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CONSTRUCTION AND STANDARDIZATION OF THE GENERAL HAPPINESS INDEX SCALE

[1]Devanggona Lahkar, [2]Professor **Dr. Rita Rani Talukdar**
[1]Research Scholar, [2]Professor & Head
Department of Psychology, Gauhati University,
Guwahati, India

***Abstract*:** Understanding and quantifying happiness has garnered significant attention in psychological research. The study aimed to develop a standardized, concise, and psychometrically sound instrument; the General Happiness Index Scale, for assessing adult happiness levels in the Indian context. The scale demonstrated strong item discrimination (ranging from 0.542 to 0.907) and moderate item difficulty (51.25 to 72.1). Exploratory factor analysis using Principal Component Analysis yielded a unidimensional structure with high sampling adequacy (KMO = 0.894) and significant Bartlett's Test of Sphericity ($\chi^2 = 1004.550$, $p < .001$). A single factor explained 42.675% of the variance, confirming the scale's focus on the singular construct of happiness. All items loaded above 0.50, indicating strong item relevance. The internal consistency reliability was high (Cronbach's $\alpha = .838$), and concurrent validity with the Subjective Happiness Scale was statistically significant ($r = .532^{**}$, $p < .01$). The study employed purposive sampling with a total of 681 Indian adults aged 18-60. Findings affirm that the General Happiness Index Scale is a reliable and valid tool for assessing subjective happiness in diverse adult populations.

Keywords: *Happiness Measurement, Psychometric Validation, General Happiness Index Scale*

1. Introduction

Understanding happiness has become a key focus for psychologists in recent times. The quest for happiness and well-being has been, and remains, a central interest for researchers and psychologists (Ryan & Deci, 2000). Happiness is viewed as the ultimate good and serves as the essential motivation behind all human actions. Lyubomirsky, S. (2007) describes happiness as "the experience of joy, contentment, or positive well-being, coupled with a sense that one's life is good, meaningful, and worthwhile." It's important to recognize that happiness encompasses various constructs, such as affective well-being (experiencing joy and pleasure), eudaimonic well-being (having a sense of meaning and purpose in life), and evaluative well-being (life satisfaction). Additionally, social and cultural influences shape our perceptions of happiness. For instance, research by William Tov and others indicates that individuals from more collectivist cultures often conceptualize happiness in terms of harmony and contentment, in contrast to individualistic cultures, where happiness is frequently associated with exuberance and joy. Social groups, especially families, also influence happiness levels, as happy individuals tend to elevate the happiness of those around them. Each person has distinct life experiences, leading to unique interpretations of happiness. Although people worldwide may think about happiness differently and experience it in various ways, a common thread is a general positive feeling about life. Each individual encounters both positive and negative life events. Compared to their unhappy counterparts, happy individuals interpret, explain, and reflect on similar events in more constructive ways. They are more likely to evaluate both types of events positively and adaptively. In a study by Lyubomirsky, S. & Lepper, H.S. (1999), it was found that happy individuals tend to remember the people they meet in a more favorable light than those who are unhappy. Happy people also experience a full range of human emotions, including anger, frustration, boredom, loneliness, and sadness at times. Yet, even in moments of discomfort, they maintain a sense of optimism, believing that things will improve, that they can manage

current challenges, and that they will find happiness again. This broader perspective on happiness is not solely emotional; it also includes a cognitive aspect. When asked to reflect on past events and circumstances, happy individuals tend to evaluate them positively. Consequently, they report greater satisfaction with their lives and the various domains within them.

