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The Relationship Between Informal Institutions and Well-being: An Empirical Study of Selected Districts of AJK

ABSTRACT

This paper investigates the relationship between informal institutions and well-being. Most of the literature highlights the impact of formal institutions on well-being but the studies related to informal institutions and well-being are rare. For formal institutions there are well defined rules and regulations with an aim to achieve certain objectives in the society, such as police, judiciary, hospitals and government systems etc. For informal institutions, the rules and regulations are not documented, but have social approval and are well observed in the society. It is assumed that strong formal and informal institutions increase efficiency and productivity of individuals and societies through structured processes and by lowering the transactions cost. For empirical analysis of relationship between informal institutions and well-being, we use primary data, conducted under "Divine Economics Survey – 2017". This survey had 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. In this paper, response variable is well-being and measured by single satisfaction question. Because response variable is discrete in nature and have more than one category, so ordered logit model is used. Empirical result shows a positive and significant effect of informal institutions on well-being, while controlling other variables. Findings about other control variables are in line with previous studies.

AUTHORS

Saeeda Yasmeen
Govt. Girls Degree College Bagh AJ&K
saeedayasmeen2005@gmail.com

Tahir Mahmood
Quaid-e-Azam University, Islamabad
tahirraja2000@yahoo.com

Anwar Shah
Quaid-e-Azam University, Islamabad
anwar@qau.edu.pk

1. INTRODUCTION

Well-being is a dynamic and broader concept and there is much debate on the definition of well-being from the time of Aristotle to the present day. A large number of thinkers and researchers have tried to explain the concept of well-being. The historical literature provides two approaches for explaining well-being. Currently, there is consensus among researchers that well-being is a multi-dimensional construct (e.g., Stiglitz et al, 2009; Diener, 2009; Michaelson et al, 2009).

In brief, well-being can be defined as "judging life positively and feeling good". Well-being can be assessed by two different ways; subjective well-being and objective well-being. Well-being assessed through variables based on perception and feelings is defined as subjective well-being; while well-being not based on perception and feelings is objective well-being. Subjective well-being is basically psychological concept and measured by self-reports and excludes the material aspects of well-being while objective well-being includes observable facts which could be economic and other socio-demographic factors that affect individual welfare.

Human well-being 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 well-being but currently it gained popularity in social sciences, especially in psychology. We have an increasing interest in the economics of well-being. Large volume of literature on this topic is also available in economics and other social sciences. Some researchers have examined the different factors that influence or determine well-being such as income (see for example Eggers & Sukhtankar, 2004; Carbonell, 2005; Haller & Hadler, 2006; Johnson & Krueger, 2006; Clark, et al, 2007; Akay & Martinsson, 2011; Garcı´a et al., 2016), health (e.g. Vermaat et al. 2006; Pierewan & Tampubolon, 2015), education (e.g. Cun˜ado & Gracia, 2012), employment (Bardasi & Francesconi, 2004), religion (Park et al., 2014), trust (Feng et al., 2016; Churchill & Mishra, 2016) etc. In economics, evolution of well-being 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 increases at a subsistence level then it has a diminishing role in the contribution of well-being.

Non-economic factors also have Impact on well-being (Frey & Stutzer 2002). Studies show that there is inverse relationship between age and well-being while age square has positive association with well-being (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 well-being. Social capital has positive association with individual well-being (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 wellbeing. However, we find little attention on the role of institutions especially informal institutions on well-being. 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 observable and well documented constitutions, laws & regulations, policies and procedures; whereas Informal rules or institutions are unwritten but socially accepted traditions, cultures and customs. According to North (1991) informal institutions are part of our culture and traditions 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 evolve through various mechanisms such as teaching, norms, cultures, traditions or 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 well-being of individuals. If formal institutions like police, judiciary, health system and markets are strong and functioning effectively, then demand for different goods and services, such as justice from courts and high quality good from market will be satisfied easily. All this will lead to increase in the well-being of individual.

