

Quantitative Relation Between Happiness and Various Factors

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ABSTRACT

This essay offers a thorough examination of the Happiness Index, concentrating on the complex elements influencing people's degrees of happiness in the modern world. We investigate the complex mechanisms affecting subjective well-being using a thorough survey that is dispersed among many demographics, such as age groups, socioeconomic backgrounds, and cultural identities. The variables that are the subject of our inquiry include environmental quality, health outcomes, social ties, economic stability, and views of personal freedom. Additionally, we investigate how happiness patterns are impacted by cultural changes, technological improvements, and societal conventions. Our research adds to a better knowledge of happiness measurement and provides insights for improving social policy and personal well-being by clarifying these difficulties.

Keyword: - Happiness Index, Central Tendency, Correlation Coefficient, Regression Analysis, Regression Analysis.

1. Mental Health

An individual's emotional, psychological, and social well-being are referred to as their mental health. It includes people's thoughts, feelings, and behavior and affects how they respond to stress, interact with others, and make decisions. People's happiness and mental health are intimately correlated since resilience and pleasant emotions are fostered by mental wellness. It cultivates fulfilling connections and a feeling of direction. It makes it possible to deal with obstacles in life effectively and adds to general life pleasure and wellbeing. Retaining mental wellness is necessary for happiness and living a purposeful life.

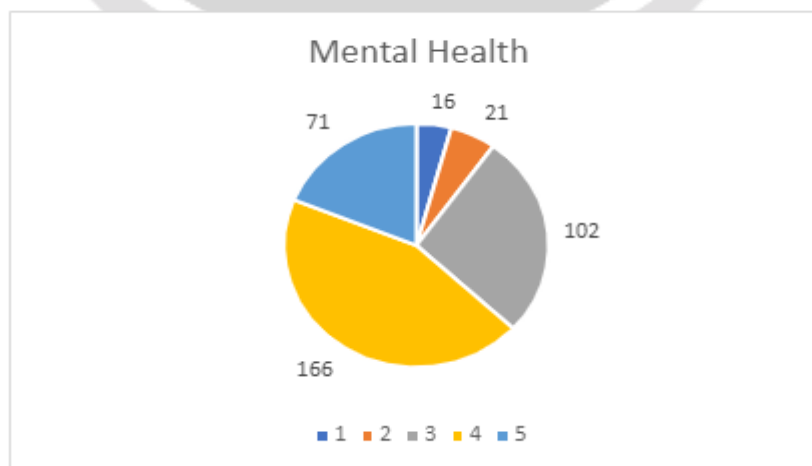


Chart-1: Rating of personal mental health

1.1 Correlation Coefficient

According to the data, there is a moderately favorable association ($r = 0.396$) between people's perceptions of their mental health and how satisfied they are with their lives. This implies that the perception of improved mental health rises in tandem with life satisfaction. Although not very strong, the correlation coefficient of 0.396 shows that there is a relationship between the two variables. Although this suggests a correlation between life satisfaction and mental health rating, an individual's assessment of their mental health may also be influenced by other circumstances. Knowing this relationship can help guide programmes meant to enhance general well-being.

1.2 Regression Analysis

Regression analysis is used in the analysis to examine the association between people's perceived mental health and their self-reported life satisfaction. The findings are as follows: R square = 0.157353, adjusted R square = 0.1551; observations = 376; standard error = 1.886652.

With an R square value of 0.157353, it is possible to explain variations in life satisfaction scores for about 15.7% of the variation in mental health ratings. This indicates a moderate level of explanatory power, meaning that although life satisfaction is a significant predictor of mental health, differences in mental health evaluations may also be caused by other factors that were not considered in the research. The average divergence of the observed values from the regression line is reflected in the standard error of 1.886652, which indicates a considerable degree of variability around the anticipated mental health ratings. The analysis benefits from a robust dataset, increasing the confidence of the findings, with a sample size of 376 observations. All things considered, the regression analysis reveals a statistically significant correlation between life happiness and assessments of mental health. The moderate R square value, however, suggests that although life satisfaction is a predictor of mental health, people's opinions of their mental health are also influenced by other characteristics that were not included in the research.

