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Enlightened, Innovative, and evidence-based policy for human dignity.

Research article

Insight into the characteristics and the underlying drivers of internal migration in Bhutan.

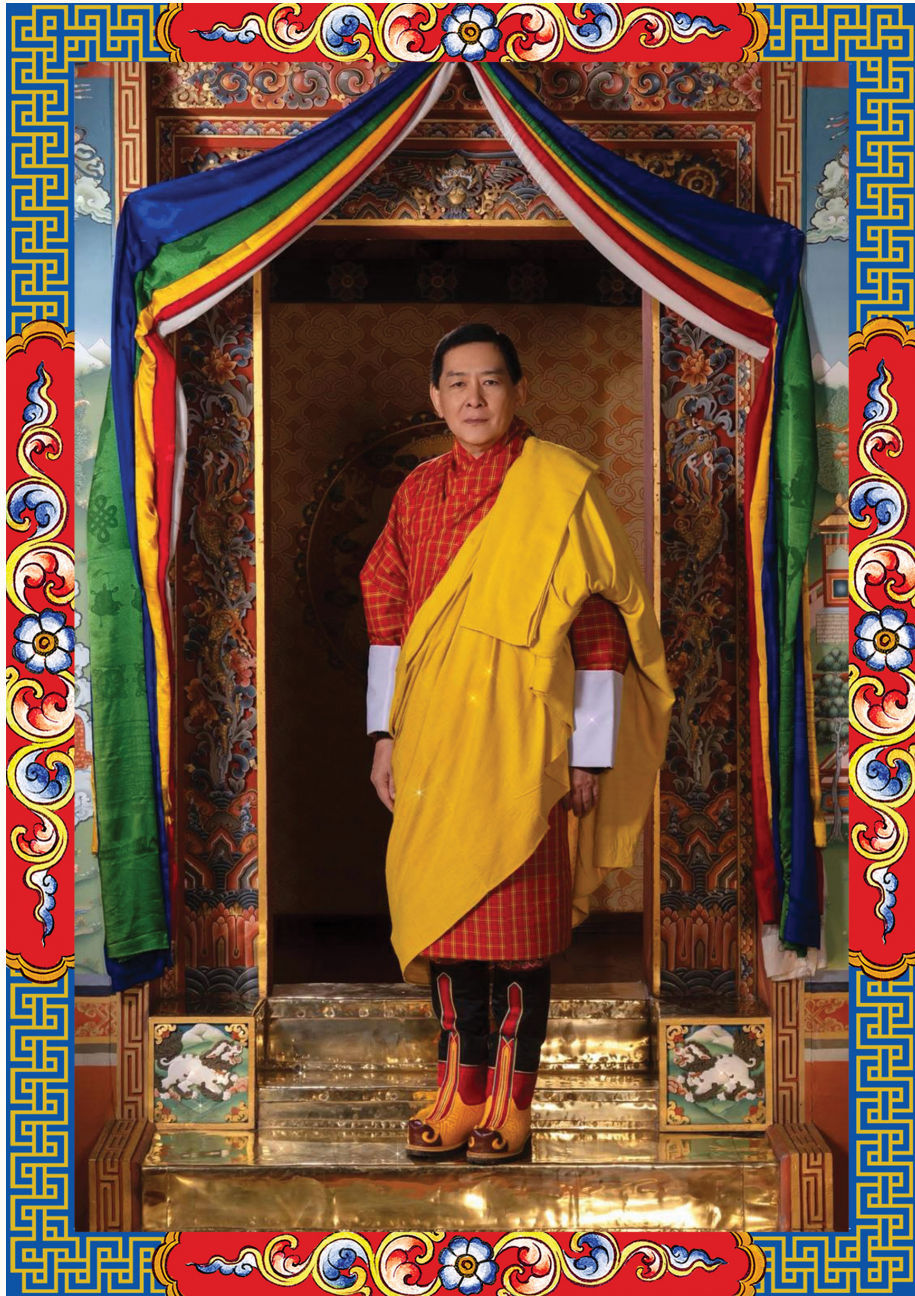
Historical narrative

A panoramic narration of the growth and expansion of Australia-Bhutan bilateral relations culminating in the academic nexus.

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**On the joyous occasion of the 70th Birth Anniversary of His Majesty
The Fourth Druk Gyalpo Jigme Singye Wangchuck, we offer our
tribute and gratitude for his vision, wisdom and compassion.**

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Positioning Bhutan through thought and innovative education

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Historically, Bhutan's journey from a medieval kingdom to a modern democracy was rooted in the social, cultural and religious values, visionary leadership and education. Under the farsighted leadership of the Bodhisatva Kings, Bhutan continued to develop as a Kingdom of peace, prosperity, and happiness. However, with globalisation, it was natural that Bhutan's integration and interactions with international affairs had its influence on the development paradigm. As countries worldwide confront rapid technological change and greater complexity in global interdependence, the evolving realities are continually presenting the grounds to make up and catch up with the challenges and opportunities of the 21st century. Although the development philosophy of Bhutan is anchored in the teachings of Buddhism and Gross National Happiness (GNH), Bhutan also faces the imperative to keep pace with the rapidly changing world order. (Gross National Happiness Commission, 2021; Bencsik, 2024).

Today, Bhutan stands at a transformative crossroad. Notwithstanding its timeless values of interdependence, unity, and mutual harmony, along with the principles of compassion and indigenous wisdom, the nation is deeply engaged in navigating the tides of internationalisation, technological advancements, demographic change, and environmental challenges. To further secure ground as a peaceful, progressive, and sovereign state, the forward momentum launched by recent policy reforms under His Majesty, King Jigme Khesar Namgyel Wangchuck's vision, centred on the economy, bureaucracy, education, and the development of the Gelephu Mindfulness City (GMC), is on its path to redefining Bhutan (The Bhutanese, 2021; Kuensel, 2021 and Bhutan Broadcasting Service, 2023)

Education remains a central pillar in national development for Bhutan. With a modest beginning from a monastic form of education to the modernising into the current state, the purposes and expectations of education have undergone a profound transformation in the past decades (Rai, 2025; Turner and Wangchuk, 2025). As societies are increasingly tasked with preparing learners for technological advancements, artificial

intelligence, global competitiveness, lifelong learning, and socio-emotional resilience, Bhutan's development trajectory positions education not merely as a tool for socio-economic growth but as a vehicle for cultivating ethical, compassionate, and enlightened citizens.

However, Bhutan also faces challenges typical of developing systems. While the country has made commendable progress in preserving its culture, protecting the environment, and maintaining political stability, it is increasingly confronted with multifaceted challenges spanning economic vulnerabilities, food security, demography, youth unemployment, environmental threats, governance issues, migration, and the complex balancing act between tradition and modernity (van Gelderen, 2023; Dorji and Hosoe, 2025). Additionally, as the pressure triggered by information flow, digital media, and social mobility across borders mounts on the cultural identity and values, the aspirations, and lifestyles of the Bhutanese, especially the youth, are also changing. While these changes offer new opportunities, they also risk diluting the historical awareness and cultural consciousness. Therefore, governance and institutional capacity need to evolve to meet emerging challenges. As Bhutan transitions into a more vibrant democracy, there is a growing demand for greater innovation, efficiency, and public participation in policymaking and policy delivery. Strengthening institutions, promoting civic engagement, and ensuring policy innovation have emerged as critical for long-term development (Wangdi and Boossabong, 2024).

Lodged at a crossroads, Bhutan must skilfully navigate a range of domestic and global challenges. While the nation's visionary leadership under His Majesty the King, provides a solid compass, contemplation and innovative educational dialogues will only stand to leverage that the national objectives are materialised. Under the Royal Vision of a knowledge-based society, as the government engages in the national transformative initiatives to foster an agile, efficient, and innovation-driven public-private sector, the emphasis on enlightened entrepreneurial bureaucracy aims to align national governance with productivity, performance, and accountability, marking a significant shift from the traditional model. The special national undertaking of

Gelephu Mindfulness City (GMC) as a special administrative region unveiled by His Majesty the King is an innovative urban development project that integrates economic growth with mindfulness, holistic living and sustainability (Poudel, 2025). Because of its strategic location at the intersection of major economic regions, including South Asia, ASEAN and China, plans for this innovative hub will position Bhutan as a global leader in mindful and sustainable urban growth. With the primacy of focus on green technology, compassion and reflection, GMC is designed to be a consciously developed landscape within the framework of sustainability, spiritualism, ethical governance and Bhutanese identity (Jackson, 2024).

Data science and generative AI offer Bhutan a powerful toolkit to enhance its education system and make policymaking more intelligent, responsive, and people-centred. As a policy direction, there is ample emphasis on digital transformation strategies and education reforms to embrace science, technology, engineering and mathematics (STEM) as an innovative solution to the emerging skill gaps. However, education for AI, machine learning, and data science, along with prioritising human dignity, community vitality, and environmental sustainability, is yet to be institutionalised (Lhamo, 2025). Therefore, there is potential to pursue data science and AI education with caution, inclusivity, and foresight. By embedding ethical safeguards and aligning technological innovation with national values, Bhutan can emerge as a model of how small nations can responsibly embrace digital futures rooted in happiness and harmony.

Bhutan's future growth depends on its ability to nurture an innovation-driven economy while maintaining cultural values. As education is at the heart of progressive nation-building, nurturing a culture of academic curiosity and civic participation among the Bhutanese populace empowers them to become active contributors to Bhutan's democratic and economic future. Additionally, as progressive societies thrive on collaboration across people, disciplines and sectors, the cross-pollination of ideas, ideologies and practices among multidisciplinary backgrounds can illuminate a unified framework (Bano, 2025). This integrated approach serves the local requirements of producing high-value evidence-based policy and practice solutions to Bhutan's developmental challenges and positions its unique narratives as a thought leader in sustainable development and mindful governance to global audiences.

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The growth and expansion of the Australia-Bhutan academic nexus

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The Australia-Bhutan Friendship began in 1962 when Ashi Tashi Dorji, the sister of the Royal Grandmother of Bhutan, led a Bhutanese delegation to the Colombo Plan Meeting in Melbourne. Australia wholeheartedly supported Bhutan's membership in the Colombo Plan and offered scholarships to Bhutanese students to study in Australia. Supported by Senator Sir John Grey Gorton and the full endorsement of Prime Minister Sir Robert Menzies, Bhutan's membership to the Colombo Plan was fast tracked. This was historic, as it was the first international organisation that Bhutan was able to join.

Crucially, the Colombo Plan opened the doors for Bhutanese students to come to Australia for higher studies. Therefore, it is only fitting that on this important occasion, we pay special tribute to Ashi Tashi Dorji for her commendable efforts in laying the foundation for the excellent bilateral relations between Australia and Bhutan. We also celebrate the recognition conferred on her by the Commonwealth of Australia when she was decorated with the 'Honorary Officer of the Order of Australia' by the Governor-General in 2018.

Since then, thousands of fortunate Bhutanese, including myself, have come to Australia to obtain a world-class education and upgrade our skills. Seven of the 11 cabinet members, including the Prime Minister and the Foreign Minister of the previous Bhutanese government, had a higher education degree from an Australian university thus clearly reflecting Australia's immense contribution to the human resource development of Bhutan. Therefore, education has been the cornerstone of our bilateral relations.

Today, Australia remains a preferred educational destination for Bhutanese, and with an estimated 37,000 Bhutanese residents in Australia, it hosts the largest Bhutanese diaspora. The Bhutanese community has become an integral and responsible part of Australia's multicultural fabric, serving as a vital bridge for people-to-people relations between our two countries.

Given the growing friendship and cooperation, diplomatic relations between Bhutan and Australia were established in September 2002. Considering the dynamics of the changing bilateral relations and the growing numbers of

Bhutanese in Australia, Bhutan established its Embassy in Canberra that formally opened on 17 December 2021, coinciding with the 114th National Day of Bhutan, thus becoming Bhutan's tenth diplomatic mission abroad. With the establishment of the Embassy, relations with Australia have expanded and the cooperation has intensified at different levels.

Australia-Bhutan relations were further elevated and received a great boost when His Majesty The King accompanied by Her Majesty The Gyaltsuen and Their Royal Highnesses the Gyalseys and Gyalsem visited Australia from 10 to 18 October 2024. During the visit to Sydney, Perth and Canberra, His Majesty met with the Government-General, the Prime Minister and other Australian government officials and business leaders, and the Bhutanese community in Sydney, Canberra and Perth. This was His Majesty's maiden visit to Australia and the first time that a Head of State of Bhutan visited Australia and interacted with the highest leadership of Australia.

The visits of other Royal Family members, two visits by our current Prime Minister, one in 2016 during his previous term, and more recently in March 2025, and the reciprocal official visits by the former Bhutanese Foreign Minister and the Australian Assistant Foreign Minister to mark the 20th anniversary of diplomatic relations in 2022, as well as the reciprocal exchanges of parliamentary visits in 2024 and 2025, have contributed significantly to strengthening our bilateral relations. In addition, there are numerous Bhutanese civil servants who come to engage and learn from their Australian counterparts on a regular basis. Furthermore, several Australian universities not only conduct joint degree programs with counterpart institutes in Bhutan, they also regularly engage in research projects and other programs. Therefore, there is constant engagement between Australia and Bhutan at different levels.

The intensification of the engagement between Australia and Bhutan have also come at a time when Bhutan is undergoing major transformations to build a brighter future for every Bhutanese. For this, His Majesty has initiated reforms in the economy, civil service, finance and education sectors. Additionally, His Majesty has pronounced the establishment of the Gelephu Mindfulness City that will not only bring about

economic prosperity to the country, it will also set a global benchmark for sustainable living in the 21st Century. The main long-term objective of this noble initiative is to gradually build a nation of highly capable people, which will translate to a more prosperous Bhutan.

His Majesty's concern for his people extends beyond Bhutan's borders. His Majesty is deeply committed to the welfare of Bhutanese living abroad. Bhutan's Embassies and Missions, including the Embassy in Canberra, regularly receive directives from His Majesty's Secretariat to always do their best to take care of the welfare of the Bhutanese people wherever they are living in the world.

While His Majesty, the Government, and the bureaucracy are working tirelessly to transform Bhutan into a prosperous modern nation-state, we as citizens, including the diaspora, must also support such change and make contributions wherever possible. Given the large pool of experts and qualified people among the Bhutanese in Australia, there are ample opportunities for the Bhutanese living in Australia to contribute to the ongoing nation building efforts under the Royal stewardship. Since Australian universities also host the largest number of Bhutanese scholars pursuing PhDs and conducting ground-breaking research, it is only befitting that we harness their knowledge, skills and expertise to build Bhutan.

Therefore, to bring together Bhutanese scholars from diverse fields, and to offer them the platform for academic engagement within themselves, and have an avenue for brain-circulation through which they can contribute to developments in Bhutan, the Australia-Bhutan Research Conference (ABRC) was initiated by the Royal Bhutan Embassy. The ABRC aims to create a collaborative platform that connects higher-degree research students, researchers, and academic professionals from Bhutan and Australia for cross-pollination of ideas and exchange of knowledge; showcasing research outcomes; fostering stronger academic, professional networks and institutional linkages; explore possibilities for commercialisation of research; and strengthen people-to-people links and bilateral ties between Australia and Bhutan.

The first ABRC was organised on 4th and 5th December 2023 at the University of Sydney under the theme 'Intersections of culture, climate, and science: Innovations from Bhutanese research in Australia'. The Conference showcased the remarkable contributions of Bhutanese scholars in Australia while fostering a conducive environment for cross-cultural exchange, innovative ideas, and potential collaborations.

Following the success of the first Conference, the second ABRC was organised by Edith Cowan University in Perth in 2024

on the theme 'Interdisciplinary perspectives on emerging topics – bridging innovations between Australia and Bhutan' from 4th to 6th December 2024. This Conference reflected the dynamic landscape of contemporary challenges and opportunities faced by Bhutan as it navigates towards economic self-sustainability and the cultivation of a knowledge-based society. In totality, the ABRC serves as a valuable platform for sharing knowledge, exchanging ideas, and collaborating on innovative solutions that can also contribute to the many transformations underway in Bhutan. For the Bhutanese academics in Australia, it allows them to engage in nation building in spirit and purpose.

The Bhutanese community is widely admired in Australia for its sincerity, hard work, trustworthiness and reliability. Also, Australians are equally impressed by the unity, close-knit bonds, and genuine care that Bhutanese people show for one another. These are admirable qualities that reflect positively on the Bhutanese diaspora and are a source of great pride for Bhutan. During His Majesty The King's visit to Australia, he reiterated the importance of supporting one another and joining hands to shoulder the responsibility of national endeavours. I firmly believe that the Bhutanese community in Australia is well-positioned to answer this call and make a positive contribution to Bhutan's transformation.

The Bhutanese diaspora in Australia has effectively become a brain bank of an exceptionally qualified and diverse pool of individuals - PhD holders, educationists, engineers, IT specialists, architects, medical doctors, nurses, childcare and aged care specialists, entrepreneurs, and support workers. With access to world-class education and training in Australia, along with valuable exposure and experience, our fellow citizens have developed a wealth of skills and expertise that can contribute significantly to Bhutan's development.

