

Age Distribution Forecast: A Panacea for a Declining U.S. Federal Agency Workforce

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Abstract: The US government workforce is witnessing an upsurge in the age of employees in the current decade. 11 age groups are analyzed comprising of <20, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, and >65 for the years 2013-2017 inclusive. The analytical review carried out in this paper includes but not limited to the age group of 50-59. The data is obtained from the U.S. office of Personnel Management database and tabulated in Microsoft Excel, converted to Pivot table, and presented in various bar chart. Pie chart, and other graphical format by using pivot chart, a visual software. Constantly forecasting the age distribution is a strategic policy to replenish the workforce with younger generation for fresh and modern ideas and improved productivity. From the analysis, the age group 50-54 is 17.84% of the workforce in 2013, 18.77% in 2014, 17.63% in 2015, 16.97% in 2016, and 16.41 in 2017. The age group of 55-59 is the next topping the chart with 14.74% in 2013, 15.49% in 2014, 14.79% in 2015, 14.96% in 2016, and 15.15% in 2017. If the trend continues in this fashion, the federal government will incur a higher cost of health insurance and other benefits; productivity could be low. In the overall, the U.S. government may not have a sustainable workforce for its agencies.

Keywords: strategy, policy, workforce.

1. INTRODUCTION

Age distribution is the commensurate statistics of persons in a succeeding age group in a particular society (D'Albis & Collard. 2013). Age distribution is the classification of a society's population demography according to seniority by birth. A society includes a country, county, community, a state, school, government, workforce to mention just a few. The Federal Government makes policy to use demographic statistics as a strategy to plan the distribution of social amenities, wealth, and type of facilities to provide to the nation. For example, a country whose population is dominated by persons between the age of 16 to 25 inclusive, will channel resources to establish more colleges and Universities and increase its workforce by creating more employment opportunities to optimize human capital development and reduce crime. On the other hand, a country with an aging population- above 50 will create more rehabilitation centers for the aging and disabled. In anyways, there must be a deliberate effort by government to engage its population in productive ventures for a sophisticated followership. Monitoring population growth in relationship to the age distribution is a *sine qua non* for planning and timely allocation of resources for a long-term development. Federal agencies are embodiment of organizations with various economic program areas, divisions, and branches (Maestas, Mullen & Powell, 2016).

2. PURPOSE

The purpose of this research study is to bring to the notice of hiring managers in the federal government agencies, to plan the future of the U.S. government workforce, based on the data displayed. For example, in 2017, from the available data, 60% of the workforce employees are 50 years and above as of year 2020. The junior staff that does the transactions with high input are between the age of 18 and 49, meaning that the government will spend more to provide health insurance and retirement benefits to aged and less functioning employees. Organizations where most of the workforce are old in age are less productive and exposed to higher health insurance cost (Vinik, 2017).

3. DATA COLLECTION, SOURCE, AND PRESENTATION

I extracted the age classification and number of employees for individual years 2013-2017 from the U.S. office of Personnel Management (OPM), sourced from the website accessible to the public. I independently calculated the percentages, entered the data in excel, manipulated the data in pivot table and transformed to Pivot chart for graphical/visual presentation. Finally, I exported the excel report to Word for publishing.

