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Horizontal Fiscal Imbalance in Nepal: Measurement and Policy Implications

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Abstract

This study measured horizontal fiscal imbalance across Nepal's provinces and local levels and assessed the role of fiscal transfers in addressing this imbalance. For this, the study employed static techniques, utilizing secondary data spanning the period from 2018/19-2022/23. Horizontal fiscal imbalance was measured using per capita GDP and per capita own revenue. The findings reveal that both provinces and local levels in Nepal display relatively unequal fiscal capacities. While HFI is moderate across provinces, it is significantly high across the local levels. Revenue sharing has positively contributed in addressing HFI at both the provincial and local levels. However, grants have had mixed effects: they slightly increased fiscal disparities across provinces while slightly reduced across local levels. Less developed provinces, like Karnali and Sudurpaschim saw improvements in fiscal capacity due to grants, despite an overall rise in fiscal disparities. At the local level, grants significantly boosted the per capita resources of rural municipalities, which tend to be more resource-deficient. Although fiscal transfers have played a positive role in addressing HFI, they remain insufficient. Therefore, there is a need to improve the current transfer system. This could involve expanding the range of taxes included under revenue sharing, adjusting the weights assigned to various factors in the formula used to determine revenue sharing and grants (particularly assigning greater weight to infrastructure development status) and incorporating relevant indicators, such as the per capita OR of provinces and local levels.

Keywords: Horizontal fiscal imbalance, federal system, fiscal transfers, Nepal, subnational governments

JEL Classification: H70, H71, H73, H77

Introduction

Fiscal imbalance is inherent feature of federal countries (Bird & Tarasov, 2004). Two major types of fiscal imbalance include vertical fiscal imbalance (VFI) and horizontal fiscal imbalance (HFI). VFI is the gap between own spending and own revenue of a government. While such gap exists across all levels of government, the concept predominantly pertains to subnational governments (Eyraud & Lusinyan, 2013). VFI, at the subnational level, occurs due to lower level of revenue decentralization compared to expenditure decentralization. HFI refers to the disparities in resources among governments operating at the same level (Bird, 2006). It can be measured in terms of difference in subnational governments' ability to generate revenue (Dafflon, 2007). While VFI and HFI arise in all countries of

the world, they are particularly prominent and frequently become the focal point of political discourse in the countries with federal system (Eyraud & Lusinyan, 2013).

HFI has substantial implications (Bird, 2006). Differences in subnational governments' (SNGs') economic foundations create disparities in their ability to generate tax revenue, which, without redistribution or varying federal transfers, leads to significant variation in the services provided to citizens (Hinchliffe, 1987). SNGs having more resources can provide more facilities to their residents. Such facilities could be provided on lower prices as well. Such SNGs could develop better infrastructures and could impose lower taxes to their residents. Such differences also create migration incentives, leading to labor misallocation, reduced marginal productivity and suboptimal aggregate output (Dahlby, 2005). People move towards those SNGs where there are more facilities, lower taxes, better infrastructure, among others. HFI generates disparities in net fiscal benefits-combining taxation levels and public services-which often justify the need for transfer payments and wealth redistribution across regions (Olisah, 2022).

Federal countries have placed significant emphasis on addressing HFI. They provide equalization grants to SNGs to tackle the issue of HFI, like in Ausatralia, Canada and Nepal (Intergovernmental Fiscal Arrangement Act [IFAA], 2017; Rangarajan & Srivastava, 2008; The Constitution of Nepal, 2015). Both in theory and practice, an equalization transfer is regarded as desirable to reduce HFI as it aligns with the principles of equity and efficiency (Rangarajan & Srivastava, 2008). It enables countries to benefit from decentralized public service delivery while empowering subnational governments with limited fiscal resources to offer comparable public goods and services (Turley & McNena, 2021). However, fiscal equalization grants (FEGs) could also have unintended consequences, like common pool problem and fly paper effect. Additionally, they may have incentive effect that reduce taxing efforts of SNGs (Buettner, 2005).