To this end, inspired by the ABRCs of 2023 and 2024, a group of Bhutanese scholars in Australia have taken up the task to launch the *Bhutan Insights Journal* to provide a vital public space dedicated to exploring synergies between Bhutanese experiences and global perspectives, aiming to reshape knowledge, deliberate ideas and provide a deeper understanding of sustainable growth. Aligned with the visionary initiatives of His Majesty The King, including the Gelephu Mindfulness City, the Journal provides an innovative forum for interdisciplinary research. It will be a critical conduit for sharing valuable insights grounded in global foresight tailored to local contexts. I am confident that the Journal will encourage robust academic discourse, promote a vibrant intellectual network, contribute to the shaping of national policies, and inspire constructive actions towards realising a happier Bhutan and a more harmonious world.



Drivers, Trajectories and Policy Implications of Rural-Urban Migration in Bhutan

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ABSTRACT

Globally, there has been an increase in urbanisation, which is primarily caused by the rising trend of rural-urban migration. One such country is Bhutan, where 38% of its population migrated from rural to urban areas between the period 2005 to 2017. Based on data from Bhutan's second population and housing census conducted in 2017, this study determines that a majority of the migrants are educated and belong to the productive age group (19-30 years). A macro/district level analysis of socio-economic variables such as income, economic activity, education, health, agriculture and infrastructure reveals that, except for the difference in the length of roads (that is, an increase in the road length was associated with reduced migration), none of the other socio-economic variables were statistically significant. The findings of this study provide insight into the characteristics and the underlying drivers of internal migration in Bhutan.

Keywords: *rural-urban migration, urbanisation, rural development, Bhutan*

INTRODUCTION

Urbanisation is increasing at a rapid pace across the world, primarily, caused due to internal migration. The number of internal migrants worldwide in 2015 was 740 million, and by 2050, it is projected that two in every three persons will live in urban areas (IOM, 2021). An increase in urbanisation or the urban share of the total population can be explained by natural growth, reclassification of areas from rural to urban and rural-urban migration. Of these numerous factors, the rural-urban migration explanation has been identified as the most important contributor to urban growth in many developing countries (Buhaug & Urdal, 2013). Determining the factors that influence the scale, direction, and demographic characteristics of internal migration is fundamental to an understanding of the urbanisation process. Historically, in Bhutan, the practice of subsistence farming was the dominant form of economic activity for its people. With rapid economic development, there has been a shift from the traditional agricultural sector to the industrial and services sector (Kamei, et al., 2021). Therefore, people leave their villages to pursue economic opportunities in the urban areas. The government, through its policy of Gross National Happiness, strives to balance economic with other developmental goals, which include a focus on improving community vitality and balanced living standards

across the country (Ura et al., 2012; Thinley, 2017; Thinley & Hartz-Karp, 2019; Ugyel et al., 2023). Nevertheless, rural to urban migration continues to feature as a prominent problem in Bhutan, with the numbers increasing over the years (Gosai & Sulewski, 2020).

Our study seeks to understand the process and implications of rural to urban migration in Bhutan and focuses on two major interrelated components. The first part examines the characteristics and trends of internal migration in Bhutan. In the second part, we analyse the factors that influence rural-urban migration in Bhutan. Currently, more than half (62%) of Bhutan's population lives in rural areas (NSB, 2017). In our study that compares the years 2005 and 2017, we determined that Bhutan has a high rate of internal migration at 38.6%. We also observe that most migrants (that is, 33.8% of the total migrants) belonged to the age group 19-30 years and had a qualification of a high school degree. The combination of a high internal migration rate of a productive and skilled cohort of migrants has major demographic and policy implications for Bhutan. This paper analyses the socio-economic factors that influence internal migration, such as income, economic activity, education, health, agriculture and infrastructure (particularly roads). Although there are some studies that examine patterns and trends of rural

to urban migration in Bhutan (for e.g., Chophel, 2020; Gosai & Sulewski, 2014), there is a paucity of information examining the drivers that influence internal migration in the country. Given the increasing trend of rural to urban migration in Bhutan, we seek to determine if it is sensible for the government to continue the pursuit of its policy of ensuring “balanced regional development” within the country. Or if it might be better off pursuing targeted policy interventions that best suit its demographic and economic contexts.

Bhutan is still a small lower-middle-income country with a GDP per capita income of just US\$3,839 in 2023 (World Bank, 2025). Bhutan is administratively divided into 20 *dzongkhags* (districts) (refer to Figure 1) and 205 *gewogs* (sub-districts) with an area of 38,394 square kilometres. As of 2019, there were 756,129 people with a sex ratio of 110 males to 100 females. The overall life expectancy is 70.3 years with a median age of 26.5 years, and more than half (62%) of the population lives in rural areas (NSB, 2017). With increasing trends of internal migration constrained by finite human and financial resources, the Bhutanese government needs to ensure that its investments are optimally utilised. Therefore, an understanding of the dynamics of rural to urban migration in Bhutan and the factors that lead to internal migration is important. The findings of this study will be important for other similar developing countries that are also facing a trend of high internal migration rates. As the world has entered “the age of migration”, the number of migrants reached 1 billion in 2015, including 740 million internal migrants worldwide (IOM, 2021). With rapid economic development, internal migration has increased significantly globally. The increase is visible within Bhutan’s neighbourhood. There were 42 million economic internal migrants in India in 2011 (Rajan & Bhagat, 2021), 2.4 million internal migrants in Nepal during the same period (Suwal, 2014), and China reported 245 million

internal migrants in 2017 (Shi et al., 2020).

Nature and Characteristics of Internal Migration

Rural and urban populations are often defined by ‘residence in settlements above or below a certain size’, and the principal activities of the rural population is agriculture and urban population engage in industrial and service activities (Tacoli, 1998: 147). There are differences in how countries interpret rural and urban areas depending on the settlement boundaries, population movement and economic activities. The definitions also differ based on the stage of development and urbanization of countries. A “rural” area can have multiple interpretations ranging from: peripheral villages that are located outside of the influence of the metropolitan region to intermediate rural regions surrounding the metropolitan regions that are closely integrated with each other (Li et al., 2019). Internal migration can be understood as the movement of population from rural to urban areas. In the context of study and in relation to Bhutan, “internal migration” will be defined as people residing in districts other than their birth district for ≥ 6 months. It will be important here to clarify that in Bhutan although people may be born or residing in one particular district, their civil and census registration is often registered in the district of their ancestral origin. Based on this clarification, we calculate the net internal migration in Bhutan by subtracting those living in the residence district from the district of birth.

Rural-urban migration can be explained through two approaches, the structuralist and neo-classical approaches. According to Tacoli (1998), the structuralist approach to migration portrays migrants as ‘victims rather than rational decision makers’ and movements are determined by social, historical and dialectic processes. In such circumstances, rural to urban migration can be seen as survival strategies due to civil conflicts and impacts of climate change (such as, drought, soil quality deterioration and deforestation) (Barrios et al. 2006). The structuralist approach differs from the neo-classical perspective where decisions are made rationally in response to certain “push” factors in source areas to perceived “pull” factors in the destination areas. In such instances, individuals act ‘rationally’ to choose to migrate because of the gaps in economic and other opportunities that urban areas provide compared to the rural areas (Tacoli, 1998). In our study, we take a neo-classical approach to rural-urban migration, and examine the demand pull and supply push factors in Bhutan. It is generally assumed that modern sectors of production which are located in urban areas have higher rates of productivity and monetary rewards than rural agricultural areas (Barrios et al. 2006).

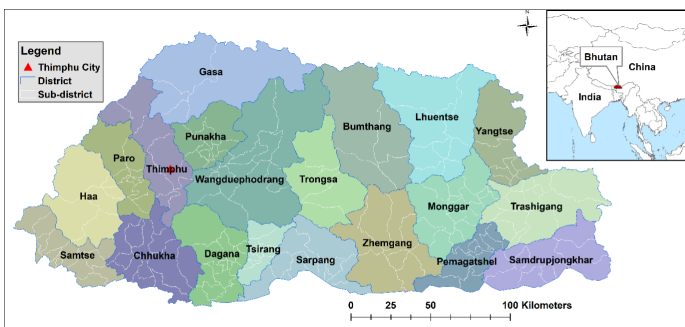


Figure 1 Administrative map of Bhutan

The key factor that rural-urban migration responds to are economic incentives and better economic opportunities in the cities are a major pull factor for internal migration (Brueckner & Lall, 2015). Supply push factors of internal migration point to factors other than productivity improvements that influence population movements to cities. Some of the common supply push factors are due to: increase in population pressure in the rural areas (Buhaug & Urdal, 2013); displacement of population due to civil conflicts (Barrios et al. 2016); and climate change (Brueckner & Lall, 2015). Such forms of supply push factors lead to deterioration of livelihoods and scarcity of resources, such as freshwater and cropland, in the rural areas. One of the most obvious reasons for migration from rural to urban areas is for economic reasons. As wage rates in the urban areas increase relative to the rural areas, people will move to the urban areas in search for better economic opportunities. These better economic opportunities are a result of location of people and firms in cities and industrial clusters and are a major pull factor that provides the main motivation for internal migration (Brueckner & Lall, 2015). Economic factors, such as, market access, cost of communication, job opportunities, better education and health care, social services and infrastructure act as major pull factors of rural populace into the cities and urban centres (Buhaug & Urdal, 2013). Furthermore, changes in the economy with the applications of new knowledge-intensive technologies has altered the rural development space, and such forms of capital-intensive technology have replaced the need of local labour force (Li et al., 2019). On the other hand, some of the economic push factors are friction in land markets as a lack of land titling and weak property rights, personal insecurity, poverty and declines in agriculture (Buhaug & Urdal, 2013; Brueckner & Lall, 2015; Lagakos, 2020). An interesting dynamic as a result of rural-urban migration is the crucial role that gender and generation plays. It is commonly assumed that the number of men migrate more than women, and as a result women take over traditionally male tasks in agricultural production increasing their workload (Brauw et al., 2021).

METHODS

This study uses the second Population and Housing Census of Bhutan (PHCB 2017) provided by the National Statistical Bureau (NSB) of Bhutan. PHCB 2017 was conducted throughout the country in June 2017 by following the international statistical standard procedures and practices. During the census enumeration, many government officials were involved to support and achieve the enumeration within the stipulated reference period. NSB, upon the completion of census enumeration, conducted

post census activities such as data entry, editing, processing, tabulation, analysis and evaluation of data for several months. The census results were disseminated through publication of an official report. A series of many other auxiliary publications based on the results of main census were made available both through hard and electronic media for wider use by planners, policy makers, international organizations and researchers (including data for this study). From a total population of 735,553 in 2017, 92.7% (681,720) were Bhutanese and 7.3% (53,833) were other nationals living in the country. The district of birth was missing for 2,012 people which was removed from the analysis leaving a total of 679,708 individual records. The outcome of interest was rural-urban migration is defined as people residing in districts other than their birth district for ≥ 6 months. The district of birth is hence described as the origin district. We calculated net internal migration by subtracting those living in the residence district from the district of birth. All socio-demographic variables including age, sex, marital status, education, and district of origin were entered in the full model. Multivariable logistic regression was undertaken and adjusted odds ratios (AOR) with 95% CI were used to determine the correlates of each independent variable. A value of $p \leq 0.05$ was considered statistically significant for the multivariable model. All explanatory variables in the multivariable model were tested for multicollinearity using a variance inflation factor (VIF). VIF < 10 was considered a good fit for regression analysis.

We examined a number of area level socio-economic variables to analyse the factors that influence rural urban migration in Bhutan. To make consistent comparisons, we sought information from the statistical yearbook released by NSB each year. Except for those factors specifically mentioned below, all data were based on the Statistical Yearbook 2005 (SYB, 2005) and Statistical Yearbook 2017 (SYB, 2017): for health, we compared the number of health facilities (for e.g., number of hospitals, basic health units), family planning (for e.g., items such as vasectomy, condoms distributed); for education, we compared the number of education facilities; for agriculture, we examined the area of land holding; for economic activity, we compared the number of firms (both by type and by size of firms); and for roads, we compared the length of roads (in this case we had to use data from SYB 2020 as there was no district level data in SYB, 2017; SYB, 2018; and SYB, 2019). For the variables on finance and poverty, we had to use different sources of information. Based on the government's five-year plan document (9th Five-Year Plan (2002-2007) and 11th Five-Year Plan (2013-2018), we compared the five-year plan outlay for each district (only capital expenditure outlay was considered as the current expenditure outlay was not possible to

calculate). To compare the poverty rates, the poverty gap index for the years 2007 and 2017 from the Poverty Analysis Report for those years published by NSB were used. While all efforts were made to have similar data for the years 2005 and 2017 (that is, the years when the two population censuses were conducted) data was always not available. In such instances, we used the closest year that similar data was available. For instance, for poverty gap index we used the years 2007 and 2017 data, for firm type and size data we used 2003 and 2017 data, for length of roads and educational facilities we used 2005 and 2020 data, for number of health facilities we used 2004 and 2016 data, for landholdings we used the 1995 and 2010 data and for the capital expenditure outlay we used the 9th Five-Year Plan (2002-07) and 11th Five-Year Plan (2013-18) data. The area level drivers of rural urban migration were assessed using a linear regression. All analysis were conducted in STATA Version 16.1 (Stata Corporation, Stata

Statistical Software). The study map was created with ArcMap 10.5.1 (ESRI, Redlands, CA).

RESULT

The findings from our study reveal that 262,641 people (38.6% of the population) migrated during the period 2005 - 2017. There were nearly an equal number of males (51.4%, 135,059) and females (48.6%, 127,582) migrants ($n=262,641$). Most migrants belonged to the 19-30 years age group category (33.8%, 88,703), followed by the 0-18 years age group (22.6%, 59,287) category. Persons in the 41-50 years age group migrated the least (10.8%, 28,304). Fifty-three percent (139,627) of the migrants were married or living together, and 42.0% (110,277) were single. More than one-third (86,403) of the migrants had an education up to higher secondary. Twenty percent (53,210) and 28.5% (74,943) were educated up to primary school and no formal education,

Table 1 Descriptive table of total and migrated population

Variables		Total (N= 679,708)		Migrated (n=262,641)	
		Frequency	Percent	Frequency	Percent
Sex					
	Female	338,861	49.9	127,582	48.6
	Male	340,847	50.1	135,059	51.4
Age					
	0-18	240,999	35.5	59,287	22.6
	19-30	161,698	23.8	88,703	33.8
	31-40	104,666	15.4	53,990	20.6
	41-50	66,817	9.8	28,304	10.8
	51-112	105,528	15.5	32,357	12.3
Marital status					
	Single	337,572	49.7	110,277	42.0
	Married/living together	310,228	45.7	139,627	53.2
	Divorced/separated	16,638	2.5	7,432	2.8
	Widow/er	15,135	2.2	5,197	2.0
Education					
	No education	270,822	39.8	74,943	28.5
	Primary	163,838	24.1	53,210	20.3
	Up to higher secondary	164,222	24.2	86,403	32.9
	VTI	3,759	0.6	2,992	1.1
	Diploma	8,426	1.2	6,545	2.5
	Bachelor and higher	46,478	6.8	31,744	12.1
	Others	22,163	3.3	6,804	2.6

respectively (refer to Table 1).

The destination of most migrants was Thimphu (30.2%, 79,313), Chhukha (10.6%, 27,758), Paro (8.2%, 21,574) and Sarpang (7.9%, 20,723), respectively. The origin of most migrants was Trashigang (12.1%, 31,869), Thimphu (7.8%, 20,463), Monggar (7.5%, 19,778) and Samtse (7.1%, 18,645) (refer to Figure 1 which shows the administrative map of Bhutan and Figure 2 which shows the proportion of origin and destination of migrants by districts in Bhutan).

The main drivers of migration were: family reasons (37.2%, 125,089), education (17.5%, 58,656), employment (18.0%,

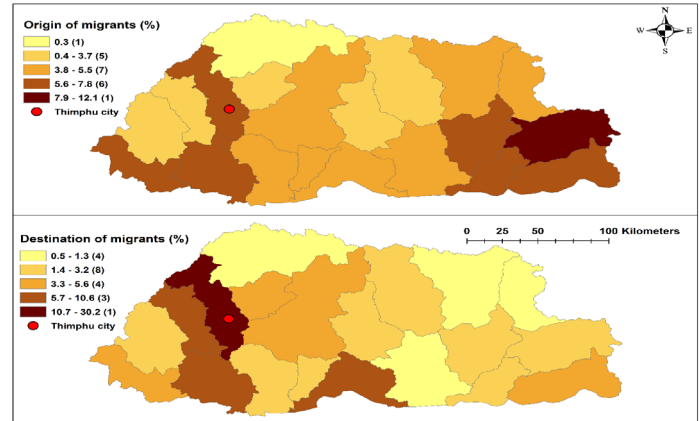


Figure 2 Proportion of origin and destination of migrants by districts in Bhutan

Table 2 Migration reasons by age group

Reason for migration	Age groups (years)				
	0-18	19-30	31-40	50	51-112
Never moved	139,246 (45.3)	46256 (15.0)	34,200 (11.1)	28777 (9.4)	59,208 (19.2)
Employment	888 (0.3)	30,077 (9.8)	17,274 (5.6)	7,187 (2.3)	4,675 (1.5)
Education	33,480 (10.9)	21,280 (6.9)	2,485 (0.8)	739 (0.2)	519 (0.2)
Training	369 (0.1)	3,740 (1.2)	378 (0.1)	103 (0.0)	57 (0.0)
Marriage	226 (0.1)	11,555 (3.8)	9,451 (3.1)	4,969 (1.6)	5,549 (1.8)
Family reasons	59,429 (19.3)	26,316 (8.6)	16,117 (5.2)	9,090 (3.0)	13,708 (4.5)
Transfer of workplace	329 (0.1)	7,758 (2.5)	13,699 (4.5)	8,184 (2.7)	3,932 (1.3)
Resettlement	346 (0.1)	1,400 (0.5)	1,917 (0.6)	2,035 (0.7)	5,600 (1.8)
Natural Calamities	47 (0.0)	99 (0.0)	94 (0.0)	91 (0.0)	216 (0.1)
Security	40 (0.0)	160 (0.1)	172 (0.1)	123 (0.0)	194 (0.1)
Health	408 (0.1)	828 (0.3)	559 (0.2)	446 (0.1)	1,857 (0.6)
Business/official tour	73 (0.0)	2,098 (0.7)	2,332 (0.8)	1318 (0.4)	1,027 (0.3)
Retirement	20 (0.0)	273 (0.1)	550 (0.2)	685 (0.2)	3,062 (1.0)
Tourist	3 (0.0)	29 (0.0)	20 (0.0)	7 (0.0)	14 (0.0)
Visiting only	3,179 (1.0)	4,971 (1.6)	2,210 (0.7)	1179 (0.4)	2,597 (0.8)
Other	636 (0.2)	2193 (0.7)	1,494 (0.5)	865 (0.3)	15,92 (0.5)
Don't know	171 (0.1)	337 (0.1)	214 (0.1)	132 (0.0)	315 (0.1)

60,369), transferred for work (10.1%, 33,980), and marriage (9.5%, 32,069) (refer to Table 2).

