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Optimal usage of allocated human resource for impactful tax compliance and desirable revenue collections

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Abstract
This paper attempts to analyse the impact of optimum human resource sanctioned for the State Taxes & Excise department and its consequential impact on the cost of collection as well as on the Tax Revenue Enhancement for the state of Himachal Pradesh. This paper uses secondary data of State Taxes and Excise department published in the Annual Administrative Reports for eight year 2017-18 to 2024-25. The paper attempts to use average per-capita expense on the collection of State Tax Revenues. It further uses cost benefit analyses of the entire human resource sanctioned and placed and its expected consequential impacts on revenues in the department of State Taxes & Excise. Hence, the per capita expense may increase as per allocated work force, however the consequential impact in the collection of revenues is projected and estimated to be proportionately multiplied manifold. It may create additional immediate capital expense of Rs. 100 Crores or more to strengthen the collection department, but the department in return, may fill the treasury of the state government additionally by the projected amount of Rs. 7,817.59 Crores. This enhanced revenue collection, thus, may bring substantial finances in the hands of the Government to help meet fiscal deficits, reduce debt liability and to further meet the socio-economic welfare needs of the people of Himachal Pradesh.

Keywords: Expenses of collection, human resource, expected revenues, projections, ST&E department, per capita expense, per capita revenue

Introduction

Background: Human resource optimization in departments that generate revenues has been a topic of much interest in public administration and fiscal policy studies, particularly in the case of tax department that is the key to state revenue collections. The current paper targets the Himachal Pradesh State Taxes & Excise Department, examining how an optimal sanctioning of human resources could impact the cost of collection and enable tax revenue augmentation. Empirical studies, administrative reports, comparative state studies, and theoretical frameworks of public finance efficiency define literature in this area.

Theoretical Background: There is a majority of research that identifies the connection between staff numbers and tax collection efficiency in tax agencies. Bird and Zolt (2008) [1] posit that the performance of tax administration is a direct reflection of effective staffing and training, enabling agencies to increase their reach and enforcement efforts. Indian state studies, like Rao (2014) [2], analyze the limitations in revenue departments due to a lack of sufficient manpower, yet pointing towards the necessity of periodic reviews and better deployment. The Annual Reports of the Central Board of Excise and Customs (CBEC) also attest to the fact that effective HR deployment increases not only daily operations but also enforcement strategies.

Some publications, such as by Keen (2012) [4], discuss the cost of tax collection as a crucial measure of assessing administrative performance. The "cost of collection ratio" (CCR) concept-i.e., administrative spending divided by overall revenue collected-is extensively applied and used as a major indicator of performance in official reports. But there remains a constant controversy regarding the marginal cost and benefit of adding every additional employee, particularly in states with uncommon geographic and economic features such as Himachal Pradesh. Tyagi and Kumar (2020) [5] note that more initial investment in human resources tend to yield disproportionately greater returns in revenue, particularly when combined with technological interventions.

The literature also makes a causal link between better revenue collection, driven by improved HR practices, and macroeconomic gains like smaller fiscal deficits and increased government ability to conduct socioeconomic interventions. Gupta (2007) [6] and Purohit (2010) [7] show that building strong revenue departments does not only strengthen public finances but also helps in building trust in government institutions and policy credibility.

Certain scholars (e.g., de Mello, 2009) [9] point out that beyond a certain point, additional human inputs result in diminishing returns unless accompanied by process reforms and modernization.

Though no direct research on this very same pattern of human resource deployment exists, past studies on human resource effectiveness in both public and private organizations. All point to one overwhelming trend that when the number of people in the workforce decreases, the remaining workers tend to have a greater workload or need more sophisticated skills, leading to enhanced per-capita expenses (Smith *et al*., 2015) [11].

Furthermore, studies in similar sectors have shown that cost increase over time is often due to inflationary adjustments in salaries, rising operational costs, or investment in new technologies (Brown & Green, 2018) [12].