1.3 Regression Line

The regression line $y = 4.258 + 0.829x$, which represents the regression analysis, shows a positive association between people's perceived mental health (y) and their self-reported life satisfaction (x). Mental health should improve by about 0.829 units for every unit improvement in life happiness. According to this research, improved mental health is linked to greater life pleasure. The analysis, however, does not take into consideration additional variables that can affect mental health.

2. Job Satisfaction

An individual's emotional, psychological, and social well-being are referred to as their mental health. It includes people's thoughts, feelings, and behaviors and affects how they respond to stress, interact with others, and make decisions. People's happiness and mental health are intimately correlated since resilience and pleasant emotions are fostered by mental wellness. It cultivates fulfilling connections and a feeling of direction. It makes it possible to deal with obstacles in life effectively and adds to general life pleasure and wellbeing. Retaining mental wellness is necessary for happiness and living a purposeful life.



Chart-2: Rating of job satisfaction by individuals

2.1 Correlation Coefficient

According to the data, there is a somewhat moderate association ($r = 0.469$) between people's perceptions of their job satisfaction and how satisfied they are with their lives. This implies that the perception of improved mental health rises in tandem with life satisfaction. The two variables have a significant and meaningful link, as indicated by the correlation coefficient of 0.469. This result emphasizes how crucial it is to evaluate overall well-being by considering both life happiness and mental health simultaneously. It's important to understand that correlation does not imply causation, as an individual's opinion of their mental health may also be influenced by other circumstances. However, by addressing life satisfaction and mental health at the same time, therapies meant to

2.2 Regression Analysis

Regression analysis is used in the investigation to examine the association between people's perceived mental health and their self-reported life satisfaction. The findings show an R square value of 0.220414, indicating that variations in life satisfaction scores account for around 22.0% of the variation in mental health ratings. This indicates a moderate level of explanatory power, suggesting that while life satisfaction is a major predictor of mental health, variations in mental health evaluations are also influenced by other unaccounted factors. The model is strong and is not unduly impacted by extra variables, as shown by the adjusted R square, which stays reasonably near to the R square value of 0.218329 after taking the number degrees of freedom into consideration. The average divergence of the observed values from the regression line is moderate, with a standard error of 1.814684, suggesting a healthy degree of variability around the anticipated mental health scores. With 376 observations as the sample size, the analysis has a solid dataset from which to draw conclusions. Regression analysis reveals an overall statistically significant correlation between life happiness and assessments of mental health. The moderate R square value, however, indicates that although life satisfaction is a significant predictor of mental health, people's opinions of their mental health are also influenced by other characteristics that were not examined in the study. To give a more thorough understanding of mental health determinants and improve the efficacy of programmes meant to improve general well-being, future study might examine these extra components.

2.3 Regression Line

Regression analysis shows that there is a positive correlation between people's perceived mental health (y) and self-reported life satisfaction (x), as shown by the regression line $y = 4.818 + 0.391x$. Mental health should improve by about 0.391 units for every unit improvement in life happiness. According to this research, improved mental health is correlated with higher life satisfaction levels. Nevertheless, other potential factors influencing mental health are not considered in the analysis. However, by highlighting the significance of fostering life satisfaction, understanding this relationship helps guide therapies aimed at improving general well-being.

3. Freedom

The capacity to behave freely and make decisions without unwarranted limitations is referred to as freedom. It has to do with people's happiness since freedom enables people to follow their dreams and ambitions. It promotes independence and self-governance, which results in a feeling of satisfaction. People may express themselves and live according to who they are when they have freedom. It enhances general wellbeing and a sense of empowerment. Happier and more fulfilled lives are correlated with greater freedom.

