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The Lifetime Cost and Services Length of Public Sector Employees in Pakistan

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Abstract

This study estimates the discounted lifetime costs and lengths of service of public sector employees in Pakistan. The revised BPS pay scales of 2022 were used to assess three different scenarios. The lifetime cost is composed of lifetime salaries, commuted pensions, and monthly pensions. The findings indicate that, under the third scenario, the average lifetime cost for a BS 1-4 who retires in their 60s amounts to approximately 36.9 million rupees. For supporting staff (BPS 5-16), the discounted lifetime cost is 59.1 million rupees. Moreover, the average lifetime cost for employees in BPS 17-19 is 140.7 million rupees. Furthermore, the study also analyzed the average length of service for different employee categories. For BS 1-4 employees, the average length of service is 39 years, and the government bears their financial liability, on average, for 53 years. In the case of supporting staff, the average length of service is 32 years, and the government bears their financial liability for 47 years. Finally, for BPS-17-19 officers, the average length of service is 29 years, and the government bears their financial liability for 44 years. These findings can contribute to a better understanding of the financial implications associated with different employee categories and help inform policy decisions in the public sector.

***Keywords*:** length of service, lifetime cost, public servants, salary, pensions

Introduction

Worldwide, budgeting and controlling personnel expenditures are major concerns for governments to ensure effective macroeconomic and fiscal policy management, efficiency in government operations, and uniformity in government pay structures. In transition economies, government personnel have expanded rapidly due to policies that guarantee employment by the state. This expansion has occurred both in state-owned enterprises and within government ministries/agencies. Pakistan, being a transition

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economy, exhibits a similar trend where the government plays a significant role in social, political, and economic activities. The job aspirants in the country are more inclined to seek government jobs due to the lifetime social security commitment and benefits, as highlighted by a study conducted by PIDE. It was found that a majority of Ph.D. holders aspire to work in the government sector compared to the private sector in Pakistan (Khan, 2023).

The voters largely expect political parties to provide benefits like jobs and resources to their associates. This has led to the expansion of state-owned enterprises and government departments, contributing to unnecessary expenditures and fiscal deficits (Husain, 2023). Factors hindering the efficiency of Pakistan's public sector, as identified by Abbasi (2011), include political job creation, lack of transparency, an extensive and unskilled workforce, lower wages, and promotion criteria that contribute to low productivity. Additionally, Ullah and Hina (2022) link the financial deficits of state-owned enterprises to excessive employment, political interference, corruption, and the use of unskilled human resources. Similarly, Shah et al. (2015) conclude that political job creation, nepotism, rent-seeking, lack of training and resources, and time-scale promotions are key difficulties impacting the performance of public sector organizations. These practices impose a financial burden on public sector entities and the economy. Furthermore, Ashraf (2017) has highlighted the negative repercussions of political job creation on organizational performance in the public sector.

In Pakistan, the government has to pay around 801 billion rupees each year in the form of pensions only. Political job creation, state-owned enterprises, and the massive presence of the government are no longer sustainable due to fiscal deficits, low performance, and excessive employment, which result in lower efficiency and growth. More recently, Haque et al. (2024) also report the total cost associated with government employees, but it did not disaggregate the expenditures by payment to employees, spouses, and unmarried daughters, nor did they consider the length of service of public servants. Therefore, in this study, we aim to estimate the disaggregated level costs associated with public sector employment from BPS 1-19. It seeks to determine the government's future financial obligations in terms of salaries and pensions for each employee, as well as the length of their service and corresponding government liabilities.

This study is organized as follows: Section 2 presents the data and research methodology, and Section 3 discusses the key findings. Whereas section 4 concludes with policy recommendations.

Data And Methods

The Data

This study employs a quantitative approach with a descriptive design to estimate the lifetime cost and service length of public servants in Pakistan. Secondary data is utilized, specifically the Basic Pay Scale of 2022, to predict the lifetime cost for public servants. Additionally, data on allowances is collected from pay slips of employees in BPS scales 1-19. This preliminary data is used to calculate the lifetime salaries, accumulated pensions, and lifetime pensions for employees, as well as pensions for their spouses and unmarried daughters. The primary objective of this study is to predict the lifetime cost associated with public employees, including both supporting staff (BPS 1-16) and professional staff (BPS -17 and above) in Pakistan.

Study Assumptions

This study is based on a different set of assumptions that are grounded in real-world observations and rationality. Study assumptions are meticulously derived to provide a foundation for the analysis. These assumptions are as follows:

Grade-wise Age and Time-Scale Promotions

BPS 1-4.

Age. For individuals entering BPS 1-4 levels, an assumed age of 22 at the time of hiring is considered. We have considered two factors while assuming the entry age into the specific categories of public sector (BPS) jobs in Pakistan. First unemployment, especially graduate unemployment is very high in Pakistan, and "it takes about a decade or more for youth to be employed. All cohorts reach the national average at about the age of 30. Both males and females at younger ages have a higher probability of unemployment till 30" (Haque & Nayab, 2022). Second, the federal and provincial public service commissions also grant age relaxation as the upper age limit is 5 years for males and 8 years for female candidates due to high unemployment rates in the country. Due to these reasons, we have assumed a mediocre level (4 to 6 years for each category of BPS grades) for assuming

the entry age of employees in different grades. For instance, for BPS grades 1-4, it is required to have an SSC or HSSSC certificate to be eligible for it. But it takes 18 years to get an HSSC certificate in Pakistan, so adding 4 years of job-seeking time to 18 years gives 22 years of entry age.

Time-Scale Promotion. It is assumed that promotions will occur at intervals of 6 years of service.

BPS Grade 5-14.

Age. For those entering BPS Grade 5-14, an assumed age of 24 at the time of hiring is taken into account.

Time-Scale Promotion. The promotion timeline is anticipated to be every 6 years of service for BPS Grades 5-10, while a promotion interval of 8 years is assumed for Grades 5-14.

BPS Grade 15 and 16.

Age. For those entering BPS Grade 15-16, an assumed age of 26 at the time of hiring is taken into account

Time-Scale Promotion. The promotion timeline is anticipated to be every 10 years of service for BPS Grades 15 and 16.

BPS-17-19.

Age. Employees in BPS-17, 18, and 19 are assumed to begin their jobs at the ages of 28, 32, and 34 years, respectively.

Time-Scale Promotion. It is envisaged that promotions will be bestowed after every 12 years of service.

Payment to Unmarred Daughter

For this study, we are assuming that an unmarried daughter of an employee would be receiving a pension payment for five years.

Annual Growth in Salary and Pension

Based on the past ten years' increment in the public sector employees' salaries and pensions, we assume a 13% increase in employees' salaries and a 5% annual increment in pensions, irrespective of grades. The 13% increase in the employee's annual salary is based on the average of the employee's annual salary increase for the last decade (2014-15 to 2023-24).

Marital Age Difference

Moreover, we assume that the marital age difference in Pakistan is 4 years. Moreover, the marital age difference of 4 years reflects the difference in the age at marriage and life expectancy between males and females in Pakistan. We have included this to fully capture the survivor's pension.

Discount Rate

To account for long-term effects, we have assumed a 3 percent discount rate (Goldemberg et al. 2020; Khan & Ahmad, 2021). A discount rate is used in economic contexts to determine the present value of future cash flows due to reasons of the time value of money, opportunity cost, etc.