Table 3 shows the multivariable logistic regression of migration with the socio-demographic drivers. In this table, males were 1% (adjusted odds ratio [AOR]= 1.01, 95% confidence interval [CI] 0.997, 1.018) more likely to migrate compared to females but was not statistically significant. People in the age groups of 19-30 years (AOR=2.29, 95% CI 2.251, 2.333), 31-40 years (AOR=2.47, 95% CI 2.414, 2.529), 41-50 years (AOR=2.09,

Table 3 Multivariable logistic regression of migration with the socio-demographic drivers

Variables	Adjusted multivariable logistic regression		
	AOR	95%CI	p-value
Sex			
Female	Ref		
Male	1.01	0.997, 1.018	0.186
Age groups (years)			
0-18	Ref		
19-30	2.29	2.251, 2.333	<0.001
31-40	2.47	2.414, 2.529	<0.001
41-50	2.09	2.032, 2.139	<0.001
51-112	1.50	1.461, 1.537	<0.001
Marital status			
Single	Ref		
Married/living together	1.27	1.246, 1.292	<0.001
Divorced/separated	1.25	1.207, 1.298	<0.001
Widow/er	1.48	1.426, 1.546	<0.001
Education			
No education	Ref		
Primary	1.88	1.848, 1.906	<0.001
Up to higher secondary	3.38	3.333, 3.437	<0.001
VTI	7.95	7.333, 8.625	<0.001
Diploma	7.61	7.218, 8.029	<0.001
Bachelor and higher	5.01	4.894, 5.132	<0.001
Others	1.09	1.057, 1.125	<0.001

Districts			
Thimphu	Ref		
Bumthang	1.37	1.317, 1.424	<0.001
Chhukha	1.24	1.208, 1.275	<0.001
Dagana	1.80	1.742, 1.851	<0.001
Gasa	0.81	0.743, 0.890	<0.001
Haa	2.24	2.148, 2.331	<0.001
Lhuentse	2.46	2.380, 2.544	<0.001
Monggar	1.91	1.863, 1.965	<0.001
Paro	1.08	1.048, 1.116	<0.001
Pema Gatshel	2.27	2.203, 2.337	<0.001
Punakha	1.68	1.623, 1.736	<0.001
Samdrup Jongkhar	1.74	1.693, 1.792	<0.001
Samtse	1.06	1.031, 1.085	<0.001
Sarpang	1.44	1.399, 1.485	<0.001
Trashigang	2.41	2.350, 2.469	<0.001
Trashy Yangtse	2.41	2.334, 2.488	<0.001
Trongsa	2.15	2.067, 2.231	<0.001
Tsirang	2.24	2.169, 2.311	<0.001
Wangdue Phodrang	1.59	1.547, 1.643	<0.001
Zhemgang	2.89	2.798, 2.978	<0.001

AOR- adjusted odds ratio; CI- confidence interval
VTI- Vocational Training Institute

95% CI 2.032, 2.139) and >50 years (AOR=1.5, 95% CI 1.461, 1.537) were more likely to migrate compared to children <19 years. Those who were married or living together were 27% (AOR=1.27, 95% CI 1.246, 1.292) more likely to migrate compared to those who were single. Similarly, divorced/ or separated and widow or /widowers was 25% (AOR=1.25, 95% CI 1.207, 1.298) and 48% (AOR=1.48, 95% CI 1.426, 1.546) respectively, more likely to migrate. All levels of education were associated with higher migration compared to those who did not receive formal education. Those with a vocational training (that is, VTI trained), diploma, bachelor and higher degrees and those educated up to higher secondary were nearly 8 times (AOR=7.95, 95% CI 7.333, 8.625), 8 (AOR=7.61, 95% CI 7.218, 8.029), 5 (AOR=5.39, 95% CI 5.257, 5.530) and 5 times (AOR=5.01, 95% CI 4.894, 5.132), respectively, more likely to migrate compared to those without formal education. People from all 18 districts migrated to Thimphu District except for Gasa District. The migration was highest from Zhemgang (AOR=2.89, 95% CI 2.798, 2.978), followed by Lhuentse (AOR=2.46, 95% CI 2.380, 2.544), Trashigang (AOR=2.41, 95% CI 2.350, 2.469) and Trashi Yangtse (AOR=2.41, 95% CI 2.334, 2.488), respectively.

There was out-migration from Thimphu District to Gasa District (AOR=0.81, 95% CI 0.743, 0.890).

In Table 4, we show the summary of the key socio-economic factors that influence rural to urban migration in Bhutan. Comparing the total changes over the period 2005 and 2017, there has been a decrease in the average poverty gap index for all 20 districts from 6.04 to 1.96. While there was a reduction in the number of firms by type (that is, whether it is sole proprietorship, partnership or company) from 9,080 in 2003 to 3,440 in 2017, the number of firms by size (that is, whether it is small, medium or large) has doubled from 4,036 to 4,392 during the same period. There was also a reduction in the size of land holdings by one-third over the fifteen years from 1995 to 2010. Although the total financial outlay increased from Nu 70 billion in the 9th Five-Year Plan (2002 – 2007) to Nu 213 billion in the 11th Five-Year Plan (2013 – 2018), the capital expenditure outlay decreased, there was a decrease in the five-year plan capital outlay for the dzongkhags from Nu.9.3 billion to Nu.9 billion. Other increases were in the number of educational institutes (from 619 in 2005 to 877 in 2020), the number of health facilities (from 681 in 2004 to 901 in 2016) and the length of roads in the districts (from 4,392

Table 4 Summary main socio-economic changes over different time period

Characteristics	Year	Total	Std. dev.	95% CI	
Average poverty gap index in each district£	2007	6.04	20.93965	76.87281	164.5272
	2017	1.96	9.459498	19.40104	58.99896
Number of firms (by type) in each districtφ	2003	9080	3378.101	2009.554	16150.45
	2017	3440	1325.083	666.57	6213.43
Number of firms (by size) in each districtφ	2003	4036	574.1535	2812.221	5259.779
	2017	8172	945.536	6156.638	10187.36
Length of roads in each district¥	2005	4392.504	519.4862	3305.207	5479.801
	2020	18264.2	1807.988	14480.04	22048.36
Number of educational institutes in each district*	2005	619	61.08622	491.1451	746.8549
	2020	877	92.51202	683.3701	1070.63
Number of health facilities in each district*	2004	681	90.11659	492.3838	869.6162
	2016	901	94.82921	702.5202	1099.48
Size of landholdings in each district in hectares**	1995	314282.8	48832.21	212075.8	416489.8
	2010	112550.6	15792.64	79496.23	145605
Difference in the five-year capital budget outlay for each district	2002-07	9318.32	862.2384	7513.634	11123.01
	2013-18	9000	381.7816	8200.922	9799.078

CI- confidence interval

£ difference between 2017 and 2007 (in absolute numbers)

φ difference between 2017 and 2003

¥ difference between 2020 and 2005

* difference between 2016 and 2004

** difference between 2010 and 1995

in 2005 to 18,264 km in 2020).

Using the information from Table 4, we ran a regression analysis of these socio-economic variables to identify the macro drivers of migration. There were positive correlations between migration, on the one hand, and on the other hand: poverty level, number of educational institutes and health facilities and size of landholdings under agriculture. And, there were negative correlations between migration, on the one hand, and on the other hand: the number of firms (both by type and size), lengths of road and capital budget outlay. However, the only variable that was a significant factor was the length of roads, which could be inferred as the increase in the length of roads leads to a reduction in migration (Coef= -0.56, 95% CI -1.056, -0.144).

changed over the years and is mostly done manually with little or no mechanisation (Chhogyel & Kumar, 2018). The introduction of mechanisation is unsuccessful partly due to difficult terrain presented by Bhutan's mountainous topography. Second, except for a few western districts (such as Thimphu, Paro and Chhukha), access to the market to sell farm produce is limited. As a result, farming is not a financially viable option in other districts.

The origin of most of the migrations was from the eastern part of Bhutan and the destination was Thimphu District where the capital city is located. More than 17.8% of the population in Thimphu were living there for employment purposes. Even though there was migration from western districts to Thimphu,

Table 5 Regression results of migration with socio-economic variables

Net migration	Coef.	Std. Err.	t	p-value	95% CI	
Poverty gap in each district£	0.027	0.156	0.17	0.865	-0.316	0.371
Number of firms (by type) in each district	-0.004	0.028	-0.16	0.874	-0.065	0.056
Number of firms (by size) in each district φ	-0.195	0.219	-0.89	0.393	-0.677	0.287
Length of roads in each district φ	-0.617	0.250	-2.47	0.031	-1.168	-0.067
Number of educational institutes in each district¥	0.081	0.071	1.14	0.278	-0.075	0.238
Number of health facilities in each district ¥	0.010	0.072	0.15	0.887	-0.148	0.169
Size of landholdings in each district*	0.014	0.018	0.78	0.45	-0.025	0.053
Difference in the five-year capital budget outlay for each district **	-0.029	0.074	-0.39	0.701	-0.191	0.133
Constant	115.751	34.950	3.31	0.007	38.827	192.676

CI- confidence interval

£ difference between 2017 and 2007 (in percentage change with 2007 as base)

φ difference between 2017 and 2003

¥ difference between 2020 and 2005

* difference between 2016 and 2004

** difference between 2010 and 1995

Trends in Rural-Urban Migration in Bhutan

Bhutan is experiencing a high rate of internal migration due to rapid urbanization and economic development. Almost one-third of the population migrated during the study period. Globally migration has been driven by pull factors (Castelli, 2018). One of the pull factors in Bhutan seems to be the demand for jobs. Historically, the rural population in Bhutan mostly engaged in subsistence farming. With the introduction of modern education in Bhutan, the younger age groups generally aspire to get employment elsewhere rather than take up farming. There are a number of plausible reasons for this drive. First, farming in Bhutan has not

the number of migrants was smaller compared to districts in eastern Bhutan. Trashigang and Monggar reported the highest migration numbers. This is similar to the finding reported by Gosai & Sulewski (2020), and the pattern of migration has not changed since 2005. This is probably driven by employment opportunities in Thimphu and neighbouring districts where most government institutions and other financial organizations are located.

Compared to age group <19 years, older people are more likely to migrate. Other main drivers of migration were education-related factors with those with higher education and,

vocationally trained more likely to migrate. In this study, we find education was associated with migration, which is in concordance with other studies related to internal migration (Li et al., 2019; Marchetta & Sim, 2021). People with a university degree or higher are likely to migrate to other districts for employment because there are limited work opportunities commensurate to the education and skills in most districts except for Thimphu, Paro and Chhukha. However, the effect size of migration was highest among those with vocational and diploma qualifications.

Thimphu, Chhukha, Paro and Sarpang districts were the most common destinations while most migrants originated from Trashigang, Thimphu, Monggar and Samtse districts. Interestingly, we also find there was out-migration from Thimphu District to Gasa District, which could be those people from the part of rural Thimphu migrating to Gasa. There was an increasing trend of migration with age but most migrants were reported in the age group of 19-30 years. The pull factor could be the easy accessibility of job in the destination district (Thimphu). However, negative effect on the origin district is the loss of workforce particularly in the agricultural sector. As Bhutan government is pursuing a national goal of food self-sufficiency (GNHC, 2019), large number of migrants in this economically productive age group are unlikely to support this national goal. Despite the extension of modern amenities including roads, electricity, and mobile network, there are little signs of slowing the trend of migration in the economically productive age groups (Gosai & Sulewski, 2020).

An interesting result from this study is the migration from Thimphu to Gasa districts. This could be due to improved economic opportunities in Gasa. Cordyceps, or the caterpillar fungus, a restricted species was legalized for collection in 2004 and has become a major source of income for the high-altitude communities in western Bhutan including Gasa (Wangmo & Wangchuk, 2008; Wangchuk & Wangdi, 2015). The collection and sale of Cordyceps is a lucrative business with households fetching an annual income of up to US\$24,500 (Wangchuk et al., 2012). This economic opportunity is a probable reason for people moving from Thimphu to Gasa.

Drivers of Rural-Urban Migration

Unbalanced regional development has led to internal migration around the world (Li et al., 2019). A similar phenomenon is responsible for internal migration in Bhutan. Generally, there is no record of disparity of welfare resources for migrants in Bhutan unlike in other countries, such as in China where resources are allocated to individuals based on the household registration system (hukou) (Chan & Buckingham, 2008). Nevertheless,

there are other social consequences due to migration. The origin districts face an acute shortage of workforce leading to most farms remaining fallow, which has been continuing for some time now (FAO, 2022). Wild animals living in these fallow lands are encroaching on other nearby farms and often destroying crops. Furthermore, destination districts for migrants are crowded with enormous social pressure including affordable housing, health and education. Affordable housing in the capital city Thimphu (destination district) continues to be a challenge (Dendup, 2016). In addition, migrant related health issues as a result of movement of the population have been documented (Green et al., 2015; Johnson & Taylor, 2019; Thapa et al., 2019; Liao et al., 2020; Groene & Kristiansen, 2021). Therefore, it is important to get a proper understanding of some of the key drivers that influence internal migration in Bhutan.

There continues to be a debate about the causes or drivers of migration (Black et al., 2022). This could be because the decision to migrate is often multifaceted and a response to various factors (Selod & Shilpi, 2021). Some of the common factors are improved income, education quality or health services available in the city or negative income shocks in the rural areas (Selod & Shilpi, 2021). Other factors that influence internal migration are lack of adequate services in rural areas, such as location of schools, health care centres and other public amenities (Brueckner & Lall, 2015). We examine some of these factors in the context of whether or not they influence rural-urban migration in Bhutan. The factors that we considered to determine their effect on whether or not people migrated from rural to urban areas in Bhutan were: income (poverty gap index of the districts), economic opportunities (land holdings and the number of firms by type and size), infrastructure (number of educational institutes and health centres and length of road in each district) and government investment (five-year capital budget outlay).

Table 4 shows the results of the regression results of the analysis. Interestingly, none of the variables except for difference in the length of roads in each district was statistically significant. The length of roads in 2005 was 4,393 km and increased by almost four times to 18,264 km in 2020. However, the increase in the road length was associated with reduced migration. Two conclusions can be drawn from these findings. Firstly, it does not matter for rural-urban migration in Bhutan, whether or not, more or less educational institutes, health facilities, economic establishments or government investments are built and set up. Secondly, in a situation where there are more roads built, there is a decrease in the rate of rural to urban migration taking place in Bhutan. One could assume that with wider road connectivity, rural livelihoods are enhanced as it provides access to the market

as well as to services. In a study examining the impact of roads to wealth in Bhutan, Nidup (2016) finds that access to road benefited the poorer sections of the rural societies, possibly due to increased opportunities for employment and trade. However, the same study also concludes that the impact of road connectivity is not the same for other income categories. In fact, road connectivity had a detrimental impact of the highest income category. These findings have significant policy implications for Bhutan. One of Bhutan's development goals is to achieve a balanced regional development across Bhutan. With the introduction of democracy in Bhutan in 2008, governments ensure that funds reach all areas of the country, with an emphasis on farm roads which forms an important part of the manifesto of most political parties in Bhutan. The findings of a special audit conducted by the Royal Audit Authority on farm roads in Bhutan note that the government has consistently sought to increase road connectivity, particularly to enhance rural livelihood (RAA, 2010). However, the same study concludes that construction and maintenance of roads are difficult and costly. In a more recent report by the Royal Audit Authority, it was found that there are several cases of wastages and abandonment of farm roads due to inadequate assessment of needs (RAA, 2022). For instance, it was reported that 19 farm roads in 13 districts that cost approximately Nu 41 million to construct have remained unutilised (RAA, 2022). Perhaps to a lesser extent, but similar conclusions could be drawn for other facilities, such as education institutes and health centres.

