A Micro Level Study Explaining Happiness Level in Pakistan

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Abstract

The aim of this paper is to propose a Happiness Index for Pakistan by looking into the determinants of the complex idea of happiness attainment. The concept of happiness dwells on dimensions ranging from financial well-being to subjective well-being and it would be very crude if we treat this variable through an objective lens of economic well-being. We aim to find how trust on people, confidence in institutions, personality dynamics, health status, and income level can impact happiness and satisfaction level of individuals. In this paper, we collected primary data from various areas (rural and urban) of Pakistan through survey with sample size of 763. The binary logistic regression framework has been used to model Happiness Index as it has been converted into dichotomous level. Results showed positive and significant relationship for Big Five traits (extraversion and neuroticism), confidence in Armed Forces, life satisfaction, and age whereas negative association of Happiness Index was observed with press media, and trust on strangers. From a policy perspective, it is suggested that the Government of Pakistan estimate Happiness Index on a national level. This will make sure that in transition, effects of different complex variables, such as political regimes, growth encouraging steps, development policies can be gauged; their nexus with Happiness can be delineated.

***Keywords*:** Determinants of happiness; Pakistan; Big Five traits; Subjective Well-being; Self-reported Health.

1. INTRODUCTION

The general linchpin for the wheel of economics is the discussion on scarcity, rationality, optimality, productivity, and utility. Apparently, utility seems to be a concrete notion relying on rational choices and optimization of satisfaction; however, an individual's utility strolls on the verges of many abstractions. Individuals' utility needs to be mapped

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and its link with variables related to economics must be delineated for a better understanding of human behaviors. The macroeconomic indicators of a country's well-being e.g., Gross Domestic Product (GDP) or Human Development Index (HDI) can sometimes be a broad-brush treatment to the intricate concept of micro-level happiness of human beings.

Happiness is a phenomenon that changes with emotions, life conditions, time, and through external factors induced through the surrounding environment. The need to measure individuals' happiness levels has been felt already by many researchers and studies exist on this topic. Bentham (1977) proposed a need to measure individual's happiness level for public policy effectiveness in society; since then researchers started analyzing happiness in measurable terms, based on either observation, psychological tests, or through self-reported happiness levels.

Since the late 1990s, researchers have initiated research on finding out the determinants of happiness through surveys that used self-reported happiness, to have insight of individuals at micro level. Earlier on, GDP was the only variable that measured the economic growth and prosperity of a country, however, GDP could not reflect a nation's performance on the environmental forefront, e.g., minimize carbon emissions. GDP could not incorporate the possible effect of such issues on the society, due to which policies were required to measure social welfare. Frey and Stutzer (2002) discussed subjective well-being and pointed out two problems with GDP: first, it does not take into account global crisis, such as global warming, and emissions, second, its inability to capture the impact of financial crisis on happiness level of society. Stiglitz (2009) upon the request of the French President, Nicholas Sarkozy Joseph, scrutinized how GDP does not add up in serving the needs of society by not measuring the factors that matter for people. He emphasized that GDP rate overlooks inequality, environmental impacts into economic decisions; policymakers and government needs an inward-out approach to take into account the needs of people to increase their satisfaction and happiness levels.

Economic policies reflect social impacts both on society as well as on individuals; some may result in extensive economic growth and

increase in GDP while others may increase well-being of humans. According to studies conducted by Easterlin and Angelescu (2009), Inglehart *et al.* (2008), Layard, *et al.* (2009), in Europe, and USA, it is obvious that even though there is rapid increase in GDP in these countries; nevertheless, the happiness level has not increased the same way. This serves as the starting point for the current research; why increase in economic growth does not lead to increase in happiness level of an individual. At micro level people who are affluent, healthy, do not have trust issues, live with stable economic factors, positive psychological correlates, are unhappy. Sometimes economic reasons are precursors of happiness, while others factors entail non-economic issues that determine emotions of happiness.

This study focuses on finding the determinants of happiness, to evaluate whether or not economic variables explain happiness significantly. This study is an effort to develop an alternative indicator of well-being. Based on aforementioned literature, the following hypotheses were developed:

Economic variables and happiness are related.[1]
Non-economic variables and happiness are related.[2]

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[1] Economic variables include: (1) There is a positive relationship between happiness level and financial satisfaction in Pakistan (Diener, Suh and Oishi (1997)); (2) Marital status and happiness are associated (Diener, *et al.* (1999)); (3) Unemployment is negatively related to life satisfaction and subjective happiness (Digman and Takemoto-Chock (1981)); (4) The higher the education level, more the subjective well-being of an individual (Easterlin and Angelescu (2009)); (5) Higher income level is positively related to level of happiness in Pakistan, along with satisfaction with life (Fiske (1949)); (6) Economic well-being depicts a positive attitude towards life and positive moods (Frey and Stutzer (2002)); and (7) As dependency rate on individual increases happiness decreases (Frey and Stutzer (2010)). Veenhoven (1991) used meta-analysis of 245 studies and conclude that happiness, Subjective Well-being (SWB) and satisfaction with life are determined as synonyms with each other so high score in one would be related to high scores in other.