These trends mirror findings from public sector performance efficiency studies. For example: (Rao & Tandon, 2017) [13] noted that revenue departments with digitization initiatives showed 30¬50% improvements in per-capita revenue collection. (Mitra *et al*., 2020) [14] found that automation and AI-based systems in state tax departments in India led to better compliance tracking and reduced leakages, even with reduced manpower. However, (Saxena & Paul, 2022) [15] cautioned that under-resourced departments may suffer long-term burnout, leading to inefficiencies or systemic fatigue.

There is less research undertaken primarily on hilly states such as Himachal Pradesh, where geographical spread might specially influence cost and effectiveness of deployment of tax staff. Although macro-level research is common, there are few papers that simulate the cost increase versus forecasted revenue increase in an explicit state-level setting with primary interest in yearly administrative records. This analysis investigates the interrelationship between human resources deployment, State Taxes & Excise (ST&E) revenue collections, and associated operational costs in Himachal Pradesh over the period from 2017-18 to 2024-25. It aims to derive the consequential impact of human capital efficiency on revenue mobilization and its cost-effectiveness.

Components of Revenue Receipts

Assigned with the role of ensuring tax collections from various tax enactments administered *viz*. Value Added Tax implemented since 2005, Passenger and Goods Tax Act administered since 1955, Certain Goods Carried by Road Tax Act 1999 and HP Excise Act 2011 and their accruals in consolidated form constitute the total tax collections of this department as state tax revenues. GST implemented since 1st July 2017 has subsumed the Value Added Tax and Post-GST implementation the component of Value Added Tax collection is replaced by pan-India Goods and Services Tax 2017.

Research Methodology

The objective of this paper is to assess the achievable revenues projections against the sanctioned human resource by the State Taxes & Excise department. This analysis investigates the interrelationship between human resources deployment, State Taxes & Excise (ST&E) revenue collections, and associated operational costs in Himachal Pradesh over the period from 2017-18 to 2024-25. It uses year wise per-capita expense and the per-capita revenue base multiplied against the allocated human resource. The optimal expected revenue enhancements are compared with existing revenues and optimal increase in expenses are compared with existing expenses. It aims to derive the consequential impact of human capital efficiency on revenue mobilization and its cost-effectiveness. The data examines the correlation between human resources deployed, ST&E (State Taxes & Excise) revenue collections, and associated costs/expenses over 8 years. It sheds light on how efficiently the department may utilize human capital against sanctioned strength and how this can translate into cost growth in cost and resultant magnified revenue enhancements.

Human Resource and Expenses

Table 1: Human Resource in place against sanctioned strength and the expected increase in Expenses for the period 2017-18 to 2024-25.

S. No.	Year	Sanctioned Human Resource (in No.)	Human Resource in place (in No.)	Cost of collection (in Cr)	Average/ per-capita Expenses (in Lakhs)	Expected increase in Expenses (in Cr)
1	2	3	4	5	6	7
1	2017-18	1335	976	84.46	8.65	115.53
2	2018-19	1335	932	67.47	7.24	96.64
3	2019-20	1335	946	96.94	10.25	136.80
4	2020-21	1335	951	83.43	8.77	117.12
5	2021-22	1335	924	103.06	11.15	148.90
6	2022-23	1334	873	131.62	15.08	201.12
7	2023-24	1437	796	114.49	14.38	206.69
8	2024-25	1438	839	188.87	22.51	323.69

Source: Annual administrative report for the year 2017-18 to 2023-24.

Results Analysis and Discussion

The above table-1 provides an overview of the sanctioned human resources, the number of human resources in place, the cost of collection, the average per-capita expenses, and the expected increase in expenses for the period 2017-18 to 2024-25. It allows for an analysis of the trends in human resource allocation and financial implications over the years.

