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DEMOGRAPHIC TRANSITION AND CHANGING AGE STRUCTURE IN NEPAL

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ABSTRACT

This paper focuses on the demographic transition of Nepal and the changing age structure between 1952/1954 and 2021. It is a quantitative study and has adopted descriptive and analytical methods to secondary data, which was collected during the 2021 Census with emphasis on general age groups, dependency ratios, and working-age population growth rates. The findings indicate that the decrease in the pre-working age population, from over 40 percent in the initial years of the census 1952/54 to 27.8 percent in the year 2021 was significant with the rise of the working-age population from 54.1 percent to 65.2 percent, which indicates that Nepal has entered into the demographic dividend phase. The population aged above 65 (after working age) grew by 2.9 to 6.9 percent, with early signs of population aging. The highest dependency ratios of 84.8 were recorded in 1991 but declined to 53.3 in 2021, which demonstrates that there is a large number of people of working age. At the same time, growth rates of working-age population continue to beat aggregate population growth consistently, and this suggests that there is a possibility of higher economic production. The results suggest that Nepal is experiencing a structural change that will provide an opportunity to economic growth, as long as workforce markets, education, and human capital investments are correlated with demographic realities. Nonetheless, the increasing number of the elderly accentuates the significance of timely planning in the social protection system, healthcare, and long-term care systems. This paper highlights the need to have policies that can maximize the demographic dividend as well as provide

solutions to the emerging aging-related challenges, thus providing socioeconomic growth in the long term.

Keywords: Age structure, dependency ratio, demographic transition, demographic dividend, Nepal, working age population,

INTRODUCTION

In the past several decades, Nepal has gone through a demographic transition which is characterized by a decrease in fertility, an increase in life expectancy and behavioral migration as the population shifts to a mature population structure than a youthful one. These transformations hold much importance on labor markets, education, health, social protection and economic growth and so it is imperative to know the forces and effects of such transformation with a view to sound policy planning. Demographic transition theory presents a trend of declining mortality rates, declining fertility rates, a transitory rise in working-age population, and subsequent declining of population ageing (Bloom *et al.,* 2023). The same applies to Nepal who has been undergoing high rates of fertility decline, increased levels of female education, high levels of labor migration and an uneven distribution of regional development. The total fertility rates that were well above the replacement rate in the 1990s have dropped to almost replacement rates nowadays, whereas life expectancy has increased due to better child survival and health services (Adhikari *et al.,* 2022). This forms a favorable dependency ratio window, which in the case of employment, high productivity, and investments in human capital, may stimulate economic growth (Crombach & Smits, 2022).

According to recent census and survey findings, it can be seen that Nepal is becoming aged rather than younger, although the absolute number of young people and working-age population are still high. This presents an urgent chance to utilize the demographic dividend, which relies on structural change, an increase in the formal sector, gender parity, education, skills acquisition and productive employment (Kurian & Kumar, 2023). At the same time, ageing of the population also contributes to the issue of population and health financing, chronic diseases, and pensions, which is why life-course social policies are necessary (Mulugeta, 2023).

Traditionally, the transition to fertility in Nepal has been caused by several related factors: the spread of modern birth control methods, the growth of girls' education, their marriages, and the urbanization of the country, the increase in horizons among young people, and the shift in

standards regarding the size of the family (Mishra *et al.,* 2025). According to the National Demographic and Health Surveys, the desired family size and unmet need of family planning are broadly reduced, and maternal and child health are greatly improved; in particular, reduction in under-five mortality (Thapa, 2024). These changes have been supported by the growth of physical and digital connectivity, mass media, and the greater access of women to education and the labor force, although the employment of women is as informal and limited by care as before (Adhikari & Sharma, 2022). Collectively, these forces have made the demographic shift a relatively brief event in history, which increases the socioeconomic impact.

