

Can Filipinos Afford to Work Remotely? A Study on the Afford Ability of Laptops Based on the Salaries and Cost of Living in the Philippines using Compounding

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Abstract

Businesses are shifting to remote or hybrid setups due to employee demand. Since the trend is moving towards these setups, employees need to be able to conduct their work in their respective homes. With this, they need devices, such as a laptop, to accomplish their daily tasks. To live comfortably, however, they must set aside 20% of their salary for savings and 30% for their wants. Considering this and the average annual salary in the Philippines and the average annual cost of living, along with the average annual rate of salary increase and average annual inflation rate, the research focuses on the affordability of laptops, given their current prices and average annual price movements. Compounding was used to determine when an employee can purchase a laptop while keeping 50% for savings and wants. Annual compounding is used, and the compounded values for the cost of living and the laptop price are deducted from the compounded value of the salary. After calculations, the Apple MacBook Air is the most feasible, but it will take the employee 37 years to purchase the laptop while keeping 50% of one's salary. Once achieved, the employee will be near retirement age, so it might not be fully utilized. It is recommended that the rate of salary increases be increased, and other businesses that offer laptops should maintain their prices or minimize the price increases to make them more affordable for employees. Benchmarking Apple is a viable option to see how they can control their prices.

Keywords: Remote Setup, Hybrid Setup, Salary, Cost of Living, Inflation, Laptop

1. Introduction

An article by Estellado (2023) mentioned that more and more businesses are embracing the remote or hybrid setting. Some companies adopting this are Google, Dropbox, Spotify, HubSpot, and Salesforce, to name a few.

The Philippines has been a preferred location for outsourced work, given the skills of the workforce and the low labor cost. Therefore, working remotely has been a part of certain industries for years. However, there has been an increase in the number of remote workers, and because of this, more Filipinos prefer this setup after experiencing it.

An article by Monzon (2023) highlighted the result of a survey done by Jobstreet, where 11,438 Filipinos were respondents in a worldwide study about employee preference on work setup. In this, 46% preferred a hybrid setup, and 28% answered that they prefer a remote setup. This is higher than the global average, which is 11%. This shows that Filipinos are more keen on

working remotely. This can be due to several factors mentioned in Laqui's (2024) article. In the article, Cisco conducted a survey, and 9,200 employees were respondents. The results showed that 37% of the respondents expressed their sentiments on returning to the office, stating that it is not conducive to productivity due to office layouts, seating arrangements, and meeting rooms.

Because of the increase in demand for a remote or hybrid setup, businesses are adapting to this to benefit them and their employees. In an article by KPMG Perspectives (2023), 93% of businesses are introducing or adopting remote work, with 48% setting policies and 27% starting to plan for it.

2. Literature Review

Based on the survey results from the Philippine Statistics Authority (2023), 5.79 million, or 78.7%, of employees use computers for work. Given the trend in remote work, employees must be able to provide themselves with a computer or a laptop if the business does not provide one. Due to this, Filipino workers have increased the demand for consumer electronics (Philippines – Information and Communications Technology, 2024). Statista's (2024) report states that 98.8% of Philippine users use mobile phones to access the Internet, while 61.8% use laptops or desktops. Laptops are, therefore, seen as a need since they are essential for working remotely.

Based on an article by Sevilla (2024), the best laptop for office use is the Dell Latitude 5420 Business Laptop. For productivity, the best laptop is the Dell XPS 15, and for a mid-priced alternative, it is the Apple MacBook Air M2 chip. The selection of these models is based on key features, namely random access memory (RAM), central processing unit (CPU), graphics processing unit (GPU), storage, battery, and refresh rate.

Given that the average monthly salary in the Philippines, the cost of living, and the increase in inflation from 2.8% in January 2024 to 3.4% in February 2024, as stated in a report by the Philippine Statistics Authority (2024), and the need to keep 20% and 30% of one's salary for savings and wants, respectively, based on an article by Whiteside (2024) about the 50-30-20 ratio, this then leads to the research objectives: Can an employee purchase a Dell XPS while keeping 50% of one's salary for savings and wants? Can an employee purchase an Apple MacBook Air while keeping 50% of one's salary for savings and wants? Can an employee purchase a Dell Latitude while keeping 50% of one's salary for savings and wants?

3. Research Method

Secondary sources were used to gather data for the research. In this study, the main data needed were the average salary in the Philippines, the average annual salary increase rate in the Philippines, the cost of living in the Philippines, the country's inflation rate, laptop prices, and the rate of price changes of laptops.

The average salary and annual salary increase rate were gathered from an article mentioning that the former is \$793.09 or PHP 44,650 and the latter is 5% (Average Salary in the Philippines for 2024, 2024). The average salary was used as the base for compounding, and the average salary increase rate was used as the rate of increase.