In 2015, Nepal implemented a new constitution, transitioning the nation from a unitary to a federal system. Nepal's federal system consists of three tiers of government: federal, provincial and local (The Constitution of Nepal, 2015). Nepal has seven provinces and 753 local levels. These provinces and local levels are SNGs of Nepal. The economic performance of Nepal's provinces varies significantly (Bhattarai, 2024a). Similarly, there are differences in the economic performance of local levels as well. The Constitution of Nepal (2015) and IFAA (2017) have made the provision of grants to be provided by federal government to the provinces and local levels, and by provinces to local levels. According to IFAA, 2017, government of Nepal should provide fiscal equalization grants to provinces and local levels on the basis of their expenditure need and revenue capacity as recommended by National Natural Resources and Fiscal Commission (NNRFC). Similarly, provinces should provide fiscal equalization grants to local levels that fall under their domain from the grants received from government of Nepal and from their resources on the basis of their expenditure need and revenue capacity as per the provincial law.

In this context, this study has two objectives: first, to measure HFI across provinces and local levels in Nepal, and second, to assess the role of fiscal transfers in addressing HFI at both the provincial and local levels. Measurement of HFI and examining the role of fiscal transfers could prove invaluable for policymakers in reducing discrepancies in fiscal capabilities among provinces and local levels and facilitating the crafting of targeted measures to mitigate them. This study is the first of its kind in the context of Nepal. It faces three key limitations. First, the limited availability of data. Nepal adopted federalism in 2015, but data for subnational governments are only available from 2018/19 onwards.

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Second, the lack of disaggregated data for provinces and local levels on their receipts throughout the study period. For example, provincial own revenue data are not reported separately but are combined with revenue sharing figures. Similarly, own-revenue data for local governments are available only for the fiscal years 2020/21, 2021/22 and 2022/23. Third, GDP data are available for provinces only.

Literature Review

In fiscal federalism literature, VFI has undergone extensive examination, while HFI has received comparatively less attention (Liddo et al., 2016; Sharma, 2012). Shankar and Shah (2001, 2003) have suggested two measures of HFI: static and dynamic. The static measures suggested include maximum to minimum ratio (MMR), coefficient of variation (CV), relative mean deviation, Gini index and Thiel index while dynamic measures include σ convergence and β convergence. Bird and Tarasov (2002, 2004), apart from the measures suggested by Shankar and Shah, has also suggested maximum (minimum) as percentage of national average of measure of HFI. Cowell (2011) has suggested range as a measure of HFI. Both maximum (minimum) ratio and range are static measures of HFI. On the other hand, Martinez-Vazquez and Boex (1997) have suggested regression-based approach to measure HFI.

Studies measuring the HFI across the countries using aforementioned methods are quite scarce. Bird and Tarasov (2004) measured VFI and HFI across Australia, Austria, Belgium, Canada, Germany, Spain, Switzerland and United States. The period covered in the study varied across these countries due to constraints related to data availability. VFI was measured by using unrestricted budget balances, budget balances excluding net intergovernmental transfers between government in question and other levels of government and vertical imbalance coefficient. Study found that VFI was consistently high in Belgium, high but in declining trend in Australia, and high and variable in Spain. It was consistently low in Germany, Austria, Canada, Switzerland and United States. Authors found that Germany and United States had highest HFI; Austria, Belgium and Spain had lowest HFI; and Canada had moderate HFI. In a similar study, Kowalik (2015) measured HFI in Germany, utilizing data encompassing the regional gross domestic product spanning from 1970-2013. The study revealed that HFI in Germany was lower before reunification compared to after. Following reunification, significant disparities emerged between old and new lander. Nevertheless, there has been a gradual reduction in HFI in Germany over time. This is attributed to the effective operation of both the federal and lander-level horizontal equalization systems in achieving their intended objectives.

Liddo et al. (2016) measured fiscal capacities of Italian municipalities based on regression analysis by using panel data of the period 2002-2010. Authors regressed actual tax revenue over a range of explanatory variables that include proxies for tax base. Study found that various types of incomes and market values, like residential cadastral income, commercial cadastral income, lag of commercial estate market values, lag of residential estate market values and real estate income are the determinants of fiscal capacity of Italian municipalities. Additionally, authors analyzed the impact of a significant policy shift in Italian municipal finance that occurred in 2008. Authors found that such policy shift increased VFI in Italy. Although the reform led to rise in HFI, the increased inequality in terms of fiscal capacity was offset by the increase in governmental grants.