Calculation of Lifetime Cost

The calculation of the lifetime cost (LTC) of a government employee involves aggregating the income flows that an employee/family receives at different stages. Three different scenarios are analyzed:

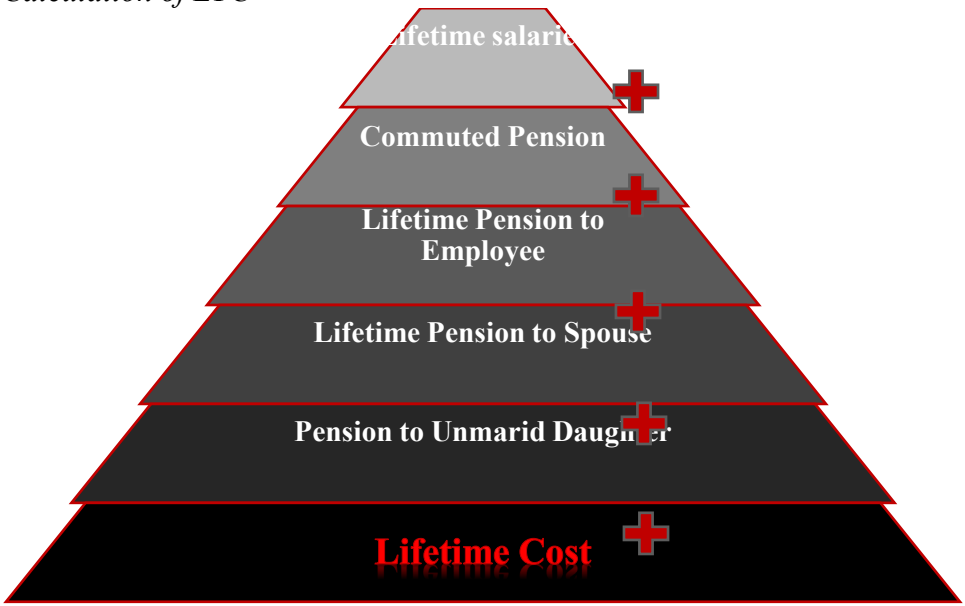
Scenario 1. If an employee passes away (serves for 10 years), the pension is received by the employee's family. In this case, the lifetime cost includes the salaries received during the employee's tenure, the commuted pension, and the monthly pension paid to the spouse till her death and to the daughter.

Scenario 2. If an employee serves for 25 years and retires (assuming a life expectancy of 65 years), the lifetime cost includes the salaries received, the commuted pension, and the monthly pension received by the employee until their death, and the monthly pension paid to the spouse till her death and to the daughter.

Scenario 3. If an employee serves and retires at the age of 60 (assuming the life expectancy of 65 years), the lifetime cost includes the salaries received, the commuted pension, and the monthly pension received by the employee until their death, and the monthly pension paid to the spouse till her death and to the daughter. Age 60 is the maximum age at which a public servant can serve, as per the law in Pakistan. As the entry to the government service is variable for each individual in each grade, the length of service varies across individuals. But this was not the case in scenarios 1 and 2 (as per current law, an employee is entitled to a pension when he/she serves for 10 years and is deceased; and as well as he/she can opt for a pension while serving for 25 years).

Figure 1

Calculation of LTC



Generally, the LTC is calculated as.

LTC = lifetime salaries received by the employee + commuted pension received by the employee + monthly pension received by the employee + monthly pension received by spouse + monthly pension received by unmarried daughter for 5 years.

Lifetime Salaries= (Annual Basic pay + Annual Increment + Annual Allowances +Annual growth) * No of years

Commuted Pension = Gross Pension*35/100*12*age rate (Gross pension = basic pay at the time of retirement *70/100).

Monthly pension of an employee= (Monthly pension + 5% growth rate) * no of years (till his death)

Monthly pension of Spouse: (Monthly pension (75% of last monthly pension received by the employee) + 5% growth rate) * no of years (till her death)

Monthly pension by an unmarried daughter: **(**Monthly pension (last monthly pension received by the spouse) + 5% growth rate) * no of years.

Additionally, in all scenarios, an unmarried daughter is assumed to receive the pension for 5 years, regardless of the employee's grade. By summing up these income flows at different stages, the lifetime cost of a government employee is calculated. Figure 1 presents the stages and their corresponding income flows.

Findings and Discussion

This section presents the main findings of the study. Firstly, the study reports the allowances received by government employees. It highlighted the different types of allowances and their corresponding proportions. Subsequently, the study estimated the anticipated LTC for three different scenarios. Finally, the anticipated length of public servants' services and the resulting government liabilities and financial outlays were discussed. This analysis shows the duration of public servants' and the subsequent financial obligations of the government in terms of pensions and other expenses.

Allowances of BPS Grade 1-19

Figure 2 demonstrates the allowances for BPS Grade 1-19 as a percentage of their basic pay. The findings indicate that, on average, the allowances other than basic pay for Grade 1 employees in Pakistan amount to approximately 158.5% of their basic pay. The amount of allowances increases with advancement in grade scale of government employees. Interestingly, while examining the supporting staff, it is noted that the allowances are highest for BPS Grade 11 employees and lowest for Grade 1 employees. On the other hand, among the professional staff (Grade 17 and above), Grade 19 employees receive the lowest allowances (approximately 158.3% of basic pay).

Overall, there exists a positive relationship between the percentage of allowances and employees' grade scales, as highlighted in Figure 2. This indicates that as employees progress to higher grade scales, their allowances also increase proportionally.

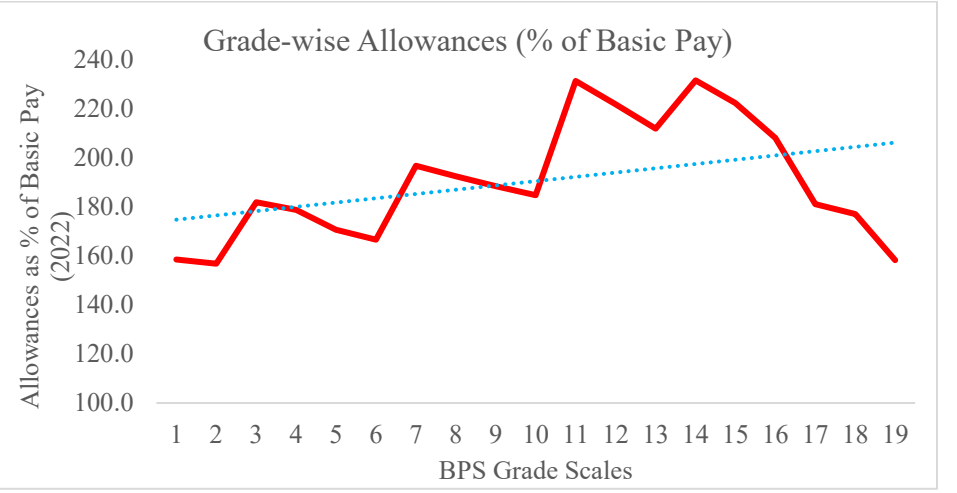
Estimated LTC (Scenario 1)

In the first scenario, this study presents the estimated lifetime cost of public servants who pass away after completing 10 years of service. In such a case, the employee's family would be eligible to receive the benefits in the form of commuted and survivor pensions. To analyze this case, the cost components have been studied separately. Initially, we calculated the cost

in terms of salaries received by the employee during their tenure. Secondly, we determined the cost of the commuted pension, which is the lump-sum payment received by the employee's family after their passing. Finally, we considered the cost of survivor pensions, which are monthly pensions provided to the employee's family members. By combining these different sources of income (salaries received by employees, commuted and survivor pension), we estimated the overall lifetime cost associated with this scenario.