Similarly, if informal institutions like family, friends, and neighbourhood are good, people will also enjoy variety of goods and services which increase their well-being by saving time and money. We find work on the effects of formal institutions on well-being (Dreher & Fischer 2010; Rode, 2013; Wicher 2014; Spruk & Kesˇeljevic,2016) however, there is a room for examining the impact of informal institutions on well-being. This research aims to fill this gap and provide empirical evidence related to the impact of informal institutions on well-being.

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

2. REVIEW OF LITERATURE

Human well-being 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 well-being (SWB) and its determinants. We have considered all papers from economics and other social sciences and arranged its review under the following two subcategories: (1) Literature on socio-economic determinants of well-being, (2) Literature on institutions as determinant of well-being.

2.1. Literature on socio-economic determinants of well-being

There is vast literature on the role of socio-economic and demographic factors on the subjective well-being. Dolan et al. (2008) provides review of literature on well-being 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 well-being. The concepts of absolute income, relative income and comparison income are used in the literature. Absolute income has positive effect on subjective well-being (Blanchflowera & Oswald 2004; Carbonell, 2005; Connell, 2004; Garcı´a et al., 2016; Akay & Martinsson , 2011; Ngoo et al., 2015; Hooghe & Vanhoutte, 2011). Health and education has positive impact on well-being; while male gender, being single, urbanization, and unemployment negatively affect the well-being (Gerdthama and Johannesson, 2001; Graham et al., 2004; Blanchflowera & Oswald 2004; Lipovčan & Larsen , 2016, Graham & Pettinat, 2000; Bjørnskov et al., 2008; Vermaat et al., 2006; Bardasi & Francesconi, 2004: Yakovleva & Leguizamon, 2012; Cun˜ado & Gracia, 2012). Religiosity has significant positive association with well-being (Dilmaghani, 2017; Tiliouine & Belgoumidi, 2009; Sahraian et al., 2013). Similarly, social capital has a strong positive influence on well-being (Portela et al., 2013; Menon et al., 2015). Age and well-being have curvilinear relationship (Blanchflower & Oswald, 2008).

2.2. Literature review on institutions and well-being

Economists have explored to understand the potential causes of human prosperity and social progress since the time of Adam Smith when economics emerged 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 well-being.

Theories developed by Neo-classical economists, conducted research and developed models on these theories ignore the role of institutions. Debate on role of institutions in development and well-being 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 institutions. 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 well-being 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 well-being 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 & Stutzer, 2000a; Ovaska & Takashima, 2006; Helliwell, 2006; Dorn et al., 2007, 2008; Helliwell & Huang, 2008; Bjørnskov et al., 2008a; Blume et al., 2009; Helfer 2016; Acemoglu & Johnson, 2005; Williamson 2009; Dorn et al., 2007; Spruk & Kesˇeljevic, 2016; Dawson, 2003. Acemoglu et al., 2005) analyzed empirically and theoretically that difference in economic growth is basically due to economic institutions. Similarly, Casson et al. (2010) presented review of literature on influence of institutions in economic development and institutional change. They basically introduced variety of papers on this issue in this study, also discussed the role of informal & formal institutions in development process. 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 quality of formal institutions 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 well-being 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 domain's 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 well-being in China. They examined the role of trust and social networks as elements of social capital on well-being. Findings suggest that trust and social capital has not strong effect on well-being than effects of income. These findings are contradictory to existing literature. Churchill and Mishra (2016) analyzed the relationship among social networks, trust and subjective well-being in China. Findings suggest that trust and social capital has not strong effect on well-being than effects of income. These findings are contradictory to existing literature. Puntscher et al. (2015) analyzed the determinants of both these types of subjective well-being. Author comes with findings that associational activity and institutional & social trust has positive significant association with subjective well-being. Overall, findings suggest that social

integration and interaction is more important for well-being than monetary factors. Married people are happier than unmarried people (Vanassche et al. 2013; Chapman & 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 determinants 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 well-being mentioned above shows various socio-economic and demographic factors as determinants of subjective-well-being. Economist and researchers from other social sciences examined the relationship of these factors with well-being over time. Formal institutions are also studied as contributor of growth, development and well-being. These all factors are important for enhancing well-being 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 well-being. The study empirically shows that trust on informal institutions has significant and positive effect on well-being.

