Abstract
This paper investigates the relationship between income tax revenue and GDP economic growth in Nepal from 2070 to 2079 B.S. The study draws upon the Economic Survey of Nepal and the data produced by Nepal Rastra Bank. By employing a linear regression model, it reveals significant influence of income tax revenue on the progression of Nepal's GDP. Methodology involves meticulous data collection and comprehensive statistical analysis. The linear regression model serves as the primary analytical tool to discern the nature and magnitude of the impact of income tax revenue on GDP economic growth. It demonstrates a positive relationship between income tax revenue and GDP progression, implying that an increase in income tax revenue correlates with a corresponding rise in Nepal's economic growth. This outcome underscores the importance of effective tax policies and revenue collection mechanisms in fostering economic development and stability in the country. In conclusion, the empirical evidence presented here highlights the pivotal role of income tax revenue in shaping the country's economic trajectory, making it an important area for policy intervention and reform as Nepal navigates its path towards prosperity in the 21st century.

Keywords: Income tax revenue, impact analysis, GDP, economic growth, tax policy, Nepal.

Introduction
The intricate relationship between income tax revenue and Gross Domestic Product (GDP) economic growth has long been a subject of keen interest for policymakers, economists, and scholars worldwide. In the context of Nepal, a nation marked by its aspirations for sustainable development and prosperity, this study embarks on a meticulous exploration of this pivotal nexus, spanning the fiscal years 2071 to 2077 B.S. This period signifies a crucial juncture in Nepal's economic journey, during which the government has been increasingly committed to fostering growth and improving the welfare of its citizens.
Governments around the world rely on substantial financial resources from both internal and external sources, with internal funding categorized into two main types: tax sources and non-tax sources (Gujarati, 2004). Among these, tax sources hold paramount importance, constituting a critical pillar of government revenue generation. Direct tax sources encompass various components such as Value Added Tax (VAT), customs duties, excise duties, and income tax. In the context of Nepal, tax sources make a substantial contribution to the nation’s Gross Domestic Product (GDP), surpassing the contribution of non-tax sources. Consequently, tax revenue emerges as the primary driver of government finances.

Kharel (2021) assert that income tax holds significant importance in the domain of tax revenue, irrespective of a country’s level of development. Essentially, income tax can be described as the financial contribution made by individuals and businesses to the government based on their income, whether derived from employment or business activities, without necessarily entailing a direct, corresponding benefit in return (Adhikari, 2020). It is a tax levied on the basis of an individual’s or entity’s income.

Adhikari (2020) further emphasize that taxation plays a pivotal role in not only collecting revenue but also in fostering economic development and stability within a nation. Also, Lee and Gordon (2005) assert that taxation, as a mandatory imposition by the government on residents’ earnings, income, or consumption, plays a vital role in promoting the equitable distribution of national income among the population. This financial contribution is viewed as a compulsory and obligatory responsibility, shared by both individuals and businesses, to aid the government in fulfilling its essential obligations (Dandago & Alabede, 2001).

Gale (1998) had focused on that the impact of income tax on long-term economic growth is a complex matter, heavily dependent on how tax changes are structured and financed. While lowering tax rates can potentially encourage individuals to work harder, save more, and invest, failing to offset these reductions with immediate spending cuts can lead to a growing federal budget deficit over time, eroding national savings and elevating interest rates. The overall effect on economic growth remains uncertain, with numerous assessments suggesting a minimal or even negative impact. Implementing measures to broaden the tax base can offset the negative consequences of rate reductions on budget deficits, albeit at the cost of diminishing their direct influence on labor supply, savings, and investment. However, such measures can reallocate resources efficiently across sectors, potentially enlarging the economy. The research emphasizes that tax changes’ impact on growth varies; reforms that improve incentives, curtail existing subsidies, avoid windfall gains, and eschew deficit financing tend to have more favorable effects on the long-term economy, albeit with possible trade-offs between equity and efficiency considerations in the tax system.

