

## Wellbeing and Informal Institutions: An Empirical Analysis<sup>15</sup>

Dr. Anwar Shah<sup>16</sup> and Saeeda Yasmeen<sup>17</sup>

### Abstract

*The study investigates the relationship between informal institutions and wellbeing. We find in the literature work related to formal institutions and wellbeing. However, the studies related to informal institution and wellbeing are rare. Formal institutions are rules and regulations which are well defined and aims for achieving some objective in the society such as police, judiciary, government etc. In the other hand informal institutions are rules which are not documented but observed in the society for long and have social approval. It is assumed that strong formal and informal institutions increase efficiency and productivity of individuals and societies by lowering transactions cost. For empirical analysis of relationship between informal institution and wellbeing we use primary data conducted under Divine Economics Survey 2017. This survey has been conducted in 2017 in Azad Jammu and Kashmir and in various cities of Pakistan. The survey has many sections however we use the section about institutions and the basic information. Our response variable is wellbeing and measured by single satisfaction question. Because our response variable is discrete in nature and have more than one category so ordered logit model is used. Results show a positive and significant effect of informal institution on wellbeing while controlling for other variables. Findings about other control variables are in line with previous studies.*

**JEL Classification:** C43, Q18

**Key Words:** Divine Economics, Wellbeing, Informal Institution

### 1. Introduction

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<sup>15</sup> Copy rights are reserved with authors

<sup>16</sup> Assistant Professor Quaid-e-Azam university Islamabad

<sup>17</sup> MPhil Scholar Quaid-e-Azam university Islamabad

Wellbeing is a dynamic and broader concept and there is much debate on the definition of wellbeing from the time of Aristotle to the present day. A large number of thinkers and researchers have tried to explain the concept of wellbeing. The historical literature provides two approaches for explaining wellbeing. Currently there is consensus among researchers that wellbeing is a multi-dimensional construct (e.g., Stiglitz, Sen, & Fitoussi 2009; Diener, 2009; Michaelson, Abdullah, Steuer, Thompson, & Marks, 2009). In brief, well-being can be defined as feeling good and positive judgment of life. Wellbeing of individuals and societies can be maximized by adopting suitable policies.

Wellbeing can be assessed by two different ways subjective wellbeing and objective wellbeing. Wellbeing assessed through variables based on perception and feelings is defined as subjective wellbeing while wellbeing not based on perception and feelings is objective wellbeing. Subjective wellbeing is basically psychological concept and measured by self-reports and excludes the material aspects of wellbeing while objective wellbeing includes observable facts which could be economic and other sociodemographic factors that affect individual welfare.

Human wellbeing has gained rapid popularity in economic literature during recent years. According to Easterly (2004), since centuries, philosophers and theologians have been discussing the concept of wellbeing but currently it gained popularity in social sciences, especially in psychiatry. We have an increasing interest in the economics of wellbeing and volume of literature is available in economics and other social sciences on this topic. Some researchers have examined the different factors that influence or determine wellbeing such as income (see for example Eggers & Sukhtankar, 2004; Carbonell, 2005; Haller & Hadler, 2006; Johnson & Krueger, 2006; Clark, Frijters and Shields, 2007; Akay A. and Martinsson P., 2011; Garcí'a et al. 2016), health (e.g Vermaat et al. 2006; Pierewan & Tampubolon, 2015), education (e.g. Cunãdo & Gracia, 2012), employment (Bardasi E. & Francesconi M., 2004), religion (Park et al., 2014), trust (Feng et al., 2016; Churchill & Mishra, 2016) etc. In economics, evolution of wellbeing starts with the well-known work of Easterlin (1974, 2002). He concluded that an increase in income does not

contribute in happiness. When the income increase at a subsistence level then it has a diminishing role in the contribution of wellbeing.

Non-economic factors also have Impact on wellbeing (Frey and Stutzer 2002). Studies show that there is inverse relationship between age and wellbeing while age squared has positive association with wellbeing (see for example Blanchflower & Oswald, 2004a; Ferreri-Carbonell, & Gowdy, 2007). Different studies also examined the issue of social capital and its dimensions as determinant of wellbeing. Social capital has positive association with individual wellbeing (Portela et al.2013, Menon et al 2015).

We can observe from the above discussion that scholars/researchers have explored the role of various factors in determining however we find little attention on the role of institutions especially informal institution on wellbeing. According to North, (1990, 1991) institutions are the humanly devised constraints that structure political, economic and social interaction and include both formal institutions and informal institutions. Formal institutions or rules are property rights, constitutions and laws whereas Informal rules or institutions are traditions, sanctions, codes of conduct and customs. According to North (1991) informal institutions are part of our culture while formal institutions are developed by the state.

Formal rules determine the economic system (i.e., contracts and property rights), political system (i.e., individual rights and the governance structure), and the enforcement system (i.e., the police and the judiciary). Formal rules are enforced by different means of sanctions such as execution, fines, and imprisonment. On the other hand Informal rules involve through various mechanisms such as teaching, oral tradition and imitation from one generation to another and are enforced by sanctions such as loss of reputation, ostracism by neighbors and friends and social exclusion. As North (1990) illustrate, institutions play role in maintaining order and minimizing uncertainty.

