

Neighborhood Homeowners Association - Lab 3

The Willow Creek Homeowners Association aims to understand their community's demographic and economic makeup. A comprehensive survey collected data on various aspects of the residents' lives, such as income, house prices, age, height, and several other variables. The analysis focuses on identifying which variables follow a normal distribution, assisting in making informed decisions for community development.

Analysis Conclusion

Based on the analysis, variables such as Age, Height, Education Years, Work Hours, and Screen Time follow a normal distribution, whereas others like Car Price, Social Media Followers, and Vacation Expenditure do not.

Implications and Recommendations

The findings of this analysis have several implications for the homeowners association, and here are a few recommendations on how the information can be used.

1. Community Events & Amenities:

- The normal distribution of age and work hours can help tailor community events and amenities that cater to the majority age group and the residents' availability.
- For instance, organizing events during peak availability hours and focusing on interests pertinent to the prevalent age group can increase event attendance.

1. Association Fees:

- a. Understanding the distribution of house prices and income can assist in setting fair and reasonable association fees. A tiered fee structure might be more appropriate, given the non-normal distribution of these variables.

1. Educational Programs:

- a. The distribution of education years suggests diverse educational backgrounds, indicating a potential for community educational programs or workshops catering to different academic levels.

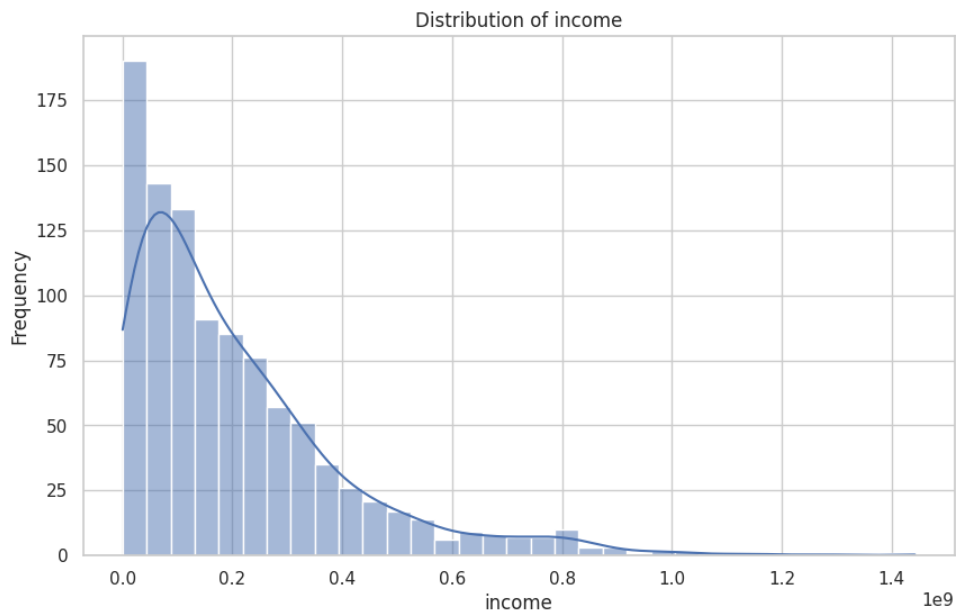
1. Screen Time & Social Media Engagement:

- a. High screen time and social media followers indicate that digital platforms can be effectively used for community engagement and communication.