The number of sanctioned human resources remains consistent at 1335 up until 2022-23. In 2023-24 and 2024-25, this number increases to 1437 and 1438, respectively. Despite the increase in sanctioned resources, the actual number of human resources in place generally decreases from 976 in 2017-18 to 839 in 2024-25, showing a gap between sanctioned and actual human resources. The cost of collection goes up quite significantly over the period. It begins at 84.46 Cr in 2017-18 and rises to 188.87 Cr by 2024-25, indicating an increasing financial outlay. The average per-capita expenses show a considerable rise from 8.65 Lakhs in 2017-18 to 22.51 Lakhs in 2024-25. This suggests that, although the number of human resources in place decreases, the financial expenditure per individual has escalated, potentially indicating inflationary pressures or increased operational costs. The expected increase in expenses grows considerably, from 115.53 Cr in 2017-18 to 323.69 Cr in 2024-25. This sharp rise points to an anticipated increase in operational costs, possibly due to inflation, expanded responsibilities, or changes in compensation structure.

There is a clear correlation between the number of human resources in place and the cost of collection over the years, although this relationship appears to be inversely proportional to the number of human resources. Despite the reduction in the workforce, the cost of collection and per-capita expenses are increasing, which could suggest inefficiencies or higher operational costs per individual.

The figures indicate that the organization is witnessing a rise in expenditure on finances while there is a reduction in the number of human resources employed. This might signal a call for more efficiency in resource allocation or an indication of increasing costs as a result of inflation, market trends, or the expansion of duties. The rising per-capita cost can also signify higher wages or operational costs per worker.

Explanation of Significance

The increase in expenses, despite the reduction in human resources, raises important questions about organizational efficiency and resource allocation. Organizations can also have to concentrate on enhancing the productivity of the remaining staff in order to compensate for the increasing per-capita cost. Moreover, bridging this gap between authorized and actual resources is essential for planning and budgeting. The statistics show that though the number of human resources available has declined, the cost commitment in terms of cost of acquisition and per-capita expenditure has risen dramatically. This implies a need for effective resource management along with possibly a realignment of fiscal policy to plan for long-term sustainability. The period 2017-18 to 2024-25 shows a consistent increase in cost of collection and per capita outgo in the context of a decrease in the number of human resources available. This trend warrants attention in terms of operational efficiency and budgetary planning, especially as the expected increase in expenses escalates in the coming years.

State Tax Revenues and Expected Enhancements

Table 2: ST&E Revenues, Human Resource in place against sanctioned strength and the Expected Revenues for the period 2017-18 to 2024-25.

S. No.	Year	Sanctioned Human Resource (in No.)	Human Resource in place (in No.)	ST&E Collections (in Cr)	Average/ per-capita collections (in Cr)	Expected increase in Revenues (in Cr)
1	2	3	4	5	6	7
1	2017-18	1335	976	6133.96	6.28	8390.20
2	2018-19	1335	932	6421.55	6.89	9198.25
3	2019-20	1335	946	6796.02	7.18	9590.58
4	2020-21	1335	951	7044.24	7.41	9888.60
5	2021-22	1335	924	8494.77	9.19	12273.29
6	2022-23	1334	873	9273.94	10.62	14171.18
7	2023-24	1437	796	10187.53	12.80	18391.31
8	2024-25	1438	839	10949.85	13.05	18767.44

Source: Annual administrative report for the year 2017-18 to 2023-24.

Result Analysis and Discussion: The above Table-2 presents annual data from 2017-18 to 2024-25 on Sanctioned and In-Place Human Resources for the ST&E department, alongside actual revenue collections, per-capita collections, and expected revenue enhancements. This table allows for the evaluation of how staffing levels correlate with revenue generation and projected fiscal performance over time.

Over the observed 8-year period, sanctioned Human Resource remains largely static (1335) until 2023-24, when it rises to 1437-1438. HR in place shows a decline from 976 in 2017-18 to a low of 796 in 2023-24, before a modest recovery to 839 in 2024-25. ST&E collections increase steadily from 6,133.96 Cr in 2017-18 to 10,949.85 Cr in 2024-25. Per-capita collections rise markedly from 26.28 Cr to 213.05 Cr, more than doubling despite fewer personnel. Expected revenue increases follow a sharp upward trajectory from 8,390.20 Cr to 18,767.44 Cr.