Strong formal and informal institutions are necessary for higher wellbeing of individuals. If formal institutions like police, judiciary and markets are strong then demand of different goods and services such as justice from courts and high quality good from market will satisfied easily. All this will increase the wellbeing of individual. Similarly if informal institution like family, friend, and neighbourhood are strong people will enjoy variety of

goods and services which increase their wellbeing by saving time and money. We find work on the effects of formal institutions on wellbeing (Dreher C.B.A. & Fischer J.A.V. 2010; Rode, 2013; Wicher J.2014; Spruk R. and Kes̄eljevic A.2016) however, there is a room for examining the impact of informal institutions on wellbeing. This research aims to fill this gap and provide empirical evidence related to the impact of informal institutions on wellbeing.

The rest of the paper is organised as follows; Section 2 presents literature on socioeconomic and demographic factors of wellbeing and then highlights the role of institutions on wellbeing. This chapter also provides the literature on the measurement of wellbeing. Section 3 discusses theoretical framework and methodology Section 4 explains result. Section 5 presents conclusion, and policy recommendations.

## **2. Review of literature**

Human wellbeing has gained rapid popularity in economic literature during recent years. There are number of articles that appeared in journals of mainstream economics focusing on subjective wellbeing (SWB) and its determinants. I have considered all papers from economics and other social sciences and arranged its review under the following two sub categories :( 1) Literature on socio-economic determinants of wellbeing, (2)Literature on institutions as determinant of wellbeing and

### **2.1 Literature on socio-economic determinants of wellbeing**

There is vast literature on the role of socio-economic and demographic factors on the subjective wellbeing. Dolan et al. (2008) provides review of literature on wellbeing and its determinants. This review suggests that separation, poor health, lack of social contact and unemployment have strong negative correlation with subjective well-being. There is extensive literature on income and wellbeing. The concepts of absolute income, relative income and comparison income are used in the literature.

Absolute income has positive effect on subjective wellbeing (Blanchflowera and Oswald 2004; Carbonell 2005; Connell, 2004; Garcı́a et al., 2016; Akay A. and Martinsson P., 2011; Ngoo et al., 2015; Hooghe and Vanhoutte, 2011).Health and education has positive impact on wellbeing while male gender, being single, urbanization, and unemployment negatively affect the wellbeing

(Gerdthama and Johannesson, 2001; Graham et al., 2004; Blanchflower and Oswald 2004; Lipovčan L.K. and Larsen Z.P., 2016, Graham and Pettinat, 2000; Bjørnskov et al., 2008; Vermaat et al., 2006; Bardasi and Francesconi ,2004; Yakovleva and Leguizamon, 2012; Cun˜ado and Gracia, 2012).Religiosity has significant positive association with wellbeing (Dilmaghani, 2017; Tiliouine and Belgoumidi, 2009; Sahraian et al., 2013). Similarly, social capital has a strong positive influence on wellbeing (Portela et al., 2013; Menon M. et al., 2015). Age and wellbeing has curvilinear relationship (Blanchflower and Oswald, 2008). **2.2**

### **Literature review on institutions and wellbeing**

Economists have explored to understand the potential causes of human prosperity and social progress since the time of Adam Smith when economics emerge as a distinct subject. Classical economists give particular emphasis to public policy, rule of law and the institutions in framing economic progress, human prosperity and well-being. In the twentieth century when neo-classical growth model developed economist stressed that human and physical capital is important factor in the explanation of development and wellbeing.

Theories developed by Neo-classical economists and conducted research and developed models on these theories ignore the role of institutions. Debate on role of institutions in development and wellbeing started in 1990. Noble Laureate Douglas North in 1990 highlighted the role of institutions in framing human interactions and political and economic incentives. Theory of institutions and economic progress presented by North has influential impact on social sciences in the measurement of legal, economic and political institution. There is vast literature in economics on the causal relationship between institutions and economic performance measured by individual income and GDP. However, the concept of wellbeing is multidimensional and it does not incorporate only economic health of the economy but also include factors such as health, education, civic engagement, social networks, community values, safety, freedom, and psychological well-being and its various sub-domains; including happiness, life satisfaction, self-esteem, optimism, negative and positive emotions and positive engagement. Most recent studies in the economics and other social sciences have started analyzing the association between cultural and formal institutions and different objective and subjective wellbeing measures.

Studies have examined the association between various measures of institutional quality and economic growth and development. These measures include economic freedom, property rights, civil liberties and democratic institutions, rule of law and different political constraints (e.g., Henisz, 2000; Frey and Stutzer, 2000a; Ovaska and Takashima, 2006; Helliwell, 2006; Dorn et al., 2007, 2008; Helliwell and Huang, 2008; Bjørnskov et al., 2008a Blume et al., 2009; Helfer H.,2016; Acemoglu and Johnson, 2005; Williamson 2009; Dorn et al. 2007; Spruk and Kes̄eljevic A. 2016; Dawson 2003. Acemoglu et al. (2005) analyzed empirically and theoretically that difference in economic growth is basically due to economic institution. Similarly, Casson et al. (2010) presented review of the literature on influence of institutions in economic development and institutional change. They basically introduced variety of papers on this issue in this study and also discussed the role of informal and formal institutions in development process and role of informal institutions in the formal ones. Using life satisfaction and happiness as indicators of happiness in a study by Wicher (2014) attempted to find the impact of institutions on sustainability. Study found Positive association between sustainability and institutions by using Random effect model and pooled OLS regression. In a study Marošević et al.2013) discussed the importance of institutions on economic growth. Author especially focused on the importance of informal institutions. Informal institutions have strong impact on growth and development of country irrespective of formal institutions. It is observed that countries having weak formal but strong informal institutions achieved high level of growth and development. Dreher & Fischer (2010) examined the impact of quality of formal institutions on national happiness. It is found that formal institutions quality has positive impact on national happiness. Tsai (2011) presented a critique on Stiglitz-Sen-Fitoussi report from institutional point of view and suggested that there is need to investigate the relationship between wellbeing of individual and institutions in broader context. Zafirovski (2000) discussed differences between economic institutionalism and sociological institutionalism. Both types of institutional approaches are different in their domains assumptions, and methodologies. Author focused on comparative analysis of both type of institutionalism in general and particularly analyzed integration of social and economic approaches to legal institutions.