Studies have explored the effects of and reform in fiscal equalization transfer. Albouy (2012) analyzed the federal fiscal equalization policy of Canada by developing a model that outlines the conditions under which household location decisions become efficient over the long-run and how federal transfers

can contribute to this efficiency. The author concludes that Canada's equalization policy is inefficient and displays some degree of inequity. There is a trend of fiscal benefits being directed towards less productive provinces, potentially disadvantaging minority households. To improve efficiency, the equalization policy could intensify the redistribution of source-based revenues and address interregional federal-tax disparities through refunds. Yaroshevych et al. (2024), by employing a quasi-experimental approach, analyzed whether the transfer system aimed at achieving horizontal fiscal alignment results in a decrease in financial system stability by increasing borrowing at both the municipal and national levels. Study was conducted in 1,439 Ukrainian municipalities. Authors found that a suboptimal system of horizontal fiscal alignment, which involves transferring funds from prosperous municipalities to less prosperous ones, results in an increase in public debt, consequently leading to decreased financial system stability. Additionally, it was found that the current Ukrainian mechanism of horizontal fiscal equalization, aimed at reducing inequalities in socio-economic development among communities and regions, paradoxically worsens these disparities.

In a study, Turley and McNena (2021) proposed a new fiscal equalization system for Ireland's local authorities based on a representative revenue system model and estimates of fiscal capacity. In Ireland, the local property tax (LPT) system allocates 80 percent of the estimated yield to respective local authority areas, while the remaining 20 percent is consolidated into an equalization fund for redistribution among local authorities with comparatively lower revenue bases. When local authorities fall short of the predetermined LPT baseline defined by central government as minimum funding requirement for each local authority, they receive equalization grant equivalent to this shortfall. Author argue that this method of providing equalization grant does not reflect the fiscal capacity of local authorities. In place of this fiscal equalization system, authors proposed a new system which is based on fiscal capacity of local authorities.

Studies have consistently utilized comparable methodologies to measure HFI across various countries. These methodologies encompass both static and dynamic approaches, ranging from descriptive analyses to regression-based models. Their findings underscore the prevalence of HFI in federal countries. While equalization transfers play a crucial role in mitigating HFI, they also come with adverse effects.

Methodology

Research Design

The study utilized descriptive techniques to analyze the data. First, HFI was measured across both provincial and local levels by using six measures of dispersion. Following this, the role of fiscal transfers in reducing HFI was analyzed. The measures of dispersion employed include maximum to minimum ratio, coefficient of variation and relative mean deviation as suggested by Shankar and Shah (2001; 2003) and minimum (maximum) as percent of national average as suggested by Bird and Tarasov (2002; 2004). Data were summarized in terms of these measures for per capita GDP and per capita own revenue (OR). However, GDP data are available at the provincial level whereas OR data are available for local levels only.

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Computation of HFI

Following Bird and Tarasov (2002; 2004) and Shankar and Shah (2001; 2003), diverse techniques were used to measure HFI. Using multiple approaches to measure HFI is effective because they capture different aspects of the issue, providing a more comprehensive understanding. When multiple methods yield similar results, it increases confidence in the findings. Moreover, employing various methods enables policymakers to adapt to changing circumstances and ensure a more equitable distribution of resources across regions. More specifically, this study used the following techniques to measure HFI:

a) Minimum (maximum) as percentage of national average

It represents the ratio of the per capita value in the poorest (or richest) subnational government (SNG) to the national per capita average, as shown below:

$\frac{y_{min}}{\bar{y}}\times 100\%$ and $\frac{y_{max}}{\bar{y}}\times 100\%$

b) Maximum to minimum ratio (MMR)

It is the ratio of per capita value of richest SNG (y_{max}) to per capita value of poorest SNG (y_{min}), i.e.

MMR = $\frac{y_{max}}{y_{min}}$.

c) Unweighted and weighted coefficient of variation (CV)

Unweighted CV was measured as follows:

$$CV_u = \frac{1}{\bar{y}_u}\sqrt{\sum_i \frac{(y_i-\bar{y}_u)^2}{N}}$$

Similarly, weighted CV was measured as follows:

$$CV_w = \frac{1}{\bar{y}}\sqrt{\sum_i (y_i-\bar{y})^2.\frac{P_i}{P}}$$

Weighted CV takes into account of population while measuring the inequality. As there is significant variation of population across the provinces and local levels of Nepal, use of weighted CV may be appropriate to measure inequality among them.

d) Relative mean deviation (R_w)

$$R_w = \frac{\sum_i |y_i-\bar{y}|.\frac{P_i}{P}}{\bar{y}}$$

The value of R_w can be utilized to assess whether the computation of CV is influenced by outliers. If the discrepancy between R_w and CV is small, it indicates that the computation of CV is not significantly affected by outliers. Conversely, a larger discrepancy suggests that outliers may have a substantial impact on the CV calculation.

