



Shahjalal University of Science and Technology, Sylhet

Department of Statistics

Project Title: Exploring the Social and Psychological Factors of Happiness

among the Adults in Sylhet Sadar Upazila, Bangladesh

Course Name: Project

Course Code: STA430

Submitted to

Department of Statistics

Shahjalal University of Science and Technology

Sylhet-3114, Bangladesh

Submitted by

Abul Bashar Nayeem 2019134104

Sazid Siddique 2019134106

Jubair Mahmud Jisan 2019134107

Supervised by

Professor Dr Md Nazrul Islam

Department of Statistics

SUST

18 May 2025

Acknowledgements

We express our sincere gratitude to Professor Dr. Md Nazrul Islam for his invaluable supervision, insightful guidance, and continuous support throughout this research project. His encouragement and expert advice were crucial in shaping the direction and quality of our work. We are also deeply grateful to our Department Head, Professor Dr. Md. Azizul Baten, for providing the necessary academic environment and institutional support. Lastly, we extend our appreciation to all faculty members and peers who offered their helpful suggestions and moral support during this study.

Abstract:

This research uses a multidisciplinary method to examine the social and psychological determinants of happiness of people living in Sylhet Sadar Upazila, Bangladesh. Data was gathered from 386 participants through a structured questionnaire based on the Oxford Happiness Questionnaire, with the results processed using binary logistic regression. It is revealed that family-related factors ‘emotional support, role satisfaction, and affection’ are the strongest predictors of subjective happiness. Demographic and economic factors such as gender, marriage, and income adequacy had limited or negligible impact, while greater happiness was also linked to regular attendance at religious services and satisfaction with governance. These findings illustrate the importance of social and emotional attachments to wellbeing for individuals in this region. The policies studied focus on improving the economic situation; however, it is more important to strengthen family support systems, improve access to mental healthcare, and develop community-based wellbeing initiatives.

TABLE OF CONTENTS

| | |
|--|----|
| 1. Introduction..... | 6 |
| 2. Study Area..... | 8 |
| 3. Objective | 8 |
| 4. Methodology | 9 |
| 4.1 Data Source and Sampling Methodology | 9 |
| 4.2 Calculation of Sample Size | 9 |
| 4.3 Questionnaire | 10 |
| 4.4 Study Variables and Measurements | 11 |
| 4.4.1 Outcome Variables | 11 |
| 4.4.2 Independent Variables | 11 |
| 4.5 Binary Logistic Regression..... | 12 |
| 4.6 Statistical Analysis | 12 |
| 5. Results..... | 13 |
| 5.1 Descriptive Analysis | 13 |
| 5.2 Table 1: [Percentage Table]..... | 14 |
| 5.3 Table 2: [Crosstab Table] | 18 |
| 5.4 Logistic Model | 19 |
| 5.5 Table 3: [Coefficient Table] | 22 |

| | |
|---|----|
| 5.6 Table 4: [Odds Ratio Table] | 24 |
| 5.7 Figure 1: Forest Plot of Odds Ratio | 25 |
| 5.8 Figure 2: ROC Curve | 26 |
| 5.9 Figure 3: Prediction Probability Plots..... | 26 |
| 6. Discussion | 29 |
| 7. Conclusion and Policy Implications | 31 |
| 8. Recommendations..... | 32 |
| 9. Limitations | 33 |
| 10. References..... | 35 |

Introduction

"Happiness" is a subjective state of mind that is characterised by a general appreciation of one's life in its whole. This concept aligns with the traditional definition of happiness put forward by Jeremy Bentham, which is "the sum of pleasures and pains." In this context, "life satisfaction" and "subjective well-being" are interchangeable terms for happiness [1]. While most historians and philosophers concur that pleasure in ancient times was mostly associated with luck and good fortune, modern people see happiness as something they can actively seek and manage [2]. Therefore, happiness can be used as a metric to assess a community's quality instead of socioeconomic, environmental, health, and governance indicators. In the late 1970s, King Jigme Singye Wangchuck, the fourth King of Bhutan, initially proposed this theory when he said, "Gross National Happiness is more important than Gross Domestic Product." According to the concept, sustainable development should approach ideas of progress holistically and give non-economic factors of happiness and well-being equal weight [3]. According to studies on subjective contentment, people in less developed and less affluent nations frequently reported higher levels of subjective satisfaction than people in some wealthier nations. The public and specialists were therefore taken aback by this subjective sensation of satisfaction, which has not received any special attention, at least not at the institutional level [4]. Thus, it is established that there is no longer a strong correlation between economic growth and social well-being and individual satisfaction [5].

Based on respondents' assessments of their own lives, the World Happiness Report provides articles and rankings of national happiness each year. The study also compares these scores with several (quality of) life characteristics [6]. According to study, important variables including health, social support, and economic performance have a significant impact on national happiness [7]. Asian nations have the greatest diversity of happiness. Among other countries, China, Russia, Nepal, Bangladesh, and Pakistan exhibit average levels of happiness,

while India, Myanmar, and Afghanistan exhibit very low levels [8]. Good self-rated health and happiness are found in South Asia, where the distribution of genders is balanced. The majority indicated contentment with their financial circumstances, and education levels tended towards lower education [9]. Happiness also comes from social harmony. Effective government is the result of allocating and using resources in accordance with predetermined aims and objectives. The foundation of the administrative capacity to react to external shocks is established by political stability. Thus, stability guarantees that things will stay stable in the future, allowing people to continue their activities and maintain their motivation to work. This tendency towards conduct is a reflection of societal satisfaction [10].

In the context of Bangladesh, the country was ranked 129th out of 143 countries in the 2024 World Happiness Report, making it the 15th least happy nation in the world [11]. The latest value from 2024 is 3.89 points, up from 3.41 points in 2023. According to data from 138 countries, the global average is 5.56 points. Bangladesh has historically averaged 4.5 points between 2013 and 2024. 2021 saw the highest value of 5.16 points, while 2023 saw the lowest value of 3.41 points [12]. The happiness report also rated nations according on six benevolence metrics. The first three were national average frequencies of people who say they have performed at least three acts of kindness in the last month, such as donating, volunteering, and helping a stranger. Bangladeshis, who rank 11th out of 147 countries, are more helpful to strangers than the happiest people in the world, including Finns, Danes, Icelanders, Swedes, and Dutch [13]. According to Dr. Helal Uddin Ahmed, a psychiatrist at the National Institute of Mental Health, Bangladesh's strong faith-based society can help to explain why we rank lower than Finland, a knowledge-based nation that is ranked first. He makes it clear that thinking with faith does not only mean being religious; it also means that we base our decisions more on our faith, beliefs, and opinions than on our knowledge and comprehension. Our current happiness rating can also be explained by the stark disparities in mental health care in

Bangladesh. In addition, the accessibility of mental health services in larger cities and more rural places differs significantly [14].

Study Area

Our aim is to determine the happiness status among the population of Sylhet Sadar Upzila which is in the north eastern region of Bangladesh. It serves as the administrative center for both the Sylhet District and the Sylhet Division. The study area is situated on the banks of the Surma River and, as of 2024, has a population of 999,374 making it the Fifth-largest upzila in Bangladesh. Sylhet is one of the most economically important cities in Bangladesh after Dhaka and Chittagong. A major commercial and financial center, Sylhet is home to several multinational companies and industries, including the tea industry, which generates a significant amount of revenue for the city. The area under study has a diverse population, with Sylhetis, Bengalis, Manipuris and other ethnic groups living together [15].