The cost of living in the Philippines was gathered from a blog that mentioned that for a single person, the average monthly cost would be \$518.62 or PHP 29,198, excluding rent (The Cost of Living in the Philippines, 2022). On the other hand, the country's inflation rate was gathered from the Philippine Statistics Authority (2024). The inflation rate for the years 2020 to 2024 was gathered. From this, the mean of the five years was calculated and used as the rate for compounding the average monthly cost of living.

The prices of the latest model and the previous four models of the Dell XPS, Apple MacBook Air, and Dell Latitude were gathered through their respective websites and articles. The prices were used to get the rate of the price changes per year by using the formula:

Formula 1.

$$\text{Percentage Change} = \frac{(\text{Price} - \text{Previous Price})}{\text{Previous Price}} * 100$$

Once the percentage changes for all prices per change in each model were gathered, the mean was used as the rate of increase or decrease for compounding. Since each model had a different percentage rate, their respective rates were used for their respective formulas.

With all this, the formula that was used to analyze the data was:

Formula 2.

$$A = P_1 \left(1 + \frac{r_1}{n}\right)^{nt} - P_2 \left(1 + \frac{r_2}{n}\right)^{nt} - P_3 \left(1 + \frac{r_3}{n}\right)^{nt}$$

Where:

P_1 = Average Annual Salary

r_1 = Average Annual Salary Increase Rate

P_2 = Average Annual Cost of Living

r_2 = Average Annual Inflation Rate

P_3 = Current Cost of the Laptop

r_3 = Average Percentage Change of the Laptop

n = Number of Times Interest is Compounded per Year

t = Time (Years)

A = Amount Left from the Salary

In personal finance, it must be noted that splitting one's salary by using the 50-30-20 ratio is good practice. 50% of the salary should be allocated to needs, 30% to wants, and 20% to savings and investments (Whiteside, 2024). Therefore, to accept the amount left, it must be greater than or equal to 50% of $P_1 \left(1 + \frac{r_1}{n}\right)^{nt}$ since, in this study, a laptop is seen as a need to be able to

work given the possible new work setup.

4. Finding and Discussion

Since annual rates will be used, the average salary and average cost of living must be first converted to annual. In the Philippines, under the Labor Code of the Philippines and Presidential Decree 851, employers are mandated to provide a monetary benefit to all employees in the form of a 13th month pay (Fuentes, 2023). Therefore, the average annual salary is \$10,310.17 or PHP 580,450. On the other hand, the average annual cost of living in the Philippines is \$6,223.44 or PHP 350,376 since it is only applicable for 12 months.

Table 1. *Inflation rates from 2020 to 2024*

Year	Inflation Rate (%)
2024	3.4
2023	8.6
2022	3.0
2021	4.2
2020	2.5

Source: Summary Inflation Report Consumer Price Index: February 2024 from the Philippine Statistics Authority

The mean of the inflation rates from 2020 to 2024 must be calculated to get the average annual inflation rate. The formula below will be used:

Formula 3.

$$\text{Mean} = \frac{\text{Sum of All Data Points}}{\text{Number of Data Points}}$$

Therefore, the inflation rates in Table 1 are added, and the sum is divided by five, giving an average annual inflation rate of 4.34%.

Table 2. *Dell XPS prices*

Model	Price (\$)	Percentage Change (%)
Dell XPS 17	1,599	-16
Dell XPS 16	1,899	-5
Dell XPS 15	1,999	33
Dell XPS 14	1,499	15
Dell XPS 13	1,299	-

Source: Dell.com

Formula 1 is used to get the percentage change from the previous model to the succeeding model. To get the mean of the percentage change, Formula 3 is used. The average percentage change in the Dell XPS model is 7%.

Since all variables are available for Dell XPS, Formula 2 can now determine when an individual

can afford the latest Dell XPS model.

Table 3. *Amount left from the salary when buying a Dell XPS*

Year	Amount Left from the Salary (\$)	50% of the Compounded Average Annual Salary	Difference between the 50% and the Amount Left
1	2,621.21	5,412.84	2,791.63
2	2,760.91	5,683.48	2,922.57
3	2,907.06	5,967.66	3,060.60
4	3,059.89	6,266.04	3,206.14
5	3,219.65	6,579.34	3,359.69

As seen in Table 3, the amount left from the salary increases yearly. However, 50% of the compounded average annual salary increases yearly, but it outpaces the amount left from the salary. Therefore, the difference between the two increases yearly; hence, the amount left will never exceed the 50% requirement.

After further analysis of Table 3, the amount left from the salary will peak in the 57th year and decline from there. In the 74th year, an employee won't be able to purchase a Dell XPS and live a comfortable life since it will have a negative value.