Figure 2

Grade-wise Allowances (% of Basic Pay)



BPS Grade 1-19 Lifetime Salaries

Figure 3 demonstrates the present and discounted lifetime salaries with respect to BPS grade scales (1-19) for an employee with a service duration of 10 years. The study findings show that the salaries of employees progressively increase with advancement in grade scales. For instance, the lifetime salaries for BPS-1 employees amount to approximately 5 million PKR (present value), while the discounted value of this salary is around 3.9 million PKR. Likewise, the graph shows a smooth upward trend in salaries across the different grades. However, there is a significant jump in salaries from BPS grade 17 and above. To provide specific examples, an employee in grade 17 would receive a total of 21.3 million PKR (present value) in the form of salary over their lifetime, with a discounted salary of 16.4 million PKR. Similarly, for an employee in BPS-19, the lifetime salary would be

35.2 million PKR (present value), and the discounted salary would be 27.1 million PKR for 10 years of service.

Figure 3

BPS Grade 1-19 Salaries (Deceased Employee)

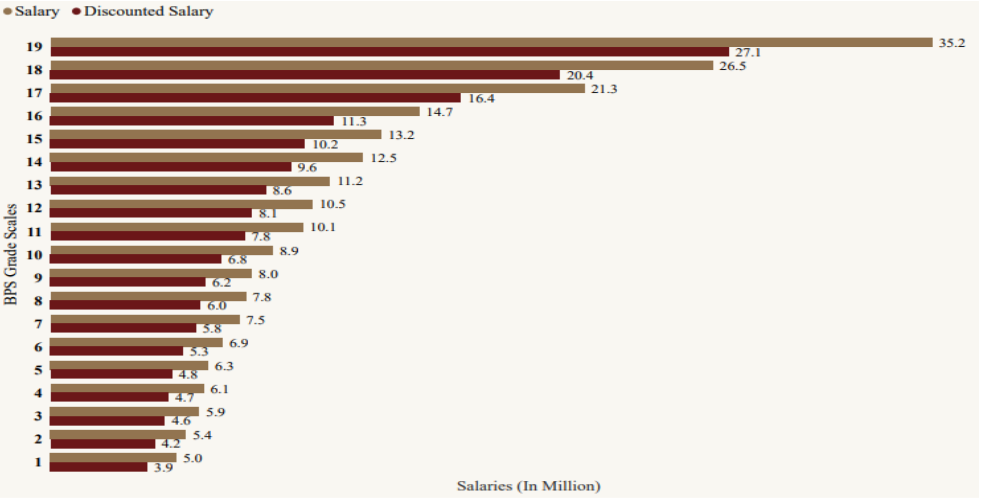
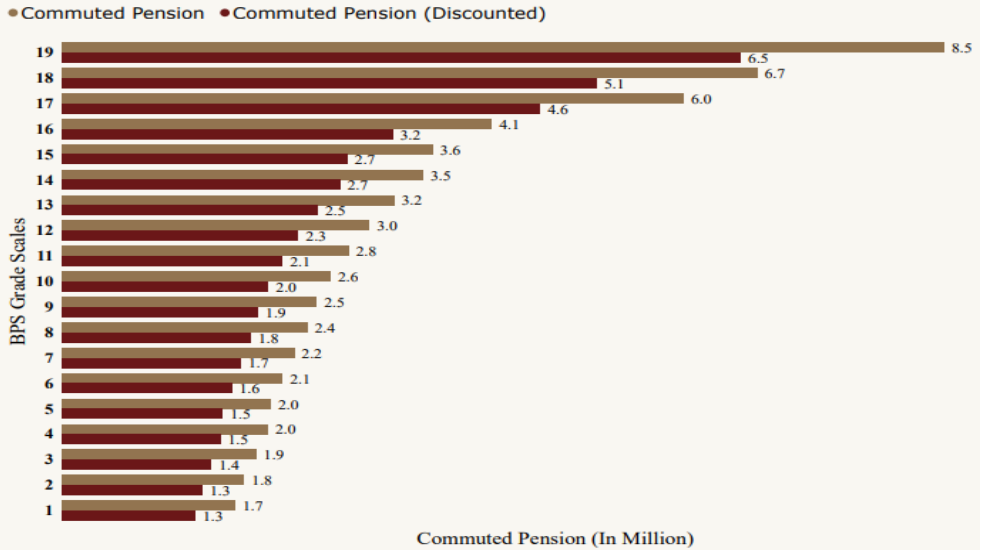


Figure 4

BPS Grade 1-19 Commuted Pensions (Deceased Employee)



BPS Grade 1-19 Commuted Pension

A government employee with a minimum of 10 years of service becomes eligible to claim commuted pensions. In the unfortunate event of an employee's death, the commuted pension is received by the family. Figure 4 provides a visual representation of the commuted pensions received by a government employee.

The commuted pension also follows an increasing trend as the grade scales of government employees rise. However, it is important to note that the amount of the commuted pension is generally lower than the lifetime salaries that a government employee would receive if he/she serve for only 10 years.

Survivors' Pensions

Survivor's pensions, also referred to as survivor's benefits or survivor's allowances, are financial benefits that are provided to the surviving family members or dependents of a deceased government employee in Pakistan. Figure 5 presents the survivor's pension amounts for the spouse, daughter, and the total discounted pension if an employee serves for 10 years. The figure demonstrates that, overall, the trend of survivors' pensions increases with higher grade scales. Nevertheless, this increase is not linear and is influenced by factors such as the difference in pension amounts and the age of the employee or spouse. Furthermore, the graph indicates that the unmarried daughter receives less than 50% of the benefits received by the spouse of an employee. This highlights a disparity in the allocation of survivors' pensions between different family members.

Lifetime Cost of BPS 1-19

Finally, Figure 6 illustrates the present and discounted lifetime cost for BPS grade scales 1-19, assuming a 10-year period of service. The lifetime cost is calculated by summing the lifetime salaries, commuted pension, and survivors' pensions as presented above. According to the findings of this study, the lifetime cost for BPS-1 and BPS-2 employees amounts to 24 million rupees (discounted value). As the grade scale of public servants advances, the associated cost progressively rises. For instance, the lifetime cost for BPS-3 employees jumps to 26 million rupees, and from there, it continues to rise with each subsequent grade scale. The cost progressively increases, finally reaching 96 million rupees for employees in the BPS-19 grade scale.