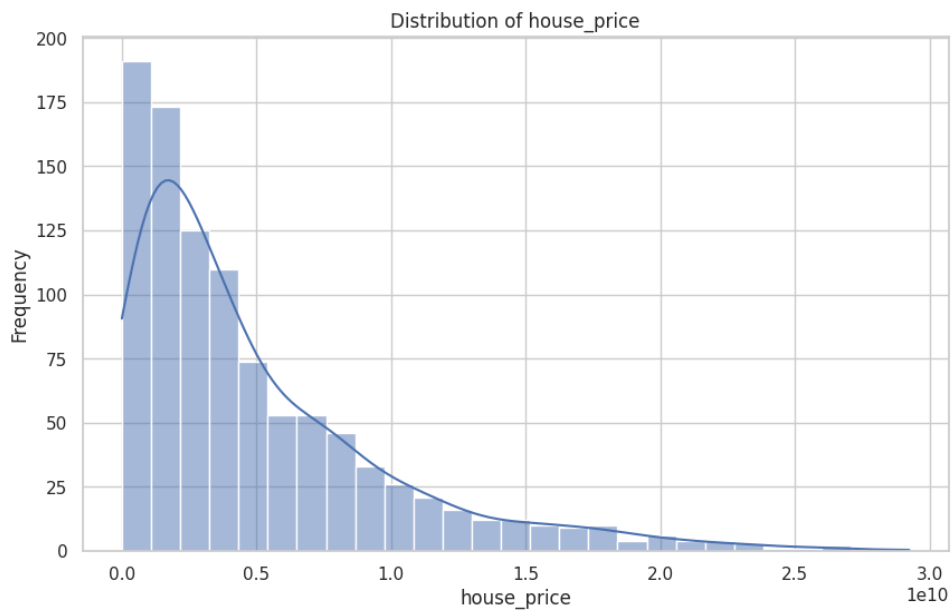
1. Vacation Expenditure:

- a. A Knowledge of vacation expenditure can help plan community activities during vacation seasons, ensuring better participation.