Migration, whether internal or international, has a strong influence on the demographics of Nepal. The outmigration of men to the Gulf states and Malaysia changes the household arrangements, labor market and local sex ratios, and remittances are used to consume, educate, treat and shelter (Shrestha, 2024; ILO, 2022). Urbanization is caused by internal migration, which concentrates people in urban areas such as Kathmandu, and affecting service delivery and infrastructure (Timsina *et al.,* 2020). The overall dependency ratio in Nepal has not increased because of the decreasing child dependency, but old-age dependency is increasing gradually with longevity. This two-step process, a decreasing youth load and an increasing dependency of the elderly, leaves a narrow demographic dividend window. The experiences of East and Southeast Asia show that to achieve this dividend, it is necessary to make specific investments in education, health, infrastructure, and productivity reforms instead of just having a favorable population structure (Bloom *et al.,* 2023).

The demographic changes can be turned into gains of development through education and promotion of health. Nepal has seen an increase in school enrollment and female literacy, as well as secondary completion, although with regional differences and a lack of quality (UNESCO, 2023; Acharya & Robinson, 2019). The conditions of education that align with the needs of the labor market, such as technical, vocational, and digital skills, are associated with increased returns (Kharel, 2023). The benefits of health include increased lifespan and productivity; however, due to the rising number of non-communicable diseases, measures to prevent diseases, strengthen primary health care, and ensure financing sustainability are necessary (WHO, 2022).

The importance of gender in fertility declines and child survival is associated with the trends of female education, postponed marriage, and reproductive health (Stoebenau *et al.,* 2013). Nevertheless, women are still disproportionate in the informal, low-paid, or unpaid labor and are restricted by care-related issues and social expectations (ILO, 2022). Policies that are in favor of childcare, safe transportation, anti-harassment measures, and access to productive sectors are imperative to fulfill a full demographic dividend of Nepal. The evidence in the world has demonstrated that fertility decline combined with a higher female workforce yields maximum economic benefits.

Nepal has a complicated demographic situation due to regional inequalities. The provinces differ in terms of fertility, education, health, and migration, which makes age structures and dependency ratios heterogeneous (MoHP, 2022). The rural regions can become older because of the outmigration of youth, overloaded local services, whereas the urban centers experience the pressure of the inflow of youths, which influences housing, transport, and employment (UN-Habitat, 2022; World Bank, 2024). Macroeconomically, an increasing working-age population would be able to increase per capita income through labor supply, savings, and human capital (Bloom *et al.,* 2023). Nevertheless, the informal labor market, inadequate industrialization, and boosting of remittances in Nepal are limiting domestic employment benefits (Lamichhane, 2018). The structural transformation to achieve demographic benefits must include: agricultural productivity, manufacturing, tourism, tradable services, infrastructure, digital connectivity, financial inclusion, pension reform, education and training in line with labor market requirements.

In Nepal, social protection needs to be modified due to a changing age composition. The coverage, adequacy, and fiscal sustainability of old-age allowances have increased, yet they continue to be a challenge (Sijapati, 2017). The increased old age dependency calls on life cycle strategies, such as child benefits, unemployment, disability, old age security and health financing reforms with more focus on primary care, non-communicable diseases (NCD) prevention, and risk pooling (WHO, 2022). The systems should consider gender, regional inequalities and the realities of migration.

Climate change is another complication, which has an impact on mobility, livelihoods and health. The mountainous nature of Nepal and the dependency on climate-related areas subject to floods, landslides, and glacial lake outburst floods (GLOFs), which affect fertility, labor, and

migration trends (Piya *et al.,* 2019; UNDP, 2023). Cities can experience the bulge of the youth, and the rural territories can experience the process of aging faster. To be resilient in development, it is important to integrate demographic foresight in climate adaptation and disaster planning. The opportunity of demographic window of Nepal may be short. The reduction of child dependency introduces an interval of time to invest in human capital, employment, and training of health and pension systems in the face of the increased old-age dependency (Chalise, 2021; UNFPA, 2022). Other nations have taught the importance of quality education, female economic empowerment, labor-intensive industrialization, urban governance as well as macroeconomic stability (Bloom *et al.,* 2023). Demographic-growth nexus can be enhanced by complementary reforms such as investments in climate, financial deepening, governance, and service delivery and digitalization.