An expanding collection of studies indicates that happiness can enhance one's physical health; feelings of positivity and fulfillment appear to support cardiovascular health, boost the immune system, reduce inflammation, and regulate blood pressure, among other benefits. Happiness is also associated with a longer lifespan, as well as improved life quality and well-being. Researchers have found that individuals worldwide prioritize happiness above other desirable outcomes, such as wealth, material possessions, and aspirations of an afterlife. American psychologist Barbara Fredrickson (1998) asserts that happiness serves to expand thinking and cultivate personal resources. Consequently, positive emotions encourage creative thought and experimentation with new experiences. As a result, happy individuals develop fresh perspectives, new interests, stronger social bonds, and enhanced physical abilities. These factors contribute to favorable life outcomes. Happy individuals tend to exercise regularly and maintain healthier eating habits, feeling content with what they possess rather than experiencing jealousy towards others. Overall, happy people are healthier and more likely to sustain good health in the future, and they generally live longer compared to those who experience lesser happiness. A recent study examined the relationship between happiness and mental health among college students, revealing a significant, positive correlation between the two factors (Shafiq et al., 2015). This correlation persisted even when accounting for gender and socio-demographic variables. A common misconception regarding happiness is that those who are happy are more inclined to be lazy or ineffective. On the contrary, research demonstrates that happiness not only feels good but also enhances performance. Economists at Warwick University showed various groups positive or neutral film clips and then asked them to perform standard workplace tasks under paid conditions. Those encouraged to experience happiness were 11% more productive than their counterparts, even after controlling for age, IQ, and other variables. Similarly, researchers at Wharton Business School discovered that organizations with happy employees consistently outperform the stock market, and a team at UCL found that happy young adults tend to earn more later in life compared to their peers. In healthcare, happy doctors have been shown to make quicker and more accurate diagnoses. In education, schools prioritizing children's social and emotional well-being witness significant increases in academic success and improvements in student behavior. Additionally, happiness promotes better decision-making and fosters creativity. Happier individuals are less inclined to engage in risky behaviors; for instance, they are more likely to wear seat belts and less likely to be involved in traffic accidents. Furthermore, happy people exhibit greater financial responsibility, often saving more and managing their expenditures more effectively.

A person's happiness is crucial to their overall sense of contentment and life satisfaction. This highlights the need for an effective 'happiness scale' to assess individual happiness levels. Such a tool will help identify factors that contribute to happiness and reveal the characteristics of happy people. As a result, we can support those who are already content in their development while also recognizing and helping those who are unhappy to enhance their lives, allowing them to lead more fulfilling lives through various psychological interventions.

2. Objectives

- To construct and standardize a scale for measuring the happiness levels of adults, specifically adapted to the Indian socio-cultural context.
- To develop a psychometrically sound scale of happiness by establishing reliability and validity through item analysis and factor analysis
- To develop a new, short, and easy to comprehend scale for measuring happiness levels of adults.
- To simplify the scoring procedure and generate results quickly.

3. Methodology

3.1. Research Design and Sampling:

In the current study, descriptive research design has been used. Survey method has been employed to collect data. Purposive sampling method has been used in the study. Item analysis has been determined on 225 participants. Internal consistency has been established based on 332 participants, concurrent validity has been substantiated using 124 participants.

3.2. Inclusion Criteria:

- Permanent residents of India were included
- Age limit ranged between 18 years to 60 years
- No bar for educational qualification, socioeconomic background, marital status was set

3.3. Exclusion Criteria:

- Adults with psychological disorders were excluded

4. Procedure

The participants were approached and whoever consented to be a part of the study were included in the study. For item analysis, the scale under construction had 26 items initially. The item analysis was determined by the participation of 225 subjects. After item analysis and working on the inadequacies of the questionnaire, the 26 items questionnaire was lowered down to 10 items. Internal consistency has been established based on 332 participants and concurrent validity has been substantiated using 124 participants using the 10 items scale. To substantiate concurrent validity, Subjective Happiness scale developed by Sonja Lyubomirsky (1999) and the scale under construction were correlated. Thus, a total of 681 participants have been studied for the development of 'General Happiness Index Scale'.

The participant were adults ageing between 18 to 60 and were permanent residents of India. All participants were briefly instructed in respect to responding to the questionnaires. No time limit was given to the participants however they were asked to complete the questionnaires as soon as possible. Following the completion of questionnaires, all the participants were thanked for their cooperation and thereafter scores were analysed and accordingly results and conclusions were drawn.

5. Tools

5.1. Subjective Happiness Scale (Sonja Lyubomirsky & Heidi S. Lepper, 1999)

It is a seven-point likert scale and has 4 items. It has internal consistency of 0.79 to 0.94 across 14 diverse samples and test-retest reliability between 0.55 to 0.90 across 5 samples of United States of America. The convergent and discriminant validity has moderate to strong associations. Each item is scored from 1 to 7. However, item 4 is reverse scored. Higher score indicates greater subjective happiness.

5.2. General Happiness Index Scale (Prof. Rita Rani Talukdar & Devanggona Lahkar, 2025)

It is a five-point likert scale and has 10 items. There are five available options for each item. The options are 'strongly disagree', 'disagree', 'neutral', 'agree', and 'strongly agree'. It has internal consistency reliability of .838 and concurrent validity of .532**. No reverse scoring is required. A high score indicates overall high happiness.