3. THEORETICAL FRAMEWORK AND METHODOLOGY

3.1. Theoretical framework about informal institutions and well-being

The concept of well-being 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 well-being. Similarly, some studies highlight other determinants of well-being such as religiosity, spirituality, morality and ethics. However, institutions also have a role in determining the well-being of people. This role of institutions in well-being is studied in institutional economics. Research on institutions and well-being 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 phenomenon 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.

3.1.1 Link between informal institutions and well-being

Over the time, theoretical relationship between institutions and well-being and the effects of institutions on well-being has got rapid importance in economics and psychological literature. The impact of institutions on well-being is captured through trust on institutions. Trust is defined differently in various fields. Blomquist (1997), in a study highlighted the definitions of trust presented in the field of economics, philosophy and psychology. Following definitions of economists and psychologists about trust are taking from Blomquist (1997). According to Rotter (1967) "An expectancy held by an individual or a group that the word or 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 well-being 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 well-being. 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 happier 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 respectively is easy, 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 timely 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 Social institution. Strong family relationships and family institution is 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 produces citizens that become 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 well-being. Previous research on family and well-being suggests that individual well-being 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 well-being of individual. An individual having good neighbor will be satisfied because his family and kids remain safe when individual is 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 neighbors 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 well-being of individuals and society and reduces the transaction cost.

Friendship also has important role in fostering well-being. 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 well-being. Literature shows that socializing with friends has positive association with subjective well-being (e.g. Lelkes, 2006; Pichler, 2006).

Scientific hypothesis

H_0: Trust on institutions does not affect the well-being of individual.

H_1: Trust on institutions does affect the well-being of individual.

3.2. The Model

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

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

Where WB is referred to self-reported well-being 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. 1 stand for index of trust on informal institutions and F is for trust on formal institutions index and Z is a set of socio-demographic and socio-economic variables. Econometric model from this information can be formed as below:

$$WB = \alpha + \beta_1\, Age + \beta_2\, AGE2 + B_3\, GNDi + \beta_4\, ln(INCMi) + \beta5EDUi + \beta6\, HLTi$$

$$+ B7\, FM + \beta8\, TFII + \beta9\, TIFII + \varepsilon i$$

Where WB is well-being
$TFII$ is index for trust on formal institutions.
$TIFII$ is index for trust on informal institutions.
GND is gender of the ith respondent.
EDU is for education of ith individual.
HLT is health of i_{th} individual.
in (INCM) is natural log of income of i_{th} respondent.
FM is family status of the ith individual.
Age^2 is used in the model for correct functional form because age and well-being have curvilinear relationship

εi is error term and from β_1 to β_9 are slope coefficients for $Age, Age2, GND, Ln(INCMi),$ $EDU, HLT, FMST, TFII\ and\ TIFII$ respectively.

The main variable of interest is trust on informal institutions. The rest of the variable are controlled variables. Age and age square are entered in the model with expected negative and positive sign respectively. The rationale behind this negative and positive effects of age and age square respectively is the effect of age on well-being that is stronger as people get older and lower in some middle years of age. In the literature, age and well-being shows u-shaped relationship i.e. well-being falls at lower level of age reach at a minimum point and then increase after this minimum point. 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 well-being. Poor health condition lowers the well-being of the individual despite the higher level of income and other fulfillment of needs. Education has positive effect on well-being because individual having higher education has more probability to earn more income and attaining higher level of well-being and this is indirect effect of education on well-being. Income is positively associated with well-being because with more money and income an individual can fulfill his /her all material needs. Marital status has effect on well-being of individual. Married people are happier than single people because an individual shares 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 system. Formal institutions enter in the model with expected positive sign. Rationale behind this positive sign is that better formal institutions provide 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 well-being of individual and society. Informal institutions index in our model is comprised of trust on self, family, friends, neighbor, strangers and trust on religious scholars. Trusts on informal institutions positively affect the well-being of individual and society. The rationale behind this positive relationship between trust on informal institutions and well-being is that trust on family members, relatives, friends and neighbor decrease various types of transaction cost, thus increase well-being. This is due to the fact that people serve each other without any demand for monetary value. These non-monetary benefits for individual increase the well-being of individual.