In a study Jalil and Rabab (2016) explored the relationship between trust and economic growth of developing countries. Empirical results suggest positive relationship between trust and economic growth. Churchill S.A. & Mishra V. (2016) analyzed the relationship among social networks, trust and subjective wellbeing in China. They examined the role of trust and social networks as elements of social capital on wellbeing. Findings suggest that trust and social capital has not strong effect on wellbeing than effects of income. These findings are contradictory to existing literature. Churchill S.A. & Mishra V. (2016) analyzed the relationship among social networks, trust and subjective wellbeing in China. Findings suggest that trust and social capital has not strong effect on wellbeing than effects of income. These findings are contradictory to existing literature. Puntischer et al. (2015) analyzed the determinants of both these types of subjective wellbeing. Author comes with findings that associational activity and institutional and social trust have positive significant association with subjective wellbeing. Overall, findings suggest that social integration and interaction is more important for wellbeing than monetary factors European Union. Married people are happier than unmarried people (Vanassche et al. 2013; Chapman and Guven 2016). Botha and Booysen (2014) examined the relationship between different levels of family functioning and life satisfaction and individual happiness. Strong relationship found between better family functioning and higher life satisfaction. Good relationships among family members are beneficial for life satisfaction and happy life. Becchetti and Pisani (2014) focused on the determinant of life satisfaction of young people. Trust on family and friends both are positively and significantly related to life satisfaction of young people. Our work is different from this study in the way that we consider trust on family and friends as informal institutions and use both these variables for making informal institutions index with many other informal institutions. In addition, our respondents are not only students but all people from different fields of life. The literature on wellbeing mentioned above shows various socio-economic and demographic factors as determinant of subjective-wellbeing. Economist and researchers from other social sciences examined the relationship of these factors with wellbeing over time. Formal institutions are also studied as contributor of growth, development and wellbeing. These all factors are important for enhancing wellbeing but the literature about the role of informal institutions is scarce up to our knowledge. The current study contributes in the existing literature by incorporating the role of informal institutions on wellbeing. The study empirically shows that trust on informal institutions has significant and positive effect on wellbeing.

### **3. Theoretical Framework and Methodology**

#### **3.1.1. Theoretical framework about informal institutions and wellbeing**

The concept of wellbeing is widely discussed in economics as well as other social sciences. There is volume of empirical as well as theoretical studies which discuss the impact of socio-demographic and socio-economic factors on individual wellbeing. Similarly some studies highlight other determinants of wellbeing such as religiosity, spirituality, morality and ethics. However, institutions also have a role in determining the wellbeing of people. This role of institution in wellbeing is studied in institutional economics. Research on institutions and wellbeing relationship is developed by Douglas North, the founder of institutional school. According to North (1990, 1991) institutions are the humanly devised constraints that structure political, economic and social interaction. The literature highlights and discusses different socio political phenomena as informal institutions. The concept has been used to identify different facets of personal networks, traditional culture, civil society and a variety of judicial, bureaucratic and legislative norms.

#### **3.1.2. Link between informal institutions and wellbeing**

Over the time, theoretical relationship between institutions and wellbeing and the effect of institutions on wellbeing has got rapid importance in economics and psychological literature. The impact of institution on wellbeing is captured through trust on institutions. Trust is defined differently in different fields. Blomqvist (1997), in a study highlighted the definitions of trust presented in the field of economics, philosophy and psychology. Following definitions of economist and psychologists about trust are taken from Blomqvist (1997). According to Rotter (1967) "An expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon". Sabel (1990) concluded that "The mutual confidence that no party to an exchange will exploit the other's vulnerability". The advantage of trust is that it reduces time and money cost of a transaction, hence individuals in a society enjoy more goods and services with low level of expenditure. Hence, trust is a capital and asset of society and bears the characteristic of public good. Higher is this capital, higher is the wellbeing of people in a society. This is the reason that in our research we examine trust on formal



and informal institutions as an indicator of wellbeing. We know that formal institutions include media, government, non-governmental organizations, defense institutions, public and private schools, public and private hospitals, and international organizations such as U.N.O, judicial institutions hygiene institutions and religious organizations while Informal institutions include family, neighbor, mosques, religious or spiritual leaders, and strangers. We assume that societies having high level of trust on institutions such as government, judiciary are likely to be more prosperous and happy than societies having lower level of trust. The opportunities of investment and innovation are higher as transactions costs are lower in such type of societies. Likewise, provision of goods and services such as better quality products from the markets and justice and peace from courts and police is easy and people make optimal and long term decisions about investment in such societies. Similarly, when people trust on informal institutions they get different goods and services such as peace, respect, security, dignity, hospitality, money and time help at the time of emergency, free labor, free advice/consultancy, free sharing of intergenerational experiences, which enhance their happiness and save money and reduce time cost.