This paper analyzes the demographic transition in Nepal and the changing age structure based on descriptive demography, policy analysis, and macroeconomic environment. It places changes in fertility, mortality and migration in regional and global trends, evaluates the implications on dependency ratios and demographic dividend and discusses the implications on education, health, labor market and social protection. Sub-national, gender, and migration dynamics are taken into consideration and a prospective outlook on policy measure to utilize the demographic dividend and prepare to age healthily is taken. The unique trend of labor outmigration, reliance on remittances, and geographical limitation of Nepal needs specific approaches. The challenge is whether institutions, markets and policies can make demographic change a part of sustainable development. The article continues by examining theoretical and empirical underpinnings, the current demographic patterns, macroeconomic and sectoral implications and evidence-based, gender-responsive, and regionally-specific policies to capitalize on the demographic dividend and counter the effects of aging populations.

METHOD AND MATERIALS

Research Design

The proposed work is a quantitative with both descriptive and analytical designs, relying on secondary data of 2021 National Population and Housing Census, conducted by the Central Bureau of Statistics (CBS), now called the National Statistics Office of Nepal. The architecture is

appropriate for researching large-scale trends in demographics and will focus on the age-sex structure of Nepal, dependency ratios, median age, and the aging of the population. The method permits the description of the demographic transition of Nepal and the transformation of the age structure based on sex, age category, and province in detail (NSO, 2024; CBS, 2023).

Sources of Data

This research used the 2021 Census data of Nepal as the data source (CBS/NSO, Nepal). The census is an entire count of the population of Nepal with elaborate details on the age, sex, household structure, and geographical location. There are transparency and reliability with all information utilized being publicly available in official NSO publications and statistical tables**.**

Measurements and Variables

This is analyzed using official census tabulations where demographic characteristics are documented by use of structured household questionnaires. The variables considered are age, gender, and province, and the population into 5-year age categories. The level and rate of demographic transition can be analyzed by deriving indicators like child, working-age, and old-age population shares, total dependency ratio, aging index, and median age.

Methods of Analysis

The research uses descriptive statistical tools in order to summarize and interpret census data. Dependency ratios and median age are calculated and compared between provinces. The analysis is based on an aggregated descriptive analysis of demographic trends and their consequences on its transition in Nepal.

Data Quality: Data Quality considerations

The 2021 Census was carried out with strict quality control measures, including pretests, training for enumerators, and a questionnaire with skip patterns. A net omission rate of 2.58 was reported in the Post-Enumeration Survey (PES), indicating a high level of reliability (NSO, 2024). However, some minor issues remain: age heaping (Whipple index: 149), potential recall bias, and limited detail in migration or informal activity reporting. Pandemic-related challenges also impacted data collection, which may have affected accuracy in some areas.

Ethical Considerations

The research involves secondary data analysis of de-identified public data of CBS/NSO. There are no analyses or included identifiers on an individual level. The research did not need any ethical approval because there would be no direct contact with human subjects, and all the academic and institutional standards of using secondary data are met in the research.

RESULTS AND DISCUSSION

Results

Nepal's demographic trend from 1952/54 to 2021 reveals that the proportions of children has decreased, adults who are working has increased, and older people has gradually increased. These changes have drastically lowered the dependency ratio, which is a clear sign of a demographic dividend since the share of labor force is increasing. The census data corroborates the trends of declining fertility, increased life expectancy, and a slowly growing economically active population, accompanied by early signs of aging that will necessitate enhanced productivity and support systems for the elderly (CBS, 2021; UNFPA, 2023; World Bank, 2024).