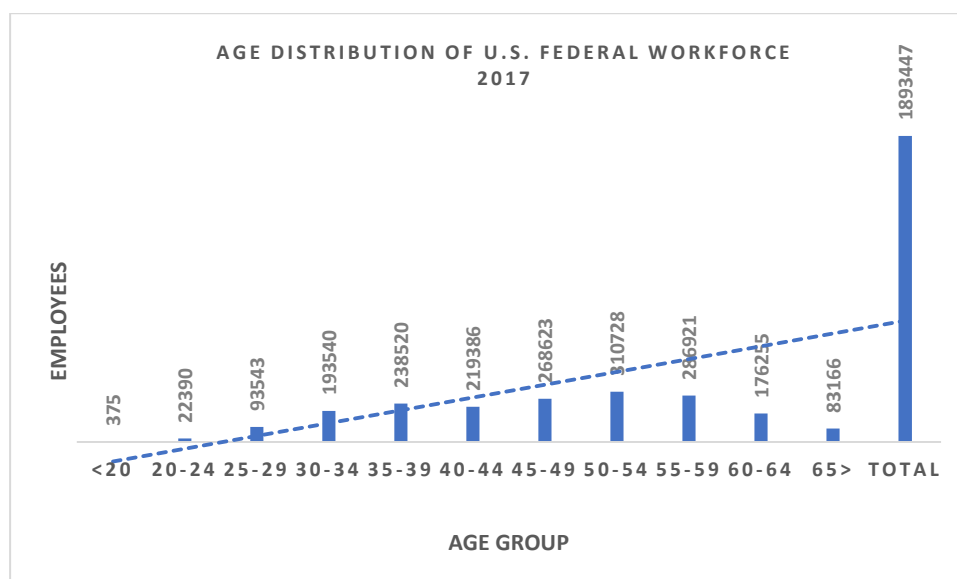
4. CHALLENGES AND LIMITATIONS

The excel pivot table and pivot chart do not accommodate an exceptionally large data. For that reason, the 2016 pie chart for example, only displays the legend from <20 to 55-59 age bracket even with that, the complete information is illustrated on the pie chart. The data in this article can be analyzed in different format but publishing in research journal, the content is limited to the portion and technical formation the platform can accept for clear and concise presentation, to enable most readers to understand. The analysis is limited to the available raw data obtained from the U.S. Federal Office of Personnel Management (OPM) website. The employees do not include those in the military but includes only civilian - agency positions on active duty. The analysis is brief for easy digest.

5. ANALYSIS

**Age Distribution of U.S. Employees in the Federal Workforce
2013 – 2017**

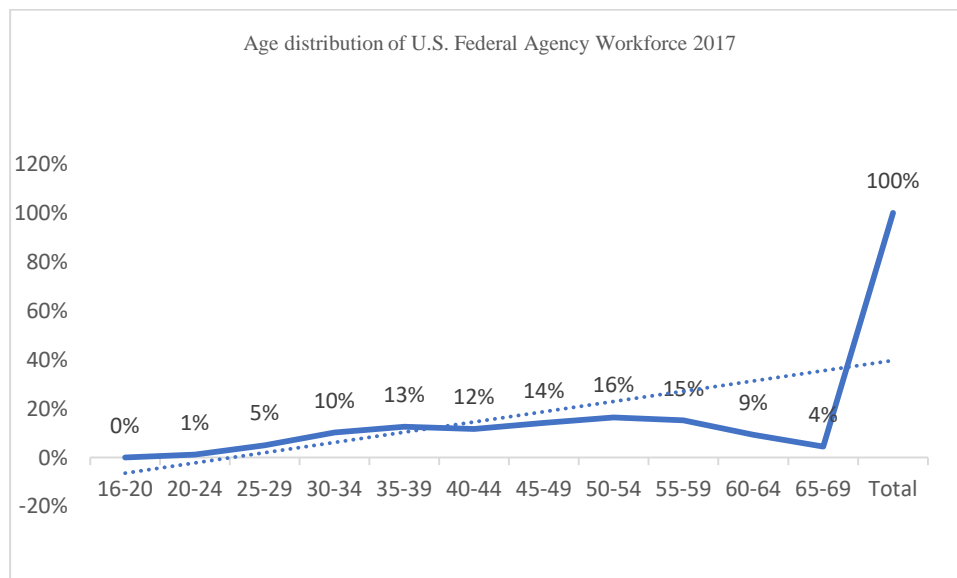
Age Group	2017	2016	2015	2014	2013
<20	375	353	319	223	139
20-24	22,390	22,091	19,226	16,637	17,477
25-29	93,543	98,042	100,503	103,073	111,124
30-34	193,540	198,721	196,385	109,920	189,630
35-39	238,520	228,809	211,848	194,962	185,663
40-44	219,386	216,166	217,077	217,710	222,702
45-49	268,623	272,250	269,759	271,205	280,102
50-54	310,728	321,002	328,033	327,527	326,728
55-59	286,921	282,927	275,189	270,122	270,061
60-64	176,255	171,849	166,472	160,452	158,132
>65	83,166	79,553	75,891	72,931	69,965
Total	1,893,447	1,891,763	1,860,702	1,744,762	1,831,723



In 2017, the trending analysis indicates the prevailing direction of the workforce population. The trend shows that between the age of 25 to 39 (inclusive), the workforce is 547,993 out of 1,893,447 employees, which is 28.9% that could be in service for a maximum of 43 years before retirement *peribus ceteris*, using 65 years as the minimum retirement age. It implies that 1.18% of the entire workforce will be in active duty at most for 43 years; 4.9% for a maximum of 38 years. 10.22% for a maximum of 33 years, and 12.6% for a maximum of 28 years. The slope below the line of positive explains that hiring managers have not been recruiting employees in the age bracket of 18 to 24 probably for the reason that only few students earn their bachelor degree at this age, and on the assumption that those on internship program are not classified as employees.