Adjusting the personal income tax code has been shown to significantly influence GDP per capita by stimulating entrepreneurship, primarily through lower tax rates and incentives that encourage individuals to invest in new ventures and start businesses, thereby fostering innovation, job creation, and economic expansion. However, this potential for increased GDP per capita through favorable tax policies comes with a trade-off, namely, the delicate balance between promoting growth and equity. While such tax changes can spur economic growth and higher incomes for entrepreneurs, they may also exacerbate income inequality, given that those benefiting most are often individuals with higher incomes and access to capital. Policymakers face the complex challenge of carefully weighing these
trade-offs when crafting personal income tax reforms, necessitating complementary measures like targeted social programs or progressive taxation on high earners to mitigate potential adverse effects on income inequality. In essence, achieving a well-rounded tax policy that simultaneously drives economic prosperity and ensures equitable benefits underscores the significance of thoughtful and comprehensive tax policy design (OECD, 2020).

This research is important for many reasons. First, it helps us understand how money and taxes affect Nepal's economy. This knowledge is useful for leaders, economists, and researchers. Second, the study shows a positive connection between higher tax revenue and economic growth in Nepal. This gives leaders valuable insights to create better tax policies. Third, the research suggests ways for the Inland Revenue Department in Nepal to collect taxes more effectively, ensuring stable government finances. It also emphasizes how crucial good tax policies are for Nepal's economic strength. Additionally, the study adds to what we know in academics by explaining the link between income tax and Nepal's economy, providing a base for future research. Lastly, the global importance of this research extends to understanding how taxes impact economies, helping in handling economic challenges in developing countries.

This study addresses a policy-level problem related to economic growth and tax policies in Nepal. The challenge lies in formulating effective policies that stimulate economic development while ensuring stable government finances. The study provides a solution by uncovering a positive relationship between increased income tax revenue and GDP growth. This insight empowers policymakers to craft more impactful tax policies, promoting economic prosperity while maintaining fiscal stability. Additionally, the research offers actionable suggestions for the Inland Revenue Department to enhance tax collection methods, addressing the policy-level problem and contributing to the overall economic well-being of Nepal.

The choice of sample in this study complements the problem by focusing on relevant data sources such as the Economic Survey and the Inland Revenue Department of Nepal. This targeted approach ensures that the research captures the intricacies of Nepal's economic landscape, aligning with the policy-level problem addressed. While the results are specific to Nepal, the methodology, including regression analysis and correlation, enhances the generalizability of findings to similar contexts. The insights gained from this study can inform and guide policymakers in other developing economies facing comparable challenges, thereby contributing to more broadly applicable solutions.

**Literature Review**

Income tax and GDP are highly discussed areas of research. A number of researchers have conducted their research in the study of income tax and GDP in various research projects. The researcher, here, has incorporated his ideas and research findings as the review of literature.

**Theoretical Review**

Odum and Egbonike (2018) investigated how income tax affects the growth of GDP, specifically focusing on the fiscal policy framework in Nigeria. They utilized time series data and applied various statistical methods such as the Granger Causality test, Pearson Coefficient Correlation, OLS regression
method, Johansen co-integration test, and the Error Correction Model (ECM) to analyze the dataset. The findings showed a positive and statistically significant relationship between income tax and GDP growth at the 5 percent significance level. Using different data set obtained from different economic environment, Dackehag and Hansson (2012) analyzed how tax on income impact upon GDP growth. More specifically, they studied how statutory tax rates on personal income and corporate income influence GDP growth by using panel data for 25 rich OECD countries. The findings reveal that both taxation of personal and corporate income negatively influence GDP growth. However, the correlation between corporate income tax and GDP growth was found to be more robust.

Padovano and Galli (2001) suggests improved econometric assessments of effective marginal income tax rates across 23 OECD nations from 1951 to 1990. Through panel regressions, these measures exhibit a negative correlation with economic growth. This aligns with endogenous growth theories but contradicts much of the existing empirical research, which predominantly relies on measures of effective average tax rates. Notably, this adverse correlation persists even when accounting for various other factors influencing growth.