Figure 5

BPS Grade 1-19 Survivor's Pension

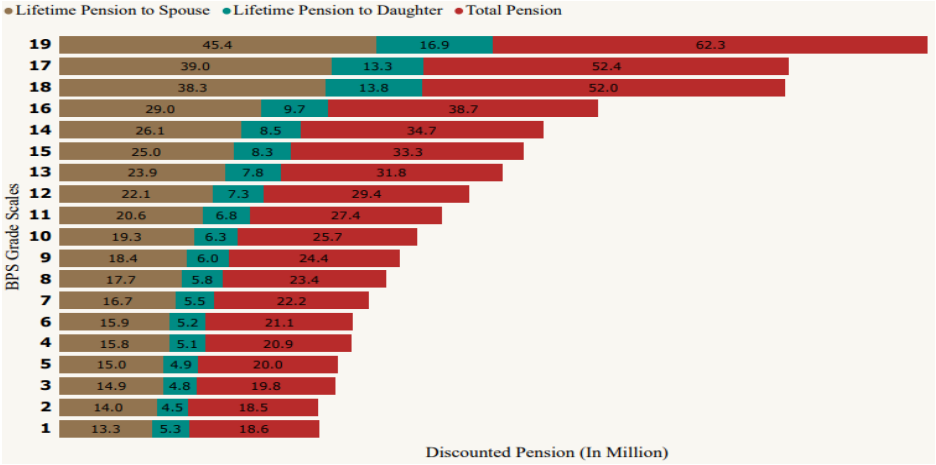
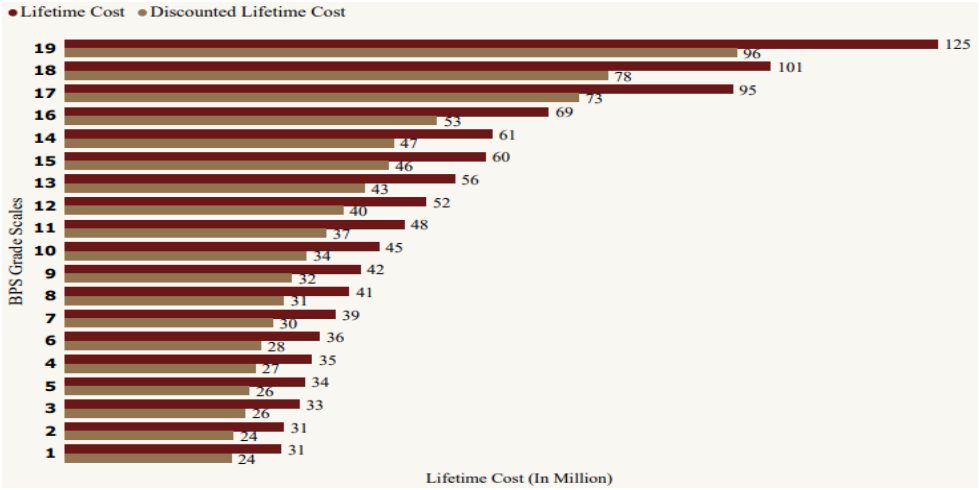


Figure 6

BPS Grade 1-19 Lifetime Cost (Deceased Employee)



Estimated LTC (Scenario-2)

In this case, we have estimated the lifetime cost for public servants in grade scales 1-19, assuming that an employee completes the minimum requirements (25 years of service) for retirement. Contrary to scenario-1, the employee is anticipated to remain alive and will live until their 65 year of age (the life expectancy in Pakistan). In this scenario, we determined the

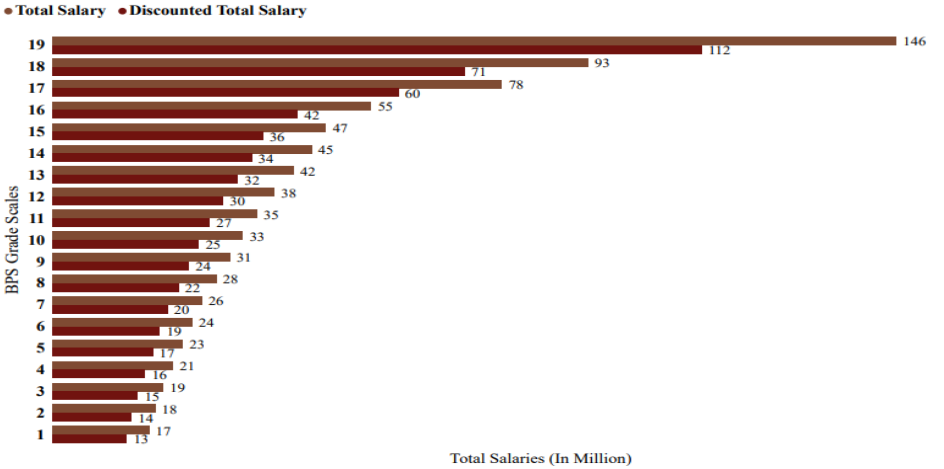
lifetime cost by taking into account the employee's entitlements to commuted and monthly pensions, as well as the pensions received by their spouse and unmarried daughter. In line with the previous case, for each grade scale, we separately analyze the lifetime salaries, commuted pensions, and monthly pensions liability. By aggregating these components, we arrive at the lifetime cost for each grade scale.

BPS Grade 1-19 Lifetime Salaries

In this case, we have anticipated the lifetime salaries of BPS Grade 1-19 employees with the assumption that an employee is hired today and serves for 25 years. In comparison to the previous scenario (where an employee serves for 10 years), the cost in terms of salaries is higher for employees serving for 25 years, both in terms of current value and discounted benefits. Figure 7 presents that the minimum current lifetime salary, for BPS Grade-1 employees, would be around 17 million, while the maximum salary for BPS Grade-19 employees would be approximately 146 million rupees. Likewise, in terms of discounted benefits, the lifetime salaries amount to 13 million rupees (minimum) and around 112 million rupees (maximum). Additionally, the findings reveal an upward trend in salaries as we move up the grade levels. Moreover, the findings show that, on average, the lifetime salaries of supporting staff (BPS 1-16) are well below 50 million rupees; on the other hand lifetime salaries of professional staff (BPS 17& above), on average, are above 60 million rupees.

Figure 7

BPS Grade 1-19 Salaries (25 years of service)

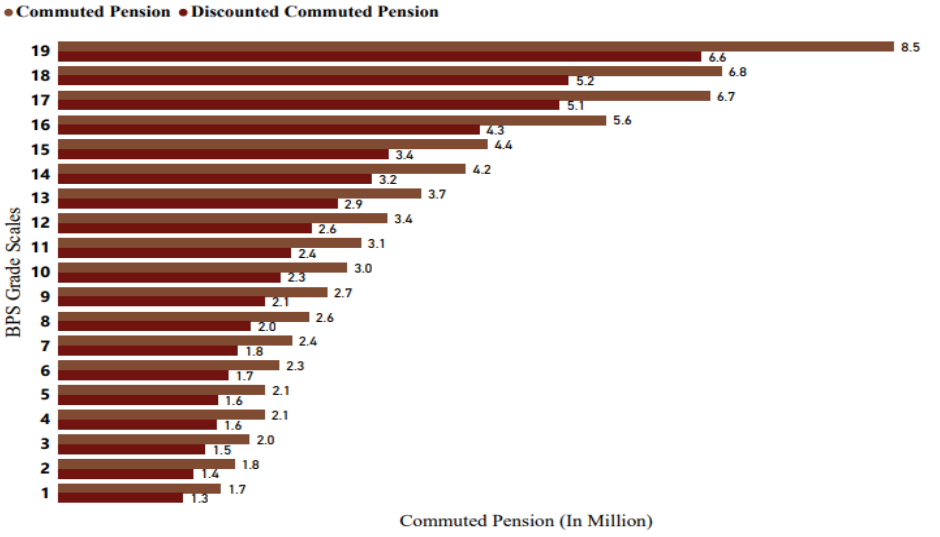


BPS Grade 1-19 Commuted Pensions

In Figure 8, we observe the future commuted pension liability of public servants for various grade scales. As presented in the figure below, the commuted pension cost for BPS Grade 1 is around 1.7 million rupees. On the other hand, when we consider the discounted benefits, the value reduces to around 1.3 million rupees. Likewise, for BPS Grades 2-4, the future cash flow in terms of commuted pension amounts to 1.8 million, 2.0 million, and 2.1 million rupees, respectively. This shows that, on average, the difference in commuted pensions among Class-4 employees is negligible. A similar trend is observed among other supporting staff. However, the findings indicate a significant variation in commuted pensions among professional staff, with the disparity reaching its peak for BPS Grade 19 officers. Overall, the analysis reports that commuted pension liability for the government increases with an increase in grade scales, aligning with the trend observed in salaries. The difference in commuted pensions among different grade scales is relatively small among supporting staff, however, more pronounced among professional staff, primarily at higher grade levels.

