

## Positive and Negative Affect, and Grit as predictors of Happiness and Life Satisfaction

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This study explores the relationship between the concepts of Happiness, Life Satisfaction, Positive and Negative Affect and Grit. Happiness is the average level of satisfaction over a specific period, the frequency and degree of positive affect manifestations or the extent to which an individual experiences positive emotional states, and the relative absence of negative affect. Life Satisfaction is one's evaluation of satisfaction with life in general and Grit refers to the character strength of perseverance described in Positive Psychology. The study was carried out on 254 undergraduate students of technology. Results revealed that the concepts of Grit, Positive Affect, Happiness and Life Satisfaction are significantly positively correlated. Negative Affect showed a significantly negative correlation with Grit, Happiness and Life Satisfaction. Stepwise regression analysis showed that Positive Affect, Grit and Negative Affect together account for 19% of the variance in Life Satisfaction. Grit, Negative Affect and Positive Affect account for 11% of the total variance in Happiness.

**Keywords:** Happiness, Life Satisfaction, Positive Affect, Negative Affect, Grit

The emphasis on describing psychological health in terms of 'what is right' has been growing ever since Martin P. Seligman coined the term 'Positive Psychology' in 1998. It calls attention to a shift in importance towards an appreciative set of assumptions and attributions about health, motivation, capacities, potential, and social functioning (Strumpfer, 2006). Over the last several years, psychologists have argued for an increased focus on investigating happiness and other positive emotions (Luthans, 2002). Rather than continue a more traditional focus on negative or dysfunctional forces in daily life, researchers are attempting to understand how to make life better. (Arthaud-Day, Rode, Mooney & Near, 2005.)

'Subjective well-being,' 'life satisfaction,' 'happiness,' and 'quality of life' appear to be conceptually related phrases. Subjective well-being reflects the extent to which people

think and feel that their life is going well (Lucas & Donnellan, 2007). Life satisfaction is defined as the cognitive aspect of subjective well being and refers to people's global evaluation of the quality of their life (Peterson, Park & Seligman, 2005). However, life satisfaction is only one factor in the more general construct of subjective well being. (Diener, Suh & Oishi, 1997) have proposed that subjective well-being is a multidimensional construct consisting of three separate components: (1) the presence of positive affect; (2) the relative lack of negative affect; and (3) people's cognitive evaluations of their life circumstances, (Diener et al., 1997; Arthaud-Day et al., 2005). This third component is defined as life satisfaction and is distinguished from affective appraisal in that it is more cognitively than emotionally driven. Individuals' assessments of their lives involve "both a cognitive evaluation and

some degree of positive and/or negative feeling, i.e., affect (Andrews & Withey, 1976). Positive and Negative Affect are two independent dimensions. Positive Affect refers to the extent to which an individual experiences positive emotional states such as joy, interest, confidence and alertness. Negative Affect refers to the extent to which an individual experiences negative emotional states such as fear, sadness, anger, guilt, contempt and disgust (Snyder & Lopez, 2002).

There has been an upsurge in studies on happiness (e.g., Diener, 2000; Chamorro-Premuzic, Bennett & Furnham, 2007). Happiness can be defined in terms of the average level of satisfaction over a specific period, the frequency and degree of positive affect manifestations, and the relative absence of negative affect (Argyle, Martin & Crossland, 1989).

The concept of Happiness has long interested philosophers and psychologists. According to Waterman (1993), it “may be expected to be felt whenever pleasant affect accompanies the satisfaction of needs, whether physically, intellectually, or socially based”. This is the notion of hedonism. Standing in contrast to hedonism is the second approach to subjective well-being / happiness. It can be traced to Aristotle’s (384–322 BCE) notion of eudemonia – being true to one’s inner self (Peterson et al., 2005). According to this view, true happiness entails identifying one’s virtues, cultivating them, and living in accordance with them (Aristotle, 2000).

Grit refers to the character strength of perseverance described in Positive Psychology. It is defined as perseverance and passion for long-term goals (Duckworth, Peterson, Matthews & Kelly, 2007). In essence “it refers to the determination to accomplish an ambitious, long-term goal despite the inevitable obstacles. (Doskoch & Flora, 2005).

The present study aims at understanding the relationship between the concepts of Happiness, Life Satisfaction, Grit and Positive and Negative Affect. It was hypothesized that the concepts of Happiness, Life Satisfaction, Positive and Negative Affect and Grit would be significantly correlated. Additionally, to reveal Positive and Negative Affect, and Grit as predictors of Happiness and Life Satisfaction.