The data expressed in percentage

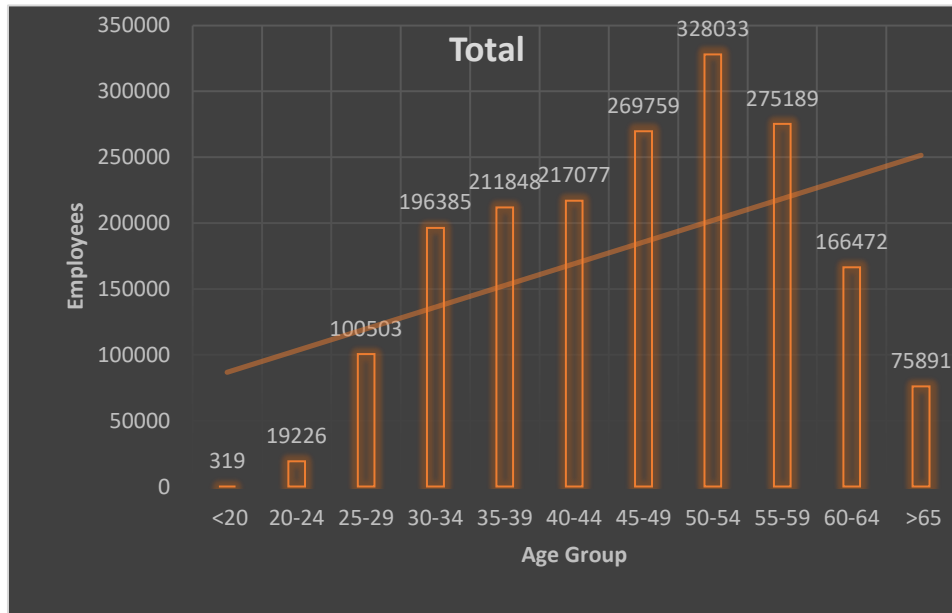
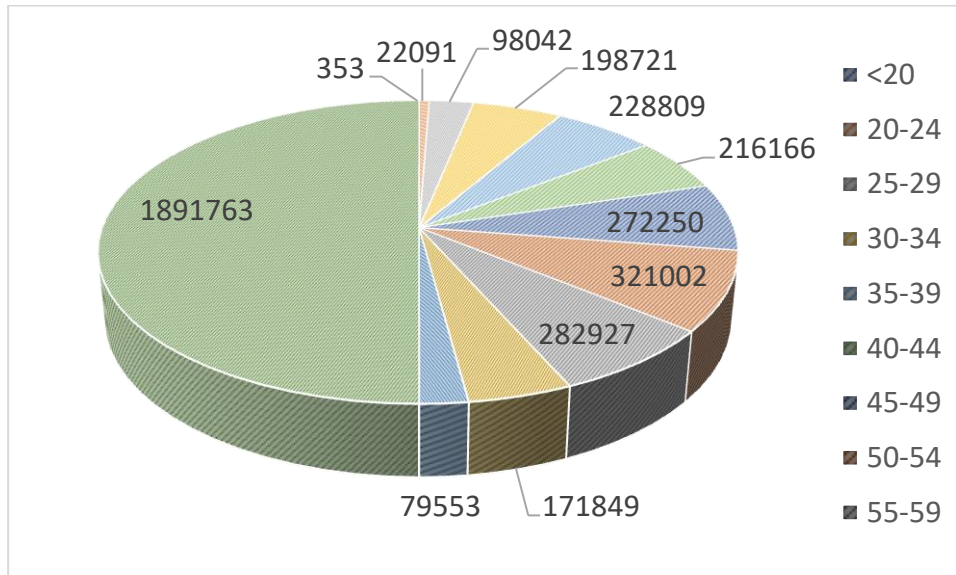
Age Group	2017	2016	2015	2014	2013
<20	0.02%	0.02%	0.02%	0.01%	0.01%
20-24	1.18%	1.17%	1.03%	0.95%	0.95%
25-29	4.94%	5.18%	5.40%	5.91%	6.07%
30-34	10.22%	10.50%	10.55%	6.30%	10.35%
35-39	12.60%	12.1%	11.38%	11.17%	10.14%
40-44	11.59%	11.43%	11.67%	12.48%	12.16%
45-49	14.19%	14.39%	14.50%	15.54%	15.29%
50-54	16.41%	16.97%	17.63%	18.77%	17.84%
55-59	15.15%	14.96%	14.79%	15.49%	14.74%
60-64	9.31%	9.08%	8.95%	9.21	8.63%
>65	4.39%	4.20%	4.08%	4.17%	3.82%
Total	100%	100%	100%	100%	100%