Figure 8

BPS Grade 1-19 Commuted Pension



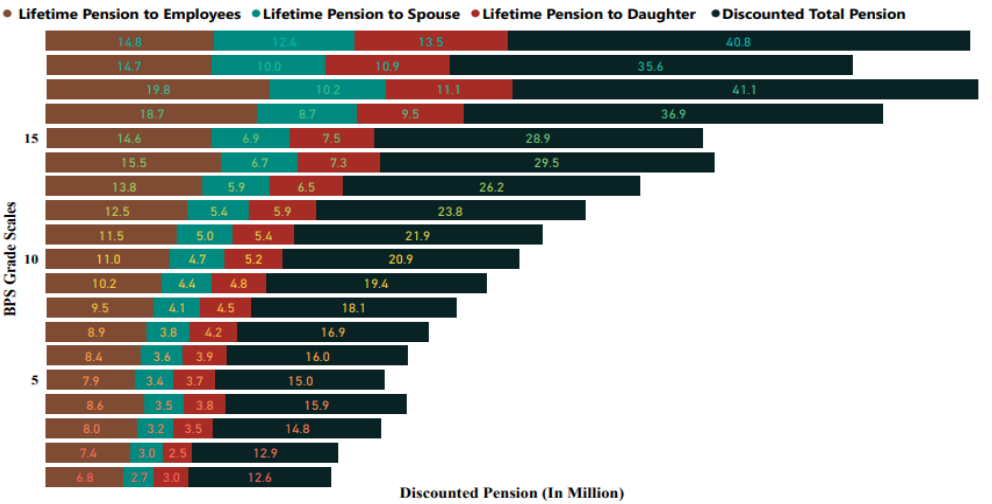
BPS Grade 1-19 Discounted Pensions

Figure 9 illustrates the anticipated total discounted pension benefits

expected to be accrued by BPS Grade 1-19 employees, as well as their spouses and unmarried daughters, if they are hired in 2023 and retire by 2048. A key finding is that, irrespective of the grade scale, the employee himself/herself would receive higher pension benefits compared to his/her spouse and daughter. While comparing the pension benefits between the mother (spouse) and his/her daughter, the results indicate that daughters would receive more financial benefits than their mothers regardless of the grade scale. Additionally, the figure shows that the total discounted pension amount increases with higher grade scales. However, for BPS Grade 18, the total amount of discounted pension declines to 35.6 million rupees as compared to the total pensions (41.1 million rupees) of BPS Grade 17. This decline is due to the age difference at the time of hiring; thus, the total lifespan reduces with rise in each grade scale. The pension benefits for each stakeholder are disaggregated in the figure 9.

Figure 9

Discounted Pensions to Employees, Spouse, and Daughter



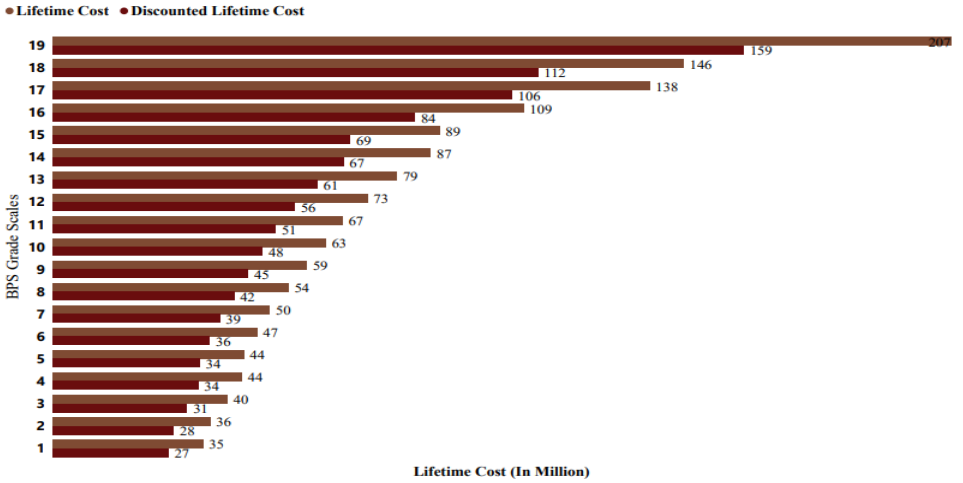
BPS 1-19, Estimated Lifetime Cost

When comparing the lifetime costs of public servants, it is evident that serving for 25 years in the public sector leads to higher costs compared to scenario one (when government employees serve for 10 years). Figure 10 presents a visual representation of the estimated present and discounted lifetime cost with respect to grade scales. For example, in the case of BPS

Grade 1, the lifetime cost amounts to 27 million rupees (discounted benefits) in the 25-year service scenario, while in the previous case it was 24 million rupees. This trend of higher lifetime costs is observed across all grade scales in this scenario compared to the previous one. Moreover, the findings show that overall, the lifetime cost among the supporting staff increases smoothly with grade. On the other hand, the gap is comparatively high among the professional staff. The specific details of the discounted and present lifetime costs for each grade scale are presented in Figure 10.

Figure 10

BPS Grade 1-19 Lifetime Cost (25 years of Services)



Estimated LTC (Scenario-3)

In this case, we have estimated the public sector employees' lifetime salaries, commuted pensions, monthly pensions to employees, to spouses, and to daughters if an employee retires at 60 years of age. It is indispensable to note that the assumptions, such as age at time of hiring and the duration required to receive promotions, remain consistent across all three cases. In fact, in the context of Pakistan majority of the cases fall in this category (where the employees get retirement at the age of 60). The estimated lifetime salaries, pensions, and cost of BPS grades 1-19 are discussed below.

BPS Grade 1-19 Lifetime Salaries

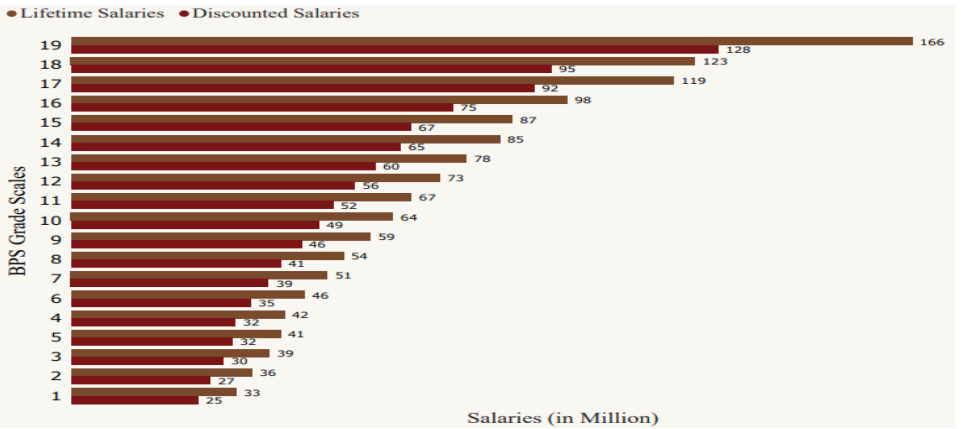
Figure 11 shows the future and discounted lifetime salaries of public

sector employees for BPS Grades 1-19. The findings illustrate that the future lifetime salary for BPS Grade 1 is around 32.6 million rupees, while for Grade 2, it increases to 35.7 million rupees. The cost continues to rise, reaching 39.1 million rupees for Grade 3 and 41.3 million rupees for Grade 4. However, the discounted benefits are less than the future cash flow. In fact, the discounted benefits of class four employees (BPS 1-4) are 25.1, 27.4, 30.1, and 31.1 million, respectively.