Where, $\bar{y}$ = National average of per capita value, y_i = Per capita value of province (or local level) i, $\bar{y}_u = \frac{1}{N}\sum_i y_i$, N = No. of provinces (or local levels), $\bar{y}_u$ = Mean per capita value, P = National population,

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P_i = Population of province (or local level) i, R_w= Relative mean deviation weighted by population proportions of the province (or local level).

3.3 Sources and analysis of data

Secondary data were used in the study. Mainly, data were taken from publications of Ministry of Finance (MOF), publications of Financial Comptroller General Office (FCGO) and National Statistics Office (NSO). Both provincial and local level data were used, spanning the time frame from 2018/19-2022/23.

Results and Discussion

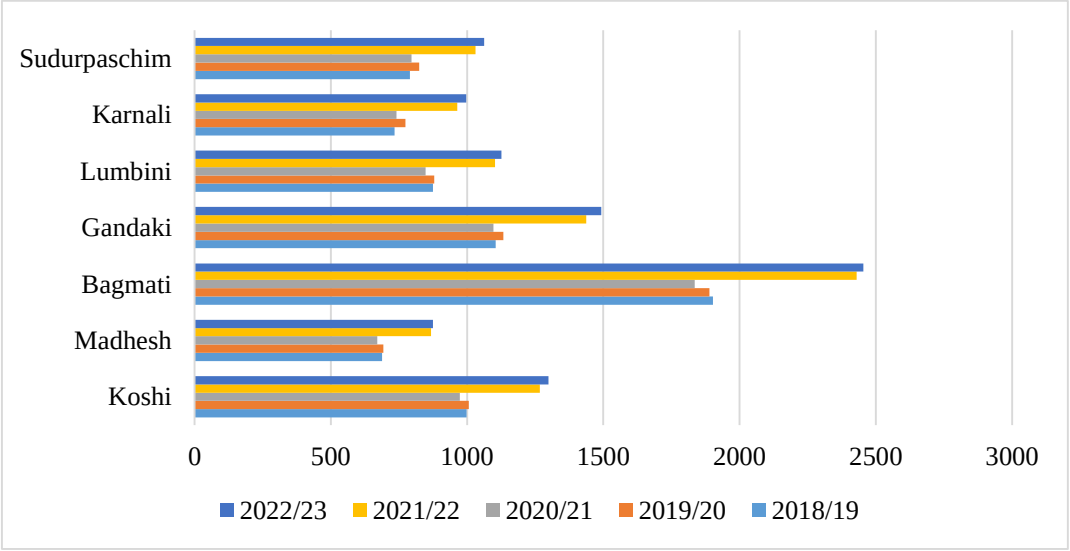
Measurement of HFI

HFI Across Provinces

Studies have used per capita subnational GDP, per capita subnational own revenue and per capita subnational expenditure as an indicator to measure HFI (Rangarajan & Srivastava, 2008; Shankar & Shah, 2003; Bird &Tarasov, 2004). However, this study uses per capita subnational GDP as a proxy for subnational fiscal capacity. Per capita expenditure may not actually reflect the subnational fiscal capacity as it includes intergovernmental fiscal transfer. Own revenue data of provinces are not available for study period. Per capita GDP data of Nepal's provinces are available for fiscal year 2021/22, 2022/23 and 2023/24 only (MOF, 2022, 2023, 2024). As provincial GDP values are available for 2018/19, 2019/20 and 2020/21, per capita GDP for those fiscal years were estimated by dividing each province's GDP (measured at basic prices) by the product of its population and the average annual exchange rate of the U.S. dollar against the Nepali Rupee as of the midpoint of the respective year (July 1). Figure 1 shows the per capita GDP of provinces.

Figure 1

Per capita GDP of provinces



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Study found that only two provinces, Bagmati and Gandaki, exhibit per capita GDP figures exceeding the provincial average in all fiscal years. The per capita GDP of Madhesh, Karnali and Sudurpaschim provinces was significantly lower compared to that of the other provinces as shown in figure 1, indicating the existence of HFI across the provinces in Nepal. Over the period 2018/19-2022/23, the average per capita GDP of Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali and Sudurpaschim was $1,109, $759, $2,102, $1,253, $966, $842 and $901 respectively. The provincial average per capita GDP was $1,013, $1,029, $994, $1,300 and $1,330 in 2018/19, 2019/20, 2020/21, 2021/22 and 2022/23 respectively.