Although statistical tests (e.g., regression) are not directly shown, trends indicate, a negative correlation between HR in place and per-capita revenue (as HR declined, per-capita revenue increased). A positive correlation between per-capita efficiency and total revenues. The increase in sanctioned posts after 2022-23 appears anticipatory, likely based on growing fiscal targets.

The data suggest substantial gains in productivity per staff member. Despite decrease in staff, collections rose, implying improved process efficiencies, technological support, or revised revenue mechanisms. The consistently increasing expected revenue also implies confidence in sustained or enhanced performance-either from systemic improvements or expected policy effects.

Explanation of Significance

This table illustrates the paradox of shrinking workforce and rising output, indicating transformative internal changes-likely process optimization, digitization, and/or policy reforms. These patterns are important for policymakers as they hint at scalable models of lean yet productive governance.

Between 2017-18 and 2024-25, the ST&E department demonstrates a compelling case of improved fiscal performance despite declining staff numbers. Rising per-capita collections and expected revenue growth suggest operational improvements and possibly higher technological enablement. However, careful monitoring is essential to prevent sustainability issues related to workforce strain.

This longitudinal dataset highlights a trend where declining HR strength coexists with increasing total and per-capita revenue collections in the ST&E sector. The consistent upward revenue trajectory implies structural or policy efficiencies, possibly through digitization or improved compliance. However, reduced staffing levels raise concerns about long-term sustainability and workforce burden. The findings are significant for governance reform discussions and suggest areas for deeper investigation.

Parallel Ratio Projections in Expenses and Revenues

Table 3: Analysis of Ratio Projections in Expenses and Revenues for the period 2017-18 to 2024-25 in Himachal Pradesh.

S. No.	Year	Current Cost of collection (in Cr)	Expected increase in Expenses (in Cr)	Excepted Percentage increase in Expenses (%)	Current ST&E Collections (in Cr)	Expected increase in Revenues collections (in Cr)	Expected Increase in Revenues (%age)
1	2	3	4	5	6	7	8
1	2017-18	84.46	115.53	36.78	6133.96	8390.20	36.78
2	2018-19	67.47	96.64	43.24	6421.55	9198.25	43.24
3	2019-20	96.94	136.80	41.12	6796.02	9590.58	41.12
4	2020-21	83.43	117.12	40.38	7044.24	9888.60	40.38
5	2021-22	103.06	148.90	44.48	8494.77	12273.29	44.48
6	2022-23	131.62	201.12	52.81	9273.94	14171.18	52.81
7	2023-24	114.49	206.69	80.53	10187.53	18391.31	80.53
8	2024-25	188.87	323.69	71.39	10949.85	18767.44	71.39