Family is an important societal institution. Strong family relationships and family institutions are necessary for social and economic development. As a basic social unit family institution is important because it prepares and produces human capital for national growth and development. Strong family institution supplies good and useful citizens while a problematic, broken and weak family supplies citizens which becomes headache for society. Trust on family increases interaction and connection among family members. All family members work for benefit of each other and enhance the individual wellbeing. Previous research on family and wellbeing suggests that individual wellbeing is positively related with healthy relationships of family or increasing interaction among different members of family (e.g. Martin & Westerhof, 2003; Lelkes, 2006; Pichler, 2006).

Similarly, neighborhood is also important institution. It plays role in the wellbeing of individual.. An individual having good neighbor will be satisfied because his family and kids remain safe when individual on his work and get late due to some reason. In the presence of good neighborhood one does not worry about theft. Due to trust some working women prefer neighbor for their babies than day care center. Individual feels mental satisfaction when not at home. They cooperate with each

other in the moments of pleasure and grief. All this increase the wellbeing of individuals and society and reduces the transaction cost.

Friendship also has important role in fostering wellbeing. Often it is noticed that people having good friends have higher level of self-confidence. Good friends provide help in case of traumas such as serious illness, divorce and job loss. All these benefits jointly increase our wellbeing. Literature shows that socializing with friends has positive association with subjective wellbeing (e.g. Lelkes, 2006; Pichler, 2006).

### **Scientific hypothesis**

**H0:** Trust on institutions do not affect wellbeing of individual.

**H1:** Trust on institutions affects the wellbeing of individual.

## **3.2. The Model**

Keeping in view the all previous model developed for studying happiness, life satisfaction or wellbeing, the following model in more general form is developed for studying the impact of institutions on wellbeing:

$$WB = f(I, F, Z)$$

Where WB is referred to self-reported wellbeing or happiness as usual measured by responses against single question on happiness or life satisfaction. Life satisfaction question is asked as follows:

How satisfied are you with your life as a whole at present?

Scale for responses of the above mentioned life satisfaction question is set as 0 to 10. Where 0 for completely unsatisfied and 10 for completely satisfied. I stand for index of trust on informal institutions and F is for trust on formal institution index and Z is a set of socio-demographic and socio-economic variables. Econometric model from this information can be formed as below:

$$WB = \alpha + \beta_1 \text{Age} + \beta_2 \text{AGE}^2 + B_3 \text{GND}_i + \beta_4 \ln(\text{INCM}_i) + \beta_5 \text{EDU}_i + \beta_6 \text{HLT}_i + B_7 \text{FM} + \beta_8 \text{TFII} + \beta_9 \text{TIFII} + \epsilon_i$$

Where WB is wellbeing

TFII is index for trust on formal institutions.

TIFII is index for trust on informal institutions.

GND is gender of the  $i^{\text{th}}$  respondent.

EDU is for education of  $i^{\text{th}}$  individual.

HLT is health of  $i_{\text{th}}$  individual.

$\ln(\text{INCM})$  is natural log of income of  $i^{\text{th}}$  respondent.

$FM$  is family status of the  $i^{\text{th}}$  individual.

$\epsilon_i$  is error term and from  $\beta_1$  to  $\beta_9$  are slope coefficients for Age, Age2, GND,  $\ln(\text{INCM}_i)$ , EDU, HLT, FMST, TFII and TIFII respectively.

The main variable of interest is trust on informal institutions. The rest of the variable are controlled variables. Health, education, and income are entered in the model with expected positive sign. The rationale behind this positive sign is that absence of illness and good physical health leads to mental satisfaction and wellbeing. Poor health condition lowers the wellbeing of the individual despite the higher level of income and other fulfillment of needs. Education has positive effect on wellbeing because individual having higher education has more probability to earn more income and attaining higher level of wellbeing and this is indirect effect of education on wellbeing. Income is positively associated with wellbeing because with more money and income an individual can fulfill his /her all material needs.

Marital status has effect on wellbeing of individual. Married people are happier than single people because an individual share his feelings, sorrows and happiness with his/her spouse. Family status is measured by single set up and joint family system. Married couples living in separate home or single set up have higher level of satisfaction than those living in joint family structure. Formal institution enters in the model with expected positive sign. Rationale behind this positive sign is that better formal institution provides better facilities of provision of goods and services like health, education and justice etc. Provision of goods and services having high quality increase the satisfaction and wellbeing of individual and society. Informal institution index in our model is comprises of trust on self, family, friends, neighbor, strangers and trust on religious scholars. Trusts on informal institutions positively affect the wellbeing of individual and society. The rationale behind this positive relationship between trust on informal institution and wellbeing is that trust on family members, relatives, friends and neighbor decrease various types of transaction cost, thus increase wellbeing. This is due to the fact that people work for each other without any demand for monetary value. These non-monetary benefits for individual increase the wellbeing of individual.