Karras and Furceri (2009) explored how changes in taxes affect economic growth. By analyzing annual data from 1965 to 2003 in nineteen European economies, their study consistently found that when taxes increased by 1% of GDP, it had a lasting negative impact on real GDP per capita. The estimated lasting effect ranged from -0.5% to -1%. Notably, the research indicates that hikes in social security contributions or taxes on goods and services wield more substantial adverse impacts on per capita output compared to increases in income tax.

Arnold et al. (2011) identified tax policies that have two goals: speeding up the recovery from the current economic crisis and promoting long-term growth. Balancing these objectives presents a challenge as short-term recovery necessitates demand increases, whereas sustained growth relies on supply enhancements. Implementing short-term tax concessions, often difficult to reverse, may inadvertently pose a threat to long-term growth prospects. Leveraging contemporary evidence on how tax structures influence economic growth, the analysis identifies tax modifications that not only promote long-term growth but also contribute to recovery efforts, all while considering the imperative to safeguard individuals with low incomes.

Nguyen et al. (2021) explored the impacts of different categories of taxes, including individual income, corporation, and consumer taxes, in the United Kingdom from 1973 to 2009. Their research highlighted those reductions in income tax, encompassing both individual and corporation taxes, wield considerable influence on GDP, private consumption, and investment. Notably, GDP demonstrates a growth of 0.78 percent for every percentage point decline in the average income tax rate. While the impact of cuts in consumption taxes appears less pronounced and lacks statistical significance, the study emphasizes the advantageous effects of transitioning from an income-based taxation system to one centered on consumption. Consumption taxes, recognized for their lower distortionary impact on work and investment incentives crucial for sustained economic growth, offer favorable implications when compared to other tax forms. The research underscores the substantial impact of diminished income taxes on GDP, private spending, and investment. Conversely, the study notes minor and statistically insignificant benefits concerning lower consumption taxes on GDP and its components. Overall, the shift of the tax burden from income to consumption is regarded as expansionary.
Pradhan (2001) states, "Income tax contributions of Nepalese public enterprises related to Nepal Telecom Corporation." In this study, Pradan found that income tax is a good source of internal resource mobilization and the income tax burden on public enterprise in Nepal was not significant during the investigation due to poor performance, weak government economic policies, and deficiencies in the law. She also stated that NTC accounted for 44% of total income tax revenue from PE, which was 34% in 1993-94 EY. With the exception of EY in 1991/92 and 1996/97, NTC's income tax collections gradually increased during the study period.

Kharel (2021) had explained that taxes are the Country's primary sources revenue, with this collected from individuals, business, investor and others to fuel the economy. Taxation is the primary sources of government revenue and revenue is the powers of government machinery. He further states tax system is critical because it provides government with defendable and sustainable revenue collection reduces reliance on foreign aid and increases financial autonomy and shows the positive relationship between tax revenue and growth of GDP.

**Empirical Review**

Pokharel (2019) explores the impact of tax adjustments on economic growth, considering various variables. Analyzing annual data from 1990 to 2012 across ten economies, the results indicate a consistently negative and lasting effect on real GDP per capita following an increase in taxes. The study identifies a noteworthy long-term influence on real GDP per capita with a 1% rise in the total tax rate, measured as the total tax ratio to GDP. Additionally, the research suggests that contributions from Foreign Direct Investment (FDI) and other taxes exert a more substantial adverse impact on per capita output compared to an escalation in taxes on goods and services.

Lee and Gordon (2005) had found that the increased corporate tax rates are expected to hinder economic growth, with the impact of elevated personal tax rates remaining uncertain. This study delves into the concrete effects of tax policies on a nation's growth rate, utilizing cross-country data spanning the period from 1970 to 1997. The results demonstrate a noteworthy adverse correlation between statutory corporate tax rates and cross-sectional disparities in average economic growth rates. This correlation persists even after adjusting for various factors influencing economic growth and standard tax variables. Through fixed-effect regressions, the study further verifies that an increase in corporate tax rates is associated with reduced future growth rates within countries. The estimated coefficients suggest that a 10-percentage-point decrease in the corporate tax rate has the potential to boost the annual growth rate by one to two percentage points.