Table 1

Share of Broad Age Group Population (%) Over the Years (1952/54–2021)

Year	Pre-working-age (<15)	Working-age (15–64)	Post-working-age (65 & above)	Dependents (<15 plus 65 & above)
1952/54	38.6	58.6	2.9	41.4
1961	40.0	57.1	2.9	42.9
1971	41.0	55.9	3.0	44.1
1981	41.4	55.4	3.3	44.6
1991	42.4	54.1	3.5	45.9
2001	39.4	56.4	4.2	43.6
2011	34.9	59.8	5.3	40.2
2021	27.8	65.2	6.9	34.8

Source: Analysis of various census data, 1952/54–2021.

Table 1 shows Nepal's transition from younger to a mature population structure between 1952/54 and 2021. Children under 15 accounted for more than 40 percent of the population until 1991, while the working-age group barely reached 56 percent, hence dependency was very high. Post-1991, the decline in fertility and improved survival rates

brought down the child share to 27.8 percent and raised the working-age share to 65.2 percent, thus, the demographic dividend was ushered in. The elderly share increased from 2.9 percent to 6.9 percent, which was a sign of early population aging. The total dependency ratio went down, which was an indication of reduced demographic pressure and improvements in conditions for economic growth if accompanied with strong labor-market and human-capital policies.

Dependency Ratios

The period from 1952/54 to 1991 witnessed an increase in total dependency rate to 84.8 per 100 working-age population due to the increase in child dependency (from 65.9 to 78.4) and a slight rise in old-age dependency (from 4.9 to 6.5). The trend reversed after 1991 when the fertility rate declination and a growing labor force cut child dependency down to 42.7 and total dependency down to 53.3 by 2021, thus delineating the entry into the demographic dividend. The share of the elderly increased to 10.6 percent, which pointed to the onset of population aging.

Table 2

Dependency Ratios Over the Years (1952/54–2021)

Year	Child (0–14) Dependency Ratio	Old-age (65+) Dependency Ratio	Total (<15 plus 65+) Dependency Ratio
1952/54	65.9	4.9	70.8
1961	70.0	5.0	75.0
1971	73.4	5.4	78.8
1981	74.7	5.9	80.5
1991	78.4	6.5	84.8
2001	69.7	7.5	77.2
2011	58.4	8.8	67.2
2021	42.7	10.6	53.3

Source: Analysis of various census data, 1952/54–2021.

The transition of Nepal from high to moderate dependency over the period 1952/54-2021 is summarized in Table 2. A total dependency increases from 70.8 to 84.8 was observed during the period of 1952/54–1991, with the main factor being child dependency, which reached its maximum of 78.4 due to conditions of high fertility and a young population. However, after 1991, there was a sharp decline in dependency ratios due to a drop in fertility: child dependency was reduced to 42.7 by 2021, while

old-age dependency gradually increased from 6.5 to 10.6 with rising life expectancy. The total dependency ratio in 2021 was 53.3, which reflected a period of favorable demographic dividend as the share of working-age population reached its highest level and thus provided economic potential if coupled with the right labor and human-capital policies.

Growth Rates of Working-Age Population

Nepal's working-age and total population have experienced a moderate increase till 1981, according to Table 3, which is a result of high fertility and improving survival rates. During the 1981-2001 period, working-age growth surpassed that of the total population as a consequence of the decline in fertility and the influx of large youth cohorts into the labor force. The period between 2001 and 2021 saw a sharp decline in total population growth (from 1.35% to 0.92%), while working-age growth remained comparatively higher (between 1.93% and 1.75%). This enduring difference between the two growth rates indicates Nepal's demographic dividend, meaning that the expansion of the labor force will be more than the increase in dependents, thus making it possible to create economic opportunities through the implementation of employment and skill-development policies.