### 3.3 Data

To test the relationship between informal institutions and wellbeing, we collect Primary data through divine economic survey 2017. This survey is conducted in different districts of Azad Jammu & Kashmir (AJ&K) as well as in Pakistan. We use the data collected from four districts of AJ&K

named as (1) Muzaffarabad, (2) Neelum, (3) Athmuqam, (4) Kotli. The main questionnaire comprises of 12 pages, 10 sections and 46 questions. The total number of observations is 160. Section 1 of the questionnaire contains basic information of respondents and we use this information as control variables in the estimation. The control variables from this information are gender, health, education, income and Family status. Section F includes institutions (formal and informal). Data for formal and informal index is taken from this section. We use principal component analysis for making index of trust on formal and informal institutions and these indices vary from person to person. A description of all variables is present in the following table.

**Table: 3.2.1 Description of variables used in the analysis**

Sr.No	Variables	Description
1	WB	Wellbeing is measured by life satisfaction scale of 1 to 3. 1 for completely unsatisfied and 3 for completely satisfied.
2	TFI	Index of trust on formal institutions comprises on twelve items. <sup>18</sup>
3	TIFII	Index of trust on informal institutions comprises on seven items. <sup>19</sup>
4	GND	Gender of the $i^{\text{th}}$ individual. A dummy variable which takes the value 1 for male respondent and 0 for female respondent
5	HLT	Health of the $i^{\text{th}}$ respondent .A discrete variable takes the values 1 for Disappointed 2 Very Poor 3 for Poor 4 Fluctuating 5 Good 6 Very good and 7 for perfectly satisfied.
6	EDU	Education of the $i^{\text{th}}$ respondent. Education is measured in years of schooling like 16 years for master and 14 for graduation.
7	lnINCM	Natural log of basic income of the $i^{\text{th}}$ respondent. Income is measured in rupees.
8	FM.S	Family status of the $i^{\text{th}}$ individual. 1 for nuclear family and 0 for joint family system.
9	AGE	Age of the $i^{\text{th}}$ respondent and measured in years.
10	AGE 2	Age square of the $i^{\text{th}}$ respondent.

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<sup>18</sup> Items used in the formal institution index are media, government, non-governmental organizations, defense institutions, public and private schools, public and private hospitals, and international organizations such as U.N.O, judicial institutions, hygiene institutions and religious organizations.

<sup>19</sup> Items used in the trust on informal institutions index are family, friends, neighbor, religious or spiritual leaders, people of other sect religion and strangers.

### 3.4 Estimation procedure

The precise observation of individual wellbeing is difficult although and not possible because wellbeing is a discrete concept and contains ordered categories in our questionnaire. The question for the wellbeing is “How satisfied are you with your life as a whole?” Scale for responses of the above mentioned life satisfaction question is set as 0.....10. Where 0 for completely unsatisfied and 10 for completely satisfied. We collapse this likert scale into three categories for simplicity and due to some measurement issues; 1, 2 and 3 where 1 for completely unsatisfied and includes 0.....3 categories of responses in the questionnaire. Category 2 includes 4...6 categories of likert scale and 3 for completely satisfied and categories 7...10 are merged in this category. For the measurement of such discrete and ordered categorical variable ordered logit and probit model are used. Some studies on the wellbeing used ordered logit and probit model while other used simple ordinary least square (OLS) because explanation of OLS results is easy. For example, Frey and Stutzer (2000) examined well-being and number of socioeconomic and socio-demographic control variables using ordered probit. Ferrer-iCarbonell and Frijters (2003) illustrate that happiness equation can be estimated with ordinal approach as well as cardinal approach and both kind of approaches provides same result and this allow to apply the OLS technique compared to ordered logit or probit. In our study dependent variable is wellbeing. Measure of satisfaction is used for wellbeing and satisfaction is measured by a single question. Since responses against this question are in ordered and categorical form we use ordered logit model for empirical analysis.

## 4. Results and Discussion

### 4.1 Descriptive Statistics

This section deals with descriptive statistics. This statistics basically gives us insight about measures of central tendency e.g. mean, standard deviation, minimum and maximum values of every variable. The results are presented below in table 4.1.1.

**Table 4.1.1 Descriptive Statistics**

Variable	N	Mean	S.D	Minimum	Maximum
Age	160	49.2125	13.60373	26	90
Education	160	7.74375	4.432934	0	16
ln Income	160	9.833075	.6839352	7.600903	11.51293
TFII <sup>20</sup>	160	.1070325	1.054511	2.384981	2.899117
TIFII <sup>21</sup>	160	.1141376	1.071705	-2.48432	-2.086898

## 4.2 Reliability Analysis

Trust on Formal and informal institution indices are used in regression analysis. Trust on formal institution and trust on informal institution indices comprises of twelve and seven items respectively. The Reliability analysis of these indicators is checked by using Cronbach's Alpha. If Scale Reliable Coefficient is greater than 0.60 then scale is reliable and consistent. In our case Cronbach's Alpha value is 0.820 for trust on informal institution Index and 0.704 for trust on formal institution Index. Our Indices are reliable and consistent. Result of Reliability Statistics are presented in the following table 4.2.1.