Objective

By analysing the happiness index and determining the factors that influence it, as well as the variations in happiness scores among individuals with varying occupations, income levels, health conditions, lifestyles, etc., our primary objective is to evaluate the general quality of life of the people in Sylhet Upazila.

Methodology

Data Source and Sampling Methodology

The data for this study were collected from Sylhet Sadar Upazila using a multistage cluster sampling method. The Upazila, which consists of eight unions, was first divided into clusters based on union boundaries. Three unions were then randomly selected. Within each chosen union, further clustering was performed to identify villages, and three villages were selected at random. A minimum age of 18 was required for participation. To gather samples, self-reported questionnaire was distributed. The gender distribution of participants in this study aimed to achieve an approximately 1:1 male-to-female ratio.

Calculation of sample size

The sample size should be calculated with the necessary precision of 5%. The prevalence of the happiness index is calculated by the reference of gender distribution in Sylhet Sadar Upazila which is 0.5 [16].

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where,

n = *desired sample size*

z = 1.96 (*Critical value for 95% confidence interval*)

p = *Prevalence* = 0.5

d = *desired absolute precision* = 0.05

Hence,

$$n = \frac{1.96^2 * 0.5 * 0.5}{0.05^2} \cong 385$$

Questionnaire

The data collection tool for this study was a structured questionnaire, adapted from the Oxford Happiness Questionnaire (OHQ), an enhanced version of the original Oxford Happiness Inventory (OHI). The OHQ consists of 29 items designed to evaluate subjective happiness and psychological well-being across various domains. Reference for the OHQ should be included [17].

For this study, eight items were selected based on their conceptual relevance to the research aims and contextual appropriateness for the target group. The chosen items ensured a balanced representation of both emotional and conceptual aspects of happiness [18], [19].

The dimensions evaluated included self-esteem, life satisfaction, physical self-perception, appreciation for beauty, time management, mental consciousness, and emotional recall. These dimensions were represented through both positively and negatively phrased statements, which helped to reduce bias toward acceptance and promoted more accurate self-evaluation.

Responses were documented using a 5-point Likert scale, ranging from Strongly Disagree to Strongly Agree. This scale allowed participants to express their level of agreement in detail and supported the statistical analysis of individual happiness levels.

The modified questionnaire underwent pre-testing on a small, demographically comparable population to assess clarity, internal consistency, and cultural relevance. Based on feedback from the pilot study, slight modifications were made to ensure that the results were reliable and comprehensible to the respondents.

Study Variables and Measurements

This study included a variety of explanatory variables, such as socio-demographic, psychological, and cultural factors, to analyze the determinants of subjective happiness in the target population.

Outcome Variables

The outcome variables comprised psychological and happiness indicators gathered from the eight items of the Oxford Happiness Questionnaire, which assessed traits such as self-esteem, life satisfaction, personal appearance, aesthetic appreciation, time management, mental consciousness, and positive emotional memories.

Independent Variables

The research explored numerous variables to investigate the factors influencing individual happiness. Socio-demographic characteristics included respondents' age, gender (male, female), education level (no formal education, primary, high school, college, university, higher studies), occupation, income, expenditure, marital status (ever married, never married), and geographic location within a village. Health-related conditions were assessed by recording self-rated health status (average, excellent, good, poor, very poor) and access to healthcare services (never, sometimes, always), providing insight into subjective well-being and the availability of facilities. Family dynamics were evaluated using criteria such as comfort with familial roles (dissatisfied, neutral, satisfied), emotional support (never, sometimes, always), relationship quality (excellent, good, average, poor, very poor), and expressions of attachment within the home (never, sometimes, good).

The influence of religion and community involvement was assessed by examining the perceived significance of religion (not important, somewhat important, very important), the frequency of religious participation (daily, occasionally, weekly, never), and the level of

community engagement and support. Economic and political stratification factors included employment satisfaction (very dissatisfied, dissatisfied, neutral, satisfied, very satisfied), perceived income sufficiency (never, sometimes, yes), governance satisfaction (very dissatisfied, dissatisfied, neutral, satisfied, very satisfied), and political engagement (very dissatisfied, dissatisfied, neutral, satisfied, very satisfied).

Binary Logistic Regression

Happiness data was analyzed using a binary logistic regression. The response variable was binary and explanatory variables were both categorical and continuous types. We assessed multicollinearity between predictors using Variance Inflation Factors (VIFs) before fitting our final model. Hosmer and Lemeshow goodness of fit tests were used to evaluate the adequacy of the model [20]. Odds ratios with 95% confidence intervals were used to assess the strength and direction of association between predictors and the binary happiness outcome. The model's ability to classify was evaluated using the Area Under Curve (AUC) from the ROC curve [21]. AUC values closer to 1.0 indicated superior discrimination between happy and not happy respondents, while 0.5 represented random chance.

The following is the description of the general multiple binary logistic regression model:

$$\text{logit}[\pi(X)] = \log \left[\frac{\pi(X)}{1-\pi(X)} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_p X_p$$

Where X_i 's are the covariates, β_i 's are the corresponding parameters, and $\pi(X)$ is the case probability (Happy or not).

Statistical Analysis

Data analysis and the output results were generated using SPSS 23.0 statistical software (IBM Corp., Armonk, NY, USA) and R version 4.4.0 with a significance level set at 0.05 for all statistical tests.

Results

Table 1 shows that the research involved a total of 386 participants, comprised of 68% males and 32% females. The educational backgrounds of respondents were diverse: 52% held a university degree, 20% had a college education, and 13% completed high school. A small percentage reported lacking formal education (3.6%) or only having primary education (8.3%). Regarding marital status, 56% of participants had never been married, while 44% had been married at some point. In terms of health assessments, 44% classified their health as good, 36% as average, and only 8% as excellent. A smaller portion reported poor health (7.3%) or extremely bad health (4.9%). Most respondents (55%) reported consistent access to healthcare, while 33% had access occasionally. Family role satisfaction was similar, with 55% indicating satisfaction. When it came to familial assistance, 72% reported consistently receiving help, while only 9.3% stated that they never received it. The majority characterized their familial ties as good (39%) or outstanding (39%), with 78% indicating they consistently received attention from family members. The significance of religion was assessed as exceedingly high, with 82% indicating it was extremely important, and 55% engaging in regular prayer. Employment satisfaction varied: 30% expressed satisfaction, while 33% reported significant dissatisfaction. Responses regarding income sufficiency were fairly evenly distributed—36% indicated their income was never sufficient, 30% admitted it was sometimes sufficient, and 34% affirmed it was sufficient. However, contentment with government and political affairs showed variability. In terms of governance, most respondents were either neutral (33%) or satisfied (28%), while political satisfaction had a higher proportion of neutral (40%) and unhappy (20%) responses.