Table 3

Growth Rates of Working-Age and Total Population (1952–2021)

Year Range	Working-age (15–64)	Overall (All Ages)
1952/54–1961	1.36	1.67
1961–1971	1.53	1.75
1971–1981	2.83	2.92
1981–1991	1.84	2.08
1991–2001	2.67	2.25
2001–2011	1.93	1.35
2011–2021	1.75	0.92

Source: NSO, 2024

According to Table 3, the population of working-age and total in Nepal underwent a moderate increase from the 1950s to the 1970s, then a sharp rise during the period of 1971–1981 when large youth cohorts entered their reproductive ages and improvement in survival rates. The following decade saw a remarkable increase in the working-age population (up to a

high of 2.67%), while total population growth was tempered by the declining birth rate in the case of the latter. After 2001, the difference between the two categories grew: the working-age group growth rate was always above (1.93% and 1.75%) the total population growth rate (1.35% and 0.92%). Such a long-term situation is indicative of a demographic dividend, but at the same time, declining fertility and increased life expectancy are contributing factors to the gradual aging of the population.

Regional Variation in Mean and Median Age of Population, Nepal

Table 4 shows that no major demographic change happened in Nepal between 2011 and 2021, as the dependency ratio dropped to 53.3 and the median age increased to 26 years. This implies a growing labor force (working population) and a gradual process of ageing. The province of Bagmati is the best in terms of demographic change with the lowest dependency ratio in 2021 (41.5) and the highest median age (29) indicating urbanization and improved socio-economic status. Gandaki also has the same trend with a median age of 29. Conversely, Karnali and Madhesh are more likely to experience a slower demographic transition because they have more dependency ratios (61.9 and 65.2) and lower median ages (22 and 23). In general, the data points to increasing regional inequalities in the pattern of ageing and economic development of Nepal.

Table 4

Regional Variation in Mean and Median Age of Population, Nepal (2011–2021)

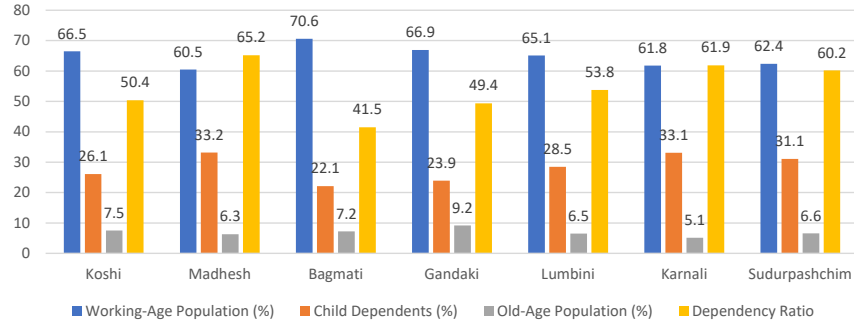
	Dependency Ratio		Median Age	
Province	2011	2021	2011	2021
Koshi	62.7	50.4	23	28
Madhesh	76.1	65.2	20	23
Bagmati	52.7	41.5	24	29
Gandaki	65.9	49.4	23	29
Lumbini	70.5	53.8	20	25
Karnali	82.0	61.9	18	22
Sudurpashchim	79.6	60.2	19	24
Nepal (Total)	67.2	53.3	22	26

Dependency Ratio by Province

Figure 1 shows the dependency ratio of Nepal by province in 2021, broken down by the working-age population, child dependents, and older adults.

Figure 1

Dependency Ratio by Province, Nepal, 2021



Sources: NSO, 2024

The representation indicates that provincial differences are evident: Bagmati is the least dependent (41.5), which means that the numbers of working adults are higher in comparison to the number of dependents. Probably, this tendency is an indicator of increased urbanization and internal migration. Conversely, Madhesh (65.2), Karnali (61.9) and Sudurpashchim (60.2) have a higher dependency ratio, mainly because of higher ratio of child dependents, which is an indicator of high economic and social dependence on the working age population. Gandaki stands out with the largest number of older adults (9.2%), which implies that aging has led to dependency issues at an early age. These differences can be used to tell the story that the demographic transition in Nepal is not very even as the provincial areas are at various levels of demographic dividend window opportunity.