Our findings have several significant and inter-related set of policy implications given the context of ongoing and increasing rural-urban migration in Bhutan. Firstly, if the government does decide to continue along the path of ensuring balanced regional development and enhancing rural livelihood the government's limited financial resources may not be optimally utilised. The continued increase in the construction of roads is a good example. Furthermore, this could be subject to manipulation. As a case in point, Wangchuk et al. (2023) found in their study of rural depopulation and empty rural houses in Bhutan that local government officials manipulated the number of *gungtongs* (although Wangchuk et al. (2023) point to various understanding and meaning of the term, it can be closely associated with empty houses and farmland abandonment) by either underreporting or overreporting so that they were not questioned by the government or to secure more funds as the case may be. Wangchuk et al. (2023) also make an important point regarding the danger of rural depopulation, not just in Bhutan but also in neighbouring mountainous countries such as India, Nepal and China where farmlands are increasingly being abandoned

can lead to vulnerability of food security. Secondly, can or should rural-urban migration be reduced in Bhutan? While it is in the government's best interest to develop the country in a balanced manner, according to Black et al. (2022:15), whether people migrate or not is often 'not exactly a choice'. As such, public policies that try and widen choice often do not succeed because they do not account for the uncertainties and unpredictability of life trajectories (Black et al., 2022).

Bhutan's rural-urban migration experiences present insights to the broader migration literature. For instance, the finding that road length negatively correlates with migration provides an interesting departure from conventional assumptions that infrastructure enhances mobility. This could, perhaps, provide evidence of how connectivity moderates rural dependency rather than simply enabling migration. While our paper focused on the neo-classical approaches to examining migration, there is certainly, the space and the need to take a nuanced structuralist approach to examine rural-urban migration in Bhutan. Typical structuralist features that explain migration, such as, survival strategies due to civil conflicts and impacts of climate change may not be relevant for Bhutan. Nevertheless, a deeper (a qualitative study, which is beyond the scope of this paper, will be appropriate) analysis why a country that pursues inclusive policies (such as, its holistic Gross National Happiness development paradigm) continues to experience out-migration—not only to urban areas in Bhutan, but also to international destinations (Tobden et al., 2024). Clearly, the government is making all attempts to minimise rural-urban migration by continuously funding development activities in the rural areas. However, our study shows that such policies and strategies are not working, and people are mostly responding to economic incentives, both at the national and international levels. It is precisely, why, a mega project, such as the Gelephu Mindfulness City, is attempting to address: firstly, to create sufficient economic opportunities to retain its people from leaving the country; and secondly, to create competitive opportunities to attract Bhutanese who have left the country to return.

CONCLUSION

This study is one of the few detailed studies that presents the characteristics of internal migration and provides an analysis of the factors that influence the rural to urban migration in Bhutan. The high rate of internal migration of close to 40% from 2005 to 2017 is likely to have an impact on the majority of Bhutan's population living in rural areas (currently estimated at close to 60%). As the more educated, particularly those with vocational training and diplomas, and the productive age group (that is, those belonging

to the 19-30 years age group), comprising the main migrants, there are major socio-demographic and socio-economic impacts for the country. An obvious challenge is the capacity of the urban areas to absorb the increase in migrants. The main destination district for 18 districts (except for Gasa) was the capital city of Thimphu. Our study also contributes significantly to the policy-making process in Bhutan in relation to rural-urban migration. The high rate of rural to urban migration and the continuing increase in this rate raise the important question of how the scarce resources are benefiting the people. A better understanding of the trends of the number and characteristics of internal migration flows and driving factors may help policymakers plan for local development to mitigate it.

The findings have to be interpreted in light of a few limitations of the study. Firstly, the migration was based on the household registration system. Second, inter-district migration was not included in this analysis, and it could be useful for future policy development. However, such a study is being undertaken by the same authors of this paper. Despite these limitations, with increasing trends of internal migration constrained by finite human and financial resources, the government needs to ensure that its investments are not optimally utilised. Therefore, an understanding of the dynamics of rural to urban migration in Bhutan and the factors that lead to internal migration is important. The findings of this study will be important for other similar developing countries that are also facing a trend of high internal migration rates.

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Bhutan's Holistic Food Systems: Integrating Culture, Policy, and Climate Resilience for Sustainable Agriculture

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ABSTRACT

Bhutan, a landlocked Himalayan kingdom, shows a unique food culture deeply rooted in spiritual beliefs, traditional rituals, and profound environmental respect. This holistic approach, central to its development philosophy of Gross National Happiness (GNH), positions food beyond mere sustenance, making it integral to preserving cultural heritage, agricultural biodiversity, and ecological integrity. This article explores the symbiotic relationship between Bhutanese food culture, its embedded rituals, and the nation's commitment to sustainable agroecologically inclined agricultural practices. It highlights how these elements contribute to the conservation of traditional knowledge and genetic resources, focusing on the significance of rice, ethnobotanical knowledge, and the integration of food-related rituals into national policies. This paper discusses government policies like organic farming and climate-resilient adaptations that underpin these traditions, and instances where ceremonies exemplify cultural practices to preserve food items like rice, fruits, and tea, connecting them to community well-being and spiritual and ritual practices preserving food items and connecting them to traditional conservation practices. Ultimately, Bhutan's unique pathway showcases an integrated approach to food security and environmental stewardship. Further, this desktop review offers a deeper and wider understanding of how Bhutan's food systems are intricately woven into its socio-cultural fabric. This unique integration significantly influences the nation's pursuit of sustainable development, particularly within the context of Bhutan's vision for developing the Gelephu Mindfulness City (GMC).

Keywords: *Bhutan, Gross National Happiness, food systems, organic agriculture, climate resilience, agroecology*

INTRODUCTION

Bhutan's development paradigm, guided by the philosophy of GNH (GNH, 2008), transcends conventional economic metrics to prioritise holistic well-being and environmental health. Within this framework, Bhutan's food systems are not just a practical necessity but a vibrant reflection of core national values, deeply intertwined with spiritual beliefs, time-honoured rituals, and reverence for the natural world.

This article postulates that Bhutan's food systems holistically integrate ancient cultural heritage, resilient traditional agricultural practices, and forward-thinking national policies. This fusion creates a distinctive approach to food and nutrition security and environmental stewardship, propelling the nation towards its ambitious goal of carbon neutrality. In this context, agroecology and organic farming are more than agricultural techniques; they represent pathways for aligning food systems with the conservation and promotion of the nation's unique socio-cultural and ecological values. This alignment is also evident in how Bhutan's approach resonates with principles like diversity, synergies, efficiency, and resilience, emphasised by the Food and Agriculture Organisation of United Nations (FAO) 10 Elements of agroecology for sustainable food systems.

Bhutan's pursuit of a wholly organic agricultural system, articulated in the mid-2000s (Tshomo, 2006), was a landmark national aspiration to integrate agricultural policy with environmental conservation and human well-being. While challenges persist, the national organic and agroecological vision remains a defining feature of Bhutan's agriculture. As the world is confronted with climate change, biodiversity loss, and food insecurity, Bhutan's agroecological pathways could offer unique insights for creating resilient and sustainable development.

This paper examined Bhutan's traditional and culture-based infused national policies at various agroecological zones across the country, which could be an innovative way to enhance Bhutan's food security and enhance its ecological resilience. Further, how the traditional values are incorporated into Bhutan's key policies, such as the Food and Nutrition Security Policy (FNSP, 2023), Bhutan's Agrifood Sector strategy 2034, and the National Organic Flagship Programme (NOFP) 2006, were assessed. Additionally, the study reviewed the perceived impacts of climate change on the Bhutanese agriculture systems and the adaptive strategies implemented to ensure food security and resilience. Bhutan's diverse geography creates distinct agroecological niches, each shaping unique food systems (Katwal

& Bazile, 2019). Agroecological zonation considers altitude, climate, soil fertility, and cultural adaptation in farming, which are varied over six broad zones (FAO et al., 2022), determining the type of food grown and utilised throughout the country. These zones, ranging from wet-subtropical to alpine, dictate distinct agricultural practices and crop varieties suitable for each of the zones (Bhandari & Mayer, 2024). For example, the wet-subtropical zone, characterised by altitudes between 150 to 600 meters above sea level, predominantly supports agriculture, whereas the cool temperate zone, at 2600 to 3600 meters, has marginal agricultural activity (Chhogyel & Kumar, 2018). The six primary agroecological zones in Bhutan are broadly categorised as (i) Wet Subtropical, (ii) Humid Subtropical, (iii) Dry Subtropical, (iv) Warm Temperate, (v) Cool Temperate, and (vi) Alpine, each exhibiting unique climatic conditions and agricultural potentials (Katwal & Bazile, 2019, Bhandari & Mayer, 2024). This intricate zonation directly influences the types of agricultural practices employed and, consequently, the food systems that emerge, ranging from subsistence farming to more market-oriented horticulture (Chhogyel & Kumar, 2018). These diverse agroecological conditions lead to varied agricultural practices, such as those described by (Katwal & Bazile, 2019):

- Lowland valleys: western and southern valleys form Bhutan's rice basket, where irrigated terraced paddies sustain cultural festivals and food traditions and food systems closely tied to rice-based foods with seasonal vegetables and fruits with short growing seasons.
- Mid-altitude maize zones: eastern *dzongkhags* (districts) that are topographically steep terrains with inadequate irrigated lands rely on maize, millet, and root crops, areas often more vulnerable to climate-induced droughts since most crops are rainfed or dry land farming systems. The diets and cultural practices are heavily based on maize and dry land cereals.
- High-altitude pastoral systems: highland yak-based systems in regions like Haa, Gasa, and Laya embody pastoral livestock-based traditions, wheat, barley, buckwheat, with dairy products, wool, and barter trade sustaining communities; and
- Horticultural belts: southern subtropical zones produce citrus, ginger, cardamom, and vegetables, linking Bhutan to regional markets.

METHODOLOGY

This research employed a desktop review involving a comprehensive literature review of academic publications, policy documents, and cultural records. The key literature includes the

FNSP, 2023, Bhutan's Agrifood Sector Strategy, 2034, the Post NOFP strategy, Bhutan Clear report, 2023, Biovision's assessment of the NOFP, and the Low Emission Development Strategy for Food Security (LEDs-FS, 2021). Additionally, information collected by the author for past lectures and presentations on Bhutan's food, culture, climate impact and agroecology in relation to organic farming in Bhutan has been used in the paper to reflect the interconnectedness.

The analysis also incorporated insights derived from past experiences of the author in the field, as well as qualitative information gathered through informal discussions, presentations, and anecdotal village stories, traditional cultural norms, etiquette and including old folk tales, to elucidate the multifaceted role of food in Bhutanese society and its contribution to national development paradigms.

The methodology focused on understanding the interconnections between traditional use of food, agricultural practices, and their relationship to biodiversity conservation within Bhutanese socio-cultural contexts. Special emphasis was given to different ways food is valued and used as a symbol of care and concern in everyday life, and examining the influence of such societal values on the formulation of formal government policies, under the overall framework of the GNH philosophy on promoting sustainable food systems and preserving indigenous knowledge.

Further investigation explored specific occasions festival and rituals where food plays a central role, such as the *Zhugdrel Phuntshom Tshopa* (an important traditional Bhutanese religious and cultural ceremony performed at the start of all major public functions, inaugurations, celebrations, and official receptions of important guests), *Drunaghu* (a mix of nine grains for rituals), etc, to illustrate the practical application of these integrated approaches that ensure the preservation of food diversity in the community. An ethnobotanical perspective was also applied to further understand the utilisation of plant resources in traditional foods, beverages, medicines, and spiritual practices and rural rituals such as *Jinseg* (a fire ritual to repel sickness and pests) and *Nyom* (a pest ward-off practice in Eastern Bhutan). Traditional rituals and cultural practices carried out annually in the author's family and village have been used to emphasise the importance of intangible cultural practices that help to promote and conserve food and seeds in rural livelihood. Authors believe that more than 50% of the population who live in different parts of the country in different agroecological zones with different cultural practices use such cultural/ritual events as part of accepted norms, although there are no specific data to link their impact directly socio-ecological resilience of the agrarian communities.

Additionally, the impacts of climate change on Bhutanese agriculture and various adaptive strategies implemented to ensure food security and resilience were explored. The perceived impacts of climate change on food security were based on speculations and deductions from common views of farmers on the changes in crop production, crop diversity due to changes in rainfall, shift in crop growth, incidences of new pests and diseases in

crops, which were recorded by the author during numerous field visits. Thus, combining all these methods, the paper provides a deeper and wider understanding of how Bhutan's food systems are intricately woven into its socio-cultural fabric, which plays a significant role in influencing the Bhutanese unique pursuit of sustainable development within the context of Bhutan's vision of development of Gelephu Mindfulness City (GMC).

RESULTS AND DISCUSSION

Bhutan's food systems embody a deeply interconnected relationship between traditional practices, such as food rituals are directly linked to Bhutan's diverse agroecological zones—from highland yak-based systems to lowland rice terraces—farmers continue to rely on indigenous organic methods, such as composting, mixed cropping, soil fertility management, and natural pest control. These practices show similarities to sustainable agroecological principles, demonstrating that sustainability is deeply embedded in Bhutan's cultural traditions in farming and food systems. National policies, including the FNSP (2023), and national organic farming principles. LEDSFS (2021) reinforces this alignment by promoting climate-resilient, low-input farming systems and integrating local knowledge into formal agricultural planning while prioritising the sustainable economic development as supported by the 13th Five-Year Plan (FYP).

Overall, Bhutan's food systems reflect a unique model of resilience where cultural identity, ecological integrity, and policy vision converge to uphold food sovereignty and the GNH philosophy embraced by Bhutan. This positions Bhutan as a living example of how traditional knowledge and modern sustainability goals can coexist within a holistic national framework for the well-being of the people. The FNSP clearly sets the need for food and nutrition security with the sustained growth of commercialisation of main food crops, while strategically conserving traditional food and seeds through the Biodiversity Act, 2023. This is well implemented through the 13th FYP.

Cultural Integration and Food Sovereignty

In Bhutan, food is for more than a means of survival; it is a profound expression of cultural identity, inseparably linked to spiritual beliefs and daily life. Bhutanese cuisine, exemplified by dishes like *Ema Datshi* (dish made from chilli and cheese) and red rice, symbolises the nation's rich heritage. Food plays a central and often sacred role across various life stages and social interactions. Ceremonies during pregnancy, childbirth, and community events feature traditional foods as offerings. Agricultural rituals, such as *Damchoe* (initiating rice transplantation) and *Seychoe* (marking the first rice harvest with offerings of new rice, *Seep* (flattened rice snack) with milk, and fresh chilli), reinforce gratitude for harvests. National festivals like *Tsechus*, *Lochoe*, and *Losar* feature distinctive food traditions that play an important part in preserving food sovereignty.

Food in Bhutan is also a sacred practice embodying reciprocity with nature and spiritual guardians. Highland

communities of Bhutan honour yak spirits before their seasonal migrations. These cultural dimensions reinforce food sovereignty, emphasising local control over seeds, land, and traditions (Bikesh et al., 2020). The significance of food and drinks in spiritual practices and seasonal agricultural rituals, particularly those tied to everyday life, preserves traditional ecological knowledge and a deep gratitude for nature's bounty (Haq et al., 2022). For instance, the *Khachey* ritual during winter snowfall celebrates its importance for agriculture, requiring recipients to host a meal with ingredients from the delivered snowball. Food offerings are also integral to rituals for sickness (*Chooney* and *Dhencho*) and death (*Semso* and *Kaylen*), where food, beverages, money, and services are offered (Tshomo, 2023). Agroecology strengthens these links by respecting farmers as custodians of biodiversity and culture, often drawing upon gendered traditional agroecological knowledge for climate change adaptation and food security (Ramirez-Santos et al., 2023). Studies in other Himalayan regions also highlight how indigenous knowledge contributes to food literacy and traditional food systems (Gartaula et al., 2019). The deep connection between food and cultural heritage is increasingly recognised as one of the key components for sustainable development (Britwum & Demont, 2022). The importance of women's role in preserving these life events, which are critical links to food use, and the need for seed conservation are often very undervalued and taken for granted.

Ethnobotanical Knowledge and Local Practices

Bhutanese livelihood relies heavily on indigenous plants used reflecting deep ethnobotanical knowledge that supports agroecological sustainability as *nakey* (fern fiddleheads), bamboo shoots, mushrooms, and wild fruits supplement rural diets aiding with seasonal nutritional requirements. Medicinal plants like *Cordyceps sinensis*, *Rhododendron anthopogon*, *Artemisia*, and *Juniperus recurva* are used in *Sowa Rigpa* medicine and household healing practices (Wangchuk & Tobgay 2015), while fodder trees such as *Ficus* and *Quercus* species support livestock during dry seasons when fodder is scarce. Natural dyes from walnut husks, madder roots, turmeric, and indigo are used in traditional weaving and crafts, while other forestry and non-forest materials like bamboo, wood, mud, and rocks are used for construction and making sacred ritual objects (Rinzin et al., 2019). Practices such as incense burning, smoke offerings (*sang-sol*), and herbal fumigation reflect spiritual practices (Centre for Bhutan and GNH Studies, 2021). The utilisation of diverse plant resources in traditional and spiritual practices underscores their significance in maintaining ecological balance and cultural identity (Yangdon et al., 2022). Such integration of ethnobiological knowledge is crucial for biodiversity conservation in the Eastern Himalayas (O'Neill et al., 2017).