Table 1

| Variables | Category | Total(N%) |
|-----------------------------|---------------------|------------------|
| Gender | Female | 125 (32) |
| | Male | 261 (68) |
| Educational Qualification | No Formal Education | 14 (3.6) |
| | Primary | 32 (8.3) |
| | High School | 51 (13) |
| | College | 77 (20) |
| | University | 199 (52) |
| | Higher Studies | 13 (3.4) |
| Marital Status | Ever Married | 169 (44) |
| | Never Married | 217 (56) |
| Health Status | Excellent | 31 (8.0) |
| | Good | 170 (44) |
| | Average | 138 (36) |
| | Poor | 28 (7.3) |
| | Very Poor | 19 (4.9) |
| Accessibility to Healthcare | No, never | 46 (12) |
| | Sometimes | 128 (33) |
| | Yes, always | 212 (55) |
| Family Role Satisfaction | Dissatisfied | 87 (23) |
| | Neutral | 87 (23) |
| | Satisfied | 212 (55) |
| Support From Family | No, never | 36 (9.3) |

| | | |
|----------------------------|--------------------|----------|
| | Sometimes | 71 (18) |
| | Yes, always | 279 (72) |
| Relationship in the Family | Excellent | 149 (39) |
| | Good | 150 (39) |
| | Average | 50 (13) |
| | Poor | 20 (5.2) |
| | Very Poor | 17 (4.4) |
| Affection in the family | No, never | 24 (6.2) |
| | Sometimes | 62 (16) |
| | Yes, always | 300 (78) |
| Importance of Religion | Not important | 20 (5.2) |
| | Somewhat important | 48 (12) |
| | Very important | 318 (82) |
| Perform Prayer | Never | 16 (4.1) |
| | Occasionally | 77 (20) |
| | Weekly | 79 (20) |
| | Daily | 214 (55) |
| Employment Satisfaction | Very dissatisfied | 127 (33) |
| | Dissatisfied | 41 (11) |
| | Neutral | 70 (18) |
| | Satisfied | 117 (30) |
| | Very Satisfied | 31 (8.0) |
| Adequacy of Income | Never | 138 (36) |
| | Sometimes | 117 (30) |

| | | |
|--------------------------|-------------------|----------|
| | Yes | 131 (34) |
| | Very Dissatisfied | 39 (10) |
| Satisfaction of | Dissatisfied | 98 (25) |
| Governance in | Neutral | 126 (33) |
| Participant's area | Satisfied | 110 (28) |
| | Very Satisfied | 13 (3.4) |
| | Very dissatisfied | 65 (17) |
| | Dissatisfied | 77 (20) |
| Satisfaction of Politics | Neutral | 156 (40) |
| in the Country | Satisfied | 72 (19) |
| | Very Satisfied | 16 (4.1) |

In table 2 the bivariate analysis explored the relationships between participants' satisfaction levels and various socio-demographic and psychological factors. The findings revealed that gender, marital status, and educational attainment did not show significant correlations with happiness. Education approached statistical significance ($p = 0.06$), indicating a lower proportion of satisfaction among individuals with advanced degrees (23.1%) compared to those with university (63.8%) and college (63.6%) education. A strong and statistically significant correlation was found between health status and happiness ($p < 0.01$). Individuals who rated their health as good or excellent reported higher levels of happiness (71.8% and 64.5%, respectively), while those who classified their health as bad or extremely poor had significantly lower happiness levels (28.6% and 31.6%, respectively). Family role satisfaction was strongly correlated with happiness ($p < 0.01$). Among those satisfied with their familial roles, 75.9% reported happiness, whereas only 43.7% of the dissatisfied expressed similar sentiments. The presence of familial support was also significantly correlated with happiness ($p < 0.01$).

Participants who consistently received familial assistance reported greater happiness (71%) compared to those who rarely or occasionally received support (22.2% and 42.3%, respectively). Positive familial relationships correlated with happiness ($p < 0.01$). Participants with excellent or good familial relationships were more likely to express happiness (72.5% and 64.7%, respectively), while those with poor or extremely poor relationships reported significantly lower satisfaction. Similarly, family affection showed a substantial correlation with happiness ($p < 0.01$). Individuals who consistently received affection were significantly more likely to report happiness (69.7%) compared to those who never received affection (16.7%). Religious participation demonstrated a notable correlation with happiness. Individuals who viewed religion as highly significant and practiced daily prayer reported higher happiness levels (65.4% and 69.6%, respectively; $p < 0.01$). Conversely, those who deemed religion unimportant or who never prayed predominantly reported unhappiness. A statistically significant correlation between occupational satisfaction and happiness was also identified ($p < 0.01$). Notably, among individuals expressing significant dissatisfaction, 75.6% classified themselves as happy, suggesting a complex relationship between job satisfaction and perceived well-being. Generally, higher satisfaction levels correlated with increased happiness. Income adequacy was marginally significant ($p = 0.05$), with participants who perceived their income as sufficient reporting higher happiness (69.5%) compared to those who deemed it consistently inadequate (56.5%). Ultimately, satisfaction with governance and political circumstances was markedly correlated with happiness ($p < 0.01$). Individuals satisfied with governance indicated higher happiness levels (79.1%), while those who were dissatisfied reported significantly lower happiness.

Table 2

| Variable | Category | Happiness Status | | Total | p-value |
|--------------------------|---------------------|------------------|---------------|-------|---------|
| | | Happy N (%) | Unhappy N (%) | | |
| Gender | Female | 76 (60.8) | 49 (39.2) | 125 | 0.92 |
| | Male | 160 (61.3) | 101 (38.7) | 261 | |
| Education Qualification | No Formal Education | 9(64.3) | 5(35.7) | 14 | 0.06 |
| | Primary | 16(50) | 16(50) | 32 | |
| | High School | 32(62.7) | 19(37.3) | 51 | |
| | College | 49(63.6) | 28(36.4) | 77 | |
| | University | 127(63.8) | 72(36.2) | 199 | |
| | Higher Studies | 3(23.1) | 10(76.9) | 13 | |
| Marital Status | Ever Married | 98 (58) | 71 (42) | 169 | 0.26 |
| | Never Married | 138 (63.6) | 79 (36.4) | 217 | |
| Health Status | Excellent | 20(64.5) | 11(35.5) | 31 | <0.01* |
| | Good | 122(71.8) | 48(28.2) | 170 | |
| | Average | 80(58) | 58(42) | 138 | |
| | Poor | 8 (28.6) | 20 (71.4) | 28 | |
| | Very Poor | 6 (31.6) | 13 (68.4) | 19 | |
| Family Role Satisfaction | Dissatisfied | 38 (43.7) | 49 (56.3) | 87 | <0.01* |
| | Neutral | 37 (42.5) | 50 (57.5) | 87 | |
| | Satisfied | 161 (75.9) | 51 (24.1) | 212 | |
| Support From Family | No, never | 8 (22.2) | 28 (77.8) | 36 | <0.01* |
| | Sometimes | 30 (42.3) | 41 (57.7) | 71 | |
| | Yes, always | 198 (71) | 81 (29) | 279 | |
| Family Relationship | Excellent | 108(72.5) | 41(27.5) | 149 | <0.01* |
| | Good | 97(64.7) | 53(35.3) | 150 | |
| | Average | 22(44) | 28(56) | 50 | |
| | Poor | 3 (15) | 17 (85) | 20 | |
| | Very Poor | 6 (35.3) | 11 (64.7) | 17 | |
| Family Affection | No, never | 4 (16.7) | 20 (83.3) | 24 | <0.01* |
| | Sometimes | 23 (37.1) | 39 (62.9) | 62 | |
| | Yes, always | 209 (69.7) | 91 (30.3) | 300 | |
| Importance of Religion | Not important | 4 (20) | 16 (80) | 20 | <0.01* |
| | Somewhat important | 24 (50) | 24 (50) | 48 | |
| | Very important | 208 (65.4) | 110 (34.6) | 318 | |
| Perform Prayer | Never | 3(18.8) | 13(81.3) | 16 | <0.01* |
| | Occasionally | 43(55.8) | 34(44.2) | 77 | |
| | Weekly | 41 (51.9) | 38 (48.1) | 79 | |

