Dwight Francis M. Caña | IT3C

Family Income and Expenditure Of Region IV-A

A Data analysis on the data set of the family income and expenditure of Region IV-A

Diagnostic

: Questions how is the distribution of expenditure to each other

Distribution of Expenditures (Pie Chart)

Expenditure Categories
- Total Food Expenditure
- Restaurant and hotels Expenditure
- Alcoholic Beverages Expenditure
- Tobacco Expenditure
- Clothing, Footwear and Other Wear Expenditure
- Imputed House Rental Value
- Housing and water Expenditure
- Communication Expenditure
- Transportation Expenditure
- Education Expenditure
- Miscellaneous Goods and Services Expenditure
- Special Occasions Expenditure
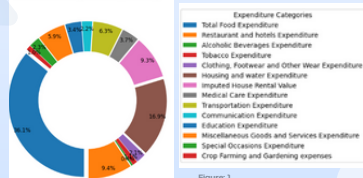- Crop Farming and Gardening expenses

Figure: 1

Expenditure Breakdown: Visualizing household spending by category, highlighting major expenses and spending patterns at a glance.

highlighting major expenses like **food**, **housing**, and **medical care**. Percentage labels and an external legend make it easy to compare essential versus discretionary spending

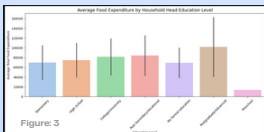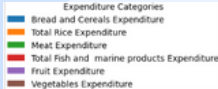: Questions Does the household head education relate to this

Figure: 3

The bar plot shows that households where the head has a higher level of education tend to spend more on food on average with the exception of those with no formal education as. The variability within groups, indicated by the error bars, is larger in middle education levels, suggesting a wider range of expenditures among these households.
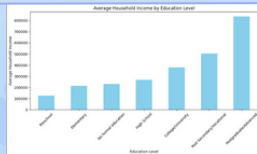
: Questions what makes up the food expenditures

Expenditure Categories
- Bread and Cereals Expenditure
- Total Rice Expenditure
- Meat Expenditure
- Total Fish and marine products Expenditure
- Fruit Expenditure
- Vegetables Expenditure

Distribution of Food Expenditures (Pie Chart)

Surprisingly the food expenditure that has the highest ratio is bread and cereals. followed up by Rice as rice is essential to Filipino's daily meal and of course meat.
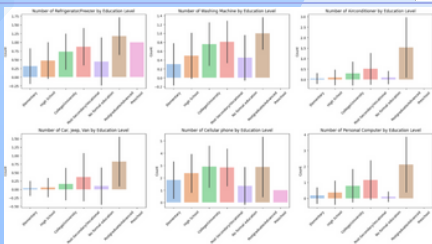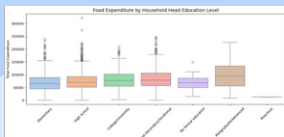
Figure: 2

The analysis of average household income shows a clear pattern across education levels of household heads. Households led by individuals with higher education tend to earn more on average. Specifically:

- Postgraduate/Advanced and Post-Secondary/Vocational households have the highest mean incomes, reflecting higher earning potential associated with advanced education.

- College/University households also have relatively high incomes, though slightly lower than the top two groups.

- High School and Elementary households have moderate average incomes, indicating more limited earning capacity.

- Households with No formal education have the lowest average income, highlighting the strong influence of education on economic well-being.

Average Household Income by Education Level

Diagnostic

The analysis indicates that mean household food expenditure generally increases with the education level of the household head, with the highest averages observed in Postgraduate/Advanced and Post-Secondary/Vocational groups. The accompanying boxplot reveals substantial variability within certain groups, particularly among higher education levels, and highlights the presence of outliers at both ends of the distribution. These patterns suggest that factors beyond education—such as household income, family size, or regional differences—likely influence food spending. The visualization effectively illustrates median trends, the spread of expenditures, and deviations from typical spending within each education group."

Food Expenditure by Household Head Education Level

Households with more educated heads generally own more appliances, including refrigerators, washing machines, air conditioners, cars, phones, and computers. Ownership increases from less-educated to highly-educated groups, but variability exists within each group, with some households owning unusually many or few items. This shows a strong link between education and household wealth, while highlighting differences within groups.

"While households with more educated heads generally own more appliances, there is considerable variation within each group. Some less-educated households own multiple high-value items, and some highly-educated households have few appliances, highlighting diversity in wealth and spending patterns beyond education alone."

Predictive

Household Income vs Education Level

- **Household income rises consistently with the education level of the household head.** The regression line shows that each step up in education is associated with a notable increase in average household income. While education is a strong predictor, there is still variation within each group, indicating that other factors—such as occupation, region, or household composition—also influence earnings

- **Households with more educated heads tend to spend more on food on average.** The linear regression trend shows a steady increase in food expenditure with each step up in education level. While higher education generally predicts higher spending, variability exists within each group, suggesting that other factors—such as household size or income source—also influence food consumption.

Food Expenditure vs Education Level

- **Appliance ownership increases with the education level of the household head,** reflecting higher household wealth and access to resources. The regression line indicates a positive relationship, with each step up in education associated with more appliances on average. Despite the overall trend, some households deviate from the expected pattern, highlighting heterogeneity in asset accumulation beyond education alone

Appliance Ownership vs Education Level

OVERALL :

- Across all three measures—income, food expenditure, and appliance ownership—higher education levels of household heads are associated with higher averages. Education is a clear baseline predictor of economic well-being and consumption patterns, but variability within each group highlights the influence of additional factors such as household size, income source, and regional differences. These trends suggest that education drives general economic potential, while other household characteristics modulate actual outcomes.

MAG ARAL NG MABUTI