## Method

### *Participants*

Participants in this research were undergraduate students of Technology. 254 students were asked to fill out the questionnaires. The sample consisted of 225 male and 29 female students. The range of age was 17-27 years. Mean age and SD= 20.36 ± 1.61 years.

### *Measures*

A booklet containing standardized instructions, psychometrically validated tests and a final debriefing sheet along with demographic profile sheet was constructed. Psychological tests were as follows:

**Satisfaction with Life Scale.** (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985). The SWLS is a 5-item self-report questionnaire that measures one’s evaluation of satisfaction with life in general (e.g., “The conditions of my life are excellent.”) Individuals respond to each item on 7-point Likert scales ranging from “strongly agree” to “strongly disagree.” Responses are summed to yield an overall score of life satisfaction. Research demonstrates acceptable psychometric properties for the SWLS; the Cronbach alpha of the SWLS was found to be 0.76. (Radhakrishnan & Chan, 1997)

### *General Happiness Scale*

Happiness in life was measured with Lyubomirsky and Lepper’s (1999) General (Subjective) Happiness Scale. This 4-item instrument contains items that tap into

subjective feelings of global happiness with one's life (e.g., "Compared to most of my peers I consider myself": 1 = less happy, 7 = more happy). The internal consistency of this scale was  $\alpha = 0.85$ . (Segrin & Taylor, 2007).

### **PANAS**

Affect was assessed using the Positive and Negative Affect Schedule (PANAS), constructed by Watson, Clark and Tellegen (1988), which treats both variables, Positive affect (PA; 10 items) & Negative affect (NA; 10 items), as separate dimensions rather than bipolar ends of the same scale. It uses a 5-point scale (1 = very slightly or not at all, 5 = extremely) to indicate the extent of generally feeling the respective mood state. The Authors calculated Cronbach  $\alpha$  coefficients in different samples range from 0.90 to 0.96 for PA and from 0.84 to 0.87 for NA, (Watson, Clark & Tellegen, 1984). Other researchers have also been reported the same to demonstrate high internal consistency, and to provide a valid index of what it purports to measure (Kercher, 1992; Watson et al., 1988).

### **Grit Scale**

Grit was measured using the Grit scale developed by Duckworth, (2004). The scale is self reporting and consists of 46 items rated on a 5-point scale from 1- not like me at all to 5- very much like me; e.g. "I finish whatever I begin," and "I have overcome setbacks to conquer an important challenge," and reverse-scored statements such as, "My interests change from year to year." The Scale has been reported to be highly reliable.

### **Results and Discussion**

Data collected through the questionnaires was analyzed using SPSS 15.0 software. We calculated Pearson's Product Moment correlation for the data along with descriptive analysis. A stepwise regression analysis was also carried out. In the first analysis, Happiness was the dependent variable and Grit, Positive Affect and Negative Affect were the predictors. In the second analysis Life Satisfaction was taken as the dependent variable and the predictors remained the same. The results are as follows:

**Table 1. Correlation Between Happiness, Positive Affect, Negative Affect, Grit and Life Satisfaction (N=254)**

	Happiness	Positive Affect	Negative Affect	Grit	Life Satisfaction
Happiness	1				
Positive Affect	.25**	1			
Negative Affect	-.20**	-.04	1		
Grit	.26**	.44**	-.14*	1	
Life Satisfaction	.18**	.38**	-.16**	.32**	1

\*\*  $p < 0.01$ , \*  $p < 0.05$

The data analysis shows that the correlations between Happiness and the other four constructs are significant. According to Table 1, the correlation between Happiness and Positive Affect (0.25,  $p < 0.01$ ), Grit (0.26,  $p < 0.01$ ) and Life Satisfaction (0.18,  $p < 0.01$ ) is positive, while the correlation between Happiness and Negative Affect is negative (-0.20,  $p < 0.01$ ).

The correlation between Positive Affect and Grit (0.44,  $p < 0.01$ ) and Life Satisfaction (0.38,  $p < 0.01$ ) is positive. Negative Affect shows significant negative correlations with Grit (-0.14,  $p < 0.05$ ) and with Life Satisfaction (-0.16,  $p < 0.01$ ). Grit shows a positive correlation with Life Satisfaction (0.32,  $p < 0.01$ ).