| | | | | | |
|-------------------------|-------------------|-----------|-----------|-----|--------|
| | Daily | 149(69.6) | 65(30.4) | 214 | |
| Employment Satisfaction | Very dissatisfied | 96(75.6) | 31(24.4) | 127 | <0.01* |
| | Dissatisfied | 15(36.6) | 26(63.4) | 41 | |
| | Neutral | 37(52.9) | 33(47.1) | 70 | |
| | Satisfied | 70(59.8) | 47(40.2) | 117 | |
| | Very Satisfied | 18(58.1) | 13(41.9) | 31 | |
| Income Adequacy | Never | 78 (56.5) | 60 (43.5) | 138 | 0.05 |
| | Sometimes | 67 (57.3) | 50 (42.7) | 117 | |
| | Yes | 91 (69.5) | 40 (30.5) | 131 | |
| Governance Satisfaction | Very Dissatisfied | 22 (56.4) | 17 (43.6) | 39 | <0.01* |
| | Dissatisfied | 57 (58.2) | 41 (41.8) | 98 | |
| | Neutral | 66 (52.4) | 60 (47.6) | 126 | |
| | Satisfied | 87 (79.1) | 23 (20.9) | 110 | |
| | Very Satisfied | 4 (30.8) | 9 (69.2) | 13 | |
| Political Satisfaction | Very dissatisfied | 36(55.4) | 29(44.6) | 65 | <0.01* |
| | Dissatisfied | 45(58.4) | 32(41.6) | 77 | |
| | Neutral | 93(59.6) | 63(40.4) | 156 | |
| | Satisfied | 57(79.2) | 15(20.8) | 72 | |
| | Very Satisfied | 5 (31.3) | 11 (68.8) | 16 | |

To assess the predictors of happiness among individuals in Sylhet Upazila a Binary logistic regression analysis was applied. The output of the binary logistic regression model is shown in Table 3. The binary model used Happiness Status as the primary outcome (1 = happy, 0 = unhappy). The models were composed of socio-demographic, health, family, religious, and governance predictors. The binary logistic model had an adequate fit with log-likelihood = -197.40 and Akaike Information Criterion (AIC) = 432.89.

In the binary logistic regression, family variables were the most predictive of happiness with family role satisfaction, where agreed they were satisfied with their family role ($\beta = 0.850$, $SE = 0.329$, $p < 0.01$). The consistent family support which they received was also predictive of happiness, ($\beta = 1.113$, $SE = 0.555$, $p < 0.05$) while the perceived always loved showed the greatest predictive of enhancement of happiness ($\beta = 1.481$, $SE = 0.673$, $p < 0.05$).

From Table 4 and Figure 1 we can see that these results are supported by the odds ratios of always feeling loved by family increased the odds of being happy more than four times (OR = 4.40, 95% CI: 0.55, 8.24, $p = 0.03$). Also, marginal effects for family role satisfaction (OR = 2.34, $p = 0.10$) and consistent family support (OR = 3.04, $p = 0.09$) observed. This would indicate strong emotional .

Health perceptions were positively associated with happiness, but not statistically significant. Participants who rated their health status as "excellent" or "good" had greater chances to be happy (OR = 1.83 and 1.71, respectively) while those who rated their health status as "poor" or "very poor" had less chances to be happy (OR = 0.44 and 0.70, respectively). However, none of the associations were statistically significant. Marital status also was not a statistically significant predictor of happiness, with never married participants with odds of happiness similar to the other marital statuses (OR = 0.97, $p = 0.47$), indicating that relationship status may be less important to happiness in this demographic.

Religious activity also showed some interesting effects. In the binary model, respondents who never engaged in any religious or spiritual activity were substantially less likely to report being happy ($\beta = -1.669$, SE = 0.717, $p < 0.05$), and while weekly participants were less likely to report being happy than occasional participants, their participation was only suggestively significant, ($\beta = -0.614$, SE = 0.322, $p < 0.1$), while it does not show significance because occasional didn't either. Nevertheless, the logistic model produced different and informative results. In the logistic model, the weekly religious participation variable was associated with a higher odds of being at high elevated happiness at the $p < 0.10$ level while the variable for never engaging in religious activity was still a negative significant predictor. These findings suggest that while religious participation may contribute a protective factor in terms of happiness, it needs to be noted that the social and emotional connectedness associated with regular religious activity likely serves as key variable in helping contribute to feelings of

happiness. The relationship may have been obscured in the binary model due to the many intersecting variables around religiosity or spirituality that were measured as part of the study.

In the binary model, governance satisfaction was not a meaningful predictor of happiness. Neutral governance views were noted the lowest predicted odds of happiness ($\beta = -0.934$, $SE = 0.461$, $p < 0.05$); whereas other existing levels of satisfaction (dissatisfied, satisfied or very satisfied) were not statistically relevant. The logistic model on the other hand demonstrated that being satisfied or very satisfied with governance was associated to be in a higher happiness status on average compared to being very dissatisfied. Perceived trust and satisfaction with governments can have an indirect role on individuals emotional dear, who have and exist in a political environment that could shape optimism, future expectations and views of governance.

Beyond this, we also evaluated the classification performance of the binary logistic model with a Receiver Operating Characteristic (ROC) curve shown in Figure 2. The area under the curve (AUC) was 0.808 which tells us the model has approximately 81% chance of distinguishing between randomly selected happy and unhappy individuals. The ROC curve was well above the 45-degree diagonal line (which indicated random chance) confirming the reliability and practical use of the logistic regression model to predict one's social and emotional outcomes relevant to happiness.

Overall, the results highlight the importance of emotional and social support, especially from family, as the biggest factors for each individual's happiness considering the context of Sylhet Upazila. While institutional aspects such as someone's feelings toward governance and participation in religious institutions had certain ways of contributing, they were not a priority compared to consistent interpersonal forms of support and feeling loved. The robustness of these predictors across our binary and multinomial models, as well as the diagnostic accuracy

of the classification of individuals by their predicted happiness, confirm that social and emotional support play an integral role in subjective well-being for this population.

Table 3

| Variable (Reference Group) | Coefficient | Std. Error | Significance |
|---------------------------------|-------------|------------|--------------|
| Marital Status | | | |
| (Ref: Ever Married) | | | |
| Never Married | -0.03 | 0.282 | |
| Health Rating | | | |
| (Ref: Average) | | | |
| Excellent | 0.605 | 0.501 | |
| Good | 0.537* | 0.285 | *p < 0.1 |
| Poor | -0.822 | 0.526 | |
| Very Poor | -0.361 | 0.62 | |
| Family Role Satisfaction | | | |
| (Ref: Dissatisfied) | | | |
| Neutral | -0.405 | 0.363 | |
| Satisfied | 0.850*** | 0.329 | ***p < 0.01 |
| Support from Family | | | |
| (Ref: Never) | | | |
| Sometimes | 0.24 | 0.56 | |
| Always | 1.113** | 0.555 | **p < 0.05 |

| | | | |
|--------------------------------|----------|-------|------------|
| Loved by Family | | | |
| (Ref: Never) | | | |
| Sometimes | 0.865 | 0.699 | |
| Always | 1.481** | 0.673 | **p < 0.05 |
| Religious Participation | | | |
| (Ref: Daily) | | | |
| Never | -1.669** | 0.717 | **p < 0.05 |
| Occasionally | -0.323 | 0.32 | |
| Weekly | -0.614* | 0.322 | *p < 0.1 |
| Governance Satisfaction | | | |
| (Ref: Very Dissatisfied) | | | |
| Dissatisfied | -0.517 | 0.467 | |
| Neutral | -0.934** | 0.461 | **p < 0.05 |
| Satisfied | 0.063 | 0.492 | |
| Very Satisfied | -1.182 | 0.859 | |
| Constant | -1.433* | 0.808 | *p < 0.1 |