3.3. Data

To test the relationship between informal institutions and well-being, data is taken from "divine economic survey-2017". This survey was 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 Valley, (3) Jhelum Valley, (4)Kotli..

Table 1: Description of variables used in the analysis

Sr. No	Variables	Description
1	WB	Well-being 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.[15]
3	TIFII	Index of trust on informal institutions comprises on seven items.[16]
4	GND	Gender of the ith individual. A dummy variable which takes the value 1 for male respondent and 0 for female respondent.
5	HLT	Health of the ith 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 ith respondent. Education is measured in years of schooling like16 years for master and 14 for graduation.
7	lnINCM	Natural log of basic income of the ith respondent. Income is measured in rupees.
8	FM.S	Family status of the ith individual.1 for nuclear family and 0 for joint family system.
9	AGE	Age of the ith respondent and measured in years.
10	AGE 2	Age square of the ith respondent.

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 age, gender, health, education, income and family status. Section F includes institutions (formal and informal). Data for formal institutions and informal institutions 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

3.4. Estimation procedure

The precise observation of individual well-being is difficult although and not possible because well-being is a discrete concept and contains ordered categories in our questionnaire. The question for the well-being 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 is for completely unsatisfied and 10 for completely

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[15] Items used in the formal institutions 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.

[16] Items used in the trust on informal institutions index are family, friends, neighbor, religious or spiritual leaders, people of other sect religion and strangers.

satisfied. We collapse this likert scale into three categories for simplicity and due to some measurement issues; category 1 for completely unsatisfied includes 0---3 categories on likert scale, category 2 for satisfied and includes 4…6 categories of likert scale and 3 for completely satisfied and includes 7---10 categories. For the measurement of such discrete and ordered categorical variable ordered Logit and Probit model are used. Ordered logit model can be thought as an extension of logistic regression model. The difference between both is that former is used when dependent variable has only two categories and later is used when dependent variable has more than two categories. Some studies on the well-being 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 socio-economic and socio-demographic control variables using ordered probit. Ferrer-i-Carbonell 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 well-being. Measure of satisfaction is used for well-being 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. Moreover, ordinary least square has some measurement problems. For avoiding such problems, we preferred the ordered logit model.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

This section deals with descriptive statistics. This statistic 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 2.

Table 2: 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[17]	160	.1070325	1.054511	2.384981	2.899117
TIFII[18]	160	.1141376	1.071705	-2.48432	-2.086898

4.2. Reliability Analysis

Trust on Formal and informal institutions indices are used in regression analysis. Trust on formal institutions and trust on informal institutions 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 institutions index and 0.704 for trust on formal institutions index. Our Indices are reliable and consistent. Result of Reliability Statistics are presented in the following Table 3

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[17] TFII is trust on formal institutions index.
[18] TIFII is trust on informal institutions index.

Table 3: Reliability Statistics for formal and informal institutions Indices

Indices	Cronbach's Alpha	No of items	Means	F-Statistics	Sig.
TFI Index	0.704	12	3.112	75.348	0.000
TIFI Index	0.820	07	2.963	200.411	0.000

4.3. Correlation Analysis

This section presents and explains the correlation analysis among well-being measured by satisfaction and different socio-demographic variables and index of trust on formal and informal institutions. Table 4 highlights the correlation analysis.

Table 4: Correlation analysis

	Well-being	Age	Age2	Gender	Health	FM	Edu	LnY	TFII	TIFII
Well-being	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).
*. 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 well-being and similarly between trust on informal institutions index and well-being. Results show positive direction between trust on formal institutions index and well-being at 1% level of significance. Our variable of interest i.e. trust on informal institutions index has 30% positive correlation with well-being at 1% level of significance. Health and education show 21 % and 19 % positive correlation with well-being 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 show 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 5: Model specification Test