DISCUSSION

This research paper employed the National Population and Housing Census 2021 of Nepal as the main piece of evidence in the consideration of the demographic transition and the changing age composition. These findings are in line with a nation that is still in the late second and early third stage of the demographic transition with further decline in fertility, further

improvement in survival, an increasing proportion of the labor force and the beginning of population ageing symptoms.

Various signs of the 2021 Census are that there is a maturing transition. The median age has increased continuously since 2011, the base of the age pyramid has become narrower, and the dependency ratios becoming lower than before. Such trends are consistent with national and global trends in recent years, which indicate that the total fertility in Nepal has significantly decreased since the beginning of the 2000s and has continued falling in the late 2010s and the early 2020s, with more women starting to receive higher education and getting married later (Melegh, 2023). The 2021 Census augurs a cohort-based trend: big cohorts of those born in more fertile times are in the prime working age and the new birth cohorts are smaller. The result of this compositional change is rebalancing the burden of child dependency and a temporary increase in the proportion of the working-age population, which, according to the literature, is a possible dividend period (UNFPA, 2022).

The journey of Nepal is not straight, though. There are three qualifiers pointed out in the literature. The mortality declines are more and more based on the non-communicable diseases management, nutrition gain, and maternal-child health advancement but they are vulnerable to the climate risk, health system shock, and uneven access (Mishra *et al.,* 2015; UNDP 2023). The rate at which fertility is declining has differed by province, urbanicity, and socioeconomic groups and stall risks are present where education, services, or economic opportunities are underdeveloped (Wu *et al.,* 2023). The migration of young adults, particularly men, has implications for household formation, marital timing, and fertility preferences, which may increase the fertility decline of some areas and change sex ratios in prime age (ILO 2022, 2024; World Bank 2023).

When combined, Nepal seems to be at an advanced level of the dividend entry phase; the working population proportion is high in comparison with the past, but the emergence of the 60 years of age and above segment is quite evident. In countries in South Asia, Nepal is one of those countries that are likely to encounter faster ageing in the 2030s onwards, as fertility and survival increases are sustained. This change of direction is reflected in the 2021 census: even with dividend potential, the window will reduce as ageing will increase (Dewan & Sarkar, 2017). The results of the census are probably represented by a thin base (0-14) and a bulky mid-

range (15-39), and a progressive thickening at 60+. The dependency ratio of children has decreased since 2011, and the old-age dependency ratio has started to increase slightly. Such an arrangement carries with it a number of socioeconomic implications.

The presence of a mass of workers aged 20-39 increases the availability of the labor force, yet productivity can only be achieved through job creation, matching of skills, and adoption of technology (ILO. 2022, 2024). The literature in Nepal observes that one of the outlets that continued to absorb the surplus labor is persistent underemployment, informality, and migration (Sharma, 2025). The age structure determined by the census implies that an immediate employment policy push exercise export-driven services, agro-processing, construction, and digital work with the potential to transform the age structure into income growth. Devoid of this, Nepal stands a chance of a demographic burden amidst desirable ratios.

Ageing preparedness and social protection: The old-age share is still rather small according to high-income standards, but the rate of growth is becoming faster. There is need of investment in contributory pensions, planned social assistance, long-term care planning, and age-friendly health systems. The positive trend in median age and ageing index of the census is an indicator of policy lag: Nepal is increasing its social protection system, but fiscal space, coverage targeting, and service availability to chronic disease and old age care needs to be strengthened (Spijker, 2015).