Model Fit Statistics:

- Observations: 386
- Log Likelihood: -197.403
- Akaike Information Criterion (AIC): 432.806

Significance codes:

***p < 0.01, **p < 0.05, *p < 0.1

Table 4

| Variables | Category | OR | 95% CI | P-value |
|--------------------------|-----------------|-----------|---------------|----------------|
| Gender | Female | 1 | | |
| | Male | 0.24 | (0.04, 1.09) | 0.07602 |
| Marital Status | Ever Married | 1 | | |
| | Never Married | 0.97 | (0.56, 1.69) | 0.91669 |
| Health Status | Average | 1 | | |
| | Excellent | 1.83 | (0.7, 5.05) | 0.2277 |
| | Good | 1.71 | (0.98, 3.01) | 0.06008 |
| | Poor | 0.44 | (0.15, 1.21) | 0.11787 |
| | Very Poor | 0.7 | (0.2, 2.32) | 0.56068 |
| Family Role Satisfaction | Dissatisfied | 1 | | |
| | Neutral | 0.67 | (0.33, 1.36) | 0.26519 |
| | Satisfied | 2.34 | (1.22, 4.47) | 0.00981 |
| Support From Family | No, never | 1 | | |
| | Sometimes | 1.27 | (0.43, 3.94) | 0.66831 |
| | Yes, always | 3.04 | (1.05, 9.4) | 0.04498 |
| Affection in the family | No, never | 1 | | |
| | Sometimes | 2.37 | (0.64, 10.38) | 0.21634 |
| | Yes, always | 4.4 | (1.25, 18.38) | 0.02783 |
| Perform Prayer | Daily | 1 | | |
| | Never | 0.19 | (0.04, 0.7) | 0.01997 |

| | | | | |
|-------------------|-------------------|------|--------------|---------|
| | Weekly | 0.54 | (0.29, 1.02) | 0.05706 |
| | Occasionally | 0.72 | (0.39, 1.36) | 0.31183 |
| | Very Dissatisfied | 1 | | |
| Satisfaction of | Dissatisfied | 0.6 | (0.23, 1.47) | 0.26834 |
| Governance in | Neutral | 0.39 | (0.16, 0.95) | 0.04255 |
| Participant's are | Satisfied | 1.07 | (0.4, 2.77) | 0.89731 |
| | Very Satisfied | 0.31 | (0.05, 1.62) | 0.16904 |