Vartia (2008) looks at how different taxes can affect investment and productivity using data from some OECD countries. The study checks if different industries react differently to taxes. It finds that when corporate taxes go up or allowances for capital depreciation go down, investment goes down because it becomes more expensive. The paper also explores how taxes connect to productivity, suggesting that certain industries are more affected by specific taxes. The results show that corporate and top personal income taxes hurt productivity, while tax incentives for research and development (R&D) help. These effects are stronger in industries that make more money, have more entrepreneurial activity, and focus more on R&D.
Stoilova and Patonov (2012) analyzed the underlying trends in the allocation of the overall tax burden among the European Union's member states (EU 27) spanning the period from 1995 to 2010. The comparative examination focuses on variations in the total tax burden across countries, gauged by the tax-to-GDP ratio, and the structure of the tax system, outlined by the breakdown of total tax revenues into key components such as direct taxes, indirect taxes, and social contributions. Special attention is given to evaluating the impact of taxation on economic growth, utilizing regression analysis as the primary investigative method. The principal finding underscores that a tax structure emphasizing direct taxes is more effective in fostering economic growth across EU nations.

Identification of Research Gap

The existing literature on the relationship between tax, specifically income tax, and GDP growth in various countries generally indicates a negative correlation. However, our examination of the context in Nepal reveals an inverse result, showcasing a positive relationship between these variables. This notable deviation prompts an exploration into the research gap, as there is a scarcity of studies addressing the specific reasons behind Nepal's distinctive pattern of a positive correlation between tax and GDP growth. Understanding this anomaly becomes crucial for policy formulation and economic planning in Nepal, necessitating a comprehensive investigation into the factors that contribute to this unique relationship and differentiates it from the prevailing global trends.

Research Objective

The primary objective of this paper is to conduct a comprehensive examination of the dynamic relationship between Income tax and Gross Domestic Product (GDP). Utilizing regression analysis, our aim is to unveil the intricate interplay between Income tax policies and their consequential impact on GDP. The central focus of our investigation is to elucidate how a thoughtfully designed income tax system can serve as a catalyst for economic growth. This study seeks to provide a nuanced understanding of the relationship between Income tax and GDP, with a specific focus on its implications for the Nepalese economy. Our overarching goal is to furnish practical insights that can inform policymakers and economic planners in Nepal. The objective extends to facilitating informed decision-making in areas such as tax policy optimization, strategic investments in taxation infrastructure, and the promotion of economic stability. Ultimately, our research endeavors to contribute to the development of targeted and effective economic policies uniquely tailored to the distinctive context of the Nepalese economy.

Research Methodology

For the completion of this research researcher will analyze the data based on Secondary data. To support the research, researcher has used data published by government and non-government. Economic Survey report, various articles published by Central Bureau of Statistics and Tax Revenue document, Bulletin published by Nepal Rastra Bank are used. Simple regression model has been applied.

The impact of income tax Revenue of GDP is estimated by:

\[ GDP = \alpha + \beta_1 IT + \mu \]
where GDP is the gross domestic product, the αO is Constant; β1 Coefficient parameter and μ is error term. The GDP is expected to be increased due to increase in income tax revenue.

Table 1: Trends of share of total revenue and income tax revenue to GDP from year 2070 to 2079B.S.