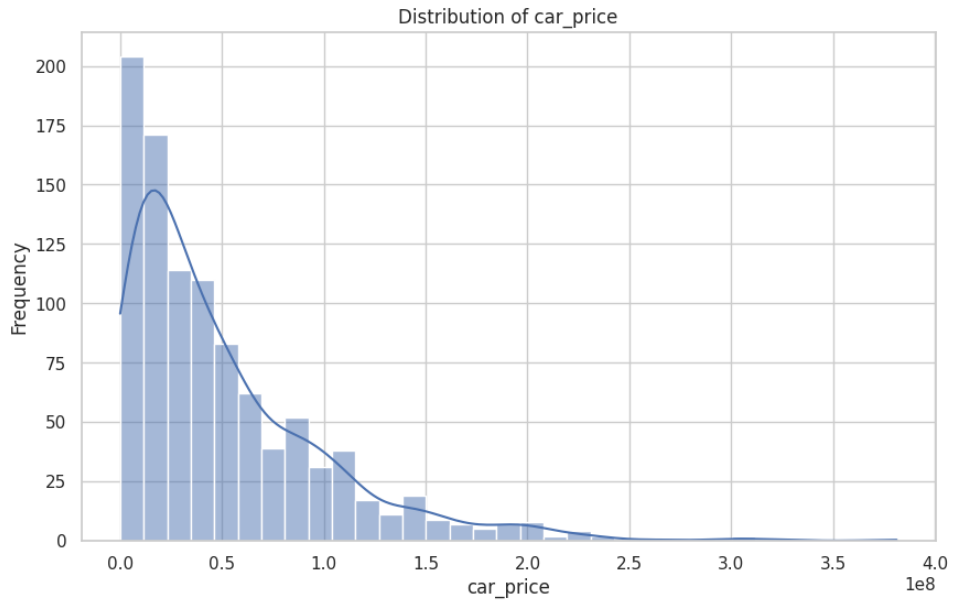
Detailed Analysis Results



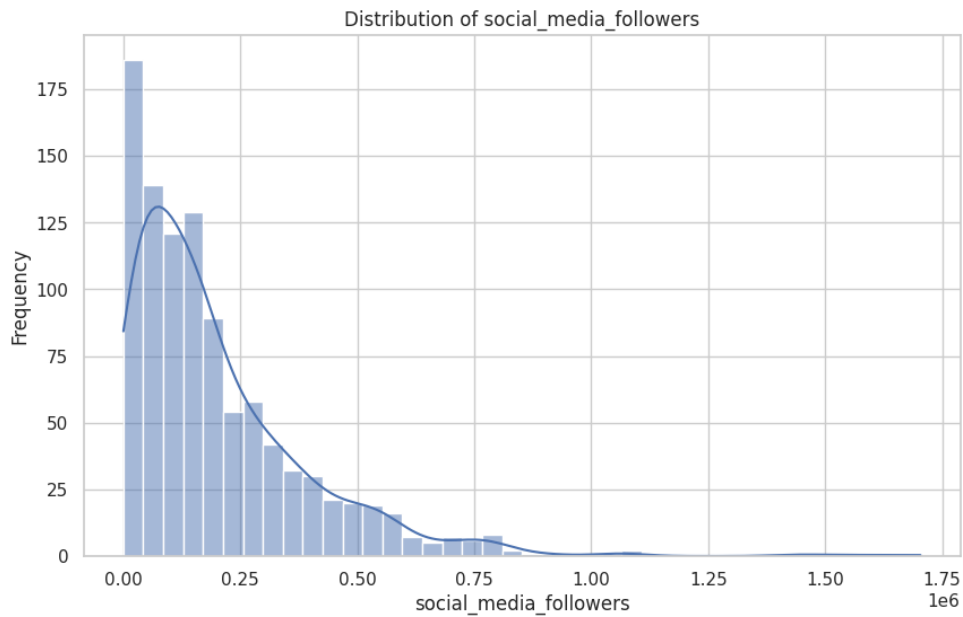
Mean (MLE): 205995854.82936555
Standard Deviation (MLE): 200880871.31822786
Within 1 standard deviation: 84.89999999999999%
Within 2 standard deviations: 94.5%



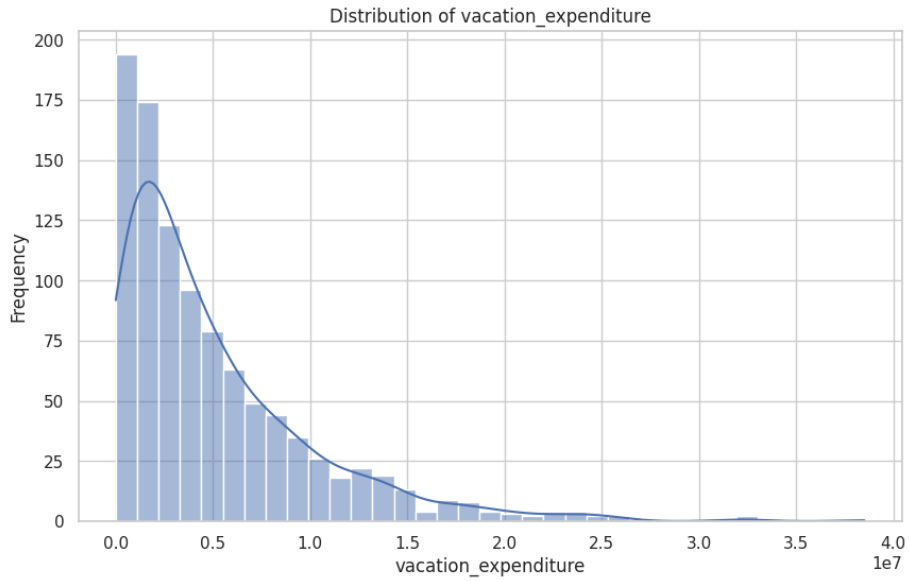
Mean (MLE): 4967879846.97569
Standard Deviation (MLE): 4927758821.960818
Within 1 standard deviation: 85.1%
Within 2 standard deviations: 93.89999999999999%



