Quintile
Bagmati	51.6	14.7	33.6	9.8	34.6
Karnali	14.9	3.8	81.3	54.7	3.0
Madhesh	20.5	74.5	5.0	25.5	8.5
Nepal	24.1	41.8	34.1	22.9	15.6

At the national level, 41.8% of children currently reside in peri-urban municipalities, more than in fully urban (24.1%) and fully rural municipalities (34.1%). This rate is 74.5% in Madhesh Province in particular. There are also significant differences in regard to stratification of wealth 9.8% of children in Bagmati are in the highest quintile of the national wealth distribution, whereas 34.6% of children are in the highest quintile of the national wealth distribution in Bagmati, and 3.0% in Karnali.

Under Five Children Birth Registration

Legal identity in Nepal, largely, defined by birth registration, though there is high degree of variation in its coverage by geography and socio-economic indicators. A provincial overview of rates for birth registration of children under 5 is displayed in Table 5.

Table 5*Birth Registration Status of Children Under 5*

Province	Registered %	Unregistered (0-1 yrs) %	Unregistered (4-5yrs) %
Koshi	72.0	44.6	18.6
Madhesh	76.6	37.3	16.2
Bagmati	67.3	49.9	21.0
Gandaki	67.0	48.8	22.5
Lumbini	74.0	41.9	19.2
Karnali	87.3	17.8	10.6
Sudurpachhim	83.3	25.2	11.9
Nepal	74.4	39.6	17.6

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

The data highlight that there are clear differences between the age of 0-1 years and those closest to school age 4-5 years and make it clear that administrative inclusion is not occurring at the same time for all. And reveal that registration has been successful in some of the poorest provinces in Nepal, but not in the same manner in urban centres.

These results support the "Karnali Paradox" outlined in Sections 1 and 2, Karnali is the province with the largest share of children in the lowest wealth quintile (Table 4) has a 20-percentage point higher under-5 birth registration rate than the much wealthier Bagmati Province (87.3% compared to 67.3%). In Nepal, children are not registered at the time of the census enumerations decreases from 39.6% at ages 0-1 year to 17.6% at 4-5 years, reflecting that children are not usually registered but rather registered at a later date which could be related to the age at attend school. In Section 5, the relationship of this pattern with the literature on institutional-inclusion, as covered in Section 2.2, is discussed.

Discussion

Analysis of the 2021 Nepal population and housing census has established a multifaceted picture of child well-being in Nepal, marked by a swift transition and underlying inequalities. The study contradicts some of the common development stories, particularly linking the impacts of household wealth on law.

Karnali Paradox

The conventional development discourse suggests that increasing household wealth and higher Human Development Index scores are positively associated with legal identity (UNICEF 2024). But this is not the case with the "Karnali Paradox" from this study Comparing the 2021 Census data, the state of birth registration in Karnali Province stands in sharp contrast to administrative participation in the other provinces, with the province having the highest registration rate (87.3%) despite children living in the poorest wealth quintile (54.7%). This is what could be called the 'Karnali Paradox', as administrative incentive structures (including conditioned social transfers) appear to be more predictive of legal registration than household wealth alone in the Nepali context. In this case, institutional drivers appear as a stronger predictor of bureaucratic inclusion than economic growth. In poor areas, a birth certificate is a "capability" that serves as a means of accessing social protection schemes, but in urban provinces,

Raut, Bohara, and Katuwal, 2026, Constructing Children's Legal Identity.....

parents may have access to private health and education services that do not necessarily require birth registration in early childhood.

Peri-Urbanization and Geographies of Vulnerability

Geographic patterns of child vulnerability show a growing situation in "peri-urban" areas. As 41.8% of the country's children now live in these areas (reaching 74.5% in Madhesh Province), Nepal is seeing vulnerability shift. These areas do not possess the institutional arrangements and arrangements of the cities, (Ellis & Roberts, 2016). The census data also supports the socio-economic indicators, with 41.8% of the child population residing in peri-urban areas and reaching a peak of 74.5% in Madhesh Province, which corresponds not only to high rates of economic participation (child labour) but also to low rankings on the HDI, where the lack of basic utilities such as piped water, as shown in this study (Table 4), can be used as an empirical proxy for 'time poverty', with children in the informal service and construction sectors being drawn away from school. This population growth in Madhesh, coupled with the region's low HDI score, indicates that federal investment must also begin transitioning from a per-capita to child-focused and region-specific approach to avoid these regions from becoming "poverty traps".

Modernized Son Preference and Demographic Inversions

The national infant sex ratio of 87 girls per 100 boys is a major departure from the natural level, and indicates deep cultural prejudices. Significantly, the inequitable sex ratios are the lowest in Koshi (83) and Bagmati (89), implying that son preference is not simply a symptom of "backwardness" but perhaps permeated by urban prosperity and availability of sex selection technologies (Subedi, 2023). This would concur with the hypothesis of "modernization of patriarchy" through the use of technology to maintain male dominance. This results in an adolescent population skew that may have consequences in adulthood for the marriage market and social equilibrium.

Infrastructure Gap and Human Capital Degradation

Given the low levels of access to piped water (32.8%) in households, a large proportion of the Nepali population of children grow up in a context of "time poverty". According to Heckman (2006), the early childhood environment is a key factor in shaping life-long cognitive and socio-economic development. Being diverted from

educational activities to help bringing water and performing other household tasks, especially amongst children from the poorest quintile, creates an alchemy that contradicts the Early Childhood Development (ECD) principles. This environmental blight is a regressive tax burden, promoting the intergenerational reproducing of poverty.

Conclusion

Nepal is transitioning from young to an old society during the advanced stages of the demographic transition, presenting a short-term opportunity to reap a demographic dividend. This research shows that while the shares of the child population are shrinking, spatial and socio-economic inequalities are growing. Yet, the skewed sex ratios in the affluent provinces show a "modernization of patriarchy" whereby gender discrimination is enabled through technology and urbanization. These insights suggest "growth without improving human rights is not enough" to protect child rights and ensure demographic equity. To overcome these threats, federal policy needs to shift from universal to region-specific child-sensitive measures. Investment in infrastructure to ease work-family schedules and expansion of successful social initiatives, such as the Child Grant, to catchment areas is fundamental to protect human capital citizenship. Finally, as youth shrinks, government priorities must shift from number to competence for quality child development. Legal identity and environmental security for the future generation is not only a constitutional responsibility but a foundation for long-term economic development and achievement of the 2030 Sustainable Development Goals.

This study relies on the secondary analyses of the 2021 National Population and Housing Census. There was no primary data collected. National statistics office of Nepal aggregated and de-identified all the data utilized. The research complies with ethical principles of transparency and integrity in reporting the publicly available data.

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