<table>
<thead>
<tr>
<th>Years</th>
<th>GDP (In Arab)</th>
<th>Total Revenue (in Arab)</th>
<th>Income tax (in Arab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2070/71</td>
<td>2232.5</td>
<td>356.42</td>
<td>77.92</td>
</tr>
<tr>
<td>2071/72</td>
<td>2423.6</td>
<td>405.87</td>
<td>79.67</td>
</tr>
<tr>
<td>2072/73</td>
<td>2608.1</td>
<td>481.97</td>
<td>117.13</td>
</tr>
<tr>
<td>2073/74</td>
<td>3077.1</td>
<td>609.18</td>
<td>135.58</td>
</tr>
<tr>
<td>2074/75</td>
<td>3455.9</td>
<td>726.72</td>
<td>159.9</td>
</tr>
<tr>
<td>2075/76</td>
<td>3858.9</td>
<td>839.66</td>
<td>192.87</td>
</tr>
<tr>
<td>2076/77</td>
<td>3888.7</td>
<td>793.78</td>
<td>197.69</td>
</tr>
<tr>
<td>2077/78</td>
<td>4352.5</td>
<td>938.32</td>
<td>203.99</td>
</tr>
<tr>
<td>2078/79</td>
<td>4933.6</td>
<td>1067.95</td>
<td>260.08</td>
</tr>
<tr>
<td>2079/80</td>
<td>5381.3</td>
<td>957.15</td>
<td>249.58</td>
</tr>
</tbody>
</table>

Source: IRD, Government of Nepal

The provided table encompasses data on GDP (in Arab), Total Revenue (in Arab), and Income tax (in Arab) for the years 2070/71 to 2079/80. Examining the trends, GDP consistently displays an upward trajectory, signifying continuous economic growth from 2232.5 in 2070/71 to 5381.3 in 2079/80. Both Total Revenue and Income tax also exhibit a general upward trend, indicating intensified government revenue collection efforts. Notably, the positive correlation observed between GDP and Total Revenue suggests that economic growth corresponds to increased government revenue. The growing figures for Income tax underscore its escalating contribution to the overall government revenue. However, a notable anomaly in 2076/77, marked by a decline in both Total Revenue and Income tax despite GDP growth, warrants further investigation. To gain a more comprehensive understanding, additional analyses, such as correlation and regression, could be conducted to quantify the relationships between GDP, Total Revenue, and Income tax. Additionally, exploring the specific factors contributing to the outlier in 2076/77 would provide valuable insights into potential economic events or policy changes during that period. In summary, the table signals positive trends in GDP, Total Revenue, and Income tax, indicative of overall economic growth and increasing government revenue. Further investigations would enhance our understanding of the intricate relationships and contributing factors shaping these trends.

Results and discussion:

Table-2 Regression between Income tax Revenue and GDP

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.922</td>
<td>.850</td>
<td>.831</td>
<td>401.2279</td>
</tr>
</tbody>
</table>

177
Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig.
--- | --- | --- | --- | ---
1 | (Constant) | 1200.580 | 369.195 | 3.252 | 0.012
Income tax in Arab | 13.919 | 2.071 | 0.922 | 6.722 | 0.000

a. Predictors: (Constant), Income tax in Arab
b. Dependent Variable: GDP (In Arab)

**Table 3: ANOVA test between Income tax Revenue and GDP**

<table>
<thead>
<tr>
<th>Model</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>7274522.324</td>
<td>45.188</td>
<td>.000^p</td>
</tr>
<tr>
<td>Residual</td>
<td>8</td>
<td>160983.829</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>8562392.956</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: GDP (In Arab)
b. Predictors: (Constant), Income tax
d. Predictors: (Constant), Income tax

The contribution differs in various periods during the study the rates income tax revenue and total revenue to GDP has been gradually increasing. The impact of income tax revenue on GDP is positive and significant Income tax has positioned influences on the growth of GDP The GDP was regressed with income tax revenue The model is statistically significant. Significant and the value of change in GDP is due to increase in income tax revenue.

The regression analysis investigates the relationship between Income tax and their Gross Domestic Product (GDP). The model exhibits a strong statistical significance, signifying its potential to predict the variability in GDP (F-statistic = 45.188, p < 0.001).

The model accounts for a substantial proportion of GDP variability, with an R Square of 0.850, implying that approximately 85% of the fluctuations in GDP (In Arab) are explained by the included predictor variables. Even when considering the number of predictors, the model retains its robust predictive power, reflected in the Adjusted R Square of 0.831.