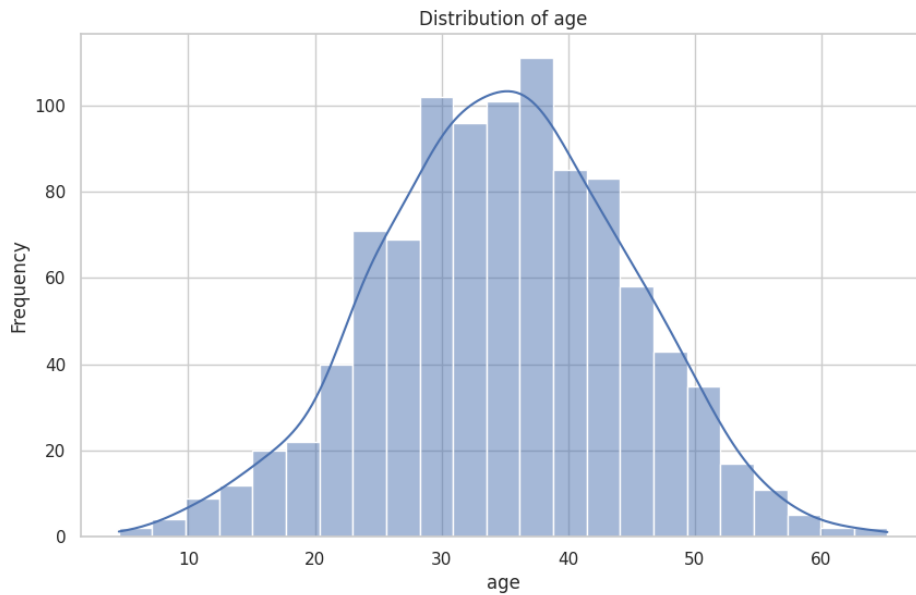
Mean (MLE): 50648807.33975265
Standard Deviation (MLE): 50140141.44051384
Within 1 standard deviation: 85.0%
Within 2 standard deviations: 95.1%



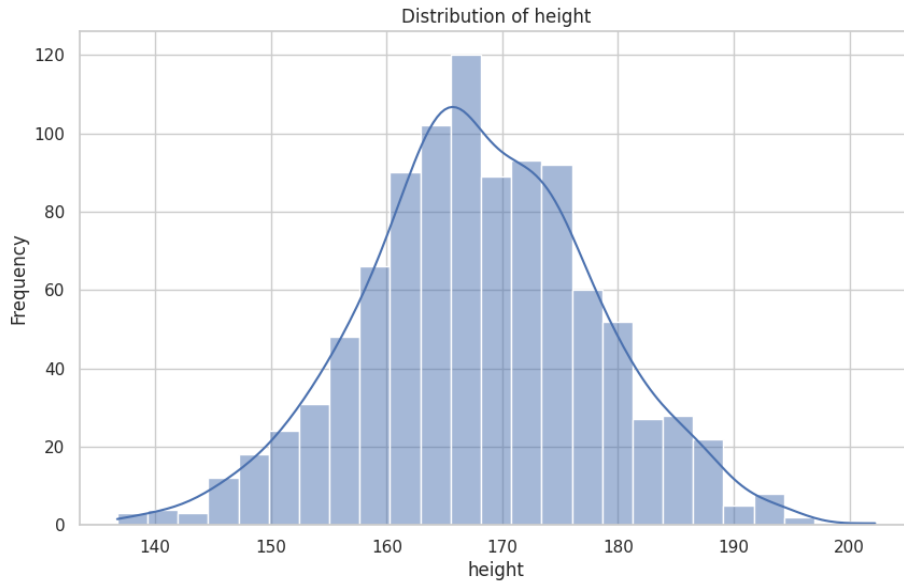
Mean (MLE): 201432.10647425416
Standard Deviation (MLE): 200744.88531767507
Within 1 standard deviation: 86.4%
Within 2 standard deviations: 95.7%