Table 1 presents the measurement of HFI across provinces based on per capita GDP. In all fiscal years, the maximum values, expressed as a percentage of national average, are relatively high while the minimum values are low. This leads to MMR greater than one, indicating that provinces exhibit relatively unequal per capita GDP, as mentioned by Shankar and Shah (2003). The coefficient of variation further suggests moderate inequality in per capita GDP across Nepal's provinces. Additionally, the small discrepancy between the coefficient of variation and relative mean deviation values indicates that the inequality measurement is not significantly affected by outliers. In conclusion, there is moderate HFI across provinces in Nepal.

Table 1

HFI based on per capita GDP across provinces

Measures	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
Maximum as % of national average	187.76	183.58	184.61	186.92	184.59
Minimum as % of national average	68.92	67.35	67.40	66.77	65.79
MMR	2.76	2.73	2.74	2.80	2.81
CV_u	0.38	0.37	0.37	0.38	0.37
CV_w	0.44	0.42	0.42	0.44	0.43
R_w	0.32	0.31	0.32	0.33	0.32

Source: Author's computation based on MOF (2022, 2023).

HFI Across Local Levels

GDP data for local levels remains unavailable but own revenue, including opening balance (hereafter referred to as own revenue, OR), has been reported separately since the fiscal year 2020/21. The analysis reveals significant disparities in per capita OR among local governments over three fiscal years. In 2020/21, OR of Chhinnamasta rural municipality was unavailable, so it was excluded from the analysis. In this fiscal year, Sarkegad rural municipality had the lowest per capita OR (Rs 19) while Narpa Bhumi rural municipality had the highest (Rs 119,607), with an average per capita OR of Rs 4,034. Out of 753 local governments, 226 exceeded this average, including 152 rural municipalities, 4 metropolitan cities (excluding Biratnagar and Birgunj), 3 sub-metropolitan cities and 67 municipalities.

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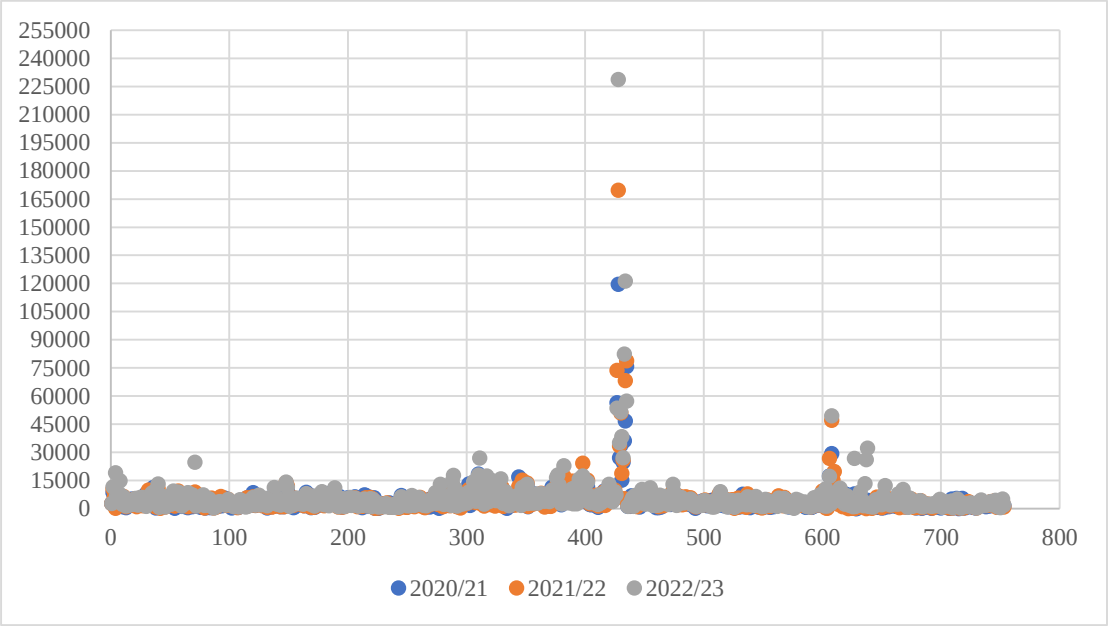
Figure 2