**Table 4.2.1 Reliability Statistics for formal and informal institutions**

Indices	Cronbach's Alpha	No of items	Means	F-Statistics	Sis.
TFI Index	0.704	12	3.112	75.348	0.000

<sup>20</sup> TFII is trust on formal institutions index.

<sup>21</sup> TIFII is trust on informal institutions index.

TIFI Index                      0.820                      07                      2.963                      200.411                      0.000

**Table 4.3.1 Correlation analysis**

	Wellbeing	Age	Age2	Gender	Health	FM	Edu	LnY	TFII	TIFII
Wellbeing	1.000									
Age	-0.0368	1.000								
Age2	-0.0078	0.98	1.000							
Gender	0.0212	-0.11	-0.09	1.000						
Health	0.2106**	-0.26	-0.27	0.0733	1.000					
FM	0.1006	-0.19	-0.20	-0.068	0.1420	1.000				
Education	0.1936*	-0.15	-0.15	0.1194	0.0853	0.017	1.000			
LnY	0.2886**	0.043	0.041	0.0243	0.0257	-0.151	0.2215	1.000		
TFII	0.1865*	0.086	0.082	0.0844	-0.036	0.178	-0.0009	-0.017	1.000	
TIFII	0.3087**	0.124	0.124	0.0682	0.2836	0.228	-0.0479	0.061	0.431	1.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 4.3 Correlation Analysis

This section presents and explains the correlation analysis among wellbeing measured by satisfaction and different socio-demographic variable and index of trust on formal and informal institution. Table 4.3.1 highlights the correlation analysis.

\*. Correlation is significant at the 0.05 level (2-tailed).

The analysis about correlation shows positive and significant association between trust on formal institutions index and wellbeing and similarly between trust on informal institution index and wellbeing. Results show positive direction between trust on formal institution index and wellbeing at 1% level of significance. Our variable of interest i.e. trust on informal institution index has 30% positive correlation with wellbeing at 1% level of significance. Health and education shows 21 % and 19 % positive correlation with wellbeing at 5% level of significance. Variable income has 28 % correlation at 1% level of significance. Age shows negative

correlation while age square, gender and family status shows positive correlation with satisfaction.

#### 4.4 Regression Analysis

For testing model specification we have performed the “Link test”. The null hypothesis in our analysis of model specification is that model is correctly specified. The probability value of link test in our analysis is greater than 0.05 and it explains that we are unable to reject our null hypothesis.

**Table 4.4.1 Model specification Test**

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**Link Test. H0: Model is correctly specified**

Satisfaction	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
_hat	1.668434	.760258	2.19	0.028	.1783561	3.158513
_hatsq	-.0803767	.0874847	-0.92	0.358	-.2518436	.0910902
cut1	2.291352	1.508329				
-.664919	5.247623	cut2	5.192405	1.628522		
2.000562	8.384249					

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Log likelihood = -109.18906	Pseudo R2 = 0.1864
Number of obs = 160	LR chi2(2) = 50.04
	Prob > chi2 = 0.0000

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**Table 4.4.2 Ordered Logit Results Of Base line model**

Satisfaction is dependent variable

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Variable	Coeff.	S.error	Z	Sig.
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Age	-0.2764659	0.10627	-2.72	0.007
Age2	0.0025849	0.0009679	2.67	0.008
Gender	-0.7512253	0.7807386	-0.96	0.336
Health	0.2477376	0.1401956	1.77	0.077
FamilyStatus	0.2891111	0.3954234	0.73	0.465
Education	0.0808018	0.0420457	1.92	0.055
lnY TFII <sup>22</sup>	1.011605	0.2791137	3.62	0.000
TIFII <sup>23</sup>	0.3956793	0.1969393	2.01	0.045
Cut1	0.4887029	0.2025642	2.41	0.016
Cut2	1.080364	3.757267		
	3.900299	3.764413		

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Log likelihood = -109.5872

Number of obs = 160

LR chi2(9) = 49.25

Pseudo R2 = 0.1835

Prob > chi2 = 0.0000

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Results of base line model are presented in above table after performing ordered logit regression. Coefficients of logit model are not directly interpretable as in OLS but just tell us the direction of relationship whether positive or negative relationship exist. In OLS rate of change is same while in Ordered logit rate of change is different on all points. For explanation we derive marginal effects or odd ratio and these marginal effects or odd ratio can be explained like OLS coefficients. Before interpreting the marginal effects we test two basic assumptions relevant with ordered logit model. One is assumption of same threshold levels or same intercept and another is assumption of parallel regression or same slope. For testing assumption of same threshold level and parallel regression we have applied the Wald test and brant test respectively. Wald test is used on 3 threshold levels in ordered logit regression. The test is applied to check that our reasoning of outcomes of dependent variable is significant or not. Our null hypothesis is that intercepts of regressions are same. As probability is less than 0.1, we can reject null hypothesis of same

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<sup>22</sup> TFII is trust on formal institutions index.

<sup>23</sup> TIFII is trust on informal institutions index.

intercepts and conclude that intercepts are not same and ordered logit model is correctly specified. Table 4.4.3 shows the results of Wald test on 3 threshold levels in ordered logit regression.

**Table 4.4.3 Wald Test on Threshold levels**

Threshold Cuts	Significance level
Ho : Cut 1 = Cut 2	chi2 ( 1) = 54.30
Prob > chi2 = 0.0000	

After concluding that both intercepts are not same we turn toward assumption of parallel slope. This assumption implies that slope for each regression is same. Result from oparallel command from using STATA are presented in the table 4.4.4 below.