Expressing the data in percentage establishes a meeting point at age group of 35-39 (inclusive). The implication here is that the federal hiring managers should keep a pace of hiring those between 35-39 to maintain long term sustainable workforce. 35-39 age bracket constitutes 12.60% of the entire workforce of which have a maximum of 28 years to be in service.

Next is the analysis for 2016. Here, I will emphasize on the age group of 25 to 39, reason that, of recent, the federal hiring managers have decided to make this age range a priority. I have made a choice of using pie chart for the analysis. There are 98,042 employees in the age group of 25 to 29 inclusive constituting 5.18% of 1,891,763 total employees, and this is the population that will possibly work not to exceed the next 36 years counting from year 2020. Similarly, for 30-34, the

number of employees is 198,721 which makes up 10.50% of total workforce. The maximum number of years employees in this category will continue in service will not exceed 31 years, also effective from 2020. The hiring pattern for this age group between 2016 and 2017 is consistent. For the age group 34-39, the 228,809 employees, which is 12.1% of total employees shall be in workforce for a maximum of 28 years. I have also used the age of 65 years as the benchmark for retirement. Again, the hiring managers have been consistent in the hiring pattern with the intention of building up a workforce that a handful of employees will be sourced to be promoted to senior management levels, most especially those in this category of 25 to 39, if they have the basic qualification of University bachelor degree in relevant discipline.