Per capita OR of local levels



Similar trends continued in subsequent years, with Narpa Bhumi consistently achieving the highest per capita OR (Rs 169,758) in 2021/22 and Rs 228,619.20 in 2022/23 while the lowest per capita OR ranged between Rs 18 (Mahbai rural municipality) and Rs 292.24 (Narainapur rural municipality) in 2021/22 and 2022/23 respectively. In 2021/22, data for Satri Tribeni, Palata, and Chankheli rural municipalities were unavailable, so they were removed from the analysis. The average per capita OR was Rs 4,423, with 220 local governments exceeding this threshold. Among these, 147 were rural municipalities, 5 were metropolitan cities (excluding Biratnagar), 3 were sub-metropolitan cities and 65 were municipalities. In 2022/23, the average per capita OR was Rs 5,366.83 and 200 local governments exceeded this figure. Of these, 147 were rural municipalities, 5 were metropolitan cities (excluding Biratnagar), 2 were sub-metropolitan cities and 46 were municipalities.

These findings highlight significant horizontal fiscal imbalances, with a small number of rural municipalities consistently outperforming others, including municipalities and sub-metropolitan cities. The increasing average per capita OR alongside declining numbers of high performers suggests growing disparities in revenue generating capacities. This calls for policy interventions, such as enhanced fiscal equalization measures and capacity-building initiatives, to ensure more equitable resource distribution and strengthen the fiscal autonomy of underperforming local governments.

Table 2

HFI based on per capita OR across local levels

Measures	2018/19	2019/20	2020/21	2021/22	2022/23
Maximum as % of national average	-	-	2,964.97	3,838.07	4,259.86
Minimum as % of national average	-	-	0.47	0.41	5.45

MMR	-	-	6,295.11	9,431	782.30
CV_u	-	-	1.61	1.92	2.91
CV_w	-	-	0.75	0.83	0.88
R_w	-	-	0.53	0.55	0.57

Source: Author's computation based on FCGO (2020, 2021, 2022, 2023, 2024) and NSO (n. d.-a, n. d.-b)

Table 2 measures the extent of HFI among Nepal's local governments based on per capita OR. The maximum as a percentage of the national average is notably high, while the minimum as a percentage of the national average is significantly low. The high values of MMR and CV indicate a significant HFI across local levels in Nepal. Although the difference between the coefficients of variation and relative mean deviation suggests that the inequality measurements are somewhat influenced by outliers, there is significant disparity in per capita OR across the local levels as shown in figure 2.

Role of Fiscal Transfers in Addressing Horizontal Fiscal Imbalance

Provincial Context

Role of Revenue Sharing

Table 3 presents the role of revenue sharing in addressing HFI across provinces. To this end, measures of dispersion are computed based on per capita own revenue including revenue sharing (ORRS) for the period 2018/19-2022/23. While the maximum as percentage of the national average remains high and the minimum as percentage of national average remains low, resulting in an MMR greater than 1, the values of both unweighted and weighted coefficients of variation suggest that HFI is moderate.

Table 3

Measures of dispersion based on per capita ORRS across provinces

Measures	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
Maximum as % of national average	137.69	141.29	137.07	139.66	149.21
Minimum as % of national average	59.48	64.78	61.77	65.32	63.52
MMR	2.31	2.18	2.22	2.14	2.35
CV_u	0.25	0.25	0.28	0.28	0.29
CV_w	0.25	0.28	0.30	0.30	0.32
R_w	0.22	0.26	0.28	0.29	0.30

Source: Author's computation based on FCGO (2024) and NSO (n. d.-a, n. d.-b)

A comparison of the dispersion measurements based on per capita GDP and per capita ORRS suggests that inequality across Nepal's provinces is greater in terms of per capita GDP than in per capita ORRS. In terms of per capita GDP, only Bagmati and Gandaki provinces consistently exceeded the average across all fiscal years analyzed. However, in terms of per capita ORRS, Karnali province also surpassed the average in all fiscal years. Additionally, Sudurpaschim province exceeded the average per capita ORRS in one fiscal year. Notably, the CV values decreased significantly after the revenue sharing as

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shown in table 3. Thus, the revenue sharing mechanism is helping to reduce HFI across provinces, functioning as a redistributive tool to reduce fiscal disparities. Moreover, the persistent economic inequality, as reflected in per capita GDP, remains a significant challenge that may require targeted policies to address provincial economic disparities. Provinces with low per capita GDP should focus on promoting investment and utilizing their resources more efficiently to boost productivity and generate higher revenue (Bhattarai, 2024b).