Table 4. *Apple MacBook Air prices*

Model	Price (\$)	Percentage Change (%)
MacBook Air M3	1,099	0
MacBook Air M2	1,099	10
MacBook Air M1	999	0
MacBook Air Intel (2020)	999	-9
MacBook Air Intel (2021)	1,099	-

Source: List of All MacBook Air Models by Year (2008 to 2023) by Jadhav (2022)

Formula 1 is again used to get the percentage changes for the Apple MacBook Air. Given the percentage changes, using Formula 3, the mean percentage change is 0.23%.

Table 5. Amount left from the salary when buying an Apple MacBook Air

Year	Amount Left from the Salary (\$)	50% of the Compounded Average Annual Salary	Difference between the 50% and the Amount Left
33	25,110.55	25,791.86	681.32
34	26,589.52	27,081.46	491.93
35	28,149.82	28,435.53	285.71
36	29,795.82	29,857.30	61.48
37	31,532.14	31,350.17	-181.97

The amount left from the salary and 50% of the compounded average annual salary increase yearly, but the former outpaces the latter. This was seen in year one and continues as years pass by. Given this, the difference between the two diminishes, and the difference will be negative in year 37, signifying that an employee can purchase an Apple MacBook Air and live comfortably while still keeping 50% of one's salary after 37 years.

Table 6. Dell Latitude prices

Model	Price (\$)	Percentage Change (%)
Dell Latitude 5440	1,229	-13
Dell Latitude 5430	1,419	27
Dell Latitude 5420	1,119	-16
Dell Latitude 5410	1,335	63
Dell Latitude 5400	819	-

Source: Dell.com and xda-developers.com

After getting the percentage changes using Formula 1, the results are used as factors in Formula 3 to get the mean, which is 15%.

Table 7. Amount left from the salary when buying a Dell Latitude

Year	Amount Left from the Salary (\$)	50% of the Compounded Average Annual Salary	Difference between the 50% and the Amount Left
1	2,918.79	5,412.84	2,494.05
2	2,966.25	5,683.48	2,717.23
3	2,996.75	5,967.66	2,970.91
4	3,006.33	6,266.04	3,259.71
5	2,990.37	6,579.34	3,588.97

Based on Table 7, the amount left from the salary increases initially, but it will peak in the 4th year. It will decline from the 5th year onwards, and the amount will be negative in the 15th year. This means that on the said year, an employee will not be able to pay for one's cost of living

and purchase a Dell Latitude based on one's salary alone.

Since 50% of the compounded average annual salary will continue to increase, the difference between the two will continue to increase. Therefore, it will never meet the condition of the amount left from the salary being greater than or equal to 50% of the compounded average annual salary.

Table 8. *Summary of findings*

Laptop Model	Result	Year of Achievement
Dell XPS	Not supported	-
Apple MacBook Air	Supported	37
Dell Latitude	Not supported	-

Based on Table 8, out of the three laptop models, only the Apple MacBook Air will be affordable for Filipino employees while keeping 50% of their salary.

5. Conclusion

The first objective, "Can an employee purchase a Dell XPS while keeping 50% of one's salary for savings and wants?" is not supported because even though an employee can purchase it for the first 57 years, the employee won't have enough money left to save and to purchase one's wants. The second objective, "Can an employee purchase an Apple MacBook Air while keeping 50% of one's salary for savings and wants?" is supported because, in the 37th year, the employee will be able to purchase the laptop and still have 20% of one's salary for savings and 30% for wants. Lastly, the third objective, "Can an employee purchase a Dell Latitude while keeping 50% of one's salary for savings and wants?" is not supported because an employee will not be able to sustain at least 50% of one's salary, even though the laptop model can be purchased in the first 14 years.

Overall, Filipino employees can purchase a good quality laptop to some extent because even though one can purchase an Apple MacBook Air, it will take a long time because, on average, a student graduates from college at age 22. Since it will take 37 years to purchase the model while keeping 50% of one's salary, the employee will be 59 years old, close to retirement. Hence, it might not be fully utilized. Aside from this, only one laptop model can be afforded out of the three studied laptops. Therefore, it is and will be challenging to purchase a laptop now and moving forward. Still, if companies lower and control their prices better, Filipino employees will be more capable of purchasing a laptop and increasing their productivity in a remote or hybrid setup.

It is recommended that businesses increase employees' salaries further to give them a better chance of purchasing a laptop while having a secure and comfortable life. Based on an article by Ranara (2024), employees in the Philippines can expect a 5.7% increase in their salary. This is greater by 0.7% from the average annual salary increase. If businesses can sustain this rate, their employees will have a better chance of purchasing essential items to be productive and still have money for future use and to afford basic needs. Businesses can perhaps review their

income statement and see if other expenses can be decreased. Doing so will keep the businesses afloat by maintaining their level of profitability while providing more to their employees.