**Table 4.4.4 Tests of the parallel regression assumption**

Statistics	Chi2	Df	P>Chi2
Wolfe Gould	5.129	9	0.823
Brant	5.259	9	0.811
Score	5.005	9	0.834
likelihood ratio	5.492	9	0.789
Wald	4.784	9	0.853

Table very clearly depicts that brant test has level of significance greater than 0.1 and we accept null hypothesis of same slope and conclude that our ordered logit model is correctly specified and there is no need of moving from ordered logit to any other model like generalized ordered legit etc. In case, if parralel regression assumption is violated than our estimation with ordered logit madel is not correct and we further proceed with generalized ordered logit. This is generlaised form of the ordered logit model and relaxses the assumption of parallel lines for some treatment variables while being maintaining for others. The reason of moving from ordered logit model to generalized ordered logit model is that ordered logit model is appropriate when our slopes are same and intercepts are different while generalized ordered model is appropriate when slopes and intercepts are both different. Now we can interpret the results of ordered logit model in the form of marginal effects. Marginal effects are presented in the table 4.4.5

**Table 4.4.5 Marginal Effects after Ordered Logit**

**Y = Pr(satisfaction= 3) (predict) = .65255289**

variable	dy/dx	Std. Err.	z	P> z	[ 95% C.I. ]	X
Age	-.0626825	.02276	-2.75	0.006	-.107295 -.01807	49.2125
Age2	.0005861	.00022	2.70	0.007	.000161 .001011	2605.78
Gender	-0.14976	.13165	-1.14	0.255	-.407784 .108264	0.9375
Health	.056169	.03174	1.77	0.077	-.006037 .118374	5
FM	.0664423	.09194	0.72	0.470	-.113748 .246632	0.675
Education	.01832	.0095	1.93	0.054	-.000298 .036938	7.74375
ln Y	.2293588	.06285	3.65	0.000	.106177 .35254	9.83308
TFII	.0897114	.04409	2.03	0.042	.003295 .176127	.107032
TIFII	.1108025	.04567	2.43	0.015	.021298 .200307	.114138

**Y = Pr(satisfaction= 1) (predict) = .03076246**

Age	.0082431	.00376	2.19	0.028	.000873 .015613	49.2125
Age2	-.0000771	.00004	-2.17	0.030	-.000147 -7.4e-06	2605.78
Gender	.0167423	.0137	1.22	0.222	-.010111 .043596	0.9375
Health	-.0073866	.00468	-1.58	0.115	-.01656 .001787	5
FM	-.0090642	.01321	-0.69	0.492	-.034946 .016818	0.675
Education	-.0024092	.00142	-1.69	0.091	-.005202 .000383	7.74375
ln y	-.0301621	.01194	-2.53	0.012	-.053574 -.006751	9.83308
TFII	-.0117976	.00673	-1.75	0.080	-.024994 .001399	.107032
TIFII	-.014571	.00732	-1.99	0.046	-.028915 -.000228	.114138

The likelihood ratio chi-square of 49.25 with a probability value of 0.0000 indicates that as a whole our model is statistically significant, when compared to the empty model with no factors. Final log likelihood value is (-109..5872). All variables are significant at 1% level of significance except Gender and family status. Both variables (Gender and family status) are not significant even at 5% and 10% level of significance. Age is negatively and age square is positively and significantly related to wellbeing and this result is consistent with the previous studies as estimated by Blanchflower & Oswald, (2004); Ferreri-Carbonell, & Gowdy (2007). Negative and Positive effect of age and age squared respectively shows that effect of age on wellbeing is stronger as people get older and lower in some middle years of age. Age and wellbeing shows u-

shaped relationship i.e. wellbeing falls at lower level of age reach at a minimum point and then increase after this minimum point. One unit increase in age decreases the chances of getting higher level of satisfaction by 6.2 percent while one unit increase in age square increases the chances of getting higher level of satisfaction by 0.05 percent.

Gender has negative association with wellbeing. It means females are more satisfied than males. Females have higher satisfaction as compared to males. Logically it is true as females receive relatively more love affection and care of spouse, parents, children, brothers and sisters. These results are consistent with earlier studies as estimated by Alesina, Di Tella, & MacCulloch (2004). If individual is male then getting chances of higher level of satisfaction is 14.9 percent lower and getting chances of lower level of satisfaction is 1.6 percent higher, given the other variables are held constant in the model. Family setup i.e. nuclear family or joint family system is positively related with wellbeing and life satisfaction. Marginal effects of family setup shows that individuals living in single set up getting chances of higher level of satisfaction is 6.6 percent higher and getting chances of lower level of satisfaction is 0.906 percent lower, given the other variables are held constant in the model.