Figure 1: Forest plot of odds ratio of binary logistic model

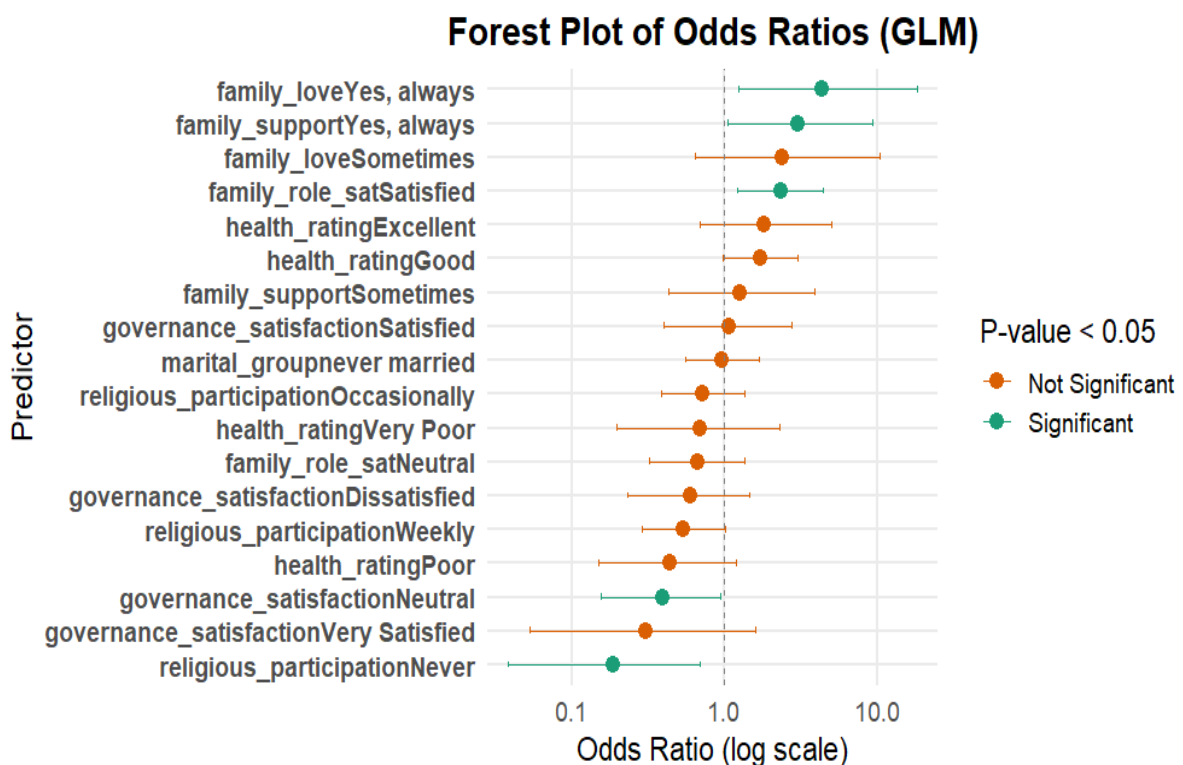


Figure 2: ROC Curve

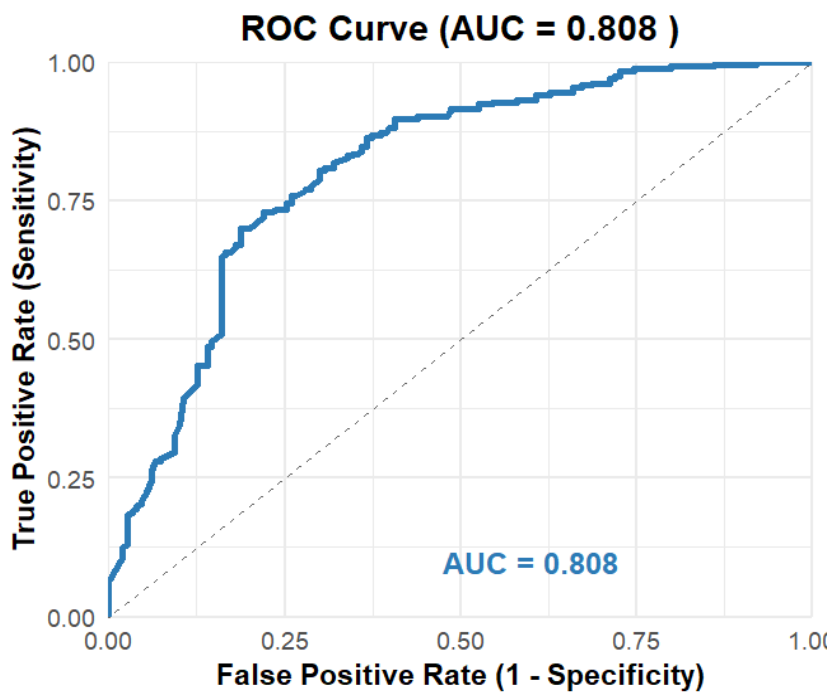
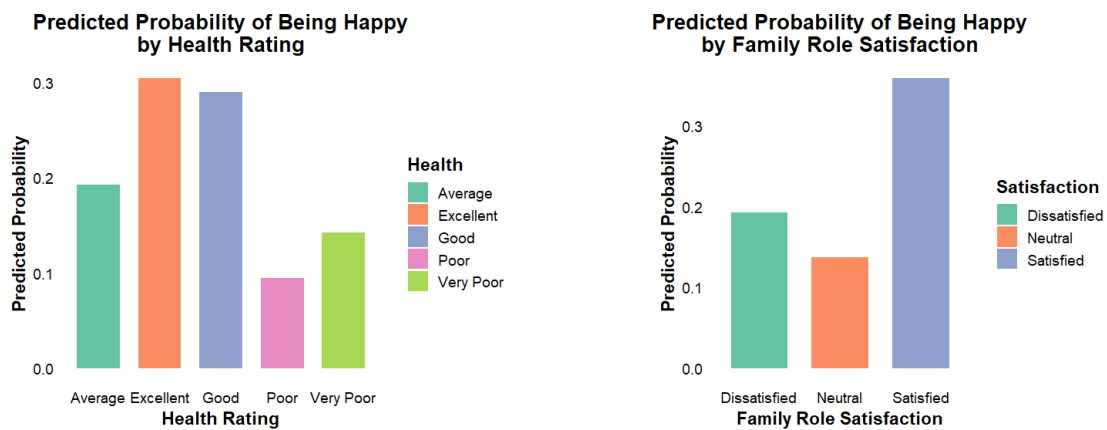


Figure 3: Prediction Probability Plot



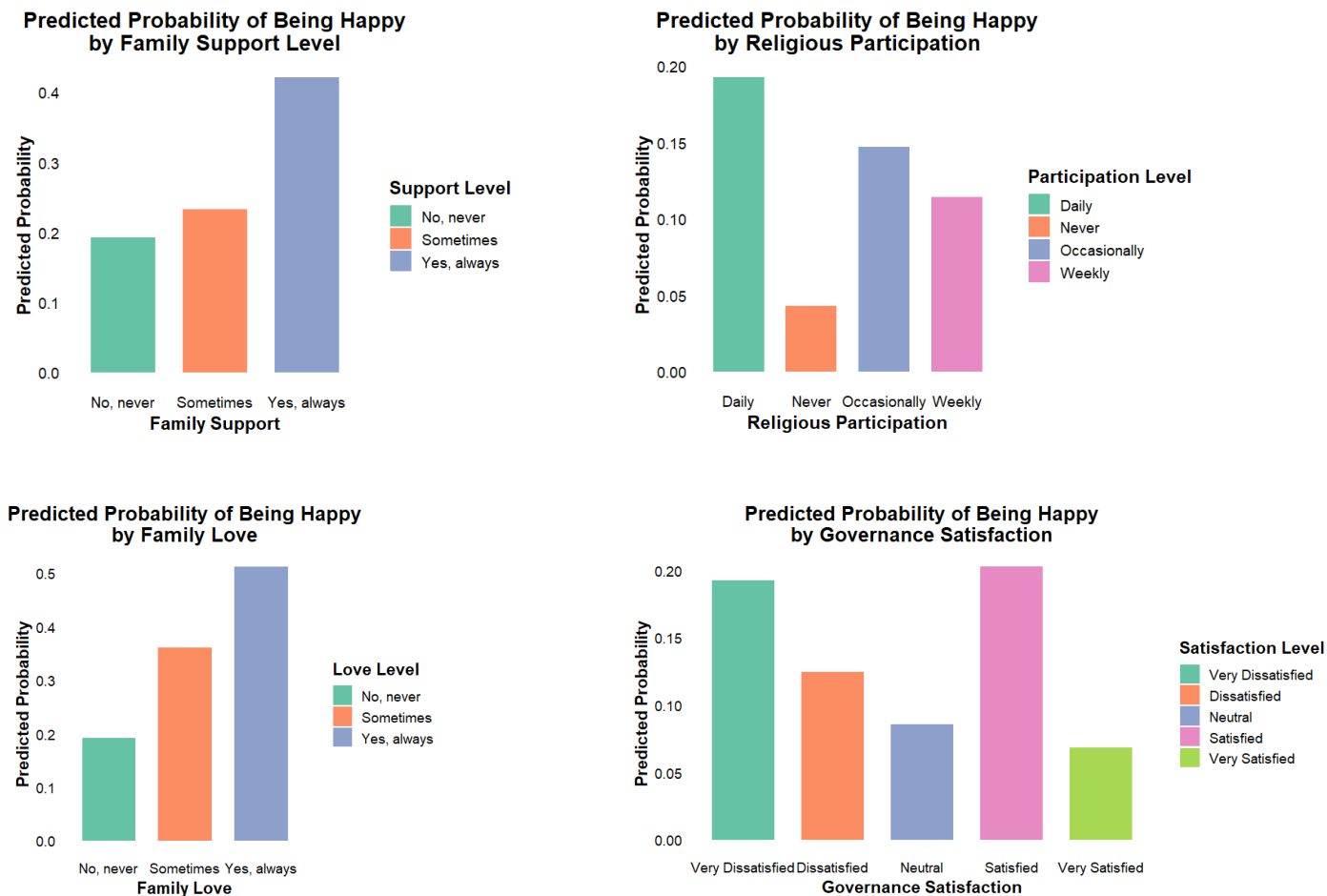


Figure 3 presents a series of probability graphs that demonstrate the variation in happiness likelihood across significant factors. Health ratings have a strong gradient, with persons in "Excellent" health demonstrating the highest predicted chance of happiness, which diminishes progressively for those in "Good," "Average," "Poor," and "Very Poor" health categories. Familial support and affection show a similar trend: positive replies of "Yes, always" are associated with the highest probabilities of happiness, whilst negative responses of "No, never" correspond with the lowest, underscoring the significance of strong familial bonds. Satisfaction with familial duties and governance demonstrates incremental increases in satisfaction from "Dissatisfied" to "Satisfied" levels. Religious participation reveals a complex relationship—participants who engage "Weekly" and "Occasionally" display marginally higher

probabilities of happiness than those who "Never" participate, while daily practitioners show the highest likelihood of happiness, indicating that frequent spiritual involvement may distinctly increase happiness. These plots highlight that happiness is influenced by a combination of physical health, emotional support, role satisfaction, and daily spiritual practices.

Discussion

We can infer from the results that a person's family is a major contributor to their happiness. It has been discovered that the factors of love and support from family have a statistically significant impact on a happy person's life, which also backs up the findings of numerous investigations [22], [23], [24]. There could be a number of reasons for the strong correlation seen in this study between happiness and family support. A basic desire for acceptance and belonging that cannot be satisfied by wealth, position, or economic stability alone is satisfied by family support. Furthermore, our measurement of family support evaluates deeper facets of family connections, such as the depth of emotional openness and sharing and the strength of the bonds between family members, which are essential to many people's senses of life's purpose.