[2] Non-Economic Variables include: (1) Big five traits are all significantly related to happiness (Ali and Haq (2006)); (2) Extraversion and emotional stability are positively associated with self-reported happiness and satisfaction with life in Pakistan (Bentham (1977)); (3) Agreeableness, conscientiousness, and openness are positively associated with HI (Bjørnskov (2008a)); (4) Health conditions and happiness level are positively associated (Bjørnskov (2008a)); (5) Trust index is positively correlated with life satisfaction and happiness in Pakistan (Borgatta(1964)); and (6) Strong foundation of support from family and friends is more likely to keep individuals happy and satisfied (DeNeve and Cooper (1998)).

2. LITERATURE REVIEW

Many worldwide surveys have been conducted in recent years to determine the happiness and life satisfaction of different countries, both developed and developing. To find determinants of happiness, Frey and Stutzer (2002) categorized happiness into five domains:

1) Personality factors, such as self-esteem, personal control, optimism, extraversion, and neuroticism.
2) Socio-demographic factors, such as age, gender, marital status, and education.
3) Economic factors, such as individual and aggregate income, unemployment, and inflation.
4) Contextual and situational factors, such as employment and working conditions, job satisfaction, interpersonal relationships with colleagues, friends and family, marriage partner and health.
5) Institutional factors, such as extent of political decentralization, and citizen's direct political participation rights.

Ha and Kim (2013) analyzed the relationship between personality traits with happiness and satisfaction level; they included control variables using three models. Model 1 consisted of dependency of happiness on big five traits. Model 2 included socio-demographic variables, such as age, income, gender, education, employment status, and marital status. Model 3 included variables related to Subjective Well-being (SWB), such as trust, financial satisfaction, health, political ideology, religious beliefs, and political participation. They relied on data from the 2009 Korean General Social Survey; results showed that Big Five personality traits particularly, emotional stability and extraversion were positively associated with happiness and life satisfaction after controlling for other factors. The idea of Big Five personality traits is consequent upon efforts of many researchers including but not limited to Fiske (1949); Norman (1963); Borgatta (1964); and Digman and Takemoto-Chock (1981). Results of Ha and Kim (2013), showed that Big Five traits were jointly significant with happiness and emotional

stability, while extraversion is positively related to happiness. Income and education were positively associated with happiness, whereas unemployed and persons separated from a marital nexus were less likely to be happy than married and single people. Trust, self-reported health, and financial satisfaction were all positively significant with happiness.

Selim (2008) aimed to find the determinants of life satisfaction and happiness level in Turkey. Data were used from WVS during 3 waves of 1990, 1996, 2001; potential determinants used for this study were age, religion, subjective health, gender, level of education, marital status, number of children, employment status, trust level, proud of nationality, political situation, and income. Results showed that happiness and life satisfaction were higher in 1990-1996 compared to base year 2001, where it decreased due to financial crisis in Turkey. Age had negative effect on happiness and life satisfaction, while education had no significant effect on happiness and life satisfaction.

Kalyuzhnova (2008) investigated the impact of social, economic, and institutional changes on people's perception of happiness in Kazakhstan. Hypothesis proposed that factors impacting the happiness level of an individual encompass dynamics of personal life, financial status, and social scenario that an individual faces. Results showed that only three variables had significant impact on happiness: size of house, regional unemployment, and student status. Older people were found to be happier, men happier in general, better educated were also relatively happier, income had a significantly positive effect on happiness of respondents. Macroeconomic factors, such as inflation and regional wages did not influence the level of happiness of individuals except unemployment in Kazakhstan.

Big five traits, i.e., Extraversion, Agreeableness, Conscientious-ness, Emotional Stability, and Openness, summarize the subjective perception of individual about how they act and perceive themselves in certain situations. Each person is characterized by a personality based on their responses. Personalities impact the way humans choose to spend their lives and corresponding decisions formulate their happiness level. Some studies have done detailed research work, they agreed that personality and happiness have significant relationship; it depicts that more optimistic and positive personality you have, the happier you are.

Happiness is a positive attitude towards life having good feelings and emotions; avoiding worrying.

Different moods and emotional status of individuals at different occasions lead to different levels of happiness that can affect academic efficiency, lead to anger issues, lack of interest in surroundings, mental health, occupational choices, and stress level. Big Five is usually used for prediction of happiness as it also serves as proxy assessment of happiness set in the theoretical model of Lyubomirsky, *et al.* (2005). The Big Five model components have been used widely and accepted as reliable and valid measure of personality [Gosling, *et al.* (2003)].