Role of Grants

As shown in table 4, the fiscal disparity across provinces increased after receiving grants compared to the levels observed following revenue sharing. However, despite this rise, they remain lower than the measures based on per capita GDP. Thus, the provision of grants led to changes in resource distribution. Notably, Gandaki, Karnali and Sudurpaschim provinces consistently had per capita own revenue including revenue sharing and grants (ORRSG) above the provincial average in each fiscal year. Karnali consistently recorded the highest per capita ORRSG, followed by Gandaki and Sudurpaschim. Thus, grants have significantly boosted the per capita resources of Karnali and Sudurpaschim, which are particularly resource-deficient provinces.

Table 4

Measures of dispersion based on per capita ORRSG across provinces

Measures	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
Maximum as % of national average	178.10	167.93	161.95	174.92	181.56
Minimum as % of national average	55.35	59.06	55.44	57.58	59.42
MMR	3.22	2.84	2.92	3.04	3.06
CV_u	0.38	0.33	0.33	0.36	0.39
CV_w	0.33	0.28	0.30	0.31	0.33
R_w	0.29	0.23	0.26	0.26	0.28

Source: Author's computation based on FCGO (2020, 2021, 2022, 2023, 2024) and NSO (n. d.-a, n. d.-b)

Grants from the federal government to provinces in Nepal depends upon seven criteria, i.e. human development index, provincial and local development, situation of discrimination, status of infrastructure development, necessity of service delivery, revenue capacity and expenditure need (National Natural Resources and Fiscal Commission Act [NNRFCA], 2017). Taking into account of human development index, provincial and local development and status of infrastructure development of Karnali and Sudurpaschim provinces, this reverse form of HFI due to grants is justifiable as transfer system aims to bridge long-standing development gaps and ensure equitable resource distribution. The higher per capita fiscal support helps less developed provinces, like Karnali and Sudurpaschim catch up with other provinces. Karnali is largest province while Sudurpaschim is the fifth largest province. These provinces have very low access to financial services, many people don't have access to electricity, many people in local levels don't have road access to centre of respective local levels, low number of secondary schools, less hospitals and so on (MOF, 2024). Additionally, the human development index of these two provinces is relatively low (Government of Nepal [GON], & United Nations Development Programme [UNDP], 2020).

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Local Level Context

Role of Revenue Sharing

Table 5 presents the fiscal disparity across the local levels based on ORRS. The maximum as a percentage of the national average is notably high, while the minimum is significantly low. This results in a high MMR, indicating substantial inequality across local levels. The high CV further reinforces fiscal disparity. Although revenue sharing has significantly reduced the fiscal disparity compared to the own revenue situation presented in table 2, a substantial fiscal disparity still persists across local levels. Over two-thirds of local levels were found to have per capita ORRS below the average. Additionally, the study revealed that among the four types of local levels, municipalities and sub-metropolitan cities have a higher proportion of local levels with per capita ORRS below the average. This may be due to their higher population size.

Table 5

Measures of dispersion based on per capita ORRS across local levels

Measures	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
Maximum as % of national average	1,772.94	1,533.84	-	-	1,909.63
Minimum as % of national average	3.59	0.38	-	-	28.38
MMR	449.21	4,012.57	-	-	67.27
CV_u	0.94	0.87	-	-	1.08
CV_w	0.57	0.48	-	-	0.50
R_w	0.38	0.38	-	-	0.40

Source: Author's computation based on FCGO (2020, 2021, 2022, 2023, 2024) and NSO (n. d.-a, n. d.-b)

Role of Grants

As demonstrated in table 6, grants have further contributed to reducing fiscal disparity across local levels compared to revenue sharing. They have significantly improved the per capita resources of rural municipalities, which are relatively more resource-deficient among local governments. However, despite these improvements, the level of disparity across local levels remains considerably high. This indicates that while revenue sharing and grants play a positive role in mitigating fiscal disparity, the current transfer system remains insufficient to fully address existing gaps. In this context, adjustments to the transfer system are necessary,particularly by assigning greater weight to infrastructure development status and incorporating relevant indicators such as per capita own revenue (OR) of local levels.