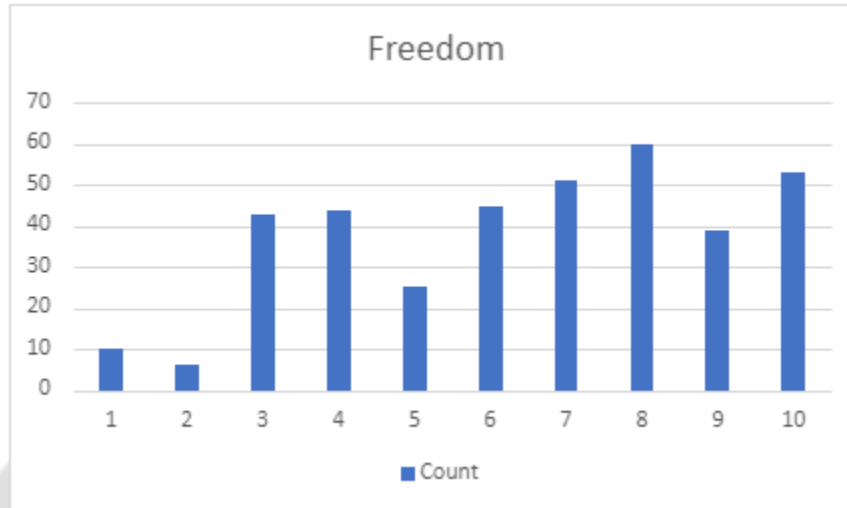


Chart-3: Rank of perceived freedom

3.1 Correlation Coefficient

The capacity to behave freely and make decisions without unwarranted limitations is referred to as freedom. It has to do with people's happiness since freedom enables people to follow their dreams and ambitions. It promotes independence and self-governance, which results in a feeling of satisfaction. People may express themselves and live according to who they are when they have freedom. It enhances general wellbeing and a sense of empowerment. Happier and more fulfilled lives are correlated with greater freedom.

3.2 Regression Analysis

Regression analysis is used in the investigation to investigate the association between people's perceived mental health and their self-reported life satisfaction. The findings show an R square value of 0.266197, meaning that variations in life satisfaction scores can account for about 26.6% of the variance in mental health assessments. This indicates a moderate level of explanatory power, suggesting that while life satisfaction is a major predictor of mental health, variations in mental health evaluations are also influenced by other unaccounted factors. The model is resilient and not unduly impacted by more variables, as indicated by the adjusted R square, which stays near to the R square value at 0.264234. This value accounts for the number of predictors and degrees of freedom. The average divergence of the observed values from the regression line is reflected in the standard error of 1.760593, which shows a respectable degree of variability around the anticipated mental health ratings. The analysis benefits from a robust dataset, increasing the confidence of the findings, with a sample size of 376 observations.

Regression analysis reveals an overall statistically significant correlation between life happiness and assessments of mental health. The moderate R square value, however, indicates that although life satisfaction is a significant predictor of mental health, people's opinions of their mental health are also influenced by other characteristics that were not examined in the study. To give a more thorough understanding of mental health determinants and improve the efficacy of programmes meant to improve general well-being, future study might examine these extra components.

3.3 Regression Line

Regression analysis shows that there is a positive correlation between people's perceived mental health (y) and self-reported life satisfaction (x), as shown by the regression line $y = 4.551 + 0.424x$. Mental health should improve by

about 0.424 units for every unit improvement in life happiness. This shows that improved mental health is correlated with increased life satisfaction levels. The analysis, however, does not take into consideration additional variables that can affect mental health. Nevertheless, by highlighting the significance of fostering life satisfaction, understanding this link helps guide interventions meant to promote general well-being.

4. Stress and Anxiety

Anxiety is a state of disquiet or worry about what might happen in the future, whereas stress is the body's reaction to perceived dangers or demands. Both may have detrimental effects on one's physical and mental health. High levels of stress and anxiety can reduce someone's happiness in the following ways by generating a sense of fatigue and overload, interfering with the enjoyment of routine tasks, limiting social ties and relationships and weakening one's general sense of satisfaction and fulfilment. More happiness and wellbeing can result from using good coping strategies to manage stress and anxiety, such as exercise, mindfulness, and getting help.