Gender dynamics: The interaction of female education, fertility drop and labor force participation of women plays a central role. The literature spanning across countries demonstrates that the demographic dividend is higher in case the female labor participation increases and the gender gap reduces (UNDP, 2023). The migration patterns in Nepal can amplify the de-facto female headship and decision-making in sending regions, though they can also increase the care burdens. A declining youth share and larger working-age groups evidenced in the census are an opportunity to drive inclusive employment and childcare policy, which are in line with the recent updates in the ILO and World Bank report as a catalyst (Islam *et al.,* 2022; ILO, 2023).

Sustained labor migration to the Gulf, Malaysia, India, and other places is one of the characteristics of Nepal. The 2021 census age-sex pyramid showed male shortages in prime working ages in the high out-migration

districts and provinces. These distortions change local dependency ratios, decrease local marriage rates in the short term and change fertility timing.

Household income and remittances: Remittances have supported consumption smoothing, poverty alleviation and education expenditure (Bam *et al.,* 2016). This may strengthen the decline in fertility in the short run through higher levels of schooling and later childbearing. Non-participation could, however, also be entrenched by remittances in case employment at home is not created as quickly, and thereby endorses an equilibrium of migration dependency.

Human capital and selective migration: Age and schooling tend to positively influence migration. Such a choice may cause local entrepreneurship to die as skilled youth go away, or they may come back with savings and capabilities that can start the businesses. South Asian experience indicates that local reforms that complement access to credit, land markets and the business climate are the factors that determine whether the returns to migration are productive (Chandio *et al.,* 2025).

Care and ageing: The out-migration process may cause the elderly population to lose their family support who live nearby; thus, this could easily increase the need for social care services. The census data indicate an increasing population of over 60 years old; therefore, the studies recommend testing community-based care and health outreach as a measure to address isolation and unmonitored chronic disease (WHO, 2022).

The 2021 census has shown remarkable age structure differences between provinces and urban-rural areas. Generally, urban areas have lower child dependency, higher working-age population and more elderly people, which are factors reflecting higher education, better access to services, and lower fertility rates. The rural and isolated areas may still have wider age distribution with more children as they are still undergoing slow population transitions. Studies in the recent past point out that the environmental belts and the provinces differ in terms of people's educational level, health, and availability of services (CBS, 2023; UNFPA, 2022). The three major equity parameters come out as follows: The areas where females completed the secondary level of education, most have the steepest decline in fertility and the lowest child dependency. If the investments are directed to poor-performing districts, it will help a lot in reducing the difference in the

timing of transition in terms of spatial inequality (Lamonica *et al.,* 2022). Maternal and child health care access, prevention of non-communicable disease, and availability of essential drugs are the factors that influence both the death rate and the quality of life of the aged. Strengthening health systems in provinces is the most important thing to do if we want to ensure that even though ageing is inevitable, it will still be healthy, not just long (WHO, 2022). Fast urban growth in Nepal alters the age structure by means of selective migration. The peripheries of the cities take in younger people who are moving for employment, which can lead to problems concerning housing, water, and transport. Urban planning that takes into account the need for affordable housing along with public transport can help in matching labor supply and demand, thus increasing the productivity effect of the demographic dividend (Severen, 2023).

The past four years of literature provide a common pathway for countries like Nepal to accelerate the process of job-rich growth, however, to prepare for an ageing society. We link the census-based results to four main policy areas. With a large proportion of the working-age population, Nepal should concentrate on sectors that are primed for employment expansion and skill development. Worldwide experience suggests that light manufacturing and agro-processing, tourism, construction, and digital economy can readily absorb young people if appropriate policies are put in place to minimize the impacts of bottlenecks in logistics, power and finance (Yeboah & Flynn, 2021).

The amount of the dividend is not only dependent on the number of students but also on the quality of their learning. The Educators of Tomorrow will need to be very good in the subjects of their choice, digital skills, and basic reading/writing skills. Health systems must divert focus from NCDs and primary care strengthening to prevention and detection of NCDs. WHO and UNDP highlight that the climate resilience of health facilities and surveillance is especially important as climate hazards can negate survival gains (Teshome, 2023). Raising female labor force participation increases the effective working-age share and boosts growth. Measures that support childcare facilities, flexible work arrangements, and thorough enforcement of non-discrimination policies, along with safe transport and finance for women entrepreneurs, are all backed by strong empirical evidence (Heath

et al., 2024). The census data indicates that the female population is very large among the working-age group; thus, the inclusion of women is a must if one wants to profit from the dividend.