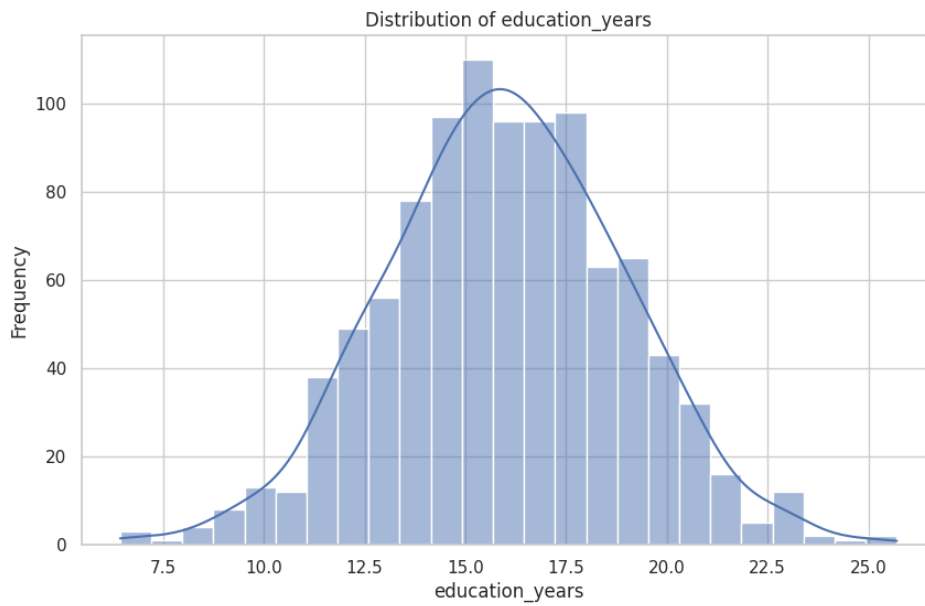
Mean (MLE): 5039727.30312732
Standard Deviation (MLE): 5072516.422822427
Within 1 standard deviation: 86.1%
Within 2 standard deviations: 95.3%



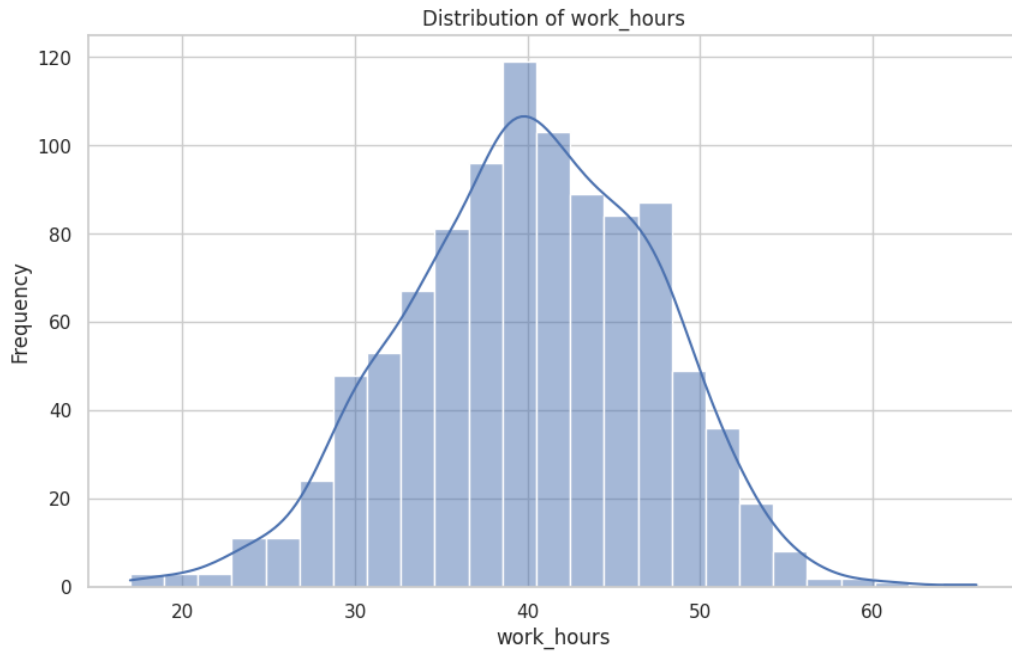
Mean (MLE): 34.837791719201924
Standard Deviation (MLE): 9.858756140024424
Within 1 standard deviation: 67.30000000000001%
Within 2 standard deviations: 95.19999999999999%