Extroverts enjoy social activities that give them positive effect, whereas neurotics have lower emotional stability, thus finding themselves more frequently in stressful situations each day resulting in less happiness. Neuroticism strongly predicts lower life satisfaction, less happiness, and more negative emotions [McCrae and Costa (1997)], whereas Agreeableness and Extraversion predict positive emotions [De Neve and Cooper, (1998); Steel, Schmidt, and Shultz (2008)]. Trust conveys the language of comfortable environment with others i.e., to be able to depend on others without worry, hence it is the most desirable emotion for humans. Loyalty and confidence in people close to them will make them easy to believe and express openly, and in the long run, contribute to happy feelings. Trust is defined in literature as social capital; Leung (2002) explained social capital as, individual resources that are used to form ties among individuals through interpersonal activities that help them to establish a strong social network in their community. To measure trust levels Paldam (2000) constructed two dimensions: generalized trust (trust in people in general) and special trust (confidence in particular organization or known person). Trust in institutions impacts subjective well-being of individuals as Hudson (2006), provides evidence from Europe that there is a positive relationship between trust on institutions and happiness level of people. Bjørnskov (2008a, b), explores the association of social capital with happiness in United States, and concluded that social trust is positively associated with happiness. Through Ordered Probit analysis of the determinants, individual levels were measured through different factors, such as income, age, education, religiosity, employment status, and civil

status. Results showed social capital variables exhibit strongly positive associations with happiness in the US.

Happiness and health are perceived through well-being of an individual. For any person, mental, physical, and psychological states of mind are major causes of disintegration of health; these factors can worsen health status of individuals, resulting in decreased happiness. Gerdtham and Johannesson (2001) showed that happiness increases with income, health, and education, while it decreases with unemployment. Sabtini (2014) tested the relationship between happiness and health in Italy, with sample size of 817; through Probit regression, the results showed that happiness is strongly correlated with self-reported health after controlling socio-economic variables.

Socio-economic variable that has some part in swaying moods are discussed in this section. Age, gender, income, unemployment, dependency ratio, and marital status can derive happiness levels. Lacey, *et al.* (2006, 2007) established that age and happiness have a U shaped curve. Younger people tend to be happier and carefree as the burden of responsibilities and problems are low, whereas adults and older people have more people dependent on them and different life events with age contribute to decreasing in happiness with age. The psychologists Diener (1997; 1999), postulates a decrease in satisfaction of people as they age; at higher age's prevalence of high life satisfaction gets less common.

Happiness research in Pakistan is limited to few dimensions; therefore, efforts are made to explore this new level of socio-economic variable. Throughout the world, indices measuring happiness levels are considered for policy perspective; however, Pakistan still lags behind. Progress on happiness started in the world, when Gross National Happiness (GNH) was first introduced by King of Bhutan after getting motivated by philosophy of happiness and well-being. A policy paper was published in the US, in 2006; calling for implementation of gross national happiness framework. In Asia, Thailand started green and happiness index in 2007. The US through Gallup Well-being index modeled GNH framework and found USA score in 2009 of 66.1/100. In 2010 Bhutan officially constructed 4 pillars to specify happiness as national happiness index. In further years' Multidimensional Poverty Index (MPI), Better Life Index (BLI), Social Progress Index (SPI) was

formed for the same purpose of measuring individual's satisfaction and well-being. The United Nation published World Happiness report (2011), Canadian index of well-being (CIW), South Korean happiness index (2012), Indian GNH model for measuring happiness (2012), Dubai localized happiness index and in 2014 United Kingdom launched well-being and happiness statics.

Under these recent developments in happiness studies, there is a need for Pakistan to construct a happiness index and measure its population satisfaction level. Through WVS and world happiness database happiness level is measured along with other countries from all over the world. Happiness was measured for Pakistan through survey questions like "Taking all together, how satisfied or dissatisfied you with your life-as-a-whole are these days?" and for Pakistan average happiness level is 5.0 from 2000-2009 (Table 1).

Table 1: Happiness in Pakistan; Current Happiness Rank Lists of Happiness in Nations 2000-2009[*]

Happiness Level (Possible Range)➜	Average Happiness (0-10)	Happy Life Years (0-100)	Inequality of Happiness (0-3.5)	Inequality Adjusted Happiness (0-100)
Highest Score	8.5 Costa Rica	66.7 Costa Rica	1.42 Netherlands	73 Denmark
Pakistan	5.0	32.5	2.49	38
Lowest Score	2.6	12.5	3.19	16

* All happiness variants are based on responses to a survey question like "Taking all together, how satisfied or dissatisfied are you with your life as-a-whole these days?". Combined question types 10-step numeral life satisfaction and 11-step numeral life satisfaction.
Source: World Happiness database.

WVS also conducted the happiness level for Pakistan in 3 waves from 1995-1998, 1999-2004 and 2010-2014 from which only waves 1995-1998 and 2010-2014 measured happiness. WVS results on Pakistan happiness level from combined 1995-2007 showed Pakistan based on reported happiness and life satisfaction, equally weighted mean as -0.30 where negative sign relates to most population unhappy and unsatisfied with life.

Mehmood and Shaukat (2014) measured life satisfaction and social well-being in Pakistan for female university students of Multan, Karachi, and Faisalabad. Through depression scale and ANOVA regression analysis, level of satisfaction in life, self-esteem, and depression were accessed. Results showed no effect of income and age on life satisfaction. Mental disorders, such as depression, anxiety, phobias, and lower self-esteem impact an individual's life satisfaction. Findings of the study showed that happiness and life satisfaction are negatively linked to depression.