6. Results and Discussions

6.1. Item Analysis:

Table 1.1

Happiness	Item Discrimination	Item Difficulty
Item 1	0.542**	64.71
Item 2	0.888**	51.25
Item 3	0.562**	56.35
Item 4	0.680**	53.25
Item 5	0.899**	59.5
Item 6	0.893**	72.1
Item 7	0.865**	63.3
Item 8	0.876**	64.6
Item 9	0.907**	64
Item 10	0.880**	67.6

The item analysis was established on 225 participants. The table presents the Item Analysis for General Happiness Index Scale, detailing two key psychometric properties for each of the 10 items.

Item Discrimination: The values range from 0.542 to 0.907, showing that all items have moderate to very high discriminative power. Item 9 (0.907) and Item 5 (0.899) exhibit the highest discrimination, making them the most effective at distinguishing between different levels of happiness. Item 1 (0.542) shows the lowest discrimination, but still falls within an acceptable range.

Item Difficulty: The values range from 51.25 to 72.1, indicating that the items vary from moderately easy to easy. Item 6 (72.1) is the easiest item, suggesting most respondents endorsed it. Item 2 (51.25) is the most difficult, meaning fewer respondents agreed with it.

The items show consistently high discrimination and moderate difficulty, which together suggest that the scale is psychometrically sound. The items are effective in capturing various levels of happiness across participants and are appropriately balanced in terms of difficulty.

6.2. Factor Analysis

Exploratory Factor Analysis:

Table 2.1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.894**
Bartlett's Test of Sphericity	Approx. Chi-Square	**1004.550**
	Df	45
	Sig.	.001

Table 2.1 explains that 'Principal Component Analysis' (PCA) extraction method has been used. PCA extraction method seeks to locate any weak item so that it can be removed to make the study better. In the PCA method, Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity are calculated and examined. The Kaiser-Meyer-Olkin test (KMO) is a statistical measure that determines if data is suitable for factor analysis. If the value of KMO is greater than .07, the sample can be considered adequate. Here, the value is .894 which is greater than .07. Hence, all the items of General Happiness Index Scale can be included for further analysis.

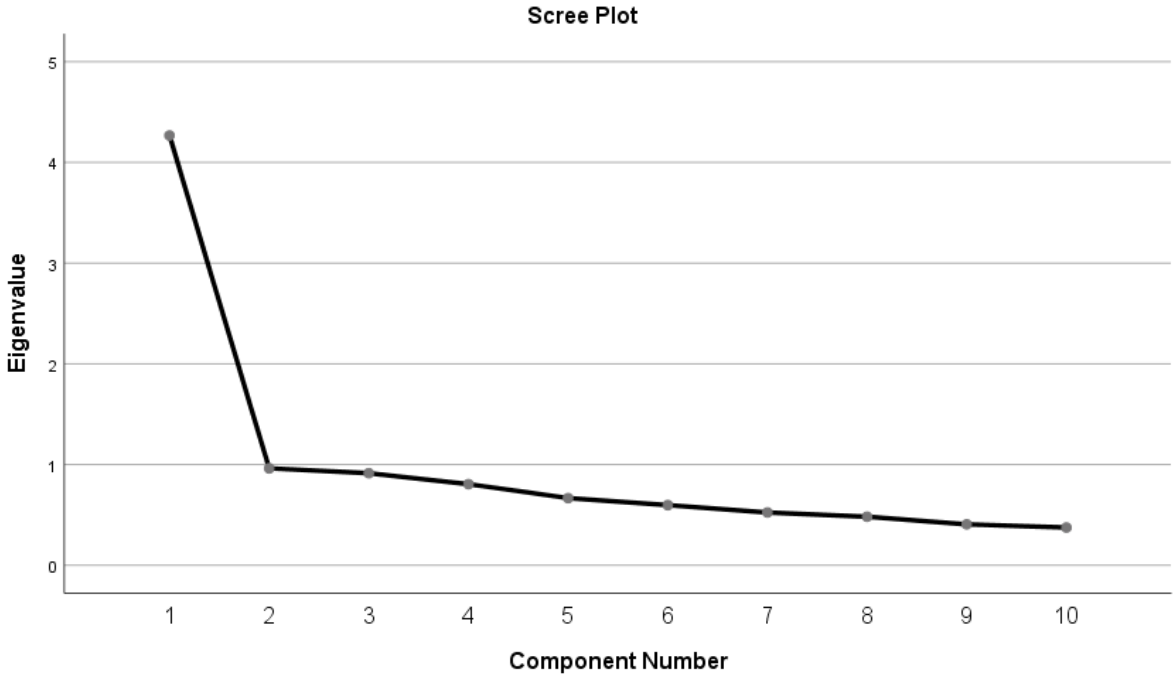
Bartlett's test of sphericity is a statistical test used in factor analysis to determine if the correlation matrix of a dataset is significantly different from an identity matrix. Statistically it is considered that in the Bartlett's test of sphericity if the Chi-Square test is significant then all items can be included in the study. Findings suggest that the approximate Chi-Square value is 1004.550 and is significant at .001 level. Thus, all the items of General Happiness Index Scale can be included for further analysis.