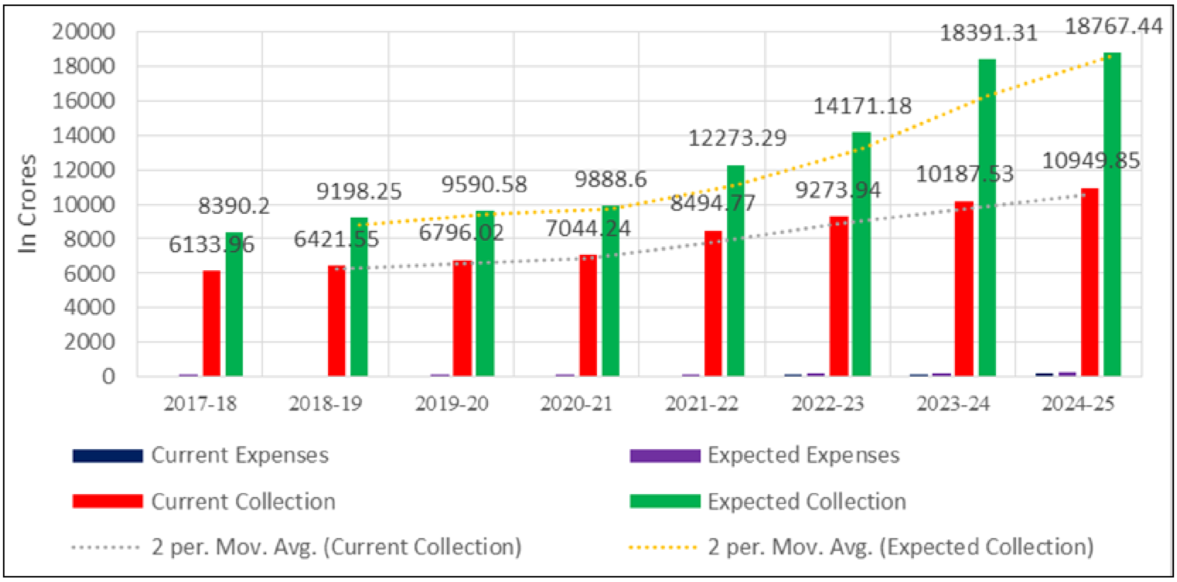

Fig 1: Analysis of Ratio Projections in Expenses and Revenues for the Period of 2017-18 to 2024-25

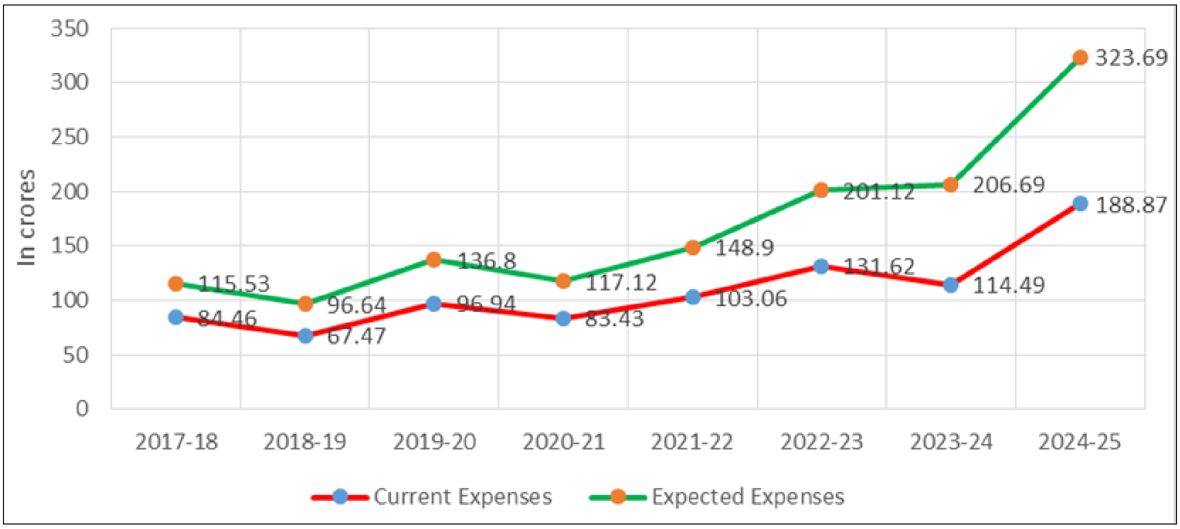

Fig 2: Analysis of Ratio Projections in Expenses for the Period of 2017-18 to 2024-25