Chart-4: Composition of rating according to the frequency of stress/anxiety

4.1 Correlation Coefficient

According to the analysis, there is a somewhat positive link ($r = 0.5$) between the frequency of stress and anxiety and life satisfaction. This implies that stress and anxiety tend to decrease with increased life satisfaction and vice versa. The correlation's strength, however, suggests that these variables might possibly be influenced by other factors. It emphasizes how crucial managing stress and anxiety is to improving general life happiness.

4.2 Average score

According to the data, there is a significant relationship between stated levels of stress and anxiety and general life satisfaction. Individuals who experience anxiety rarely have much better average life satisfaction (7.987) than those who feel sometimes (7.439) or often (6.2). This pattern shows that there is a positive correlation between life satisfaction and anxiety levels. Despite the fact that anxiety still receives a very good satisfaction score, the significant proportion of respondents (223) who reported experiencing anxiety occasionally highlights how common it is in society. On the other hand, those who report feeling anxious often (73) had the lowest satisfaction score, which is a sign of the negative effects of ongoing stress on a person's general health. The results highlight how crucial it is to manage stress and anxiety in order to enhance people's quality of life.

5. Employment

The term "employment" describes the situation in which a person works for pay and is either employed or has a job. People's happiness and employment are associated because employment offers security and stability in terms of money. It provides a feeling of fulfilment and purpose. It encourages ties with others and a feeling of inclusion. It can improve general wellbeing and self-esteem. A meaningful job is frequently linked to greater levels of contentment and life satisfaction.

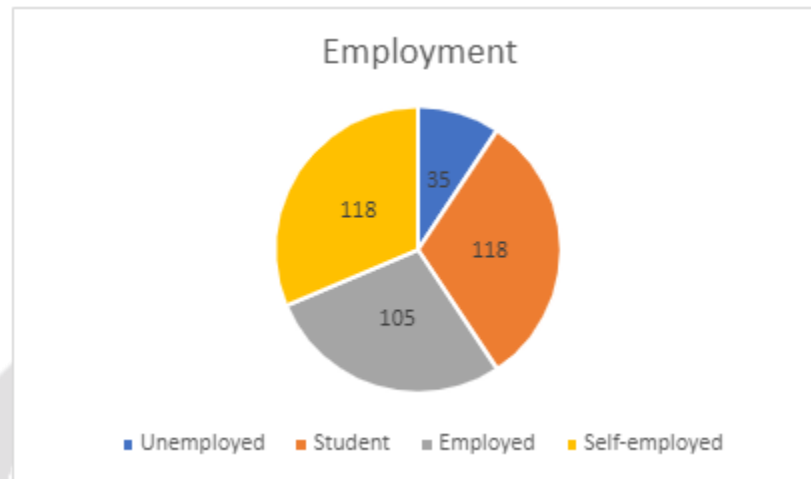


Chart-5: Employment status

5.1 Correlation Coefficient

The results of the investigation show that the association between employment status and overall life satisfaction is significant (correlation coefficient of 0.65). This implies that those who are working generally report better levels of life satisfaction than people who are jobless or not working. The positive link suggests that life satisfaction increases with employment status, highlighting the importance of work in enhancing people's sense of fulfilment and well-being. Even while work seems to be a major component in determining life pleasure, a thorough understanding necessitates considering broader contextual elements.

5.2 Average score

The data shows that there is a significant relationship between employment status and general life satisfaction. The average happiness score of people who are unemployed is 3.91 out of 10, indicating a comparatively lower degree of satisfaction. On the other hand, 118 students indicate a moderate level of pleasure, with an average score of 6.86, which may reflect the transitory character of their current situation. Significant increases in satisfaction occur among the employed (105 total) and the self-employed (118 total), at 7.90 and 8.23, respectively. This upward trend is consistent with the widely held belief that work, especially in positions that allow for flexibility and decision-making, is generally linked to greater levels of life satisfaction. The variation in satisfaction ratings within the occupational categories highlights the role that self-determination and meaningful work play in influencing people's general well-being.