Additionally, the study reports an upward trend in salaries with respect to the grade scales; this trend is in line with the findings from Case 1 and Case 2. However, in absolute terms, the lifetime cost of public servants with a retirement age of 60 is comparatively higher. Furthermore, the findings reveal that the salary gap among supporting staff is relatively small, but it significantly increases when transitioning to professional roles (e.g., BPS-17). For instance, the discounted lifetime salary for BPS-16 is approximately 75.4 million rupees, while for BPS-17, it jumps to 91.5 million rupees. Overall, the salaries are directly proportional to the grade scales, with higher grade scales reflecting higher salaries. Compared to Case 1 (10 years of service) and Case 2 (25 years of service), the cost of public sector employees with a retirement plan in their 60s would have comparatively higher cost.

Figure 11

BPS Grade 1-19 Salaries (60 years of age)



Commuted Pensions BPS 1-19

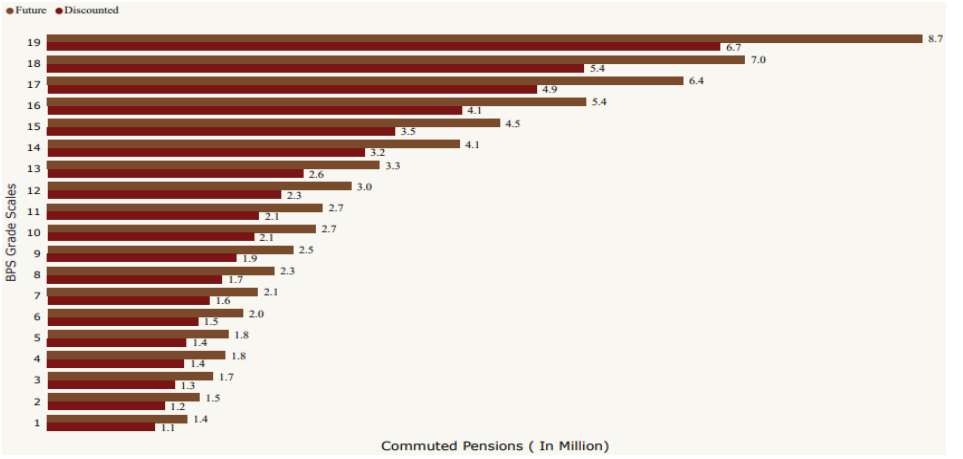
Figure 12 portrays the discounted commuted pensions of government

employees in BPS-1-19. Commuted pensions increase with higher grade scales, both in terms of future and discounted amounts. However, it is important to note that the commuted pensions in Case 3 are lower compared to the pensions they would receive in Case 1 and Case 2.

For instance, in Case 1, the commuted pensions for employees of BPS-1-4 are approximately 1.3, 1.3, 1.4, and 1.5 million rupees, respectively. In Case 2, these amounts increase slightly to 1.3, 1.4, 1.5, and 1.6 million rupees. However, in Case 3, the commuted pensions decrease to 1.1, 1.2, 1.3, and 1.4 million rupees for employees of BPS-1-4. This variation in commuted pensions can be explained by the different age rates assumed in each case.

Figure 12

BPS Grade 1-19 Commuted Pensions (in Million)



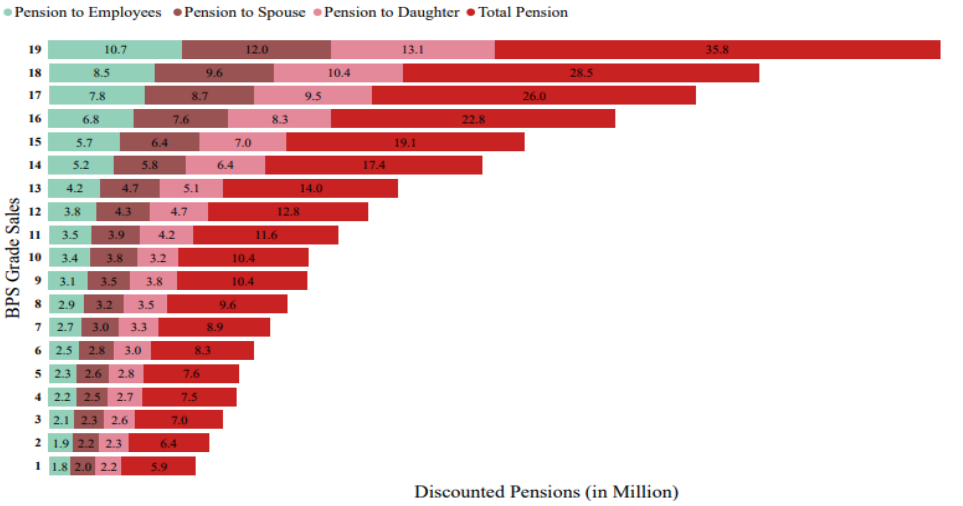
BPS Grade 1-19 Pensions, if they retire in their 60s

Figure 13 shows the lifetime pensions of public sector employees of BPS-1-19, their spouses, and unmarried daughters. The amount of pension increases with grade scales. The minimum pension amount is approximately 1.8 million rupees for grade 1, while it reaches 10.7 million rupees for grade 19. The pensions transfer to the employee's spouse after their death, with the minimum amount being around 2.0 million rupees and reaching a peak of 12.0 million rupees for grade 19. The pension amount for spouses exceeds that of the employee, indicating an upward trend in pensions for spouses with higher grade scales. Furthermore, the pensions allocated to

unmarried daughters are even higher than those received by employees and their spouses, and these amounts are directly proportional to the grade scale. The graph also presents the total pension burden for the government, assuming retirement at the age of 60. In summary, if public sector employees retire in their 60s, the government is responsible for bearing the pension burden of both spouses and unmarried daughters, with the amounts for spouses and daughters surpassing those for the employees themselves. These liabilities increase as the grade scales rise.

Figure 13

BPS Grade 1-19, Discounted Pension (60 years of age)



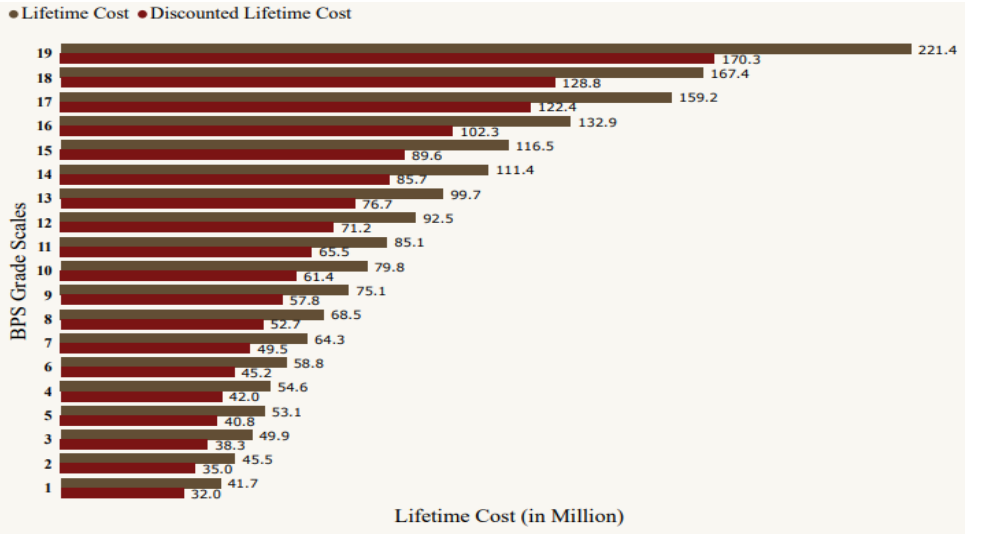
BPS Grade 1-19 Lifetime Cost (if Retires in their 60s)