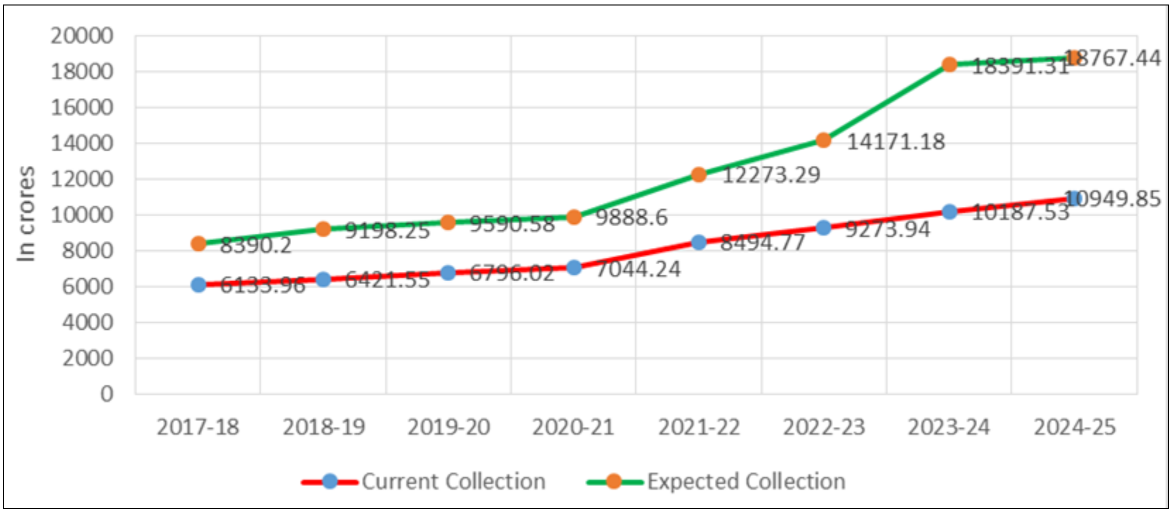

Fig 3: Analysis of Ratio Projections in Revenues for the Period of 2017-18 to 2024-25

Results Analysis and Discussion

The above table-3 and the diagrams presents the financial projections for Himachal Pradesh between the years 2017-18 and 2024-25, focusing on the cost of collection, expenses, and revenue collections. This provides a comparative analysis of the current cost of collection (in crores), expected increase in expenses (in crores), expected percentage increase in expenses, current State Taxes and Excise (ST&E) collections (in crores), expected increase in revenue collections (in crores), and expected percentage increase in revenue for each year. The table shows a general rise in both expenses and collections in revenues over the years.

The current collection cost varies between 67.47 crores in 2018-19 to 188.87 crores in 2024¬25. The projected rise in expenses has a general upward movement, with notable growth in 2022-23 (201.12 crores) and 2024-25 (323.69 crores). In the same way, revenue collection indicates steady growth with anticipated revenue growth showing the highest in 2023-24 (18391.31 crores), an increase of 80.53%. The maximum percentage growth in expenses is shown in 2023-24 (80.53%), and the maximum percentage growth in revenue is indicated in 2022-23 (52.81%).

The anticipated percentage increase in spending has been fluctuating, hitting 80.53% in 2023¬24, showing a very high rise in estimated expenditure. This suggests that the state is expecting far greater expenditure, perhaps from inflationary forces or an uptick in service delivery. The projected percentage growth of revenue collections has been high, with the highest growth (52.81%) projected for 2022-23, but tapering in the subsequent years. As revenue growth is robust, but percentage growth tapers off after 2022-23, it implies that the revenue generation rate may start stabilizing after this time horizon.

The rising trend in costs is probably due to rising administrative expenses, inflation, or growing government programs. The deceleration of growth in projected costs after 2023-24 may be an indication of more effective administration or that most of the significant increases in expenditure have already been factored into the accounts.

On the revenue side, the greater percentage rises may be a result of tax reforms, greater tax compliance, or economic growth leading to higher revenues. The tapering growth in subsequent years, however, could be indicative of decreasing returns because the revenue base is saturated, or because the economic climate has stabilized.

The computation of anticipated expenditures and incomes in Himachal Pradesh reveals a strong fiscal policy to enlarge government services and raise incomes. Although the anticipated hikes are reassuring, the deceleration of growth rates in subsequent years implies the necessity of strategic economic reforms for maintaining long-term growth and guaranteeing efficient resource use.