6. Corruption

The misuse of authority for one's own benefit, such as through fraud or bribery, is called corruption. It erodes confidence in authorities, sustains inequality, and impedes the progress of the economy. People may become less happy because of their growing lack of trust in the government and society, unfairness and inequality in the allocation of resources, decreased availability of vital services. Promoting justice, trust, and eventually increased pleasure and well-being in society requires fighting corruption through accountability and openness.

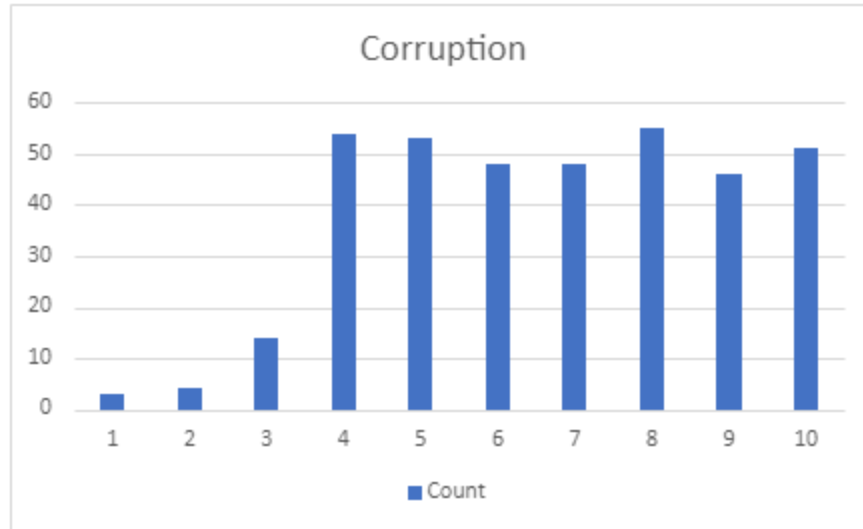


Chart-6: Perceived Corruption in the country

6.1 Correlation Coefficient

According to the data, there is a slight positive correlation ($r = 0.549$) between the country's perceived level of corruption and overall life satisfaction. Higher life satisfaction is generally associated with lower perceptions of corruption, and vice versa. This raises the possibility that social trust and personal satisfaction are related.

6.2 Regression Analysis

According to the computed R square value of 0.301, the perceived amount of corruption in the nation can account for about 30.1% of the variation in overall life satisfaction. This implies that although there is a strong correlation between these variables, life satisfaction is also influenced by other factors that were not taken into consideration throughout the analysis.

The model's dependability is further supported by the adjusted R square value of 0.299, which indicates that the explanatory power of the model is still strong even after accounting for the number of predictors. The average divergence of the observed values from the regression line is shown by the standard error of 1.569, which provides a gauge of how well the model predicts life satisfaction based on perceptions of corruption.

6.3 Regression Line

According to the regression equation $y = 4.428 + 0.464x$, there is a 0.464-unit rise in total life satisfaction (y) for every unit increase in perceived corruption level (x). When the sense of corruption is zero, the intercept of 4.428 represents the estimated life satisfaction. This suggests that there is a certain level of increase in happiness in the absence of corruption. Nonetheless, the moderately significant impact of corruption perception on life satisfaction is indicated by the coefficient of 0.464, highlighting the significance of resolving corruption for the well-being of society.

7. LIMITATIONS

(A) Pie Chart:

- They may become crowded and hard to read if there are too many pieces of data, and even if you add data labels and numbers may not help here.
- Pie charts are not suitable for displaying trends over time or comparing multiple data sets, as they cannot represent changes in values.