Figure 14 provides an estimation of the lifetime cost associated with BPS-1-19 if employees retire in their 60s. The lifetime cost includes the sum of lifetime salaries, commuted pensions, and lifetime monthly pensions for employees, spouses, and daughters. The graph demonstrates that the discounted lifetime cost for BPS-1 is 32.0 million rupees, representing the minimum liability for a public sector employee. However, the liabilities or costs increase with higher grade scales. For instance, the lifetime amount to be paid to BPS grade 2, 3, and 4 employees would be 35.0 million, 38.3 million, and 42.2 million rupees, respectively. Furthermore, when considering future values, the costs range from 41.7 million rupees (BPS-1) to 221.4 million rupees (BPS-19). These findings also highlight an increase

in lifetime costs with grade scales, as observed in the previous two scenarios. Categorically, the discounted lifetime cost for supporting staff (BPS 1-16) ranges from 32.0 million to 102.3 million rupees. Conversely, the discounted lifetime cost for professional staff (BPS 17 & above) starts at 122.4 million rupees (BPS-17) and reaches 170.3 million rupees.

Figure 14

BPS Grade 1-19, Lifetime Cost (Case-3)



Average Lifetime Cost of Public Servants

Finally, we have calculated the average lifetime salaries, commuted pensions, monthly pensions, and their sum to estimate the average lifetime cost of BPS grade scales 1-19 in three different scenarios: if the employee serves for 10 years, 25 years, and 60 years. We have categorized the average lifetime cost based on classifications, including class-4 employees (BPS 1-4), supporting staff (BPS 1-16), and professional staff (BPS 17 & above). Let's discuss each case in detail below.

BPS Grade (1-4) Discounted Lifetime Liabilities

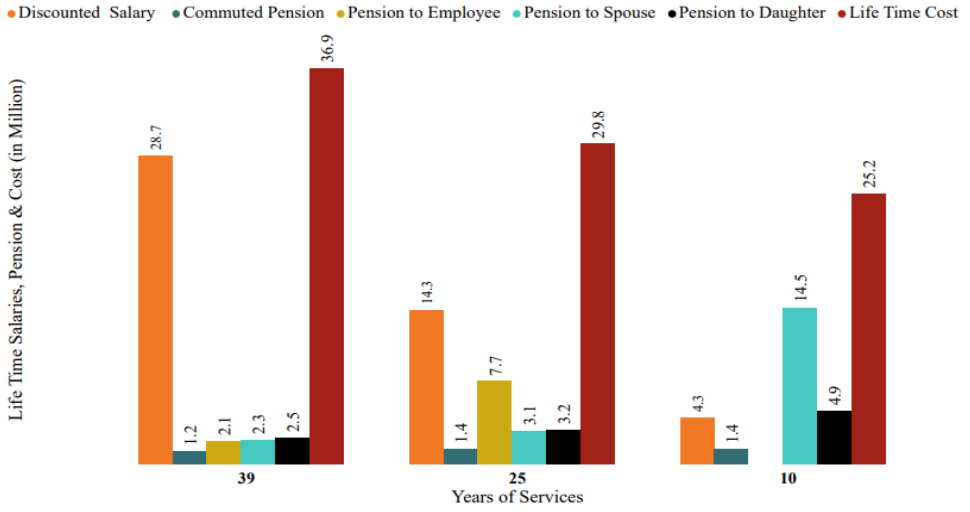
Figure 15 illustrates the average discounted lifetime salaries, commuted pensions, monthly pensions, and lifetime cost for class-4 employees in three scenarios: serving for 10 years and passing away, serving for 25 years and retiring, and serving for 39 years and retiring at the age of 60. In the first scenario, the largest beneficiaries are the spouse and the unmarried daughter

of the employee. The spouse is estimated to receive around 14.5 million rupees as a survivor's pension, while the unmarried daughter would receive approximately 4.9 million rupees. The employee themselves would receive only 4.3 million rupees during their 10 years of service. In the second and third scenarios, where the employee serves for 25 years and 39 years respectively, the employee themselves become the major beneficiaries. On average, class-4 employees receive around 14.3 million rupees as salary during their 25 years of service. In the third scenario, they receive an average salary of 28.7 million rupees, along with 1.2 million rupees as commuted pensions and 2.1 million rupees as monthly pensions after retirement. Additionally, the spouse receives around 2.3 million rupees as a survivor's pension, and the daughter receives approximately 2.5 million rupees.

Therefore, the estimated average lifetime cost for class-4 employees amounts to around 36.9 million rupees. It is important to note that these figures represent averages, and individual costs may vary. This analysis highlights the distribution of benefits among class-4 employees and their families in different service and retirement scenarios, emphasizing the significant impact of service duration and retirement age on the overall lifetime cost.

Figure 15

BPS Class-4 Average Discounted Lifetime Cost

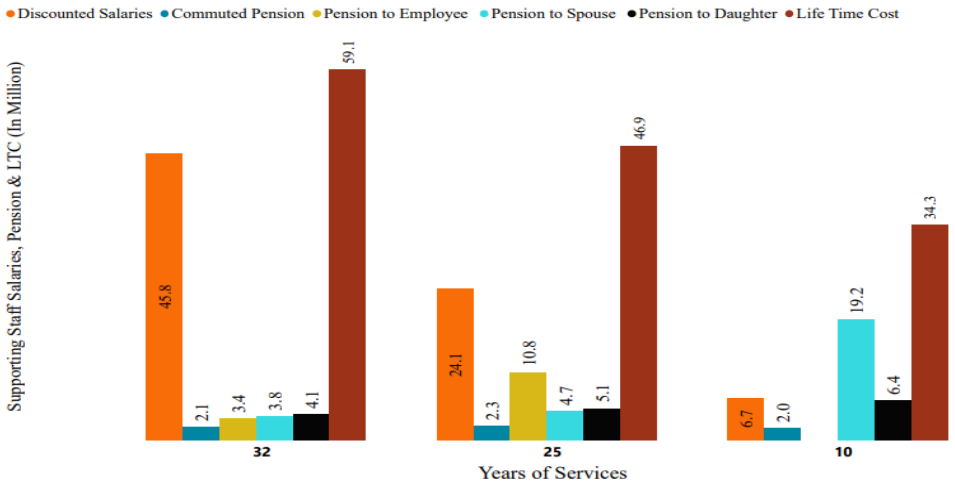


Supporting Staff Average Discounted Personal Cost

Furthermore, we have estimated the average discounted personal cost of supporting staff (BPS 5-16) in three different scenarios: serving for 10 years and passing away, serving for 25 years and retiring, and serving for an average of 32 years and retiring at the age of 60. Figure 16 illustrates the discounted average personal cost for supporting staff, including their lifetime salaries, commuted pensions, monthly pensions to the employee, pensions to the spouse, pensions to the daughter, and the total sum of these expenses as the discounted lifetime cost. On average, the personal cost (discounted lifetime) for supporting staff in the first scenario is around 34.3 million rupees. This cost increases to 46.9 million rupees in the second scenario (25 years of service), and to approximately 59.1 million rupees in the third scenario (32 years of service). Additionally, the findings indicate that in the first scenario, the largest beneficiary is the spouse, followed by the employee themselves. However, in both the second and third scenarios, the employee themselves become the primary beneficiaries of the personal cost.