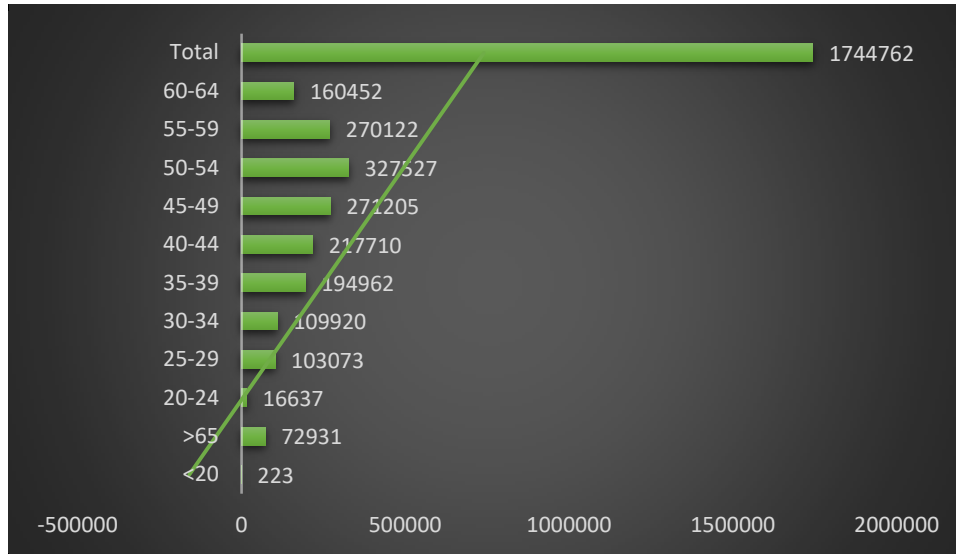


Age distribution of U.S. Federal workforce 2016

In 2015, the Age distribution of U.S. Federal workforce 2015

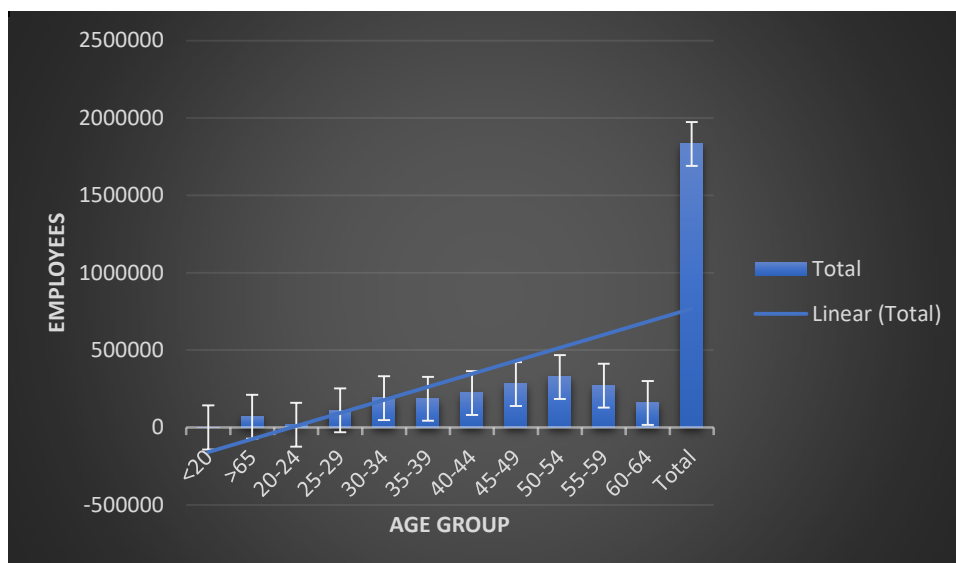
In 2015, the number of employees for age 50-54, 17.63%, recorded the highest for the year and for a second time between 2013 to 2017 inclusive, signifying an aging workforce population. Much like 2016, The age category of employees from 50 years upward, makes up 60% of the workforce as of year 2020, another evidence of an aging workforce, even though the 75,891 employees would have retired. The reason for an increase in this category of employees is the longevity of up to 20 years on the employment. They are well experienced and that aid them to rise to the top of the organization structure.

For 2014, I have placed the maximum age of >65 and < 20 next to each other to show disparity between minimum and maximum age comparison to number of hires. If the government hires more of the 20 to 24 age bracket the employees would have served up to 45 years before retirement and that is a big savings to the government in terms of maintaining workforce consistency, and accumulated savings for pension and retirement benefit payment. As we can see from the graph, the trending line intersects at age 20-24 with 16,637 employees. This point of intersection is favorable at entry level because after 10 to 20 years of working in an agency, an employee would have attained the age of 44 years and still be strong and be productive to the agency. But achieving this suggestion is a far cry, reason that going by the trend, the pace with which the hiring managers absorbed age category 20-24 from 2015 to 2017 is not skewed, that is, it has been consistent and no prove it will change any time soon.



Age distribution of U.S. Federal workforce 2014

The 2013 chart indicates a meeting point at 0 and 20 - 24 for 17,477 employees, a 0.95% of total employees. Also, the age group of 50-54 has the highest score of 17.84% in the hiring trend from 2013 to 2017. Here, I included the error bar on the chart to determine any uncertainty in the data presented. The error bar is also used to ascertain the confident level and accurate standard deviation. Position of the bars is normal showing the chart is free from error. Employees in the age of 40 to 54 constituted the highest number of employees in the workforce which is 45%, an aging workforce because the youngest person in that age bracket is 47-year-old in 2020. Also, the chart indicates a 72.5% of total employees that fall between 40-65-year-old in 2013, signifying an aging workforce.



Age distribution of U.S. Federal workforce 2013

6. RECOMMENDATION AND CONCLUSION

I strongly recommend hiring employees through internship and recent graduate -pathway program. Employees in this program should be allowed to be on training for 52 weeks before they can work independently, to enable them understand the work properly. The government should retire aged employees who have attained the age of 65 and not to exceed that limit. Employees in this age do not involve in the routine activities but they incur high cost to the government and taxpayers by way of high remuneration and health insurance that hit the ceiling. Prompt retiring of employees that reach the age of 65 creates way for employment of the youth who are still strong and energetic in both mental and physical capacity to increase productivity.

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