Table 2.2

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.267	42.675	42.675	4.267	42.675	42.675
2	.963	9.625	52.300			
3	.914	9.140	61.440			
4	.805	8.054	69.494			
5	.667	6.668	76.162			
6	.597	5.970	82.131			
7	.524	5.243	87.374			
8	.482	4.819	92.193			
9	.406	4.065	96.258			
10	.374	3.742	100.000			
Extraction Method: Principal Component Analysis.						

The table 2.2 suggests that all items fall under one single factor i.e. happiness. Only one component has an eigenvalue greater than 1, which suggests a unidimensional factor structure, representing the singular construct of happiness. This component alone explains 42.675% of the total variance, justifying that the scale items converge on a single underlying factor. And it doesn't require to be further divided into dimensions/factors.

Here, Principal component method explains that only one factors which has eigenvalue of more than one (1) is selected for the study. The happiness factor has ten items.



Scree Plot gives the graphical representation of Eigen value.

Component Matrix[a]	
	Component
	1
Item-1	.708
Item-2	.555
Item-3	.755
Item-4	.573
Item-5	.725
Item-6	.501
Item-7	.720
Item-8	.757
Item-9	.647
Item-10	.688
Extraction Method: Principal Component Analysis.	

All items had loadings greater than .50, indicating a good level of item representation for the extracted factor. Hence, all 10 items are retained.

7. Reliability:

Table 3.1

Total Participants	Total Items	Reliability
332	10	.838

Table 3.1 explains that the reliability for General Happiness Index Scale is .838. It has been found by using Cronbach's Alpha in SPSS version 25. Cronbach's alpha is a measure of reliability. More precisely it measures the internal consistency of a set of items. Cronbach's alpha quantifies the level of agreement on a standardized 0 to 1 scale. Higher values indicate higher agreement between items. Analysts frequently use Cronbach's alpha when designing and testing a new survey or assessment instrument. This statistic helps them evaluate the quality of the tool during the design phase before deploying it fully.

According to Nunnally (1978), for measuring internal consistency if the value of Cronbach Alpha is 0.6 or more than 0.6, the test can be considered as reliable. Since, analysis suggests that 'General happiness Index' is .838, the questionnaire can be considered as reliable.

8. Validity:

Table 4.1

Test	**Criterion**	**Correlation Coefficient**	**N**	**P value**
General Happiness Index Scale	Subjective Happiness Scale	.532**	124	< .01

** Correlation is significant at 0.01 level

The following table indicates that the present questionnaire (General Happiness Index Scale) has been validated against the Subjective Happiness Scale developed by Sonja Lyubomirsky & Heidi S. Leeper (1999). Concurrent validity has been used to check the validity of General Happiness Index Scale. Results show that a positive correlation (.532**) has been found while correlating the responses of the participants between General Happiness Index Scale and Subjective Happiness Scale.

9. Conclusion

This study provides empirical evidence supporting the General Happiness Index Scale as a valid and robust instrument for measuring happiness. The item analysis revealed that all ten items exhibited satisfactory discrimination and appropriate difficulty levels, confirming their effectiveness in assessing the overall construct. The results of the Exploratory Factor Analysis (EFA) indicated a unidimensional structure, with one principal component explaining a significant amount of variance. The high Kaiser-Meyer-Olkin (KMO) value and the significant outcome of Bartlett's Test of Sphericity confirmed the suitability of the data for factor analysis. All items showed strong factor loadings, which further supported their inclusion. The reliability analysis yielded a Cronbach's Alpha coefficient of 0.838, indicating a high level of internal consistency. Furthermore, the scale demonstrated good concurrent validity, as evidenced by a significant positive correlation with the established Subjective Happiness Scale (Lyubomirsky & Lepper, 1999), reinforcing its validity.

In conclusion, the General Happiness Index Scale represents a valid, reliable, and concise tool for measuring happiness in both research and practical applications.

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