It is also recommended that businesses that offer laptops control the price increases or maintain the current price. Doing so will help employees purchase a laptop and keep 50% of their salary faster since the price increase rate will not contribute to the already high average annual inflation rate of 4.34%. One way to do this is to benchmark Apple's actions because it maintained its price twice in its past five models of the MacBook Air. If businesses can somewhat replicate this, it will give employees more options and opportunities to purchase one.

For future research, other essential devices for remote or hybrid work setups can be studied to give more information and opportunities to employees in terms of being productive. Also, a different demographic, perhaps from a different country, can be considered since their salaries and living costs might differ from those of the Philippines'. If this is the case, the figures will be different, affecting the results.

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References

2019 Survey on Information and Communication Technology (SICT) - for non-core ICT industries: Final results | Philippine Statistics Authority | Republic of the Philippines. (2023, February 22). <https://psa.gov.ph/content/2019-survey-information-and-communication-technology-sict-non-core-ict-industries-final>

Average salary in Philippines for 2024. (n.d.). World Salaries. <https://worldsalaries.com/average-salary-in-philippines/>

Computers, Monitors & Technology Solutions | Dell USA. (n.d.). Dell. <https://www.dell.com/en-us>

Consumer Price Index and Inflation Rate | Philippine Statistics Authority | Republic of the Philippines. (2024, April 2). <https://psa.gov.ph/price-indices/cpi-ir>

Edmonds, R. (n.d.). XDA. XDA Developers. <https://www.xda-developers.com/>

Estrellado, V. (2023, December 14). Surprising work-from-home statistics of 2024. Outsource Accelerator. <https://www.outsourceaccelerator.com/articles/work-from-home-statistics/#:~:text=Philippine%20work%2Dfrom%2Dhome%20statistics%20and%20trends&text=More%20than%20half%20of%20Filipino,of%20their%20flexible%20work%20arrangements>

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- Fuentes, K. J. (2023, December 1). *DOLE releases guidelines on 13th month pay*. SunStar Publishing Inc. <https://www.sunstar.com.ph/cebu/dole-releases-guidelines-on-13th-month-pay>
- Jadhav, S. (2023, June 14). List of All MacBook Air Models by Year (2008 to 2023) - atozapplesilicon. atozapplesilicon. <https://atozapplesilicon.com/all-macbook-air-models-by-year/>
- KPMG Perspectives. (2023, October 29). *Current trends in remote working | KPMG Perspectives*. BusinessMirror. <https://businessmirror.com.ph/2023/10/30/current-trends-in-remote-working/>
- Laqui, I. (2024, January 30). 37% of employees in the Philippines feel hindered by office environment — report. Philstar.com. <https://www.philstar.com/business/2024/01/26/2328735/37-employees-philippines-feel-hindered-office-environment-report>
- Monzon, A. M. (2023, March 2). *Most PH job seekers now prefer hybrid, remote work setup | Inquirer News*. INQUIRER.net. <https://newsinfo.inquirer.net/1737214/most-ph-job-seekers-now-prefer-hybrid-work-setup>
- Philippines - Information and Communications Technology*. (2024, January 23). International Trade Administration | Trade.gov. <https://www.trade.gov/country-commercial-guides/philippines-information-and-communications-technology>
- Ranara, J. P. M. (2024). *Philippine salary continues to increase in 2024 —survey*. Philstar Life. <https://philstarlife.com/self/382615-philippine-salary-increase-in-2024?page=3>
- Sevilla, S. (2024, February 13). *Top 10 Best Laptop to Buy this 2024 in the Philippines*. Shoppable: #1 B2B Platform for Procurement of Products in Bulk. <https://shoppable.ph/business/best-laptop-2024-philippines/>
- Statista. (2024, March 26). *Devices used to access the internet Philippines Q3 2023*. <https://www.statista.com/statistics/803808/digital-device-usage-among-adults-by-device-philippines/>
- Subramaniam, V. (2019, April 14). *A history of Dell XPS laptops from 2007 to present*. Notebookcheck. <https://www.notebookcheck.net/A-history-of-Dell-XPS-laptops-from-2007-to-present.411002.0.html>
- The Cost of Living in the Philippines*. (2022c, September 27). Luxury Homes for Sale in the Philippines | Brittany Corporation. <https://www.brittany.com.ph/blogs/the-cost-of-living-in-the-philippines/>
- Whiteside, E. (2024, February 26). *The 50/30/20 budget rule explained with examples*. Investopedia. <https://www.investopedia.com/ask/answers/022916/what-502030-budget-rule.asp>

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