Health is positively associated with wellbeing level. Mentally and physically healthy people are more satisfied. A point increase in the level of health i.e. moving from bad health to excellent health, there is 5.6 percentage points increase in the ordered log-odds of being in the higher category of satisfaction. Whereas, a point increase in the level of health i.e. moving from bad health to excellent health, there is 0.73 percentage points decrease in the ordered log-odds of being in the lower category of satisfaction given all of the other variables in the model are held constant. General education is positively and significantly related with wellbeing. Results are consistent with previous studies e.g. Blanchflower & Oswald (2004b). One unit increase in general education (i.e. Increase in no. of years of education), we expect a 1.83 percent increase in the log odds of being in a higher level of satisfaction, given all of the other variables in the model are held constant. Whereas One unit increase in general education (i.e. Increase in no. of years of education), we expect a 0.24 percent decrease in the log odds of being in a lower category of satisfaction, given all of the other variables in the model are held constant.

Income has positive and significant effect on wellbeing and this result is consistent with the previous researches e.g. Frey & Stutzer(2002), Inglehart (1990), Ostram (2000) Stevson and Wolfers(2013) and many others. Our results are not consistent with the results of Easterlin (1973). Easterlin findings are that income has no role in the wellbeing of

individual. Our research shows that income has significant positive role in the wellbeing. One unit increase in income we expect a 22.9 percentage point increase in the log odds of being in a higher level of satisfaction, given all of the other variables in the model are held constant. Whereas one unit increase in income we expect a 3.01 percentage point decrease in the log odds of being in a lower category of satisfaction, given all of the other variables in the model are held constant.

Trust on formal institutions is positively and significantly related to higher levels of satisfaction. These results are in line with previous studies (Dorn et al. 2007; Helliwell and Huang 2008). The log odds of being in a higher level of satisfaction due to trust on formal institution is 8.9 percent higher given all of the other variables in the model are held constant. While, log odds of being in a lower level of satisfaction due to trust on formal institution is 1.1 percent lower, given all of the other variables in the model are held constant. Trust on informal institutions index is our variable of interest. Trust on informal institutions is positively and significantly associated with wellbeing. The log odds of being in a higher level of satisfaction due to trust on informal institution is 11.08 percent higher given all of the other variables in the model are held constant. While, log odds of being in a lower category of satisfaction due to trust on informal institution is 1.4 percent lower, given all of the other variables in the model are held constant.

## **5. Conclusions and Policy Recommendations**

Wellbeing of individuals and societies is an important and interesting area in economics and other social sciences from centuries. However, the discipline got rapid popularity and progress after well-known and famous work of Easterlin (1974, 2002). It was noticed that despite a rise in the per capita income and Gross National Product (GNP) many economies on the globe showing a lower level of satisfaction, happiness and wellbeing. Institutional economics is emerging branch of economics from last two decades after the noble work of North Douglas (1990, 1991). The discipline focused on the role of formal and informal institutions on economic behavior and wellbeing. The economics of happiness is an important approach that deals with welfare by combining all those techniques used by economists and psychologists. It depends on surveys of self-reported wellbeing of individuals for highlighting all those non-economic factors and variables that affect welfare. The current study is a combination of both approaches mentioned above i.e. Institutional Economics and Economics of happiness. Keeping above two approaches in mind we developed a theoretical framework and model showing

linkages between wellbeing, institutions and socio economic variables. Later using this model we explore the role of trust on formal and informal institutions in the subjective wellbeing. The main objective of the study is to investigate the relationship and direction between trust on informal institutions and subjective wellbeing and highlighting the fact that trust on informal institutions is important as well as income and other socio economic variables for both individuals and society. “Whether or not trust on informal institutions affects wellbeing?” is research question of the current study. Data used in the study is collected through *Divine Economics Survey 2017*. We employed descriptive analysis first and then for regression analysis ordered logit model is used. In our study income, health and education shows positive and almost significant impact on wellbeing and confirms the previous studies results. Age and age squared showing positive and negative effect on wellbeing respectively. Type of family whether individual live in nuclear family system or joint family system has its impact on individual wellbeing. Our findings show that individual live in nuclear family system are more satisfied from his life. Trust on formal institutions index and wellbeing showing positive and significant association. It concludes that strong formal institutions are necessary for improving wellbeing of individuals, societies and nations. Important variable in the study is trust on informal institutions and findings shows that trust on informal institutions is very important in the development and wellbeing of societies and nations. This is because when individuals have strong association with family, friends, neighbors and relatives they receive nonmonetary benefits as well as monetary support and benefits.

**Limitations:** The findings of this study are based on the small number of observations from Divine Economics Survey 2017. Total 160 observations are used in the analysis. All respondents are from Muslim community and other religion people are not included in the survey. Survey instrument need to be refined and the variable measurement has to be improved over decades. Moreover, perceptions about religion and institutions may vary across regions and religion. It is possible that when same research will conduct after modified tools, methods, including non-Muslims having different religious interpretations with large data set then findings may be different.

### **Policy Recommendations**

On the basis of these empirical findings it is concluded that strong formal and informal institutions are necessary for happiness and wellbeing. Without strong formal and informal institutions wellbeing via

conventional method is possible but not sufficient for holistic and comprehensive improvement in satisfaction and wellbeing. So it is highly recommended that:

1. Government should built and maintain strong formal institution because with these weak formal institutions we cannot make our people happy.
2. Implication of the positive relationship of trust on informal institution and wellbeing for government policies is to promote job opportunities at local level so that labor mobility is discouraged as labor mobility weakening friends and family networking. Non-governmental organizations should be work for increasing social connections among family members, relatives and friends because we can see that in western countries family and relatives connections are going to end and despite the increase in per capita income wellbeing of individual is at low level.

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