**Table 2. Regression Analysis of Positive and Negative Affect and Grit onto Life Satisfaction**

Dependent Variables	R	R <sup>2</sup>	R <sup>2</sup> change	F change
Life Satisfaction	.38 <sup>a</sup>	.14	.14	41.91***
	.41 <sup>b</sup>	.17	.03	8.67**
	.43 <sup>c</sup>	.19	.02	4.71*

\*

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

a. Predictors: (constant), PAS

b. Predictors: (constant), PAS, Grit

c. Predictors: (constant), PAS, Grit, NAS

**Table 3. Regression Analysis of Positive and Negative Affect and Grit onto Happiness**

Dependent Variables	R	R <sup>2</sup>	R <sup>2</sup> change	F change
Happiness	.26 <sup>a</sup>	.07	.07	17.63***
	.30 <sup>b</sup>	.09	.02	7.34**
	.34 <sup>c</sup>	.11	.02	6.67*

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

a. Predictors: (constant), Grit

b. Predictors: (constant), Grit, NAS

c. Predictors: (constant), Grit, NAS, PAS

The stepwise regression analysis shows that for Life Satisfaction, Positive Affect accounts for 14% of the variance (Table 2) and Positive Affect, Grit and Negative Affect together account for 19% of the variance in Life Satisfaction. For Happiness, (Table 3) Grit accounts for 7% of the total variance and Grit, Negative Affect and Positive Affect account for 11% of the total variance.

The preliminary findings of this research study support the hypothesis proposed in the beginning of this paper. With the exception of a significant correlation between Positive and Negative Affect, the other constructs are significantly related to each other and also show a significant correlation with Grit.

As found in our research, positive and negative affect bear a significantly positive and negative (respectively) correlation with both aspects of well being namely happiness and life satisfaction. Walker and Schinmack (in press) found a correlation of 0.53, ( $p < 0.05$ ) between Life Satisfaction and Positive Affect and a correlation of -0.50, ( $p < 0.05$ )

between Life Satisfaction and Negative Affect. Similar findings are reported by Tversky and Griffin (1991) who state that a positive event raises one's well-being over the long haul, and a negative event reduces it. Cheng (2004) found that positive affect was the strongest predictor of global well-being and accounted for 11% of variance in the Well Being Appraisal Index (WBA). He defines WBA as the cognitive aspect of subjective well being. He also states that the affective and the cognitive aspects of well-being are not as distinct as is commonly assumed and that this is true for different population subgroups. He found a correlation of 0.70, ( $p < 0.001$ ) between WBA and Positive Affect and a correlation of -0.51, ( $p < 0.001$ ) between WBA and Negative Affect. The significant correlations found in our research appear to be in line with this point of view. Diener, Sandvik, and Pavot (1991) have also observed that life satisfaction is a function of the preponderance of Positive Affect in daily life. Lyubomirsky, King and Diener (2005), found that positive affect may be the cause of many of the desirable characteristics,

resources, and successes correlated with happiness.

Life Satisfaction and Happiness also show a significant correlation. As stated earlier, the concept of Life Satisfaction is encompassed within the concept of Happiness. According to Argyle et al. (1989) one of the elements of happiness is the average level of satisfaction over a specific time period. As the two are conceptually related notions, the same seems to be reflected in the findings of our research as well. Sergin & Taylor (2007) reported a correlation of 0.62, ( $p < 0.001$ ) between Life Satisfaction and Happiness in their study.

As positive psychology turns its attention to interventions that cultivate the good life, perhaps interventions that target meaning will prove most fruitful (Linley and Joseph, in press). This is where the correlation of Grit with Happiness, Positive Affect and Life Satisfaction as found in our study becomes significant. Earlier, a common interpretation of existing subjective well-being research was that long-term levels of well-being are almost completely stable. In a recent study Lucas and Donnellan (2007) challenged the notion that 'changing happiness is akin to changing height'. They found that although life satisfaction measures are very stable over the short term, they are only moderately stable over the long-term and that there is room for change. Diener (2000) concluded that lasting happiness could result in part from, for instance, working for one's goals, from close social relationships, renewable physical pleasures, and flow activities. Thus Grit could have an important role to play in achieving this.

In summary, Happiness, Positive Affect, Life Satisfaction and Grit are positively correlated concepts. All constructs except Positive Affect bear a negative correlation with Negative Affect showing that the two are independent concepts. However, as Positive Psychology is an emerging field of

Psychology, there exists a further need to explore and validate the present study.