Figure 16

Average Supporting Staff Discounted Lifetime Cost



Professional Staff Average Discounted Personal Cost

Our study also includes the anticipated average discounted personal cost of professional staff (BPS 17 & above). We considered factors such as

lifetime salary, commuted pensions, lifetime employee pensions (monthly), pensions to be paid to the spouse, pensions to be paid to unmarried daughters, and the total sum of these costs to estimate the lifetime cost in all three scenarios.

The lifetime cost for professional staff amounts to approximately 82.3 million rupees (Figure 17). This cost is notably higher compared to class-4 employees and supporting staff, being three times higher than class-4 and twice as high as supporting staff.

Figure 17

BPS 17-19 Average Discounted Lifetime Cost

Public Servants' Length of Services and Corresponding Financial Outlays

Finally, in this study, we also examined the average "Public Servants' Length of Services," which refers to the duration of time a public servant serves in a government agency or entity. This parameter helps determine how long the government is financially responsible for supporting the employee and their family. Additionally, we have estimated the average annual, monthly, and daily discounted costs of public servants based on their grade scales (Table 1).

Table 1

Public Servants' Length of Services and Corresponding Financial Outlays to the Governments in Pakistan

#	Grade Scale	Public Servants' Length of Service			Government Liability			Average Cost (PKR)		
		Years	Months	Days	Years	Months	Days	Annual	Monthly	Daily
					Class-4 Employees (BPS 1-4)					
3	BPS 1-4	39	468	14040	53	636	19080	696226	58019	1934
2	BPS 1-4	25	300	9000	53	636	19080	562264	46855	1562
1	BPS 1-4	10	120	3600	53	636	19080	475472	39623	1321
					Supporting Staff (BPS 1-16)					
3	BPS 1-16	32	384	11520	47	564	16920	1257447	104787	3493
2	BPS 1-16	25	300	9000	47	564	16920	997872	83156	2772
1	BPS 1-16	10	120	3600	47	564	16920	729787	60816	2027
					Professional Staff (BPS 17 & above)					
3	BPS 17-19	29	348	10440	44	528	115840	3193181.8	266099	8870
2	BPS 17-19	25	300	9000	44	528	115840	2859090.9	238258	7942
1	BPS 17-19	10	120	3600	44	528	115840	1870454.5	155871	5196

***Note*. Case 3:** When an employee chooses to retire in their 60s. **Case 2:** When an employee chooses to retire after meeting the minimum requirement for retirement (25 years of service). And, **Case 1:** When an employee serves for 10 years and passes away.

The findings indicate that, on average, class-4 (BPS 1-4) employees serve for 39 years if they retire in their 60s. However, regardless of their years of service, the government is bound to provide financial support to the employees and their families for a minimum of 53 years. This means that even if an employee serves for only 10 or 25 years, the government is responsible for supporting them for 53 years. The anticipated discounted costs reveal that, on average, the government is expected to pay class-4 employees an annual amount of PKR 696,226, 562,264, and 475,472 in cases 3, 2, and 1, respectively. The monthly discounted costs amount to PKR 58,019, 46,855, and 39,623 in cases 3, 2, and 1, respectively.

Furthermore, the findings indicate that, on average, supporting staff members serve for 32 years if they retire in their 60s. However, the government's liability to support them remains for 47 years, regardless of their years of service. This means that once an employee enters a public job, it becomes the responsibility of the state to bear the costs for 47 years. The annual anticipated (discounted) average cost of supporting staff is approximately PKR 1,257,447, 997,872, and 729,787 in cases 3, 2, and 1, respectively. The average monthly discounted cost for supporting staff is PKR 104,787, 83,156, and 60,816 in cases 3, 2, and 1, respectively.

Lastly, we have anticipated the average discounted annual, monthly, and daily costs of professional staff (BPS 17-19). On average, they serve for 25 years in government if they retire in their 60s. However, the government's liability to provide financial support extends for 44 years. The annual anticipated (discounted) average cost for professional staff is around PKR 3,193,181.8, 2,859,090.9, and 1,870,454.5 in cases 3, 2, and 1, respectively. Similarly, the average monthly costs amount to PKR 266,099, 238,258, and 155,871 in cases 3, 2, and 1, respectively. The average (discounted) per-day costs for professional staff are approximately PKR 8,870, 7,942, and 5,196 in cases 3, 2, and 1, respectively.

Conclusion

This study aims to estimate the lifetime cost of public sector employees in Pakistan based on the latest 2022 Basic Pay Scale (BPS). The cost includes lifetime salaries, commuted pension, monthly pension for the employee, monthly pension for the spouse, and monthly pension for unmarried daughters. A 3% discount rate is applied to calculate the discounted lifetime cost. The study considers three scenarios: when the

employee serves for 10 years, 25 years, or until retirement at the age of 60. In the first scenario, the spouse of a class-4 employee is the largest beneficiary, followed by unmarried daughters. The employee receives a comparatively smaller amount. However, in scenarios two and three, the employee himself receives the majority of the benefits in the form of salary. The average discounted lifetime cost for class-4 employees is approximately 36.9 million Pakistani rupees in scenario three. For supporting staff (BPS 1-16), the average discounted lifetime cost ranges from around 34.3 million rupees in scenario one to 59.1 million rupees in scenario three. Professional staff (BPS 17-19) have a higher average discounted lifetime cost, reaching 140.5 million rupees in scenario three.

The study also examines the average length of service for public servants and the duration for which the government is financially responsible for them. On average, class-4 employees serve for 39 years, while the government's responsibility extends for 53 years. The anticipated discounted costs per year, month, and day are provided for each grade scale. Supporting staff serve for 32 years on average, and the government has a financial responsibility towards them for 47 years. Professional staff serve for 25 years on average, and the government's responsibility lasts for 44 years. The anticipated discounted costs per year, month, and day are also provided for these categories.

Implications of the existing pay and pension structure

- As the government hires more employees and promises long-term benefits like pensions, the financial commitment grows far beyond the employee's years of service. This can allocate a significant portion of the budget to salaries, pensions, and associated benefits, reducing funds available for other critical areas such as research and development, education, healthcare, and infrastructure.
- To sustain the growing salary and pension liabilities, the government may need to increase revenue through higher taxes or by taking on more debt. This can lead to a budget deficit if government revenue does not keep pace with its expenditures. Higher taxes can reduce disposable income for the public, leading to lower consumer spending and potentially slowing down economic growth.

Future Economic Impact

- The growing salary and pension burden may become unsustainable over time. As the population ages and the number of retirees increases, the government may find it increasingly difficult to meet its pension obligations. This could lead to pension reforms, such as reducing benefits or increasing the retirement age, which may face public opposition.
- Higher government spending on salaries and pensions, relative to productive benefits, can reduce the country's economic competitiveness. Resources that could be used to enhance innovation, education, and other growth-enhancing activities are instead locked into non-productive expenditures.
- If the government continues to borrow to meet the salary and pension burden, it can lead to a significant increase in public debt. High debt levels can result in higher interest payments, which put further pressure on the budget and limit the government's ability to invest in growth-promoting activities.

The continued increase in the salary and pension burden poses a significant threat to the economy, potentially leading to budget deficits, inflation, reduced public investment, and increased debt. To mitigate these risks, it is imperative for the government to reform its public sector employment and pension system to ensure long-term fiscal sustainability.

Author Contribution

Muhammd Ajmal Khan: conceptualization, data curation, formal analysis, writing-original draft. **M Jehangir Khan:** methodology, supervision, validation, writing-review & editing. **Nadeem Khan**: visualization

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

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