Ali and Haq (2006) studied autonomy of females and their happiness levels. They measured indicators of happiness of women in Pakistan through different variables, such as education, age, assets, health, labor force participation level, and decision-making power. Using multinomial regression, results depict a clear positive relationship between women's educational levels and their happiness. Results also showed that as compared to sick women, healthy women are happier. This relationship is very strong as evidenced by odds ratios as well as statistical significance level of less than 1 percent.

Tariq (2012) analyzed the impact of financial stress on life satisfaction by getting data from Karachi. Pearson correlation test was used for measuring perceived stress scale and satisfaction level. Tariq (2012) dichotomized stress as external stressors - poor working conditions and adverse physical conditions, and internal stressors-physical, psychological. Outcome of this study showed that there is a weak negative relation existing between financial stress and life satisfaction (happiness). Results concluded that people with strong life satisfaction have strong financial status and less stress.

3. CURRENT STUDY

This is a cross-sectional study based on data from various rural and urban areas of Pakistan chosen randomly. Purposive sampling was used, and target population were defined as persons, belonging to Punjab, Sindh or KPK, aged 18 or more able to understand at least one of the languages, English and Urdu (Questionnaire was translated by an Urdu Language Professor). Primary data from 763 respondents was collected through survey in 2015 through online and face-to-face

surveys. Data on happiness, life satisfaction, health, and other variables (How much individual think about their life on the whole and being happy and other questions regarding Big Five Personality Traits, trust, social, and financial satisfaction along with socio-economic demographics) were measured through self-perceived levels by individuals in Pakistan. The questionnaire was divided into 6 sections, including Subjective happiness scale (SHS) by Lyubomirsky (1999), 50 itemed Big Five Personality traits by Goldberg (1999), some selected questions from Happiness Initiative Index including health, material well-being, social support, and demographics. Trust section with questions from World Values Survey (WVS) that was related to Pakistan. Each question was designed to get insight into individual thoughts and inner emotions. Common response to questionnaire by individuals who filled it was that 'it made them think about aspects of their life and personality they have never paid attention to'. Pilot survey was conducted online from 40 individuals and response level was low so 1000 printed hard copies of surveys in English (700) and Urdu (300) were conducted in Pakistan to incorporate randomness in the sample. Further Rank Set Sampling (RSS) was also used for randomization of data. Data were entered in SPSS-20 and MS-Excel; results were estimated through logistic regression. The overall non-response was 337 and data from Baluchistan could not be obtained.

Happiness Index (HI) was constructed through 3 questions, mentioned below with ordinal responses 1-7 (1 means not happy at all and 7 means most happy):

1) Compared to most of my peers, I consider myself:
2) Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything.
3) Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be.

The results were converted into binary variable by computing sum of these questions after reverse coding the third question. Then median was computed and HI was coded as follows:

$$HI = \begin{bmatrix} 0 \; if \; Sum_{ith \; respondent} < Median_{sum} \\ 1 \; if \; Sum_{ith \; respondent} \geq Median_{sum} \end{bmatrix} \qquad \dots (1)$$

Life satisfaction index (LI) was constructed by getting ordinal responses from 1 to 7 on each of the two questions mentioned below;

1) In context of your satisfaction with life on which point do you think you stand in present on a ladder, with top best at 10 and lower bottom as 0?
2) All the things considered, how satisfied are you with life as a whole nowadays?

The results were converted into trinomial variable by computing sum of these questions. Then percentiles were computed and coded as follows:

$$LI = \begin{bmatrix} 0 \; if \; Sum_{ith \; respondent} < P1_{sum} \\ 1 \; if \; P1_{sum} \leq Sum_{ith \; respondent} < P2_{sum} \\ 2 \; if \; Sum_{ith \; respondent} > P2_{sum} \end{bmatrix} \qquad \dots (2)$$

Health index was constructed by getting ordinal responses on each of the three questions mentioned below:

1) In general, I would say my health is: poor=1, fair 2, good 3, very good=4, excellent= 5.
2) Please indicate, how much of the time during the past week you had a lot of energy: never= 1, rarely=2, sometimes=3, often=4, always=5.
3) How satisfied were you with your ability to perform your daily living activities? very dissatisfied=1, dissatisfied=2, neither Satisfied nor dissatisfied=3, satisfied=4, very satisfied=5.

The results were converted into binary variable by computing sum of these questions. Then median was computed and Health Index (HLI) was coded as follows;

$$HLI = \begin{bmatrix} 0 \, (represting \; less \; healthy) \; if \; Sum_{ith \; respondent} < Median_{sum} \\ 1 \, (representing \; more \; healthy) \; if \; Sum_{ith \; respondent} \geq Median_{sum} \end{bmatrix} \dots (3)$$

In order to check reliability of the instrument guidelines from literature have been used [George and Mallery 2003]. Cronbach alpha for trust on individuals, confidence on organizations and health was found in acceptable range while HI, life satisfaction, Big five traits, and financial satisfaction produced results in good range.