## References

- Andrews, F. M. & Withey, S. B. (1976). *Social Indicators of Well-being: Americans' Perceptions of Life Quality*. New York, Plenum Press
- Argyle, M., Martin, M., & Crossland, J. (1989). Happiness as a function of personality and social encounters. In J. P. Forgas & M. Innes (Eds.), *Recent advances in social psychology: an international perspective*. North Holland
- Aristotle. (2000). *Nicomachean Ethics* (R. Crisp, Trans.), Cambridge University Press, Cambridge, England
- Arthaud-Day, M.L., Rode, J.C., Mooney, C.H. & Near, J.P. (2005). The subjective well-being construct: a test of its convergent, discriminant, and Factorial validity. *Social Indicators Research*, 74, 445–476
- Chamorro-Premuzic, T., Bennett, E., & Furnham, A. (2007). The happy personality: Mediation role of trait Emotional Intelligence. *Personality and Individual Differences*, 42, 1633–1639
- Cheng, Sheung-Tak, (2006) Negative emotions make positive emotions more salient in well-being appraisal, *Journal of Personality and Individual Differences*, 40, 557–567
- Diener, E, Suh, E. & Oishi, S. (1997). Recent findings on subjective well being. *Indian Journal of Clinical Psychology*, 24, 25–41.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55, 34–43.
- Diener, E. Sandvik & W. Pavot, (1991), Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle & N. Schwarz (Ed) (1991). *Subjective well-being: An interdisciplinary perspective*, Pergamon, Oxford.
- Diener, E., Emmons, R. A., Larsen, R. J. & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71–75.
- Doskoch, P & Flora, C. (2005). The Winning



- Edge. *Psychology Today*, 38, 42-52
- Duckworth, A.L., (2004) *www. authentic happiness.org*.
- Duckworth, A.L., Peterson, C., Matthews, M.D., & Kelley, D.R. (2007). Grit: Perspective and Passion for Long Term Goals. *Journal of Personality and Social Psychology*, 92, 1087-1101
- Kercher, K. (1992). Assessing subjective well-being in the old-old: the PANAS as a measure of orthogonal dimensions of positive and negative affect. *Research on Aging*, 14, 131-168
- Linley, P.A. & Joseph, S. (in press) *Positive Psychology in Practice*, (eds.) John Wiley and Sons, New York
- Lucas, R.E. & Donnellan, M.B. (2007). How stable is happiness? Using the STARTS Model to estimate the reliability of life satisfaction. *Journal of Research in Personality*, 41, 1091-1098
- Luthans, F. (2002). 'Positive organizational behavior: Developing and managing psychological strengths'. *Academy of Management Executive*, 16, 57-75.
- Lyubomirsky S., King L. & Diener E., (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success?, *Psychological Bulletin*, 131, 803-855
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: preliminary reliability and construct validation. *Journal of Social Indicators*, 46, 137-155
- Peterson, C., Park N. & Seligman, M.E.P. (2005). Orientations to happiness and life Satisfaction: the full life versus the Empty life. *Journal of Happiness Studies*, 6, 25-41
- Radhakrishnan P. & Chan D.K.S. (1997). Cultural Differences in the Relation between Self discrepancy and Life Satisfaction. *International Journal of Psychology*, 32, 387-398
- Segrin, C. & Taylor, M. (2007). Positive Interpersonal Relations mediate the association between social skills and psychological well being. *Journal of Personality and Individual Differences*, 43, 637-646
- Seligman, M.E.P. (1998). *Learned optimism*, New York: Pocket Books
- Segrin, C. & Taylor, P. (2007) Positive Interpersonal relationships mediate the association between social skills and psychological well being, *Journal of Personality and Individual Differences*, 43, 637-646
- Snyder C. & Lopez S.J., (2002), *Handbook of Positive Psychology*, Oxford University Press, New York
- Strumpfer, D.J.W. (2006). The strengths perspective: Fortigenesis in Adult Life. *Social Indicators Research*, 77, 11-36.
- Tversky, A. & Griffin, D., (1991) Endowment and contrast in judgments of well-being. In: Strack, F., Argyle, M. and Schwarz, N., Editors, (1991). *Subjective well-being: an interdisciplinary perspective*, Pergamon, Oxford, pp. 101-118.
- Walker, S.S. & Schinmack, U. (in press) Validity of happiness implicit association test as a measure of subjective well being, *Journal of Research in Personality*
- Waterman, A.S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678-691.
- Watson, D. Clark L.A. & Tellegen, A. (1988), Development and validation of brief measures of positive and negative affect: The PANAS scales, *Journal of Personality and Social Psychology*, 54, 1063-1070
- Watson, D., Clark L.A. & Tellegen, A. (1984) Cross-cultural convergence in the structure of mood: A Japanese replication and a comparison with U.S. findings, *Journal of Personality and Social Psychology* 47, 127-144.

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