Table 6

Measures of dispersion based on per capita ORRSG across local levels

Measures	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
Maximum as % of national average	1,705.01	1,745.59	1,796.98	1,978.96	1,768.35

Minimum as % of national average	29.68	17.52	15.76	31.12	30.54
MMR	57.44	99.64	112.30	63.58	57.90
CV_u	0.90	0.92	1.00	1.02	0.92
CV_w	0.50	0.46	0.45	0.45	0.49
R_w	0.40	0.39	0.38	0.38	0.43

Source: Author's computation based on FCGO (2020, 2021, 2022, 2023, 2024) and NSO (n. d.-a, n. d.-b)

Policy Implications

The results confirm moderate HFI across Nepal's provinces, primarily driven by disparities in per capita GDP. Bagmati and Gandaki provinces consistently recorded per capita GDP above the national average, while other provinces consistently fell below it. The average per capita GDP of Madhesh and Karnali, the provinces with the lowest figures, was almost 33% and 26% less than the provincial average respectively, highlighting economic disparities. While revenue sharing mechanism reduced fiscal disparity across provinces, the persistent inequality in economic indicators like per capita GDP reflects structural challenges. Revenue sharing has improved the fiscal capacity of underperforming provinces like Karnali and Sudurpaschim. This underscores the redistributive effect of revenue sharing but also indicates that economic disparities remain inadequately addressed. Grants have increased fiscal disparity across the provinces. However, it improved the fiscal capacity of Karnali and Sudurpaschim provinces. Karnali has consistently recorded the highest per capita ORRSG, benefiting from the grant distribution. The persistent economic disparities across provinces underline the need for targeted interventions to stimulate economic growth in less-developed provinces and foster equitable development.

At the local level, the analysis revealed stark disparities in per capita OR. On average, 37.78% rural municipalities, 21.50% municipalities, 24.24% sub-metropolitan cities and 66.67% metropolitan cities had per capita OR higher than average per capita OR. Although revenue sharing has helped mitigate fiscal disparity, substantial disparities persist among local levels. This is evident from the high MMR and CV, even after accounting for revenue sharing. Grants have further reduced disparities. However, the high level of fiscal disparities across local levels suggests that the existing fiscal transfer system does not adequately address the disparities.

The findings underscore the importance of fiscal transfers in reducing subnational fiscal disparities. However, the current system requires refinement to further enhance its redistributive impact. Assigning greater weight to factors such as infrastructure development status and incorporating more relevant indicators, like per capita OR. Enhancing the fiscal capacity of resource-deficient SNGs is essential. Targeted investments in infrastructure, education and healthcare can help to bridge developmental gaps and boost productivity. Karnali and Sudurpaschim, for instance, require sustained support to improve their economic indicators. Addressing economic disparities requires policies aimed at fostering subnational economic development. Provinces with low per capita GDP should prioritize investment in sectors with high growth potential and efficient resource utilization to boost their revenue generation capabilities. Regular assessment of fiscal disparities and the effectiveness of transfer mechanisms is crucial. This study demonstrates the utility of techniques like CV in measuring fiscal disparity. Incorporating such evaluations into policymaking can ensure that fiscal transfers align with the needs of SNGs.

Conclusions

This paper measured the HFI across SNGs of Nepal and examined the role of fiscal transfers in addressing this imbalance. The study employed descriptive research design, measuring HFI using the indicators per capita GDP and per capita OR. The findings indicate that both provinces and local levels exhibit relatively unequal fiscal capacities, though the level of inequality is moderate across provinces while significantly high across local levels. Revenue sharing has contributed positively to reduce fiscal disparities across both provinces and local levels. Grants have increased fiscal disparities across provinces while it reduced across local levels. Regarding provinces, the fiscal capacity of less developed provinces such as Karnali and Sudurpaschim increased due to grants, even though fiscal disparities rose overall. Regarding local levels, grants increased per capita resources of rural municipalities significantly, which are relatively more resource-deficient among the local levels. Thus, fiscal transfers played positive role to address fiscal disparities across subnational governments of Nepal. Although fiscal transfers have played a positive role in reducing fiscal disparities, they remain insufficient. Therefore, there is a need to improve the current transfer system. This could involve expanding the range of taxes included under revenue sharing, adjusting the weights assigned to various factors in the formula used to determine revenue sharing and grants (particularly assigning greater weight to infrastructure development status) and incorporating relevant indicators, such as the per capita OR of local levels.

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