Link Test. H_0: 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

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

Table 6: Ordered Logit Results of Baseline model

Satisfaction is dependent variable

Variable	Coeff.	S.error	Z	Sig.
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	1.011605	0.2791137	3.62	0.000
TFII[19]	0.3956793	0.1969393	2.01	0.045
TIFII[20]	0.4887029	0.2025642	2.41	0.016
Cut1	1.080364	3.757267		
Cut2	3.900299	3.764413		

Log likelihood = -109.5872   Number of obs = 160
LR chi2(9)   =   49.25   Pseudo R2   = 0.1835
Prob > chi2   =   0.0000

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 relationshep whether positive or negetive relationship exist. In OLS rate of change is same while in ordered logit, rate of change is different on all points. For explaination 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 relevent 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 intercepts and conclude that intercepts are not same and ordered logit model is correctly specified. Table 7 shows the results of Wald test on 3 threshold levels in ordered logit regression.

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[19] TFII is trust on formal institutions index.
[20] TIFII is trust on informal institutions index.

Table 7: Wald Test on Threshold levels

Threshold Cuts	Significance level
Ho : Cut 1 = Cut 2	chi2 (1) = 54.30
	Prop > 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. Results from oparallel command using STATA are presented in the Table 8 below.

Table 8: 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 generalised ordered logit etc. In case, if parallel regression assumption is voilated then our estimation with ordered logit madel is not correct and we further proceed with generalised 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.Now we can interpret the results of ordered logit model in the form of marginal effects. Marginal effects are presented in the Table 9.

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 negetievly and age square is positivly and significantly related to well-being and this result is consistent with the previous studies as estimated by Blanchflower & Oswald, (2004); Ferreri-Carbonell, & Gowdy (2007). 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 well-being. It means females are more satisfied than males. 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.

Marginal effects of family setup show 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.

Table 9: 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

Variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
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

Health is positively associated with well-being level. A point increase in the level of health i.e. moving from bad to excellent health, there is 5.6 percentage points increase in the log-odds of being in the higher category of satisfaction and 0.73 percentage points decrease in the log-odds of being in the lower category of satisfaction given all of the other variables in the model are held constant.

Education is positively and significantly related with well-being. One unit increase in 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 and 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 well-being. 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 and 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 institutions is 8.9 percent higher and log odds of being in a lower level of satisfaction due to trust on formal institutions 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 well-being. The log odds of being in a higher level of satisfaction due to trust on informal institutions is 11.08 percent higher and log odds of being in a lower category of satisfaction due to trust on informal institutions is 1.4 percent lower, given all of the other variables in the model are held constant.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1. Summary, Conclusions

Well-being 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 show a lower level of satisfaction, happiness and well-being. Institutional economics is emerging branch of economics from last two decades after the noble work of North Douglas (1990, 1991). The discipline focuses on the role of formal and informal institutions on economic behavior and well-being. 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 well-being 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 well-being, institutions and socio-economic variables. Later using this model we explore the role of trust on formal and informal institutions in the subjective well-being. The main objective of the study is to investigate the relationship and direction between trust on informal institutions and subjective well-being 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 well-being?" 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 well-being and confirms the previous studies results. Age and age square are showing negative and positive effect on well-being respectively. Type of family whether individual lives in nuclear family system or joint family system has its impact on individual well-being. Our findings show that individual lives in nuclear family system is more satisfied from his life. Trust on formal institutions index and well-being shows positive and significant association. It concludes that strong formal institutions are necessary for improving well-being 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 well-being of societies and nations. This is because when individuals have strong association with family, friends, neighbors and relatives, they receive non-monetary 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 people of other religions 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 religions. 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.

5.2. Policy Recommendations

On the basis of these empirical findings it is concluded that strong formal and informal institutions are necessary for happiness and well-being. Without strong formal and informal institutions well-being via conventional method is possible but not sufficient for holistic and comprehensive improvement in satisfaction and well-being. So it is highly recommended that:

1. Government should build and maintain strong formal institutions because with the weak formal institutions we cannot make our people happy.
2. Implication of the positive relationship of trust on informal institutions and well-being for government policies is to promote job opportunities at local level so that labor mobility is discouraged as labor mobility weakens friends and family networking. Non-governmental organizations should 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 well-being of individual is at low level.

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