Proactive measures are less costly. Opening up savings pensions for formal and informal workers, adjusting social welfare benefits, and introducing long-term care financing will push back old-age poverty. Social care for the elderly (hypertensive, diabetic, cancer patient screening) is more cost-effective than hospitalizations (Oliver *et al.,* 2014). The ageing index increased in the 2021 census warranting pilot projects for the older people in provinces and districts as a matter of urgency.

Migration under duress can be diminished by introducing good jobs in the country of origin, while also ensuring the safety and well-being of migrant workers through ethical recruitment, the issuance of skills passports, and remittance-linked savings and investment products that can direct funds to small and medium enterprises (SMEs) and local infrastructure. Data from 2021 onwards shows that skill certification and recognition are essential for labor migration where higher wage premia are expected and for increased return productivity (Doan *et al.,* 2023). The census is the reference point; annual administrative data, sample surveys, and small-area estimation can indicate how fast the population transitions between censuses. The employed methods for ensuring data quality are age-heaping diagnostics, sex-ratio checks, and applying migration modules. UN DESA (2022) suggests combining the census with the population register wherever feasible.

Nepal's age structure now compared with its South Asian neighbors, looks more like the early Sri Lankan way than Pakistan's, with lower fertility and aging already arriving sooner than some regional peers (UN, 2022). However, Nepal is still a lower-income nation with a higher out-migration rate, which makes it more like the Philippines in terms of economic dependence on remittance due to labor export. The interaction between early aging and externalized employment creates an issue of a unique kind; if the pace of job creation domestically is slow, then aging will take place before there are adequate incomes and this would lead to insufficient fiscal space "grow-old-before-rich" dilemma.

Census-based analysis has the main advantage of being comprehensive in coverage. These permits creating precise age-sex profiles even for the smallest areas and robust dependency metrics too. Enumeration and digitization improvements lead to the timeliness and internal consistency in census data. Censuses might not count the temporary migrants correctly and might classify their usual residence incorrectly, which in turn can distort the local age-sex structures. Age misreporting and rounding off demographic data around certain age groups can result in single-year age distributions being skewed; while the Whipple or Myers' indices may generally rise over time, localized problems might persist. The census produces little direct data on fertility and mortality; thus, indirect methods and triangulation with DHS 2022 and UN DESA estimates are required for drawing inferences. The pandemic period coincided with the 2021 Census period in Nepal, which might have impacted people's movement, mortality, and fertility; thus, careful sensitivity analysis is suggested that utilizes administrative vital data and international series.

CONCLUSION

The shift of the Nepalese population between 1952/54 and 2021 is supported by a significant change in the demographic trend of the country, as the population is undergoing its demographic transition to a low-fertility and low-dependency society. The proportion of children below the age of 15 years shrank drastically from as much as 40 to 27.8, and the working-age group (15-64 years) rose to 65.2 indicating the transition to the stage of the demographic dividend. There has also been a gradual increase in the number of the elderly population (65+) as a sign of the ageing of the population.

The overall dependency ratio declined from 84.8 prior to 1991 to 53.3 in 2021, indicating a decrease in economic load and a possibility of economic enhancement. Nevertheless, the change in dependency ratios over post-2016, where dependency ratios fell and the ageing population rose, suggests an increasing opportunity of demographic window along with the ageing issues ahead also. Altogether, the demographic trend in Nepal has both opportunities and threats. The achievement of the benefits of such a demographic window hinge on the good labor, education, health, and social protection policies are summed up in the above policy implications.

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