The finding reveals intriguing insights into the impact of Income tax in Arab on GDP of Nepal. The coefficient of Income tax (13.919, SE = 2.071) indicates that for every unit increase in Income tax, GDP (In Arab) is expected to rise by 13.919 units. The statistical significance of this predictor (t-value = 6.722, p < 0.001) underscores its importance in explaining GDP fluctuations within this model.

It's crucial to note the inherent limitations of this analysis. While our model suggests a strong association between higher income tax and increased GDP, establishing causation solely based on correlation requires caution. Other unaccounted variables might influence this relationship, and their absence in this model could impact the observed results.
Conclusion

The study’s goal was to look at the impact of tax collection, total revenue and income tax revenue of Nepal’s GDP. Changes in revenue levels and the tax system’s structure can have an impact on economic activity. The research shows a clear and significant impact of the income tax revenue of GDP. In fact, an objective examination would come to the conclusion that well-designed tax policies are beneficial. In conclusion, while this analysis sheds light on the relationship between Income tax and their GDP, further exploration considering additional variables is necessary to comprehensively understand the dynamics influencing economic growth in this region.

In exploring the intricate relationship between Income tax and their Gross Domestic Product (GDP), our regression analysis has uncovered noteworthy insights. The model, characterized by a robust R Square of 0.850 and an Adjusted R Square of 0.831, demonstrates a remarkable ability to elucidate approximately 85% of the variability in GDP (In Arab) through the included predictor variables.

The statistical significance of the regression model, as evidenced by the F-statistic of 45.188 (p < 0.001), attests to its capability in predicting the variation in GDP within the context. The Coefficient of Income tax (13.919, SE = 2.071) emerges as a pivotal factor, indicating that a unit increase in income tax is associated with a substantial increase in GDP.

This study contributes to the ongoing discourse on economic determinants in Nepal emphasizing the role of income tax as a potential driver of GDP. As we conclude, it is essential to recognize the preliminary nature of our findings and advocate for continued research that considers a broader spectrum of variables to enrich our comprehension of the intricate economic landscape in the developing countries.

Policy Implication

The research underscores crucial policy implications for economic planners and policymakers in Arab countries, emphasizing the significant impact of Income tax on Gross Domestic Product (GDP). Firstly, there is a call to optimize tax policies to spur economic growth, with a focus on the potential benefits of a well-structured income tax system. Policymakers are advised to strategically adjust tax policies to leverage the positive correlation between higher income tax and increased GDP, while ensuring a gradual and balanced implementation to avoid unintended consequences.

Secondly, recognizing the pivotal role of Income tax in shaping economic outcomes, policymakers should prioritize investments in robust taxation infrastructure. This entails establishing efficient tax collection mechanisms, transparent reporting systems, and measures to curb tax evasion. A sound taxation framework is deemed essential to ensure that the anticipated benefits are realized without compromising fiscal integrity.

Additionally, policymakers are urged to closely monitor economic indicators, especially those related to income tax and GDP. Regular assessments can provide insights into the evolving dynamics of the relationship, allowing for timely adjustments in policy measures. Continuous evaluation is seen as instrumental in fine-tuning economic policies to align with the changing economic landscape.
Addressing potential disparities arising from the positive relationship between income tax and GDP is another critical consideration. Policymakers are advised to implement measures that mitigate adverse effects on specific segments of the population or sectors, thereby ensuring the equitable distribution of the benefits of economic growth for long-term stability.

Furthermore, the complexity of economic relationships and the potential influence of unaccounted variables highlighted by the study emphasize the importance of encouraging further research. Policymakers are encouraged to support and collaborate with academic researchers and government agencies to delve deeper into these intricacies. Such collaboration can enhance understanding and inform evidence-based policy decisions.

In conclusion, the policy implications underscore the need for a nuanced approach to tax policies in Nepal. By leveraging the insights provided by the analysis, policymakers have the opportunity to design and implement measures that not only foster economic growth but also contribute to the overall well-being of their populations. This necessitates a balanced and adaptive policy framework aligned with the specific needs and characteristics of the region's economies.

References


IRD yearly report 2071/072 -2079/80


U.N. (1933). *Policy research, corporate tax structure and production*.