Local knowledge in organic farming drawn from traditional practices is applied to modern farming, especially regarding plants with pesticidal effects or soil nutrient-improving qualities. The use of charcoal and green manuring was known for soil nutrient enrichment after exhaustive crops, and knowledge

of animal fodder and crop protection highlights a comprehensive understanding of natural resources for on-farm uses (Tshomo, 2023).

The Cultural and Policy Significance of Rice in Bhutan's Food System

Rice occupies a central position in Bhutan's cultural and dietary landscape, functioning not only as a staple food but also as a symbol of prosperity, well-being, and communal identity embedded in religious rituals, festivals, and daily meals. Rice represents a cultural continuum that links current Bhutanese livelihoods to their agrarian ancestral history (Katwal & Bazile, 2019). The preference for locally produced rice, despite its relatively high production costs resulting from topographical constraints, limited arable land, and dependence on imported inputs, underscores its profound social and cultural significance. In Bhutan, rice cultivation extends beyond economic rationality, reflecting a commitment to preserving cultural integrity and food sovereignty (Dorji et al., 2020).

The persistence of rice cultivation in Bhutan's traditional food systems has direct implications for food security and climate resilience. Traditional rice varieties, adapted to local agroecological conditions, exhibit traits of resilience that are increasingly relevant under changing climatic conditions (Tshotsho et al., 2022). Supporting the production and consumption of such culturally rooted foods contributes to nutritional diversity and strengthens community-based resilience to external shocks, including market fluctuations and climate-induced disruptions.

Policy interventions must therefore recognise the interdependence between culture, food, and sustainability. Strengthening traditional food systems through targeted support for rice and other indigenous crops aligns with Bhutan's broader development philosophy of GNH, which emphasises ecological balance, cultural preservation, and well-being (GNH, 2008). Integrating climate-smart agricultural practices—such as improved irrigation efficiency, organic soil management, and the use of locally adapted crop varieties—can enhance productivity while maintaining the cultural and ecological functions of rice cultivation. In a global context increasingly oriented toward sustainable and resilient food systems, Bhutan's commitment to protecting traditional foods offers valuable insights into harmonising food policy, cultural identity, and climate adaptation.

Bhutan's Approach to Sustainable Food Systems

This is reported in great detail in the report *Bhutan Clear*, a report that analyses the climate change impacts and climate resilience of smallholder farmers in Bhutan and provides actionable recommendations specific to the different agroecological and food system zones of Bhutan. Although the National Framework for Organic Farming in Bhutan (NFOFB, 2006) (Tshomo, 2007) was developed some time ago, the relevance to current development philosophy internationally is seen as applicable to guide the country's sustainable development from an agroecology

assessment carried out by Biovision (2025). Bhutan's food system demonstrates a deep interconnection between ecological sustainability, cultural traditions, and the GNH policy vision, as well as the agriculture sector's plans. In this context, agroecology and organic farming are more than agricultural techniques; they represent pathways for aligning food systems with the nation's broader socio-cultural and ecological values. This alignment is also evident from Bhutan's approach with principles like diversity, synergies, efficiency, and resilience, emphasised by the FAO's 10 Elements of agroecology for sustainable food systems."

Integrated Farming Systems and Organic Strategy

The majority of rural Bhutan continues to practice integrated farming, which combines agriculture, livestock, and utilisation of nearby forests for farm inputs like leaf litter and non-wood forest products for domestic use. This traditional system resembles permaculture with the people, animals, horticulture, cereal, and forestry concept, emphasising food basket diversity, on-farm inputs, and low-cost technologies for smallholder resilience (Tshomo, 2023, 2025).

The existing farming systems in Bhutan are closely aligned with the International Federation of Organic Agriculture Movement - Health, Ecology, Fairness, and Care. These principles are the foundation for organic agriculture and guide its practice to promote the health of ecosystems and people, ensuring ecological balance, being fair to all stakeholders, and exercising care in its management of all farming and trading operations (IFOAM-International, 2020). These principles are also very similar to the indicators of the GNH principles of Bhutan, which are an inspirational and operational guideline for Bhutan's development path. Continued practice of such traditional food systems with improved development and innovations based on improved scientific knowledge on local soil and plant health management and fertility management through more defined practices such as organic, agroecological, regenerative, which encourage technologies that reduce carbon emission and possibilities to link reduced use of synthetic agrochemicals to carbon credits could lead to a contribution to long-term sustainability of farming systems, seed conservation, building climate resilience and rural economic stability when linked to markets.

Currently, the Royal Government of Bhutan's Ministry

Table 1 Categories for the Development of Organic Agriculture in Bhutan

Category	Characteristics	Examples
Local Organic Assurance System	Second party, supervised practices	Farmer groups and individuals
Traditional Organic	Low external inputs, indigenous practices	Highland barley, buckwheat
Transition Systems	Farms moving from conventional to organic	Vegetable cooperatives

of Agriculture support those farmers willing to shift to organic farming by providing free certification and market linkages, rather than enforcing regulations. Farmers are grouped by their readiness and development stage, allowing tailored support from the Ministry, as shown in Table 1.

Policy Frameworks and Climate Resilience

Bhutan's commitment to sustainable food systems is enshrined in national policies and international commitments. The National Framework for Organic Farming in Bhutan initiated the transition towards organic practices (Tshomo, 2023). The GNH philosophy ensures that agriculture integrates ecological sustainability and cultural values (Tshomo, 2023). The FNS policy (2023) aims to ensure food security for all households, improve rural incomes, double exports through commercial scale and technology use, and promote sustainable/organic farming linked to markets and safe, nutritious food (MoAL, 2023; Tshomo, 2025a, 2025b). This is further supported by the Agrifood Sector Strategy 2034 (MOAL, 2023), which guides long-term agricultural development aiming to significantly contribute to Bhutan's economy through tripling exports, enhancing commercialisation, and adopting technology (MOAL, 2023). The 13th (2024 to 2029) and 14th Five-Year Plans (2029-2034) focus on essential food production for self-sufficiency, import reduction, high-end niche organic products and commercial production, market development, enhancing agro-technology, environmental conservation, and seed/genetic security (Tshomo, 2025b, 2025a). The National Organic Flagship Programme (NOFP) expanded certified organic production and branding (Tshomo, 2023). These policies align with FAO's 10 Elements of Agroecology (FAO, 2019).

Bhutan's commitment to carbon neutrality since 2009 is supported by strategies under Nationally Determined Contributions and Low Emission Development for Food Security (Tshomo, 2025). The Pesticide Act, 2000, mandates Integrated Pest Management. Bhutan faces increased climate risks, including glacial lake outburst floods, erratic rainfall, and increasing incidence of pest outbreaks (MoAL, 2023; Tshomo, 2025). The agrifood sector is highly vulnerable to extreme weather events, which damage crops, livestock, and infrastructure (MOAL, 2023). Agroecological practices enhance resilience through diversified cropping systems, improved soil organic matter, and reduced vulnerability (Tshomo, 2025). Research into drought-resistant maize, cold-tolerant rice, short-season vegetables, water harvesting, and yak pasture management is currently under investigation (MOAL, 2023).

CONCLUSION

Bhutan's food systems embody a unique integration of culture, policy, and ecology under the guiding philosophy of GNH. The National Organic Flagship Programme has demonstrated the country's capacity to mobilise institutions, farmers, and market linkages towards an integrated organic agenda, building essential infrastructure and piloting exports to demanding markets with increased areas and number of farmers and increased range

of products grown and certified organic within the four years despite Covid 19 pandemic disruptions. It has also highlighted critical systemic constraints like fragmented execution, budget volatility, input shortages, certification bottlenecks, post-harvest weaknesses, and market discontinuities, which are reflected in The Post NOFP strategy (Tshomo & Tshetrimla, 2023).

The proposed organic strategy for Bhutan's upcoming mega-city, Gelephu Mindfulness City (GMC), by MOAL to support the GMC transition, offers a unique opportunity to address these constraints in a concentrated, well-resourced, and streamlined environment. With its low baseline dependence on synthetic agrochemicals, robust irrigation, protected cultivation assets, and strategic geographic position, GMC is poised for internationally recognised and credible organic certification (Tshomo et.al, 2025). This initiative represents a new model of mindful urban development, integrating traditional wisdom with modern innovation, focusing on ecological sustainability, mindful inclusivity, high international standards, and an organic, plastic-free orientation. Further, formal initiatives like the *Gyalsung* Academy for Food Security Skilling can serve as a critical pilot for integrated policy and market solutions before national scaling. The new opportunities open as a scope for mindfully integrated state-of-the-art agrotech of the highest standard, woven with traditional wisdom and practices based on agroecological principles, could potentially bring new agribusinesses and agro-ecotourism to the GMC. Such businesses based on food and sustainable agriculture that take root in the GMC may eventually influence the other *dzongkhags* as proposed according to the Bhutan's diamond strategy.

Key Recommendations

Policy and Funding: Based on the NOFP experience, future initiatives should prioritise stable, long-term funding and consistent policy signals (Tshomo & Tshetrimla, 2023). This means locking commodity and landscape lists for sustained periods, aligning budgets to a 10-year organic roadmap, and adopting phased investment matrices like GMC's template for national rollout. The recently released Bhutan 21st Century Economic Roadmap outlines an ambitious vision for economic transformation, aiming for significant GDP growth and diversification into new sectors, including knowledge and technology-driven industries (Bhutan 21st Century Economic Roadmap, 2025). This roadmap emphasises building a robust and diversified economy led by the private sector, and its strategic enablers, such as improved infrastructure and market access, are crucial for agricultural development and achieving organic transition goals. Predictable priorities and capital expenditure are crucial for attracting private investment in input plants, processing, and export programs.

Quality, standards and certification

Institutionalising robust quality and traceability systems is important. This involves continued accreditation and resourcing of national organic bodies, accrediting the Bhutan Organic Guarantee System for domestic and international certification.

Additionally, strengthening and developing national import/export codes to facilitate trade as required by the GMC will be very important. Strong quality assurance reduces rejection risk and price fluctuation of exported products in international markets; therefore, both product physical quality and food safety and integrity compliance to support branding and labelling successfully will play key roles.

De-risking Farmer Conversion with Targeted Incentives

To mitigate conversion costs and risks for farmers, standardised compensation or cost-sharing mechanisms should be deployed. Incentives should target critical pain points such as wildlife damage, water availability, and affordable bio-inputs, potentially through chain-link fencing, irrigation expansion, and initial input subsidies. Human-wildlife conflict is still a significant challenge for organic farmers (Tshomo et al, 2025).

Prioritising Domestic Input Production

An "inputs-first" action is essential. Investing in large-scale compost/vermicompost plants and bio-fertiliser units through public-private partnerships can address the current deficit in organic inputs. Simultaneously, robust enforcement against illegal chemical imports and promotion of on-farm nutrient recycling are vital (Tshomo et al, 2025).

Market Access and Value Chains

Establishing formal organic sales outlets, aggregation hubs, and institutionalising recurring organic fairs, food fests, and international events will be crucial to attract international attention and investment. Concentrating export efforts on a few "lead products" per corridor, leveraging existing business-to-business linkages, will professionalise the product flow and data of organic products. Developing inclusive value chains is key to strengthening rural livelihoods and connecting smallholder producers to markets (Pastakia, 2012; Swinnen & Kuijpers, 2020). Lessons from other developing countries emphasise the importance of meeting requirements for cost, quality, and certification to integrate into global markets (Barua et al., 2021). Successful farmer community enterprises in marketing organic products demonstrate the potential for improved livelihoods (Garmin et al., 2011). Value chain analysis for organic products can also highlight areas for development (Haddas et al., 2018). Agricultural biodiversity is a crucial link between traditional food systems and contemporary development, social integrity, and ecological health (Johns et al., 2013). Challenges in marketing include small land holdings, scattered settlements, low volume, seasonal production, high transportation costs, and post-harvest losses (Food and Nutrition Security Policy of Bhutan 2023, which need organising into significant volumes for either processing or trading and export development.

Investing in Climate-Smart Infrastructure and Human Capital

Prioritising irrigation rehabilitation and new infrastructure (e.g., polycarbonate/glass greenhouses) is key for climate resilience.

Scaling farmer and extension officials training, building on NOFP's achievements, and creating an Organic Knowledge Hub or Centre of Excellence and Service Centre will strengthen extension, research, and business incubation.

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Implications of Decreasing Fertility Rate in Bhutan

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ABSTRACT

The fertility rate is one of the important demographic indicators for a country's development and welfare. The study is exploratory and qualitative, using secondary data to analyse the implications of Bhutan's declining fertility rate. The study concluded that a decline in fertility rates can slow population growth, helping reduce the strain on a country's resources and infrastructure. With fewer children to support, families can provide them with better financial support and invest more effectively in their education and health, resulting in improved educational outcomes and a more skilled workforce. However, a declining fertility rate results in a shrinking workforce and an ageing population, with fewer people contributing to the economy and more relying on pensions and healthcare, ultimately slowing the country's economic growth.

Keywords: *Fertility rate, declining fertility, workforce, economic growth*

INTRODUCTION

The total fertility rate (TFR) is a major determinant of the population growth rate (Gotmark & Andersson, 2020). As per Li, 2015, the replacement rate of 2.1 children per woman has been steadily declining among European nations in the past thirty years. In addition to extremely low fertility rates, death has been declining, hastening demographic aging. Major concerns about the shrinking labor supply, the effect on future economic growth, and the incapacity of countries to fund pensions and healthcare for aging populations have been raised because of these trends (Li, 2015).

In Bhutan, the size of the young generations began to drop because of lower fertility rates (total number of children born or likely to be born to a woman in her lifetime), according to the Vital Statistics Report 2021. The Population Projections Bhutan 2017–2047 Report states that Bhutan has recently seen a sharp fall in fertility, and it is expected to remain below replacement level in the foreseeable future. This could not have come at a time when thousands of young and middle-aged professionals leave for overseas. The fertility status in Bhutan has changed from a state of high fertility, high mortality, and a high child dependency ratio in the late 1980s to early 1990s to one of low fertility, low mortality, and a low child dependency ratio, according to the Demographic Dividend in Bhutan 2020 (Drukpa, 2022).

OBJECTIVE AND RATIONALE

The growing concerns regarding the declining pattern of

the fertility rate in Bhutan have prompted the study of its implications. In the absence of credible literature on this issue, this study is anticipated to contribute towards highlighting the potential implications of the decreasing fertility rate in Bhutan.

Literature Review

Population dynamics play a critical role in shaping a nation's economic growth because both the size of the population and the pace at which it grows influence overall economic performance. Changes in population structure generate demographic shifts that alter the supply of and demand for labor, thereby affecting labor market outcomes. Since labor is a fundamental input in the production of goods and services, any demographic change directly influences national productivity (Mason & Lee, 2010; Li, 2015). Supporting this view, Bloom's research, cited by Belsie (2009), emphasises that fertility, mortality, and net migration together determine the size of a country's working-age population. Persistently low fertility rates are therefore linked to slower economic growth over time because per-capita output relies heavily on the proportion of individuals in the working-age group.

A proper understanding of demographic concepts requires distinguishing clearly between fertility, fertility rate, and birth rate. Fertility rate refers to the average number of children born to women of reproductive age, whereas birth rate is the number of live births per 1,000 people in the total population (Encyclopaedia Britannica, 2024; Population Reference Bureau,

2011). A key metric, the total fertility rate (TFR), represents the average number of children a woman would bear over her reproductive lifetime. A TFR of 2.1 is generally considered the replacement level. If each woman has roughly 2.1 children who survive to age 15, she and her partner are effectively “replaced” in the population. A TFR above 2.1 typically results in population growth, while a sustained TFR below this level leads to long-term population decline, although actual outcomes may differ based on immigration, emigration, and age structure (Smoak, 2022).

Li (2015) argues that fertility reduction is both an economic and a social phenomenon arising from economic development. Declining fertility significantly influences demographic structure as well as economic and social outcomes. Many countries, therefore, adopt population control policies. China’s “one-child policy,” for example, was an economic incentive mechanism that rewarded one-child households and penalised larger families (Weeks, 2008; Li, 2015). Very low fertility rates accelerate population aging; as fertility falls, the age distribution shifts and can create a demographic dividend (Li, 2015). However, declining fertility can also constrict population size, especially among younger cohorts, and shape an age structure that increases the likelihood of long-term population decline (Lal et al., 2021).

In Europe, birth rates have been declining and family sizes shrinking across all EU member states. Grant et al. (2005) found that every EU nation now has a fertility rate below the replacement level. Low fertility is also accelerating population aging. According to U.S. Census Bureau projections, the global population aged 65 and older is expected to increase from about 8 percent in 2012 to nearly 17 percent by 2050 (U.S. Census Bureau, 2012). This demographic shift poses significant economic challenges for Europe. A shrinking workforce reduces productivity, and the viability of pension and social insurance systems is strained by a growing elderly population. Smaller household sizes further increase healthcare and social support costs. Collectively, these pressures make it difficult for the EU to maintain full employment, economic growth, and social cohesion (Grant et al., 2005).