In order to induce randomization, simple rank set sampling has been used. Rank Set Sampling can be used when we have an auxiliary variable correlated to the study variable, in this case study variable is a true/actual happiness level that is unobservable and we use HI as the closely correlated auxiliary variable. To explain RSS, it can be explained as a procedure to generalize and diversify the sample as picking up the ith minimum in the ith set where i=1, 2, m (see, Figure 1). It invites all sorts of observations in the sample hence reducing errors due to biased and skewed responses. Details specific to current study RSS procedure can be requested through email.

Figure 1: Rank Set Sampling Procedure
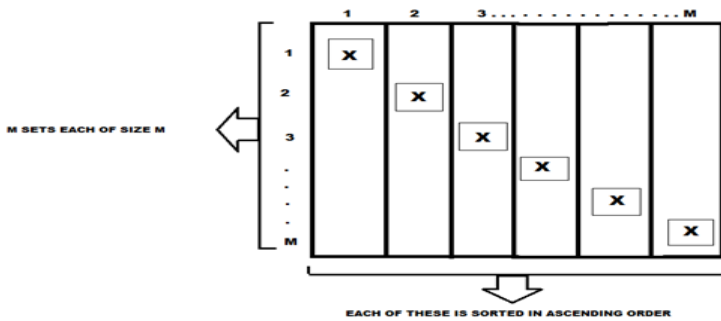
4. RESULTS

In the sample, 55.2% individuals were found to be not happy according to proposed HI while 44.8% percentage of individuals were happy respectively as shown in Figure 2. Percentages of self-reported health level are 67.9 and 32.1 for less healthy and healthier, respectively, shown in Figure 3.

Figure 2: Illustration of Sample Data Pertaining to Happiness Index

Figure 3: Illustration of Health of Respondents through Health Index
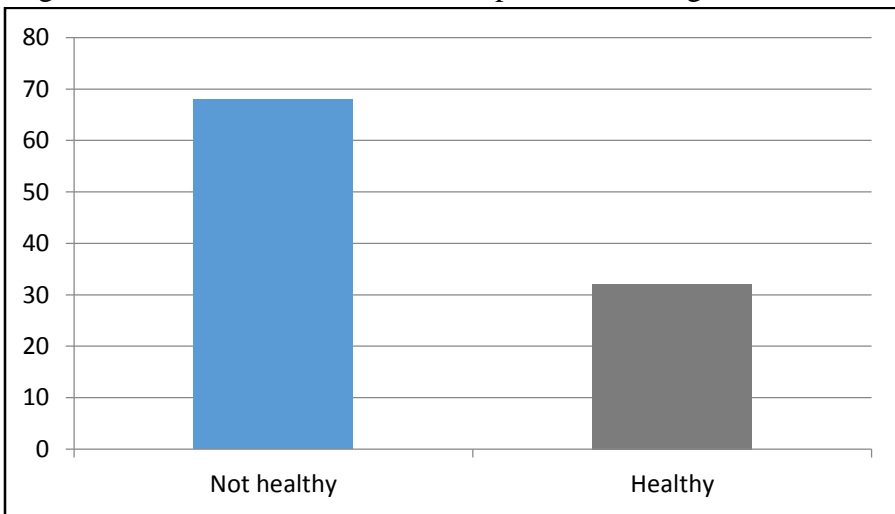
Big five traits produced the following results: Percentage of introverts, extroverts at moderate level and extroverts at higher levels are 34.5, 33.4 and 32.6, respectively. Percentages of least agreeableness, moderate, and high agreeableness are 36.4, 32.1 and 31.5, respectively. Percentages of least, moderate, and high neuroticism are 72, 18.7 and 9.3, respectively. Percentages of least, moderate, and high conscientiousness are 39.1, 30.9 and 30, respectively. Percentages of least,

moderate and high openness are 36.8, 34.5 and 28.7, respectively. Figure 4 shows the big five traits results.

Figure 4: Depiction of Respondents' Big Five Personality Traits
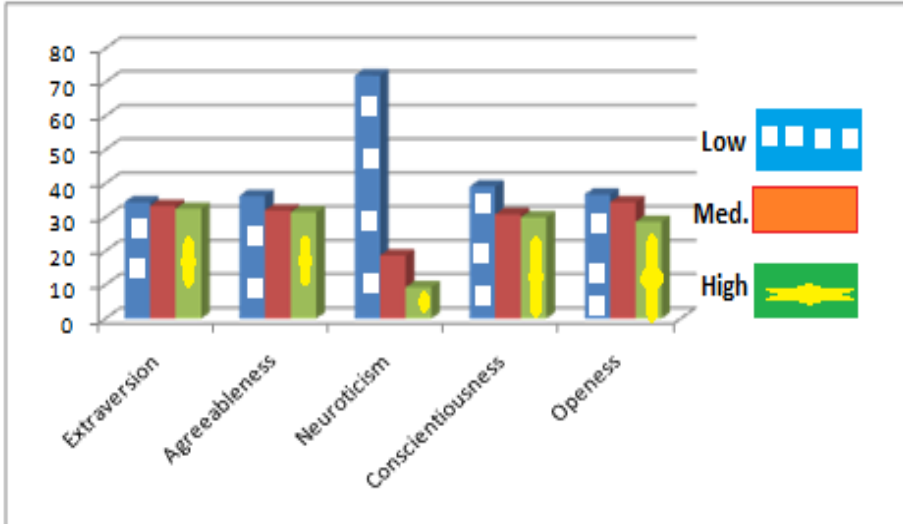
Trust is an important element that binds human beings together as a society. Overall there is lack of trust in Pakistan but in families trust level is high as 77.1% as shown, otherwise result showed the need to be careful while trusting on people while only on average 31.7% responses indicated that people can be trusted safely. Details can be seen in Figure 5. Strength of governance and institutional quality determines state's amicableness towards its citizens. Referring to Figure 6, one can see that Armed Forces have won maximum confidence while political parties need to strategize seriously as there is serious lack of confidence in them. Figure 7 shows, financial satisfaction of individuals determined by the less, and medium and high financial satisfaction levels at 32.9%, 35.8%, and 30.8%, respectively. This means that the relative share of those who are less, appropriately, and highly satisfied with their financial status is negligibly different. This demands more research in future, where actual per capita earnings are analysed in comparison with micro level happiness scores.