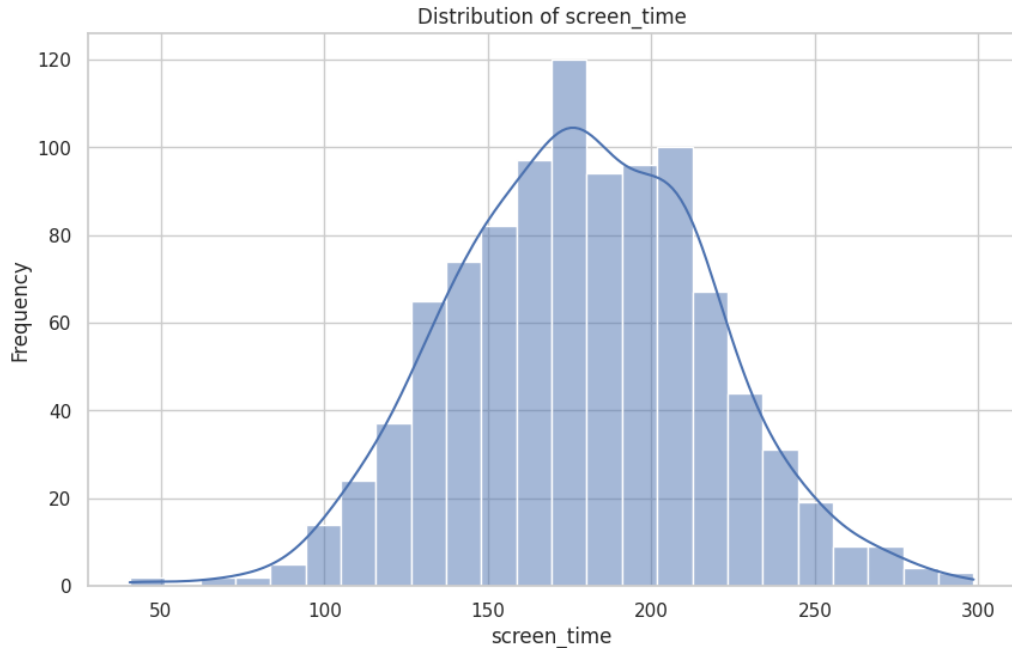
Mean (MLE): 167.99290152978628
Standard Deviation (MLE): 10.092754878184449
Within 1 standard deviation: 69.5%
Within 2 standard deviations: 95.1%



Mean (MLE): 15.985085349984507
Standard Deviation (MLE): 2.9545052339805347
Within 1 standard deviation: 68.5%
Within 2 standard deviations: 95.3%



Mean (MLE): 40.11430007017228
Standard Deviation (MLE): 7.154577979867374
Within 1 standard deviation: 67.30000000000001%
Within 2 standard deviations: 96.0%



Mean (MLE): 178.58140045862237
Standard Deviation (MLE): 38.980442571227485
Within 1 standard deviation: 68.89999999999999%
Within 2 standard deviations: 95.89999999999999%

Conclusion

This analysis of the neighborhood survey data show critical insights into the demographic and economic structures that shape the Willow Creek community. Investigating which variables adhere to a normal distribution and analyzing how they work and how they can be used provided the knowledge needed to make informed and strategic decisions. Following the advice described above, the Willow Creek community can achieve its primary goal.