The Pew Research Center (2022) highlights that declining fertility is already leading to reduced school enrolments in many districts, which can generate short-term cost savings. Yet, in the long term, governments may face revenue constraints, labour shortages, and fiscal pressures due to fewer taxpayers. In a long-term endogenous growth model, Lee (2012) found that higher fertility can hinder economic growth because of increased child-rearing costs, whereas higher economic growth tends to increase fertility as rising capital increases child-rearing

expenses. The phrase “development is the best contraceptive,” coined at the 1975 United Nations conference, encapsulates the idea that economic development naturally reduces fertility (Lee, 2012).

Monitoring fertility trends is therefore essential for effective planning. Persistently high fertility may require investment in schools and childcare, while persistently low fertility may signal an aging population that could burden the economy with rising health and pension costs. Governments typically employ direct and indirect fertility policies. Direct policies include tax rebates or financial incentives to encourage childbirth. Indirect policies include reforms in childcare availability, parental leave, and workplace regulations, which influence fertility as a secondary effect (Smoak, 2022). One major explanation for falling fertility is the delay of first births. Women today are postponing childbearing, shortening their reproductive years and increasing the likelihood of remaining childless (Weston & Parker, 2002). International studies suggest that increased access to education and employment opportunities for women significantly delays marriage and childbearing (Bailey et al., 2018). Compared to fifty years ago, women now have more life choices, greater access to contraception, and diverse career pathways. Shortages of affordable childcare also contribute to decisions to postpone or avoid childbearing. Age-Specific Fertility Rates (ASFR) for 2017–2020 show that fertility peaks among women aged 25–29 and 30–34 before gradually declining.

In Bhutan, higher female education levels and expanding career opportunities have led many women to delay marriage and childbirth (Drukpa, 2022). The UN Population Division maintains that a TFR of 2.1 is required to sustain population replacement. However, modern societies offer women considerable autonomy, often accompanied by workplace environments that make balancing work and family difficult. As McDonald (2000, 2008) points out, women face greater career and economic risks from family formation than men, making childbearing less attractive in certain labour markets. Education is strongly linked to declining fertility. Longer schooling delays marriage, empowers women, and encourages smaller family sizes. Economic development shifts preferences toward investment in fewer children with higher “quality” better health, education, and opportunities (Jones et al., 2011; Gotmark & Andersson, 2020).

Belsie (2009) notes that each additional child reduces a woman’s lifetime labour participation by approximately 1.9 years. As fertility declines, women work more, save more, and gain experience, contributing to higher future earnings. Parents with fewer children also invest more time and resources per child,

improving education and health outcomes. Lam (2015) observed similar trends in Brazil, concluding that declining fertility enables greater investment in children, enhancing human capital. This pattern is reinforced by Bairoliya and Miller (2021), who argue that higher education and lower fertility redirect parental resources toward child development. Japan's fertility decline has also been attributed to delayed marriage. Shirahase (2000) found that increasing numbers of highly educated women remained unmarried in their twenties, contributing to sustained fertility decline since the late 1960s. The rise in women's university enrolment since the 1990s corresponds inversely with falling birth rates, suggesting a strong relationship between education and reduced fertility.

Kim (2016) offers three mechanisms through which education influences fertility among women:

1. Income and opportunity cost: Higher-earning women experience greater income loss from childbearing and therefore prefer fewer children.
2. Health improvements: Education enhances maternal and child health, increasing child survival and reducing the economic need for larger families.
3. Knowledge effect: Educated women have more knowledge and better use of contraception.

Understanding how income, health, and knowledge intersect with fertility decisions in specific national contexts is critical for effective population policymaking.

METHODOLOGY

This study adopts an exploratory qualitative research design, aiming to gain a deeper understanding of the implications of declining fertility rates in Bhutan. The exploratory approach is particularly suitable because the topic is complex and multifaceted, with social, economic, and demographic dimensions that require in-depth understanding rather than purely quantitative analysis. The study focuses on interpreting patterns, trends, and implications of fertility changes by leveraging secondary data from credible sources.

Data Sources: The study utilises a variety of high-quality secondary sources to ensure reliability, credibility, and comprehensiveness of the findings:

Government Reports and Official Statistics: Labour Force Survey Reports (National Statistics Bureau, 2021, 2024) provided up-to-date demographic and labor market data.

Peer-Reviewed Scholarly Journals: High-indexed, open-access journals were prioritised to ensure the integrity and academic rigor of the literature. Examples include BMC Public Health (e.g., studies on maternal education and fertility outcomes); the

Lancet (systematic analyses linking education, fertility, and child mortality); Population and Population Studies (on demographic transition and fertility trends) and proceedings of the National Academy of Sciences (PNAS) (on fertility, contraception, and socioeconomic effects)

Grey Literature and Online Data Sources: Macrotrends websites and other open-access demographic data platforms were used to track historical trends in fertility, birth rates, and population growth. Policy briefs, working papers, and official press releases were consulted to understand government strategies, fertility-related programs, and broader demographic implications.

Data Collection Process and Analysis: The data were collected systematically through a literature survey and structured keyword searches. Keywords included: fertility rate, declining fertility, implications of decreased fertility, women's fertility choices, population stability, reproductive health, empowerment, and socioeconomic impacts of fertility decline. Collected secondary data were analysed qualitatively to identify patterns, trends, and relationships relevant to fertility and its societal implications in Bhutan. Quantitative components such as birth rates, fertility rates, and population trends were presented using tables, charts, and graphs, processed in Microsoft Excel and MS Office for clarity and visualisation.

RESULTS AND FINDINGS

Bhutan's fertility rate has declined since 2015, when it fell below the sustaining level of 2.1, as displayed in Figure 1. The current fertility rate of 1.824 has raised concerns about the country's stability both now and in the future. Low fertility has the drawback of reducing population size only among the young, rather than across the board. If the population is to be demographically sustainable, low fertility will eventually lead to an age structure that will accelerate further population decline. The long-term effects of this decline will be felt because the State's tax bases may eventually be threatened by smaller working-age populations, which is a major source of fiscal uncertainty.

The Birth Rate in Bhutan

Bhutan has had substantial socioeconomic growth since the introduction of planned development in 1961. In other words, over the past 60 years, the nation has undergone significant demographic changes. If Bhutan is to benefit from sustainable population growth, the declining birth rate, a growing concern, needs to be reversed to at least a replacement level (Dorjee & Spoorenberg, 2016). Otherwise, due to an aging population and a declining labor force, Bhutan is likely to experience significant societal issues in the future, as depicted in Figure 2. Furthermore, the old-age dependency ratio is expected to rise, potentially reducing economic growth as the proportion of the population that is older relative to the working-age population increases. If Bhutan is slow to invest in human capital and implement growth-promoting measures that are guided by a national population

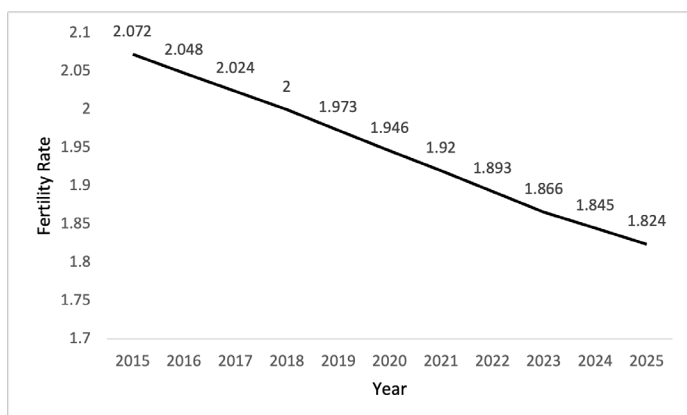


Figure 1 Trend of Fertility rate in Bhutan

Source: Bhutan Fertility Rate 1950-2025

(<https://www.macrotrends.net/countries/BTN/bhutan/fertility-rate>)

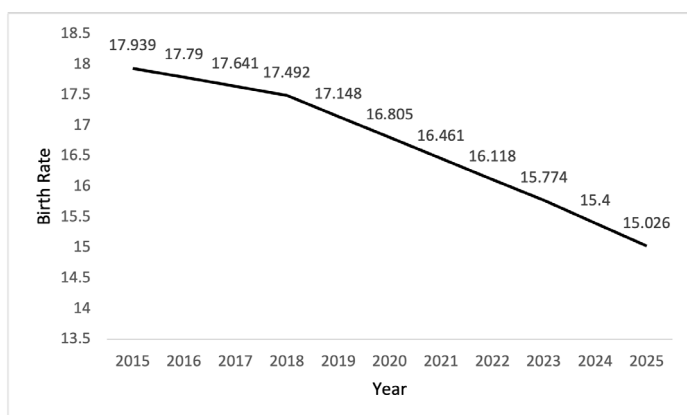


Figure 2 Trend of Birth rate in Bhutan

Source: Bhutan Birth Rate 1950-2025

(<https://www.macrotrends.net/countries/BTN/bhutan/birth-rate>)

policy, the effects of a declining birth rate could be detrimental (Wangchuk, 2020).

Two countervailing trends dominate the demographic discussion. On the one hand, Bhutan is undergoing rapid demographic change with an increase in population and rising life expectancy, as displayed in Figure 3. On the other hand, fertility is on the decline. Bhutan is undergoing rapid demographic change with rising life expectancy and literacy rates and a sharp decline in fertility. Economically, the country benefits from a high proportion of the working-age population. However, as demographic change progresses, the number of older people increases, turning the demographic dividend into a demographic tax. According to the Asian Development Bank (2020) on Bhutan's Demographic Dividend, declining fertility has been accompanied by an increase in life expectancy and is expected to increase further. The child dependency ratio, the number of children (under the age of 15) per 100 working-age population, decreased from 53.1 in 2005 to 38.3 in 2017.

Population Pyramid in Bhutan

Bhutan has experienced a decrease in birth rates over the years. In 2024, the birth rate is approximately 15.4 births per 1,000 population. Advancements in healthcare have led to a steady increase in life expectancy in the past ten years. Population growth (annual %) in Bhutan was reported at 0.69815 % in

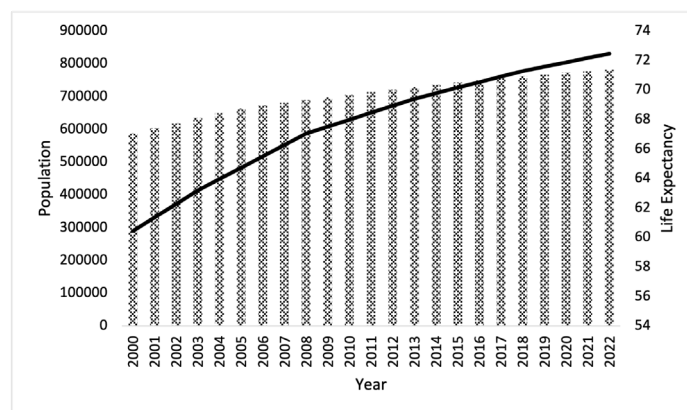


Figure 3 Trend of population and life expectancy

Source: <https://www.worldometers.info/world-population/bhutan-population/>

<https://countrysteconomy.com/demography/life-expectancy/bhutan>

2023, according to the World Bank collection of development indicators (Trading Economics, 2025), suggesting a lower growth rate could eventually lead to a declining population in the long run, especially if birth rates continue to fall. The demographic trends suggest that Bhutan is transitioning from a youthful population to an aging one, as seen in Figure 4, whereby the shift poses challenges such as a shrinking workforce and increased dependency on the elderly, putting pressure on public services and pensions.

Labour Force Participation

According to the National Statistics Bureau (2025), the overall employment rate in Bhutan is 96.89%, with men having a slightly higher rate at 97.7% compared to women at 95.6%. The Labor Force Participation Rate (LFPR) is defined as the ratio of the economically active population to the working-age population. In general, as shown in Figure 4, the men's labor force participation rate (LFPR) in 2024 stands at 74%, notably higher than the women's rate at 54.6%, reflecting a gap of approximately 19 percentage points. While men's LFPR has steadily increased over the years, peaking in 2024, women's participation has been more volatile. In 2021, it reached its highest recorded level at 65.3%. Despite the fluctuations, women's LFPR demonstrates their growing engagement in the workforce, largely driven by higher educational attainment and expanded career opportunities, which have also contributed to delays in marriage and childbearing.

DISCUSSIONS

Bhutan is facing the demographic transition wherein the younger

generation is starting to shrink in size due to declining fertility rates, which are expected to remain below replacement levels for the foreseeable future. The fertility rate, or the number of children born per woman, is an important demographic indicator

which is below the replacement rate of 2.1. However, having fewer children means parents have more resources to invest in their children's education and health, leading to better educational outcomes and a more skilled workforce.

Fertility rates can also be indicators of gender equality and women's empowerment. Studies show that fertility rates tend to decline as women become more educated and gain employment opportunities. Women understand these benefits would be significantly compromised once they have a child, and given these results, it is possible to hypothesise that the rise in women's access to higher education and the fall in fertility rates are related. High fertility is also associated with higher maternal and infant mortality, while lower fertility tends to align with better health outcomes, a link supported by evidence that increased maternal education reduces both maternal mortality (Gakidou et al., 2010) and under-5 child mortality (Bbaale, 2019). Fertility is a crucial factor in both policy and decision-making, especially in areas related to population, economy, and health. Understanding fertility rates allows governments to make informed decisions about resource allocation and welfare programs. Bhutan needs to maximise the benefits of the demographic transition so that it will increase the working-age population and reduce the burden of dependence. The impact of very low fertility rates on future labour forces and the sustained low fertility rates may be difficult to reverse. Further research and analysis are needed to better understand the impact of declining fertility and develop effective strategies to mitigate its negative implications, since tracking fertility rates allows for more efficient and beneficial planning and allocation of resources within a given region.

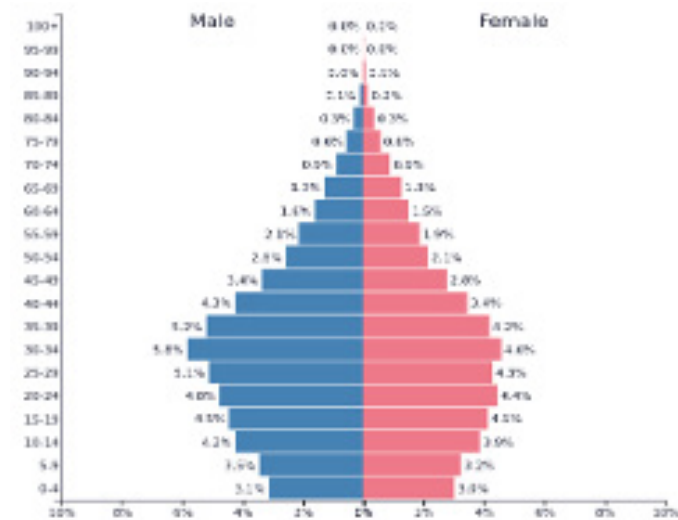


Figure 4 Population Pyramid in Bhutan

Source: <https://www.populationpyramid.net/bhutan/2024/>

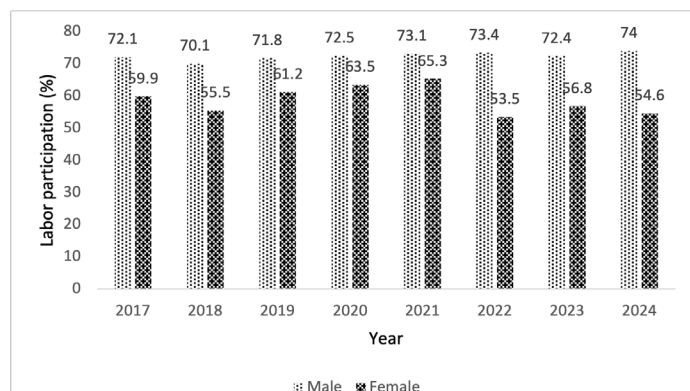


Figure 5 Labor Force Participation rate by sex

Source: Labor Force Survey Report, from 2017 to 2024

with social, economic, and political implications. Therefore, this research aims to examine the implications of declining fertility rates in Bhutan, contributing to a deeper understanding of the demographic and socioeconomic consequences of this trend. The fertility rate determines the rate of population growth since high fertility rates can lead to rapid population growth, straining resources and infrastructure. Low fertility may contribute to an aging population and labor shortages, which can, in turn, affect economic growth and increase the dependency burden on the working population. Moreover, Bhutan has seen increasing population and life expectancy over the years, but declining fertility and birth rate. The fertility rate of 2025 stands at 1.824,

CONCLUSION

Declining fertility rates are a growing global concern, and Bhutan is no exception. This study highlights that Bhutan is experiencing a decline in fertility and birth rates alongside rising life expectancy, resulting in an aging population. Fewer children and longer life expectancy have shifted the population structure, increased the proportion of older adults, and placed greater demands on healthcare and social security systems. The study also finds that declining fertility contributes to a shrinking workforce, which has implications for economic growth due to fewer individuals participating in the labor market. Rising women's education and labor force participation further influence fertility decisions, as women balance career and personal development with family responsibilities. These findings underscore that declining fertility has significant implications for both individuals and society. Policymakers, governments, and communities must proactively address these challenges by implementing strategies that support aging populations, sustain workforce participation, and balance gender equality with demographic stability.