Figure 5: Depiction of Sample Data Pertaining to Trust on Different Networks
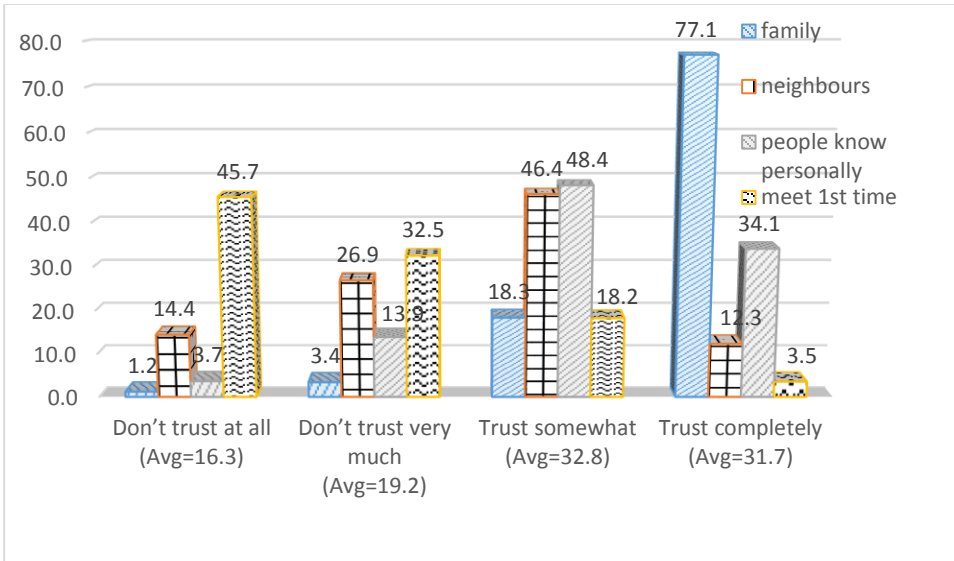

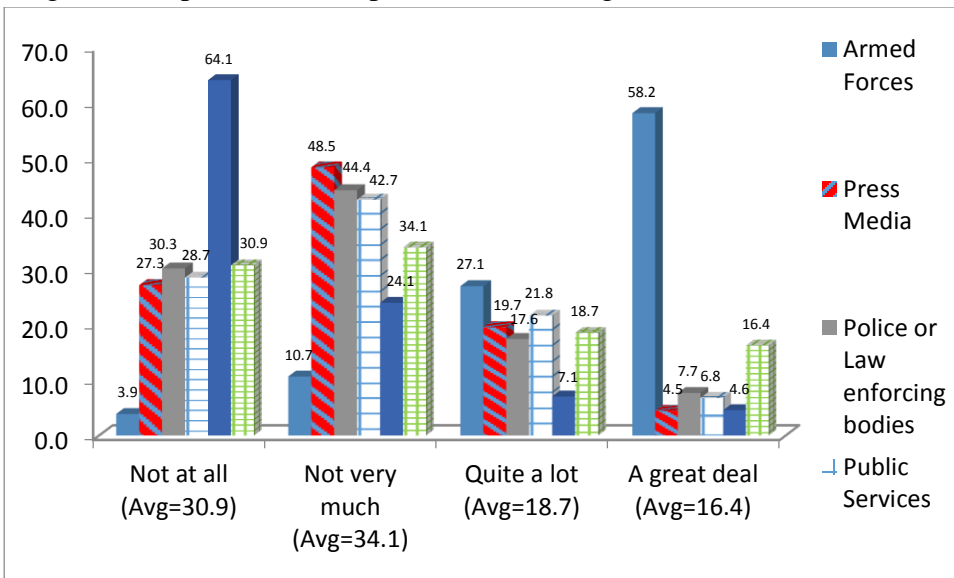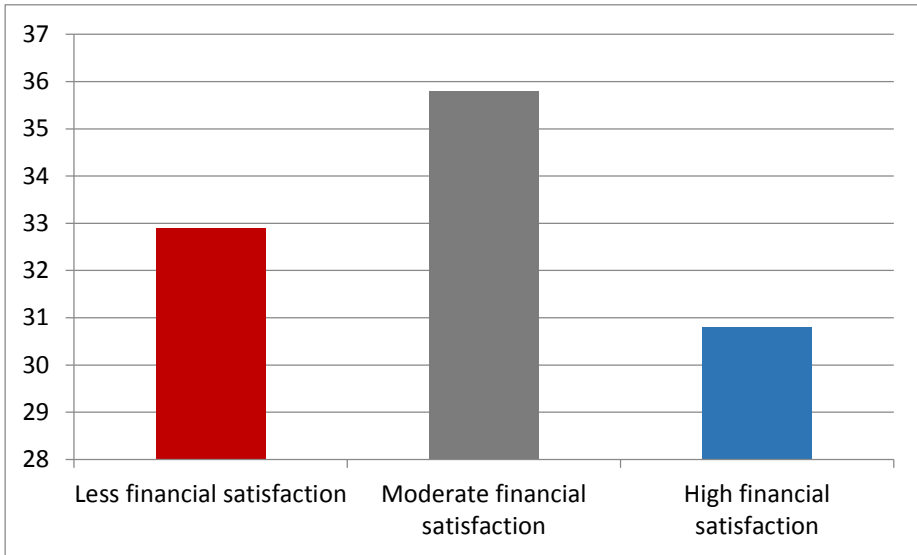Figure 6: Depiction of Sample Data Pertaining to Trust in Institutions