This dataset shows substantial growth in both government revenues and expenditures for Himachal Pradesh, with wide fluctuations in growth rates, particularly during 2022-2024. The added revenue will be anticipated to fund further fiscal development, though the weakening growth rates for both revenue and expenditure in the later years suggest the need for policy adjustments and specific reforms. Additional research on the sectoral pattern of both costs and revenues may give a better image of the state's future in economic terms.

Findings and Interpretation

The paper considers the implications of optimizing human resources in Himachal Pradesh's State Taxes and Excise department on the cost of tax collection as well as total tax revenue. It relies on secondary data from annual reports for the period 2017-18 to 2024-25. The focus is given to per capita expenditures on tax collection. It is assumed that there is a possibility of rising human resources on account of gap in vacancy and allocation causing an increase in costs in the beginning but would enormously increase the revenue collections. The analysis of diagram for the year 2023-24 reveals a difference merely of 92.20 Cr. in the existing and projected expenses. It simply means that by investing almost 92 Cr., the department could generate additional revenues in the same year of Rs. 4,897.24 Cr. to the state. Similarly, analysis of existing and projected revenues for the year 2024-25 reveals that with an additional expenses of Rs. 134.82 Cr. on allocated human resource may generate the additional revenues of Rs. 7817.59 Cr. to the state of Himachal Pradesh. This rise in expected income is 71.39% against the existing income and is vital for meeting fiscal deficits and supporting socio-economic welfare programs. As the number of allocated posts have increased in the year 1,437 (2023-24) as against the year 1,334 (2022-23) and similarly these sanctioned post have increased in the year 2024-25 to a total strength of 1,438 sanctioned posts. Hence, these trends in both the years 2023-24 and 2024-25 may be determinant and precedential truing point for the expected revenues and sound tax base in the ensuing future.

The article explains the connection between human resource optimization and the effectiveness of tax revenue collection. Research indicates that staffing levels and training significantly affect a tax department's performance to enable improved enforcement and revenue collection. It also emphasizes the role of cost-benefit analysis in the measurement of tax collection efficiency, pointing to arguments regarding decreasing returns on investment in human resources, particularly in the specific geography of Himachal Pradesh. Specific research on these matters is lacking in the hilly areas, inviting targeted studies on this subject.

Comparisons reveal that while the number of employees reduced, the department's revenue collection did not. Revenue in the State Taxes and Excise sector increased from 6,133. 96 Crores during 2017-18 to 10,949. 85 Crores as of 2024-25, with the per-capita collection doubling more than two times within the same period. The anticipated revenue gains indicate optimism about sustained robust fiscal performance.

The paper presents in-depth numerical breakdowns illustrating the correlation between human resources, spending, and revenue throughout the research period. While the data demonstrates rising expenses and rising revenues, the paradox of increasing costs alongside decreasing personnel raises questions about efficiency and effective resource management. Policymakers must address these trends carefully by recruiting and conducting regular manpower audits, leveraging technology to improve compliance, introducing a performance monitoring framework and rationalizing expenses through the optimized processes to ensure sustainability in tax revenue generation without overburdening the remaining workforce. The untapped revenue potential due to shortfall of workforce and systemic inefficiencies could be corrected by regularly and constantly balancing required human resource in such a significant department.

Conclusion

The analysis concludes that while revenue growth has been impressive, it has been driven by an increasingly burdened workforce. Sustainable growth demands balancing human resources, minimizing cost escalation, and modernizing processes to ensure long-term fiscal health. Human capital is not merely a cost but a pivotal asset for public finance. The data clearly suggests that while revenue mobilization has increased significantly, it is being achieved through overburdened and shrinking human capital. The most significant revealing is that the human capital is more vital instrument to trigger the desirable growth of state's revenue earnings. Automation through IT machine, systemic changings and revenue augmentation is possible only with the help of human resource. Investing on human resource in the collection agency is more catalytic for the enhanced revenue generation. This model is productive but unsustainable in the long run unless balanced human resource policy, cost control, and process modernization are adopted. Efficient human resource planning is not just a cost - it's a critical investment in sustaining desired revenue growth.

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