The study's other main finding is that a person's level of happiness is not significantly influenced by their gender, which multiple studies support [25], [26], [27]. According to the findings, there is no difference in life satisfaction across genders, which may be because of cultural and other reasons. However, the results also conflict with other research and with societal viewpoints. According to one theoretical viewpoint, Brody and Hall (1993) clarified that an individual's awareness of gender norms might either intentionally or unintentionally prejudice gender disparities in feelings, such as happiness. The idea that men exhibit anger and aggression more strongly than women, while women display grief, happiness, and fear more intelligently than men, is supported by gender stereotypes. Furthermore, according to Brody and Hall, these gender stereotypes could be self-fulfilling prophecies that result in real gender variations in how people display feelings like happiness [28].

The fact that people who regularly participate in religious activities have statistically significant higher odds of being happy is another crucial result. The reason for this could be that when

someone prays every day, their mental state becomes calm and optimistic about life or the future. Therefore, a person's religious views have a significant impact on their outlook on life and how they think. The current findings are consistent with earlier research on religiousness and happiness that highlighted the significance of engaging in religious activities [29], [30], [31].

It's interesting to note that happiness was discovered to be significantly impacted by governance satisfaction. The current political situation in Bangladesh may be the cause. The nation's political acts have an impact on people's feelings. Which is also supported by previous studies [32], [33], [34].

Conclusion and Policy Implications

This study provides insight into key determinants of happiness among the adults of Sylhet Upazila, Bangladesh. Using a binary logistic regression model and likelihood ratios, we found significant social, emotional, family, health/satisfaction-related, and governance factors that affect individual happiness. The most important and best explanatory factors of happiness were the family support system, emotional connectedness with one's family, generally, and taking satisfaction in one's family role. Our findings also point to the accelerated importance of emotional well-being, and particularly, the centrality of close interpersonal relationships in producing life satisfaction, further local to context.

Although other variables such as health status, participation in religious activities, and satisfaction with their governance accounted for some explanatory capacity regarding happiness, their overall influence was much less. In addition, marital status and other structural demographic categories showed little or no significance, which suggests that the emotional and relational considerations were critical factors in experiencing happiness, as opposed to social formal ones.

From a policy standpoint, there are some recommendations based on the findings.. First, any approach to enhancing well-being would have to move beyond economic meaning and understand the emotional and psychological sense of quality of life, including in its evidence as part of policy evaluation. The local and national governments should consider other measures of subjective well-being in policy evaluations because they are much more reflective of the social environment. We need policies that develop family resilience, emotional literacy, and mental health literacy. Moreover, addressing social cohesion through community development initiatives that enhance social bonding and trust in government institutions can make for more satisfied, contented, and hopeful citizens. Faith-based institutions and civic institutions can also play a complementary role in enhancing social cohesion and creating

spaces for meaningful participation. To sum it all up, this research suggests that happiness is not simply a personal state, but rather a product of socially constructed experiences that stem from family, community, and perception of caring. A comprehensive policy, inclusive of both emotional and institutional support, can help create a healthier, more peaceful society in Bangladesh.

Recommendations

This study provided strong evidence supporting the impact of family-based emotional and psychological support in defining happiness for adults in Sylhet Upazila, Bangladesh. Building upon this finding, in addition to the results of the bivariate analysis of these variables and measured satisfaction and well-being, it is possible to offer several recommendations and ways to perhaps improve subjective well-being and satisfaction with one's life in the region:

Enhancing Family-Based Interventions: Government and community-based organizations can improve the emotional connection, role satisfaction, and affection of families by providing guidance in family counselling, intergenerational bonding, and support groups. These interventions may greatly increase happiness overall.

Increasing Mental Health and Health Access: Health ratings of physical and mental health were shown to be moderately predictive variables of subjective well-being. It is worth considering that a wider focus on developing healthcare mechanisms, like physical, healthcare, and emotional healthcare, to enable community members to feel support/emotional or physical support, may be a better investment for governance.

Fostering Community-Based Positive Religious Engagement: As with the health measures, participation in religious activity every week was not a strong predictive measure of subjective well-being. However, it could be possible that spiritual, community-based reflection and

support could be protective of happiness and subjective well-being. Places for faith and community centres should be supported in their development of positive community spaces.

Enhanced Responsibility and Transparency from Governance: Neutral or dissatisfied perspectives toward governance were correlated with lower happiness. The development of civic trust, collective responsibility, elected and appointed decision makers, participatory management of governance, transparency of decision-making, and local public feedback may lead to a greater sense of subjective well-being--if many of these items are targeted collectively.

Enhanced Responsibility and Transparency from Governance: Neutral or dissatisfied perspectives toward governance were correlated with lower happiness. The development of civic trust, collective responsibility, elected and appointed decision makers, participatory management of governance, transparency of decision-making, and local public feedback may lead to a greater sense of subjective well-being--if many of these items are targeted collectively.

Social Policies Targeting At-Risk Groups: Certain demographic groups - for example, the unmarried and the health-compromised, as well as people with broken family ties - may enjoy enhanced targeted happiness-enhancing strategies, including social cohesion activities, volunteer activities, and public information campaigns.

Develop National and Local Happiness Monitoring Systems: On the example of Bhutan's Gross National Happiness system, policymakers in Bangladesh may wish to consider incorporating measures of subjective well-being into their assessments of local development and national policies, to provide a more consistent measurement of quality of life alongside economic progress.

Limitations

The study was concentrated on Sylhet Upazila where sample has been drawn by multistage cluster sampling where we chose a small portion of sylhet Upazila. Further analysis can be

done by collecting more sample by including more clusters. Besides the data collection process was done by the shorter format (8 Items) of Oxford Happiness Questionnaire which is originally consisted with 29 items with broader range of factors. So further study can be done with the actual Oxford Happiness Questionnaire for calculating more accurate happiness scores.

The happiness scores can be affected by the income and expenditure level of an individual. Because money can play a vital role in one's quality of life. So the financial section needs to be explored with the happiness score and calculate the effect of it.

References

- [1] “International Differences in Well-Being,” https://books.google.com.bd/books?hl=en&lr=&id=R77hW11gaQsC&oi=fnd&pg=PA328&dq=what+is+happiness&ots=EWqIeMfNuT&sig=1p88S4l6sQhbYiNO6yR0y_u8kTs&redir_esc=y#v=onepage&q=what%20is%20happiness&f=false.
- [2] S. Oishi, J. Graham, S. Kesebir, and I. C. Galinha, “Concepts of Happiness Across Time and Cultures,” *Pers Soc Psychol Bull*, vol. 39, pp. 559–577, May 2013, doi: 10.1177/0146167213480042.
- [3] “Gross National Happiness,” <https://ophi.org.uk/gross-national-happiness>.
- [4] A. Tosovic -Stevanovic, D. Trifunovic, and A. M. Belgrade, “Varazdin Development and Entrepreneurship Agency in cooperation with Economic and Social Development Book of Proceedings.” [Online]. Available: <http://www.esd-conference.com>
- [5] V. Applasamy, R. A. Gamboa, M. Al-Atabi, and S. Namasivayam, “Measuring Happiness in Academic Environment: A Case Study of the School of Engineering at Taylor’s University (Malaysia),” *Procedia Soc Behav Sci*, vol. 123, pp. 106–112, Mar. 2014, doi: 10.1016/j.sbspro.2014.01.1403.
- [6] P. Dolan, L. Kudrna, and A. Stone, “The Measure Matters: An Investigation of Evaluative and Experience-Based Measures of Wellbeing in Time Use Data,” *Soc Indic Res*, vol. 134, pp. 57–73, Oct. 2017, doi: 10.1007/s11205-016-1429-8.
- [7] M. A. Khder, M. A. Sayfi, and S. W. Fujo, “Analysis of World Happiness Report Dataset Using Machine Learning Approaches,” *International Journal of Advances in Soft Computing and its Applications*, vol. 14, pp. 14–34, 2022, doi: 10.15849/IJASCA.220328.02.