Figure 7: Financial Satisfaction Levels of Respondents

For categorical representation to estimate attributes of association with dependent variable, Chi-square test has been used. At a p-value of either at 5% or 10% below mentioned variables showed statistically significant relationship with HI. Extraversion, neuroticism, health, life satisfaction, economic well-being, number of financially dependent individuals in the family, trust on family, trust on neighbors, confidence on armed forces, confidence on public organizations, employment status, gender, age, financial satisfaction, and social support.

4.1.   Binary Logistic Unrestricted Model

In order to imitate the true data generating process of happiness, Logistic regression has been used by treating happiness as a binary variable as stated in Equation (4)

HI = f [age, gender, education level, marital status, extraversion, neuroticism, agreeableness, health index, life satisfaction index, financial satisfaction, trust vector, confidence vector]   … (4)

Where, confidence vector measures confidence on various institutions and is equal to (armed forces, press media, police and law, public services, political parties) and trust vector represents trust on

different social networks and is equal to (family, neighbors, people u know personally, people meet 1st time).

Hosmer-Lemeshow results showed that this model has predicted the actual happiness level, 82.6% of times.

Table 2 shows the coefficient values and significance for independent variables. Results show positive significant relationship between extraversion and happiness. Odds ratio for extraversion is 1.545 meaning thereby: as odds ratio >1 extraversion quality increases as HI increases. *Ceteris paribus*, we expect 1545 individuals who are extraverts and HI=1 as compared to 1000 individuals who are extroverts and have HI=0. As depicted by results, that if one is sociable, talkative, outgoing and not shy, he/she will feel more happy than those who are introverts and prefer being alone and reserved. Results showed that individuals at extraversion score 2 are twice as likely to be happy compared to people with extraversion at score 1.

A positive relationship between happiness and extraversion was observed. Neuroticism is positively related to happiness with odds ratio value of 1.998 with is greater than 1 showing that 1998 individuals that are neurotic are most likely that are happy. It shows that the more neurotic an individual is the happier he will be, hence positive relationship. For neuroticism, results showed positive significant relationship with HI indicating that more emotionally stable tend to be less happy compared to those who are neurotic. This result does not match with Ha and Kim (2012) findings that Big Five personality traits particularly emotional stability and happiness are positively associated indicating less neurotic, happier the individual.

There is a negative and significant association between trust in people meeting for the first time and happiness. Odds ratio is less than 1 (0.771) that means 771 individuals with more trust on strangers have decreased in happiness so more people trust stranger more likely they are going to be unhappy. We found that there is a negative association between trusting strangers and happiness. If a person seems to trust everyone they meet, ultimately they will share negative emotions after bad experiences as not everyone can be trusted.