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Implementing Gross National Happiness in Bhutan as a Development Model and Governance Tool – Perspectives of Policy Influencers

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ABSTRACT

Bhutan's development philosophy of Gross National Happiness (GNH) prioritises the collective wellbeing of its people over economic growth through a multidimensional index that informs policy. While GNH has received global recognition, persistent challenges in conceptual clarity and practical implementation are argued and debated. This qualitative study examines the role and utility of GNH as a development model and its implementation as a multifaceted governance tool in Bhutan. The findings reveal that GNH is conceptualised in diverse ways, ranging from personal happiness to a more generic communal philosophy. While its strengths lie in its culturally grounded framework, key limitations include a lack of shared understanding, overuse in marketing, and tensions with economic growth. As a governance tool, its implementation is challenged by inconsistent political commitment, limited resources, and reliance on informal cultural practices, rather than official policy instruments. The study concludes that for GNH to mature into an effective and replicable alternative development paradigm, Bhutan must address these implementation gaps through legislative formalisation, simplified public communication, and strategies that reconcile its wellbeing objectives with economic imperatives.

Keywords: *Bhutan, Gross National Happiness, happiness, sustainability, sustainable development, wellbeing, wellbeing governance*

INTRODUCTION

Bhutan's development vision stands apart from conventional metrics by embracing Gross National Happiness (GNH) which prioritises wellbeing of its people and all sentient beings (Thinley, 2014). GNH offers a multidimensional, collective understanding of wellbeing, operationalised through the GNH index to guide policies (Verma, 2017) and His Majesty King Jigme Khesar Namgyel Wangchuck describes it as development with values (Ura et al., 2023). Unlike conventional growth models, GNH explicitly integrates often overlooked human dimensions such as psychological wellbeing, culture, spirituality, and community vitality (Thinley, 2014), positioning it as an alternative to GDP-centric development. Although newer models like the Organisation for Economic and Cooperation Development's (OECD) Better Life Index broaden wellbeing metric, wellbeing frameworks remain abstract and face implementation challenges (Kasparian & Rolland, 2012), a difficulty also seen in Sweden's Lagom model (Leese et al., 2016), New Zealand's Wellbeing Budget (Anderson & Mossialos, 2019), or Iceland's welfare policies (Eydal & Ólafsson, 2016).

The incorporation of GNH into Bhutan's constitution further cemented the use of GNH as a public policy instrument and the formal implementation of the philosophy nationwide

(Ugyel et al. 2023). After 17 years of its formal implementation since 2008, including three formal rounds of index measurement (explained in the next section), it is timely to reassess GNH as an alternative development philosophy. Although literature on the conceptual evolution is growing, empirical insights into how GNH is operationalised by policy actors remain limited (Verma, 2017). This study addresses this gap by drawing on the perspectives of 40 policy influencers to examine their understanding of GNH and its implementation as both a development philosophy and a governance tool. As part of a broader research on climate change and wellbeing, this paper explores two research questions: i) How is GNH conceptualised in Bhutan in relation to its role and utility as a development model? and ii) What are the perspectives on how GNH is implemented in Bhutan as a multifaceted governance tool?

Before providing further details on the interviews (Section 4 & 5), some defining characteristics of the GNH philosophy are explained.

Understanding GNH

To further understand the notion of GNH as a national development concept for Bhutan, it is useful to understand its genesis. Its origin can be traced back to Lama Ngawang Namgyel (1594–1651),

who founded Bhutan. He affirmed that the happiness of sentient beings was dependent on the teachings of the Buddha, which was further dependent on the happiness of the world (Ugyel et al., 2023, p. 497). The Bhutanese legal code of 1729 stated that: “if the Government cannot create happiness (*dekid*) for its people, there is no purpose for the Government to exist” (Ura et al., 2023). In the 1970s, His Majesty, the fourth King Jigme Singye Wangchuck, established GNH as Bhutan’s development goal, later incorporated into the Constitution in 2008, whose Article 9 mandates the state to promote conditions enabling the pursuit of GNH (Kingdom of Bhutan, 2008, p. 8)

GNH is framed through four pillars - sustainable and equitable socioeconomic development, environmental conservation, cultural preservation, and good governance (Ura et al., 2023). Its implementation is operationalised through the GNH index, calculated every five years using nine domains: psychological wellbeing, health, education, living standards, environmental diversity and resilience, good governance, time use, community vitality, and cultural diversity and resilience (Givel, 2022). These domains comprise 33 indicators and 124 variables that become the basis for the construction of the GNH index (Ura et al., 2023).

By recording people’s personal ratings across 124 variables, the GNH index measures happiness at the individual level (Thinley, 2014). The individual scores are then aggregated across demographic groups (e.g. age, gender, occupation) and/or geographic units ranging from rural-urban areas to villages, village clusters, districts, and regions, ultimately producing the national GNH score (Ura et al., 2023). The GNH index guides national wellbeing by assessing happiness, identifying those who are not happy, and revealing inequalities across groups and regions. These data are considered crucial for policymaking, resource allocation, and targeted interventions.

The concept of GNH went beyond Bhutan in 1998 when it formally declared GNH as its development philosophy at the Asia-Pacific Millennium Summit in Seoul, positioning it as an alternative to GDP-centric models (Chetri 2023). In 2011, the United Nations unanimously adopted Bhutan’s resolution ‘Happiness: Towards a Holistic Approach to Development,’ which led to March 20 being declared the International Day of Happiness (Chetri 2023). Bhutan has since hosted seven international GNH conferences - in Thimphu (2004, 2008 and 2017), Canada (2005), Thailand (2007), Brazil (2009), and Paro (2016), - drawing global scholars to critically engage with the concept and its practical challenges (Ugyel et al. 2023).

Although GNH has gained significant global attention, it remains widely misunderstood due to confusion in its definition, intent, articulation, and operationalisation (Masaki, 2024). Internationally, it is often conflated with other wellbeing indices and misinterpreted for academic gain, while in Bhutan, the shift to democracy in 2008 has led to political interpretations of GNH and a limited understanding of the state’s role in generating it (Verma, 2017).

Bhutan’s public sector transformation beginning 2022 has brought significant changes in the civil service and government structure (Royal Government of Bhutan 2024, p. 1). For example, the number of ministries was reduced from 10 to 9, and the Gross National Happiness Commission (GNHC) – established in 2008 to lead policy formulation and ensure alignment with GNH - was dissolved in October 2022 (Passang, 2022). These changes have created some uncertainty, particularly concerns that policy intentions may be drifting from GNH (as discussed later). However, 13th Five-Year Plan of 2024 reaffirms GNH by setting a long-term goal for Bhutan to become a ‘high-income Gross National Happiness economy by 2034’. This underscores the need to assess how key policy influencers understand and implement GNH in shaping national policy.

METHODOLOGY

An interpretivist paradigm of research was adopted to explore how interviewees construct meaning around complex social issues (Potrac et al., 2024). Semi-structured interviews provided structure while allowing flexibility to probe deeper insights (Adams, 2015). Participants included policy influencers and experts in GNH and climate change, selected in line with Kongrats et al.’s (2019, p. 1494) definition of policy influencers across government, non-governmental organisations, and the media. Including all three elected prime ministers since Bhutan’s transition to democracy further strengthened the sample’s breadth of high-level policy perspectives.

A purposive sampling strategy was used (Guarte & Barrios, 2006) with interviewees contacted for consent and asked to suggest expert substitutes. Snowball sampling (Leighton et al. 2021) remained an option. Data saturation was reached with 40 interviews. Participation was voluntary and confidentiality was assured. The in-person interviews were conducted in Bhutan from mid-February to mid-April in 2024, focusing on interviewees’ understanding of GNH, its strengths and limitations, and all aspects of its implementation in Bhutan.

All interviews were conducted by the lead author, recorded, transcribed, and carried out in English, with some parts in *Dzongkha* (national language) and *Tshangla* (a dominant language originating from eastern Bhutan). Non-English sections were translated into English and all transcripts were checked against recordings for accuracy before being imported into NVivo 12 (Phillips & Lu, 2018). A combined thematic and content analyses was applied: thematic analysis to identify and interpret key perspectives (Wiggins et al., 2024) on GNH, and content analysis to quantify the frequency of core concepts (Nimanis, 2024). Braun & Clarke’s (2006) six-step framework guided the thematic analysis, from familiarization and coding to theme development, review, and reporting.

Interviewees were coded in the order they were the interviewed (11, 12, 13...). The suffix(es) indicate their current or most recent occupation- civil servants (S), politicians (P), non-government organisations (N), and media (M) – listed from latest to earlier ones. Expertise in GNH (G) and/or climate change (C)

appears last in parentheses. For example, 29PS(G) refers to the 29th interviewee, whose latest role was politician, previously a civil servant, with GNH expertise. Many interviewees had held multiple professions; their backgrounds and expertise are summarised in Table 1. Interviewees are quoted 1 to 41, although one participant (36S(C)), declined to answer GNH answers; numbering was retained for consistency across the broader research.

RESULT AND DISCUSSION

This section probes into understanding the research questions on the conceptualisation of GNH as a development model and implementation as a governance tool.

Conceptualisation of GNH as a development model

When asked to describe what GNH means, most interviewees (n = 9; 23%) initially described their own ideas of happiness rather than the concept of GNH itself. Their interpretations ranged from personal and individual happiness to collective wellbeing at the community, national, and even global levels.

Personal interpretations included expressions such as “being financially and socially comfortable” (18N(C)) and “being happy and in inner peace” (19NM), reflecting understandings of GNH at an individual level. Interviewees also extended their interpretations of GNH beyond the personal, generalising it to what it might mean to others, as expressed in statements such as “happiness and wellbeing of the individual”

(26N(C)) and “happiness on every Bhutanese face” (17PB). Interviewee 30PMS(G) described GNH as the pursuit of both individual and collective happiness within the framework of the Bhutanese nation-state. Interviewee 21SM(G) emphasized that GNH is rooted in the Buddhist philosophy of interdependence, viewing happiness as a product of communal support intrinsic to Bhutanese communities, where people of all backgrounds help and support one another. GNH has also inspired interviewees to view happiness as a vision for humanity, as explained by interviewee 6PN,

“It's an idea that pursues higher human goals, which is happiness. And ultimately, for every sentient being, it is to be free of suffering, and be at peace, and be in harmony, and be contented.”

The diversity of these reflections reveal that policy influencers do not see GNH has a single, static concept but as an evolving philosophy bridging personal wellbeing and collective harmony. Some interviewees also regarded GNH as a concept that transcends conventional understandings of happiness, describing it as “more than momentary happiness” (12NS(C)) and as “contentment” (7MN; 24N(C)). Interviewee 7MN explained,

“At an individual level, if we remain happy with what we have, if we remain happy with what we are, then happiness is just a by-product of contentment.”

Table 1 The professional background and related expertise in GNH of the 40 participants are outlined in this table

	Occupation/Profession	Participant numbers	Total
1	Civil Servants (S)	1, 2, 3, 8, 10, 12, 13, 15, 17, 20, 21, 23, 25, 29, 30, 31, 33, 34, 36, 39, 40, 41	22
2	Politician (P)	2, 6, 9, 11, 13, 17, 22, 28, 29, 30, 31, 32, 40, 41	14
3	Non-government organisation (N)	6, 9, 10, 11, 12, 16, 18, 19, 20, 22, 24, 25, 26, 27, 31, 35, 37, 38, 39	19
4	Media (M) Expertise	2, 3, 4, 5, 7, 10, 14, 16, 19, 21, 28, 30, 32	13
1	GNH (G)	8, 20, 21, 29, 30, 35, 41	7
2	Climate change (C)	1, 12, 15, 18, 23, 24, 25, 26, 31, 33, 36, 39, 41	13

The above findings show that many interviewees first conceptualised GNH in terms of their personal ideas of happiness rather than its conceptual meaning. This indicates a discrepancy between personal interpretations and the institutionalised meaning of GNH, aligning with Ura et al. (2023), who point out that the abstract nature of GNH makes it challenging to operationalise. Some equated GNH to individual wellbeing, like financial security and inner peace and others extended their understanding to collective happiness, reflecting the Buddhist principles of interdependence (Givel, 2015). This duality also reflects discussions about happiness around the world, where Western models tend to prioritise subjective wellbeing (Diener et al., 2018), whereas Bhutan's approach is more inclined towards communal harmony (Schroeder & Schroeder, 2014).

The description of GNH as a beyond-happiness concept and as an ultimate vision for humanity and the main purpose in life resonates with McKnight & Kashdan (2009), who assert that the main purpose in life is a fundamental, self-organizing life objective that shapes and motivates goals, regulates behaviours, and provides a sense of meaning. The description of GNH as more than just a pursuit of momentary or personal happiness can be described as a 'happiness-plus' or a 'neo-happiness' attempt to understand GNH. This interpretation aligns with the eudaimonic perspective of happiness, focusing on human flourishing and purpose rather than on hedonic objectives of mere pleasure and satisfaction (Ehrlich et al., 2024).

Interviewees viewing GNH as a vision for the entire humanity aligns with Bhutan's advocacy for global wellbeing (Thinley, 2014). This broader perspective, although less common, highlights GNH's potential as an alternative development paradigm to the GDP model. Seen through the lens of happiness, the interpretations of GNH reveal a spectrum of interpretations from personal happiness to collective ethos, highlighting the need for deeper public engagement with GNH's principles to ensure its enduring relevance. The following subsections build on this conceptual understanding by exploring the philosophical foundations of GNH and the ongoing debate surrounding its measurability.

Philosophy versus measurability

The participants in the study endorsed GNH as a noble and wise philosophy and expressed their understanding of it through diverse theoretical frameworks. However, concerns were consistently raised regarding its measurability, which remains a point of contention. As a philosophical construct, GNH retains widespread appeal, primarily due to the transformative leadership of its founder, His Majesty the Fourth King. Most interviewees (n = 34; 85%) referenced him when discussing the concept. Those who served him closely (e.g., 23S(C), 29PS(G)) stressed that GNH must be understood within the context of its genesis. Interviewee 29PS(G), a former prime minister and a key figure in the global GNH discourse, claimed to have first heard the king mention GNH in 1974 or 1975. GNH was envisioned as a holistic development paradigm and a counter-narrative to

GDP-led progress, which was said to have brought societies to multidimensional existential threats from ecological and social to economic and nuclear crises. Interviewee 29PS(G) explained,

“So GNH is an alternative track... a track that moves away from this precipice... GNH is a holistic development paradigm which addresses the entirety of human needs”.

Interviewee 8S(G) from CBS observed that no single definition could encompass GNH's breadth and cited His Majesty's own framing of GNH as a balance between material and non-material aspects of development. Interviewees interpreted GNH as a holistic (n=16, 40%), inclusive (n=19, 48%), meaningful (n=9, 23%), and balanced (n=29, 73%) development philosophy/paradigm (n=33, 83%) beyond material development (and/or GDP) (n=23, 58%) placing people (n=18, 45%), happiness and wellbeing (n=35, 88%), at the centre of the development agenda respecting fundamental human values (n=11, 28%) inspired by spirituality (n=7, 18%) in general and Buddhism (n=17, 43%) in particular, culture (n=18, 45%), and Bhutanese way of life (n=12, 30%) guiding one towards the right approach to meaningful living (n=13, 33%). It was characterised as a “holy grail” (23S(C)), “national conscience” (6PN), “Bhutan's soft power” (37N), and even a “pun on greed and GDP” (21SM(G)). Some dissenting views labelled it “too idealistic” or “impractical” (15NS(C)), especially considering its perceived measurement challenges.

While GNH is measured through a robust statistical process, the Alkire-Foster method, only one interviewee (8S(G)) could confidently explain the index. The complexity of this process contributes to a widespread lack of understanding, as reflected in the view of interviewee 26N(C), who stated, “At the index level, it's very confusing.” Regarding whether GNH should be measured, 40% of participants said yes, 30% were undecided, and another 30% opposed it. Critics argued that happiness is a “state of mind” (15NS(C)) and should remain a guiding ideology (16NM), rather than a quantifiable target. Thus, while GNH is widely revered as a visionary philosophy rooted in holistic development, its technical measurability remains poorly understood, contributing to a gap between theory and practice.

The findings reveal strong support for GNH as a development philosophy, aligning with existing literature that positions GNH as a holistic alternative to GDP-centric development models (Ura et al., 2023; Thinley & Hartz-Karp, 2019). The description of GNH as a holistic, inclusive, and balanced ideology resonates with scholarly characterisations of GNH as a multidimensional framework integrating material, psychological, social, and ecological wellbeing (Verma, 2017). However, the persistent concern over its measurability also reflects a critical tension between GNH's theoretical appeal and its practical application (Braun & Hussain, 2009; Diener et al., 2008). The other challenge reflected banked upon GNH's anchorage to Buddhism (43%) and Bhutanese culture (30%),

which reinforces its contextual specificity, ultimately raising questions about its universal applicability and the struggle to reconcile cultural relativism with standardised metrics (Kasparian & Rolland, 2012).

Despite the statistical rigor of the Alkire-Foster method (Alkire, 2015), the interviewees' limited comprehension of GNH measurement reflects a broader issue in wellbeing indices, which is characterised by complex methodologies often alienating policymakers and citizens (Stiglitz et al., 2023). This is similar to the Human Development Index (HDI) being frequently misunderstood outside academic circles (Klugman et al., 2011). The split among participants on whether GNH should be measured mirrors academic divisions between those advocating quantifiable wellbeing metrics and those arguing that happiness is too subjective for standardisation (Li et al., 2023). The dissenting views labelling GNH as "too idealistic" (15NS(C)) reflect criticisms of Bhutan's own developmental contradictions, where the nation's rapid modernisation has challenged its sustainability ambitions (Schroeder & Schroeder, 2014). This tension between idealism and pragmatism is not unique and similar critiques have been levied at Sweden's 'lagom' (balanced living) model, which faces pressures from globalisation (Leese et al., 2016). Thus, while GNH has the potential to offer itself as a compelling alternative development paradigm, it faces the challenges of bridging the gap between conceptual richness and methodological clarity for effective operationalisation. The next subsection extends this discussion by analysing how these philosophical ideals translate into perceived strengths and limitations in practice.