- [8] K. Bhowmick and C. Ranjit, "Mapping the Statistical Significance of Factors Contributing to the World Happiness Report," *Int J Eng Adv Technol*, vol. 10, no. 6, pp. 28–37, Aug. 2021, doi: 10.35940/ijeat.F2963.0810621.
- [9] A. Javed, S. Mustafa, S. Sadiq, S. Ullah Khan, and S. Noor, "Self-Reported Health and Happiness Among Sub-Regions of Asia: The World Value Survey 2017-2021," *Journal of Asian Development Studies*, vol. 13, pp. 227–241, May 2024, doi: 10.62345/jads.2024.13.2.20.
- [10] N. Arshed, A. Arif, D. R. Z. Abbas, and K. Hameed, "Comparing Quality of Institutions with Happiness of Asian People," *Studies of Applied Economics*, vol. 39, no. 3, Apr. 2021, doi: 10.25115/eea.v39i2.3431.
- [11] "What makes Bangladesh the 15th least happy country in the world?," <https://www.thedailystar.net/news/world/news/what-makes-bangladesh-the-15th-least-happy-country-the-world-3571166>.
- [12] "Bangladesh Happiness index - data, chart | TheGlobalEconomy.com," <https://www.theglobaleconomy.com/Bangladesh/happiness/>.
- [13] "Bangladeshis keep growing unhappier, study finds," <https://www.tbsnews.net/bangladesh/bangladesh-slips-5-notches-world-happiness-report-ranks-134th-2025-1097216>.
- [14] "The state of our unhappiness," <https://www.tbsnews.net/features/panorama/state-our-unhappiness-1099011>.
- [15] "Sylhet - Wikipedia," <https://en.wikipedia.org/wiki/Sylhet>.

- [16] “Untitled Document,” <https://sylhetsadar.sylhet.gov.bd/bn/site/page/2uV0-%E0%A6%87%E0%A6%89%E0%A6%A8%E0%A6%BF%E0%A6%AF%E0%A6%BC%E0%A6%A8-%E0%A6%B8%E0%A6%AE%E0%A7%82%E0%A6%B9>.
- [17] P. Hills and M. Argyle, “The Oxford Happiness Questionnaire: A compact scale for the measurement of psychological well-being,” *Pers Individ Dif*, vol. 33, pp. 1073–1082, Nov. 2002, doi: 10.1016/S0191-8869(01)00213-6.
- [18] E. Grigoriadou, P. Kolias, M. Theocharidou, and M. Gkioka, “Psychometric properties of the Oxford Happiness Questionnaire Short Form (OHQ-SF) in a Greek student sample,” *Discover Psychology*, vol. 4, no. 1, Dec. 2024, doi: 10.1007/s44202-024-00153-2.
- [19] L. J. Lin, S. P. Yu, Y. H. Lin, and Y. L. Chen, “Enhancing Subjective Well-Being in Taiwanese University Students Through an Eight-Week Mindfulness-Based Program: A Pilot Study,” *Behavioral Sciences*, vol. 14, no. 11, Nov. 2024, doi: 10.3390/bs14110980.
- [20] J. Lin, “A Preliminary Study on Parkinson’s Disease with Regularized Logistic Regression Method,” *Open J Soc Sci*, vol. 07, pp. 126–132, 2019, doi: 10.4236/jss.2019.711010.
- [21] O. Gumbo, “A Critical Analysis of the Role of Civil Society in Zimbabwe’s 2018 Harmonized Elections,” *Open J Polit Sci*, vol. 10, pp. 319–328, 2020, doi: 10.4236/ojps.2020.102020.
- [22] F. Izzo, R. Baiocco, and J. Pistella, “Children’s and Adolescents’ Happiness and Family Functioning: A Systematic Literature Review,” Dec. 2022, *MDPI*. doi: 10.3390/ijerph192416593.

- [23] A. Kareem, “Family Support as Predictor of life Satisfaction and Happiness in Pakistani Adolescents,” *Journal of Development and Social Sciences*, vol. 4, Jun. 2023, doi: 10.47205/jdss.2023(4-ii)48.
- [24] R. J. North, C. J. Holahan, R. H. Moos, and R. C. Cronkite, “Family Support, Family Income, and Happiness: A 10-Year Perspective,” *Journal of Family Psychology*, vol. 22, pp. 475–483, Jun. 2008, doi: 10.1037/0893-3200.22.3.475.
- [25] C. Batz-Barbarich, L. Tay, L. Kuykendall, and H. K. Cheung, “A Meta-Analysis of Gender Differences in Subjective Well-Being: Estimating Effect Sizes and Associations With Gender Inequality,” *Psychol Sci*, vol. 29, pp. 1491–1503, Sep. 2018, doi: 10.1177/0956797618774796.
- [26] N. E. Mahon, A. Yarcheski, and T. J. Tarcheski, “Happiness as related to gender and health in early adolescents,” *Clin Nurs Res*, vol. 14, pp. 175–190, May 2005, doi: 10.1177/1054773804271936.
- [27] A. Al-Attayah and R. Nasser, “Gender and age differences in life satisfaction within a sex-segregated society: Sampling youth in Qatar,” *Int J Adolesc Youth*, vol. 21, pp. 84–95, Jan. 2016, doi: 10.1080/02673843.2013.808158.
- [28] “(PDF) Gender differences in self-esteem and happiness among university students,” https://www.researchgate.net/publication/319990094_Gender_differences_in_self-esteem_and_happiness_among_university_students.
- [29] “Are religious people happier, healthier? Our new global study explores this question,” <https://www.pewresearch.org/short-reads/2019/01/31/are-religious-people-happier-healthier-our-new-global-study-explores-this-question/>

- [30] A. Berthold and W. Ruch, "Satisfaction with life and character strengths of non-religious and religious people: It's practicing one's religion that makes the difference," *Front Psychol*, vol. 5, 2014, doi: 10.3389/fpsyg.2014.00876.
- [31] M. Sholihin, H. Hardivizon, D. Wanto, and H. Saputra, "The effect of religiosity on life satisfaction: A meta-analysis," *HTS Teologiese Studies / Theological Studies*, vol. 78, 2022, doi: 10.4102/hts.v78i4.7172.
- [32] P. Flavin, "Democracy and Life Satisfaction: Evidence from Updated Global Data," *Soc Indic Res*, vol. 174, pp. 409–419, Aug. 2024, doi: 10.1007/s11205-024-03392-x.
- [33] G. B. Yu, M. Joshanloo, and M. J. Sirgy, "The Impact of Citizens' Satisfaction with National-level Institutions and Conditions on Their Subjective Wellbeing: Evidence from 137 Countries," *Appl Res Qual Life*, Dec. 2024, doi: 10.1007/s11482-024-10374-1.
- [34] <https://irrational.lse.ac.uk/articles/17/files/66436ef813d71.pdf>