Table 2: Unrestricted Binary Logistic Model Results

Determinant	B	S.E.	Sig.	Exp (B)
Marital status			.131	
Single	-.480	1.440	.739	.619
Married	-.433	.924	.640	.649
Separated	-1.895	1.392	.173	.150
Widowed	-1.236	.975	.205	.291
Extraversion	.435	.160	.006	1.545
Agreeableness	-.158	.163	.332	.854
Neuroticism	.687	.166	.000	1.988
Trust: family	-.132	.185	.475	.877
Trust:neighbor	-.049	.136	.718	.952
Trust: know personally	-.048	.146	.743	.953
Trust : meet 1st time	-.260	.128	.043	.771
Confidence: armed forces	.744	.141	.000	2.105
Confidence : pressmedia	-.387	.146	.008	.679
Confidence: policeandLaw	.126	.124	.310	1.134
Confidence: Public organizations.	.165	.132	.211	1.179
Confidence: Politicalparties	-.054	.139	.700	.948
Health index	.312	.216	.148	1.366
Life satisfaction			.000	
Present point	1.692	.222	.000	5.432
On the whole	-1.105	.289	.000	.331
Financial satisfaction			.058	
Not satisfied	1.154	1.742	.508	3.170
Normal	.660	.245	.007	1.934
Satisfied	.245	.249	.326	1.278
Age			.066	
18-24	2.863	1.401	.041	17.514
25-34	2.552	1.381	.065	12.830
35-44	2.510	1.386	.070	12.307
45 onwards	1.470	1.376	.285	4.349
Gender	-.370	.212	.080	.690
Education			.490	
Primary	-.972	.813	.232	.378
Secondary	-.238	.418	.569	.788
Tertiary	-.239	.229	.297	.788
Constant	-6.174	1.689	.000	.002

Confidence in press media tends to have a negative impact on happiness, as more you believe in media it will impact HI. Its odds ratio is less than 1 showing that increase in trust level on media is likely to decrease happiness of its viewers. Confidence in armed forces has positive and significant association with happiness with odds ratio of 2.105 that is >1. This is interpreted as 2105 individuals who reported to have confidence in armed force are happy compared to 1000 who are unhappy. In previous studies, Hudson (2006) found a positive relationship between well-being and trust in institutions, such as the law, the national government, and the UN among EU member countries. Our results also showed positive relationship with armed forces in unrestricted model and weak positive significant for public services but still not true for all institutions in case of Pakistan as no significant impact of political parties and police on happiness of individuals.

Life satisfaction and happiness are strongly positively correlated with odds ratio of 5.432 but decreasing as life satisfaction increases. *Ceteris paribus*, at low satisfaction level 5432 individuals are more likely to be happy as compared to base category (i.e., high satisfaction). Similarly, for moderate life satisfaction, 331 individuals are likely to be happy as compared to base category at high satisfaction with life. This result shows that life satisfaction is decreasing with increase in happiness for high level of satisfaction. From what we know or have studied, life satisfaction and happiness are synonyms for subjective well-being.

Age has significant association with happiness; 17514 individuals that are within age range 18-24 are more likely to be happy than the base category age 15-24. Odds ratio decreases as age increases showing middle age people are less likely to be happy than old people. In literature review, Selim (2008) found that age has negative effect on happiness and life satisfaction compared to base category of age 15-24. Older people are less happy than youngsters. These findings corroborate with Selim (2008) as age has a significant association with low age group individuals with odds ratio of 17.514 depicting increase in happiness at lower age as compared to the base category. Odds ratio decreases as age increases showing middle age people are less likely to be happy than old people.

4.2.   Rank Set Sampling (RSS) Regression

For RSS we found that the variables significant in logistic regression were also found out to be significant in rank set sampling model. We also found that trust in family was found to be significant in RSS model whereas it was insignificant in logistic model. RSS results theoretically explain the trust in family members has a significant impact on happiness. All other variables were found significant in RSS mode as in logistic model showing that even in random sample the results are similar showing our full sample of 763 is random with having no such discrepancies in results.

Findings of current study are in agreement with Ha and Kim (2013), Selim (2008), Kalyuzhnova (2008), Mehmood and Shaukat (2014), Ali and Haq (2006), and Tariq (2012).

5.   CONCLUSION AND POLICY IMPLICATIONS

In this paper, we estimated the determinants of happiness in Pakistan. Results showed significant relationship of HI with extraversion, neuroticism, trust in family, trust in strangers, confidence on armed forces and press media, life satisfaction, moderate financial satisfaction, and age group of 18-24 years. This study can be further continued with longitudinal study of happiness over the years; efforts could be done to have a large survey sample to get insight on insignificant variables. We can also find association of all independent variables and life satisfaction index through multinomial regression or binary regression. Rank set sampling technique can be applied with bigger sample size. This research can also estimate the relationship between happiness through multinomial regression by taking happiness into categories. Further study could be done on finding determinants of happiness at macroeconomic level including impact of religiosity and national security (terrorism) on happiness of citizens of Pakistan.

In terms of Policy implications, happiness index should be used as national variable in economy to see the impact of macro and microeconomic variables on happiness which will indicate the satisfaction of individuals with life and society on whole. Gross national

happiness index can be used for policy decisions to incorporate utility through happiness of citizens in public sector in Pakistan. Happiness index can serve the role of a watchdog that measures the impact of governmental policies and projects on the general masses, however, the essence of the index will remain prudent if it is measured by a team of independent researchers so that there is no conflict of interest. Real-time trend analysis of the happiness index will enable various political parties to see the segments of society they have been able to feel better through their policies. The study further guides the masses that economic well-being is not an important determinant of happiness, hence the study hints towards the concept of contentment. One of the contributions of the present study is to help people realize that materialistic gains are just a mundane affair; in order to feel happy one has to think positively for self, institutions, and society.

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