Strengths and Limitations

Described by interviewee 8S(G) from the CBS as the "most comprehensive wellbeing indicator in the world," GNH was contrasted with other global wellbeing indicators, most of which typically measure only 10 to 15 wellbeing variables (8S(G)). In comparison, GNH considers 124 variables, making it more comprehensive and multidimensional. Moreover, GNH includes "intuitive and innovative" domains such as psychological wellbeing, time use, community vitality, and cultural diversity, which are not commonly found in other countries' development planning considerations. The majority of interviewees appreciated GNH for its superior philosophical foundation. Interviewee 20NS(G) described it as an "SDG-plus" model due to its incorporation of cultural values. Interviewee 22PN explained,

"GNH is the answer to all global challenges like climate change, poverty, destruction of nature, and over-consumption."

Further, interviewee 32PM emphasized the moral dimension of GNH:

"In many developed countries... there is an erosion of human values... GNH makes humanity better."

Several participants (n=6, 15%) praised GNH as being "well ahead of its time", conceptualised in the 1970s, predating global sustainable development discussions. According to interviewee 40PS, GNH could have even inspired the SDGs. Interviewee 4M further observed that Bhutan's constitution mandates the government to create a "conducive environment... for people to be happy," establishing GNH as a constitutional commitment.

A prominent limitation cited was the lack of a shared understanding of GNH (n=18, 45%). As interviewee 21SM(G) noted,

"When a concept is understood, there is no question about having any limitation."

Over time, GNH has become a popularised and often misused term, adopted in speeches by civil servants and politicians irrespective of comprehension (2PMS, 20NS(G), 21SM(G)). Interviewees (n=15, 38%) said that GNH had, over time, become an elitist concept with 2PMS describing the discourse on GNH as "academic and limited to the intellectual elite," contributing to its elitist image.

Interviewees noted the over-commercialisation of GNH, naming shops, hotels, and products after it, which led to public confusion and what several referred to as "GNH fatigue" (n=12, 30%) or even a "cliché" (n=7, 18%). This fatigue was described as a predominantly domestic phenomenon, with many believing that GNH largely enjoyed a positive international appeal (n=5, 13%). According to 32PM, GNH fatigue emerges when public dissatisfaction about any issue in Bhutan is framed as "GNH gone wrong," raising unrealistic expectations that everyone in Bhutan should always be happy. Another recurring concern was that an excessive focus on GNH had compromised economic development (32PM), despite economic sustainability being one of its four pillars. Interviewee 13PS pointed out that numerous recent royal decrees have been issued, pushing Bhutan towards more robust economic development, clearly suggesting the need to rebalance priorities. Some interviewees also pointed out the idealistic and impractical nature of GNH (n=5, 13%) and its implementation challenges (n=12, 30%) as limitations.

Interviewees' description of GNH as an 'SDG-plus' model reflects criticisms of SDG which has often been described as a Western-centric, technocratic, and sidelining cultural and spiritual dimensions (Kumar & Giri, 2020). The early conceptualisation of GNH in the 1970s, predating the global sustainability discourses, suggests Bhutan's pioneering role in wellbeing governance (Verma, 2017). This supports Alkire's (2015) argument that GNH played a role in influencing global development thinking by highlighting the importance of non-material dimensions of human development.

However, this paper also identifies critical limitations, with the most notable being the lack of a common understanding of GNH among the Bhutanese people. This reflects findings in the literature that complex wellbeing frameworks often struggle

with public engagement (McRae-Williams et al., 2018). The ‘GNH fatigue’ phenomenon resulting from the overuse of GNH in commercialisation mirrors critiques of “SDG-washing,” which happens when organisations falsely claim to contribute to SDGs for marketing and branding purposes (Costa et al., 2025). Describing GNH as an elitist idea reflects a broader challenge in participatory policymaking where abstract concepts often remain confined to academic circles (Borghi et al., 2017). A key tension exists between GNH’s moral idealism and economic pragmatism, as economic sustainability is a key pillar of GNH, and the emphasis on non-material values is perceived to hinder growth. This mirrors the global discussion on whether wellbeing frameworks can coexist with economic development models (Grimes, 2020). Numerous recent royal decrees calling for a national economic revitalisation also suggest a need to recalibrate priorities to balance ethical governance with material progress, which is a challenge observed in degrowth (Kallis et al., 2018) and post-development literature (McGregor, 2009). Future research should explore how Bhutan could enhance public engagement with GNH, mitigate commercialisation risks, and reconcile its spiritual foundations with economic imperatives. Comparative studies with other wellbeing frameworks, such as New Zealand’s Wellbeing Budget (Anderson & Mossialos, 2019) or Iceland’s welfare policies (Eydal & Ólafsson, 2016), could be undertaken to gain insights into addressing the limitations of GNH in relation to its role and utility as a development model.

Implementation of GNH as a governance tool

Currently, Bhutan does not have a formal policy or legal framework explicitly outlining how GNH should be implemented, while certain guiding narratives have evolved. Interviewee 29PS(G) said that Bhutan has been pursuing GNH “mindfully” since the 1970s. Key welfare provisions like free healthcare and free education are often cited as examples of Bhutan prioritising the wellbeing of its citizens in line with GNH values (21SM(G)).

The first democratically elected government (2008-2013) introduced the GNH screening tools to assess whether policies and projects aligned with GNH principles (29PS(G)). This administration also framed the development objectives of the five-year plan (FYP) and the annual performance reports based on the four GNH pillars. But subsequent governments have demonstrated less commitment, and as noted by a former cabinet minister, 29PS(G):

“Sad to say, this is no longer the case now. We abandoned GNH.”

The absence of explicit legislation on GNH implementation should not be interpreted to mean that it is not being implemented. According to the CBS, GNH is implemented at multiple levels through various mechanisms that have evolved. Interviewee 8S(G) articulated four main implementation strategies. First, the government uses the GNH index data as baselines and targets in FYP formulation. Second,

the government allocates higher budgets to districts with lower GNH scores. Third, the CBS has developed a GNH Certification for businesses as an assessment framework to align with GNH principles. Fourth, GNH has been included in the school curricula, including a master’s level module offered in collaboration with the University of Canberra.

It is noteworthy that Bhutan does not have a formal legislation on GNH implementation despite decades of discourse around the concept. The findings indicate that Bhutan has relied more on normative alignment with GNH values, like free healthcare and education, rather than codified governance procedures. This is consistent with Ura et al. (2023) who maintained that GNH has always functioned as an overarching philosophy rather than a legal framework. Such reliance on moral authority rather than statutory power illustrates both the cultural strength and administrative fragility of GNH as a governance tool. This reliance on implicit norms without legal mandates means the absence of accountability in deviating from GNH principles which could result in an erosion of its influence in policymaking and national planning. This has been pointed by Brooks (2013), who concluded that GNH has encountered difficulties in transitioning from an idealistic vision to measurable policy outcomes.

While the first elected government (2008-2013) aligned the FYPs to the four GNH pillars and championed the GNH screening tools, subsequent governments have not shown such explicit enthusiasm. These varying political commitments from different governments suggest a vulnerability of dependence on political will rather than legal enforcement. This contrasts with other wellbeing governance models, such as New Zealand’s ‘Wellbeing Budget’ model, which incorporates wellbeing metrics into fiscal policy (Anderson & Mossialos, 2019), thereby offering it a legislative umbrella. As such, the lack of similar legal instruments could help explain many issues related to the implementation of GNH.

The attempt to mainstream GNH principles is evident in the four strategies of implementing GNH as outlined by CBS - integrating GNH into planning, budget allocation, private sector certification, and education. But findings also question the consistency in the application across the four strategies. While the use of GNH data in planning resonates with broader literature on evidence-based policy (Baron, 2018), there is hardly any scholarly evidence to prove the claim about budget allocation prioritising lower GNH-score districts. Moreover, the GNH certification for business, although innovative, is not mandatory and it limits its systemic impact (Bencsik, 2023). However, the inclusion of GNH in the school curriculum and postgraduate education reflects a longer-term approach to societal change aligning with UNESCO’s emphasis on education for sustainable development and transformative learning (Mundy, 1999). The next subsection explores how Bhutan’s Five-Year Plans (FYPs) and the GNH screening tools have served as the main institutional vehicles for translating GNH into practice.

Five-Year Plans (FYPs) and the GNH Screening Tools as governance tools

A majority of participants (n=16, 40%) identified the FYPs as the primary vehicle for implementing GNH. Interviewee 13PS explained:

“All the Five-Year development plans are framed based on the four pillars... all 20 *dzongkhags* (districts), all 205 *gewogs* (sub-districts) are given a guideline... to propose development activities under each of the four pillars.”

This was corroborated by interviewee 20NS(G), who formerly served with the GNHC, affirming deliberate alignment between planning documents and GNH index findings.

The next most cited mechanism (n=12, 30%) was the use of GNH screening tools to evaluate proposed national policies and projects. According to 24N(C):

“Every policy that the government wants to propose goes through a set of evaluations. There is a set of screening tools. I would say it is fairly well-implemented.”

Similarly, interviewee 14M described the tools as a “GNH implementation guideline.” However, their coverage remains incomplete. Interviewee 30PMS(G), a two-time former Member of Parliament, noted that parliamentary legislation is not subject to these tools, highlighting a significant gap in application.

Moreover, concerns were raised regarding the continued relevance and utility of the screening tools. As explained by 34S, a senior civil servant:

“In the past, we tried (the screening tools)... But it was not proven to be relevant most of the time. We wanted to put it in a tool with specific criteria, but we realised that it cannot be a general policy tool. So, it was not found useful. But we are still trying.”

Interviewees identified the FYPs as central to GNH implementation aligning with literature that highlights their role as Bhutan’s primary planning tool (Ura et al., 2023; Thinley & Hartz-Karp, 2019). However, as previously noted, aligning developmental priorities depends on the political will of elected governments, making the process inherently subjective. This study saw interviewees questioning the relevance of the screening tools, even though they were initially seen as innovative instruments to align policies to GNH principles (Sithey et al., 2018). This study also discloses that the GNH screening process does not include parliamentary bills, which raises concerns about how selective application could compromise the coherence of overall policy (Barry et al., 2010). Moreover, doubts about the effectiveness of the screening tools mirror concerns about the complexities of applying complex models in real-world situations (Costa et al.,

2011).

Questioning the Reality of Implementation

Some participants expressed scepticism about the actual implementation of GNH. For instance, interviewee 11PN stated:

“I don't think we are implementing it as such... I don't think there is an intentional, planned government effort in defining the parameters of GNH and implementing it.”

Echoing this sentiment, six interviewees (15%) admitted uncertainty regarding how GNH is being implemented. The recent dissolution of the Gross National Happiness Commission (GNHC) further deepened doubts among respondents (2PMS, 30PMS(G), 13PS). Interviewee 13PS noted:

“Now we have done away with the GNH Commission, which means, I think, GNH screening tools will also disappear.”

However, interviewee 29PS(G) argued that removing the GNHC may encourage a more decentralised understanding of GNH responsibilities, making all government offices accountable rather than a single agency.

Interviewees’ questioning whether GNH is truly being implemented on the ground highlights the tension between policies that serve as a symbolic rhetoric and those that truly reflect an actionable national vision, as noted by Winton (2013). In Bhutan’s case, it is exemplified by the recent dissolution of the GNHC, which prompted interviewees to interpret it as a digression from the pursuit of GNH. Conversely, the argument that decentralising the responsibility of implementation across government agencies could foster wider ownership is reflective of governance theories emphasising shared responsibility (Kater & Kisker, 2018), but the effectiveness of such an approach depends on having effective monitoring systems in place (Rawluk et al., 2021), which Bhutan does not currently have. The next subsection discusses how GNH is informally practised through community life and cultural values rather than bureaucratic processes.

GNH as an Informal Practice and Way of Life

Some (n=6, 15%) interviewees asserted that GNH is more meaningfully practised at the community or household level and not as a governance tool. Interviewee 3MS emphasised:

“GNH is implemented in Bhutan not through governance... but through the community level itself, from the household level itself.”

Interviewee 39NS(C) agreed, stating:

“GNH is being implemented at the household level without even knowing that it is being implemented...”

it's a way of life to live meaningfully.”

This perspective was supported by 8S(G), who highlighted community vitality, volunteerism, and moral belief systems, such as karmic consequences, as informal yet significant conduits of GNH principles.

This finding aligns with the recognition that GNH is embodied in the Bhutanese way of life, and it is embedded in daily life at the household and community level. It reflects a bottom-up dimension of the GNH framework, which is consistent with Givel (2015) in emphasising that GNH is sustained by Bhutanese cultural and spiritual traditions and not just by state institutions. It supports the argument that karmic beliefs, community vitality, and volunteerism, among other value-based systems, are deeply embedded in Bhutanese society and arguably serve as organic manifestations of GNH principles (Givel, 2015). It aligns with Kothari et al.'s (2019) concept of “pluriversal development,” recognising alternative modernity grounded in local epistemologies. This experience of Bhutan also shows that development approaches can be guided by culturally rooted values rather than standardised global models.

Challenges of implementing GNH as a governance tool

Multiple challenges were identified that hinder effective implementation. Besides the lack of common understanding (n=18, 45%), resource constraints were reported by 16 interviewees (40%). As interviewee 34S summarized:

“All activities, at the end of the day, boil down to resources... and we don't have resources. We still depend on external aid, official development assistance, and grants.”

In addition to financial constraints, interviewee 8S(G) emphasised two further challenges: addressing public scepticism about GNH's practicality and deepening the understanding of GNH among policymakers and civil servants. Adding to it, interviewee 10NMS pointed out a gap between GNH literature and policy and highlighted that policymakers don't consult GNH literature produced by CBS.

Interviewees also noted a common misperception that GNH is antithetical to economic growth, potentially delaying progress (20NS(G), 33S(C), 40PS). Additionally, interviewee 30PMS(G) described a self-imposed reputational challenge:

“I think there is this excessive, very obnoxious paranoia about trying to get everything in line with GNH, and that could backfire... We talk as if unemployment does not exist... and then we get carried away with these international reports.”

At the global level, Bhutan's uniqueness in pursuing GNH presents its own challenge. Interviewee 6PN noted:

“A big challenge for Bhutan is that it is charting a lonely path with no precedence.”

The lack of a shared understanding of GNH is noted by Ura et al. (2023), who emphasises the need for ongoing dialogue and education to sustain GNH principles. It reflects findings in the broader governance literature where fragmentation of interpretation is noted as a barrier to integrated policymaking often leading to policy inconsistency (Cejudo & Michel, 2017). Similarly, interviewees citing resource constraints, including dependence on foreign aid as a challenge, is not surprising and aligns with the literature that wellbeing frameworks are often deprioritised under fiscal pressure (Stiglitz et al., 2023).

The limited engagement with academic literature by policymakers aligns with O'Toole (2000), who notes a perennial gap between research and policy. Addressing this tension seems critical in facilitating theoretically grounded and empirically robust applications of GNH. Furthermore, the perception that GNH hinders economic growth reflects the dichotomy between wellbeing indicators and conventional GDP-based development paradigms (Costanza et al., 2025). In this context, scholars like Alkire (2015) stress that wellbeing frameworks like GNH face the challenge of scientifically articulating how they complement economic imperatives rather than rejecting them.

As such, implementing GNH in Bhutan as a governance tool involves a complex interplay of philosophy, governance, and culture. The absence of a formal policy mechanism and political prioritisation presents serious concerns, but the enduring cultural resonance offers itself as a unique model of value-based development beyond the conventions of the GDP-based development model. Ultimately, for GNH to become a credible alternative development model and a governance tool, there is an ardent need for Bhutan to address implementation inconsistencies, enhance institutional capacity, and build stronger linkages between knowledge and practice. Future research should explore how GNH-inspired frameworks might be adapted in other cultural contexts and examine their comparative effectiveness against mainstream wellbeing models.

CONCLUSION

This paper explores how GNH is implemented in Bhutan as a development model and a governance tool. While Bhutan has been a trendsetter in the development model beyond the GDP movement, this study shows that Bhutan's experience with GNH needs further refinement in transforming it into a replicable development model and efficient governance tool. Bhutan could consider formalising the implementation of GNH through legislation (like a GNH implementation Act, or a policy), which could help integrate GNH across all policies by creating an independent oversight body to ensure accountability. There is a need to simplify the GNH index into localised and actionable metrics and narratives to inform and guide policymaking. Bhutan could also develop multi-pronged strategies to dispel the

perception that GNH hinders economic growth. Also, Bhutan could establish knowledge-sharing partnerships with other wellbeing-driven nations to test GNH's applicability to different cultural contexts. To this end, there is a need to invest in research and publish credible outputs accordingly. Future research could explore the understanding of GNH among different demographic groups to understand its evolving relevance to Bhutanese society. Comparative studies with other wellbeing models are crucial towards developing universally applicable development models.

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