- As the reader must factor in angles and compare nonadjacent slices, it has its problems in comparing the data slices.
- To make decisions based on visual impact rather than data analysis leads readers to draw inaccurate conclusions.

(B) Bar Graphs:

- **Difficulty in Comparing Magnitudes:** It can be challenging to accurately compare the magnitudes of different bars, especially when the differences are small or when the graph contains many bars.
- **Potential for Misleading Interpretations:** Depending on the scale and formatting of the graph, it can be easy to manipulate the perception of data. Inappropriate scaling or truncation of axes can lead to misinterpretations.
- **Inefficiency for Large Datasets:** Bar graphs may become cluttered and visually overwhelming when representing large datasets with numerous categories or variables.
- **Inability to Show Relationships:** Bar graphs are primarily used to display individual categories or groups of data. They do not effectively illustrate relationships or patterns between variables.

(C) Correlation:

- Correlation does not indicate a cause. Two factors do not necessarily cause the other just because they are connected. There could be other reasons affecting both variables.
- The sample size might have an impact on correlation. The number of observations in the sample might have an impact on the correlation coefficient. An estimate of the genuine correlation that is more accurate can result from a bigger sample size.
- Relationships that are not linear are not captured by correlation. The only associations that correlation analysis can measure are linear ones. Although correlation analysis is not sufficient to identify non-linear correlations, they may occur.

(D) Regression:

- It is presumed that the variables' cause-and-effect relationship stays the same. The estimation of a variable's values based on the regression equation may produce inaccurate and deceptive results because this assumption may not always hold.
- When additional data are considered, a functional relationship that has been created between two or more variables based on a small amount of data may no longer be valid. In the context of the Law of Return, for instance, excessive input utilization intended to boost output volume may result in the application of the law of decreasing return.
- Calculations and analysis must be done in a very long and intricate process.

(E) Sample Size: The sample size consists only of 377 data sets which may or may not be the reflection of the society at large.

8. CONCLUSIONS

In conclusion, the analysis of variables such as corruption, employment status, mental health, job satisfaction, frequency of stress and anxiety, and freedom reveals significant correlations with the happiness index. A lower prevalence of corruption, coupled with higher levels of employment, job satisfaction, and mental well-being, tends to correlate positively with happiness. Additionally, reduced levels of stress and anxiety, along with a greater sense of personal freedom, contribute positively to individuals' overall happiness. These findings underscore the complex interplay between societal, economic, and individual factors in shaping happiness levels, emphasizing the importance of addressing these variables to promote well-being and contentment within communities.

Our findings and the analysis of various factors such as corruption perception, frequency of stress and anxiety, and employment status reveal significant association with happiness.

1. **Mental Health:** There is a moderate positive association between individuals' perceptions of their mental health and their life satisfaction levels. Understanding this correlation highlights the importance of addressing mental well-being to enhance overall happiness and quality of life.
2. **Job Satisfaction:** The data reveals a significant positive correlation between job satisfaction and life satisfaction. Employed individuals generally report higher levels of life satisfaction compared to the unemployed, emphasizing the role of meaningful work in fostering well-being.
3. **Freedom:** Similarly, freedom also shows a positive association with life satisfaction. Individuals who perceive greater levels of freedom tend to report higher life satisfaction levels, underlining the significance of autonomy and choice in promoting overall happiness.
4. **Stress/Anxiety:** There is a positive correlation between lower levels of stress and anxiety and higher life satisfaction. Managing stress and anxiety is crucial for enhancing overall happiness and quality of life.
5. **Employment:** Being employed is associated with higher life satisfaction compared to unemployment. Meaningful work and self-determination contribute significantly to individuals' sense of fulfillment and well-being.
6. **Corruption Perception:** Higher levels of perceived corruption correlate with lower life satisfaction, indicating the importance of addressing corruption to improve societal well-being.

9. Acknowledgement

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Working on this project has proved to be an enlightening experience for us.

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