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IMPACT OF PSYCHOLOGICAL CONSEQUENCES ON POVERTY: AN EVIDENCE FROM PAKISTAN

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HIGHLIGHTS

- Creative minds of individuals, freedom of choice to control their lives phenomenon have a strong, positive and significant association with income.
- The individuals who mistrust less are consequently quicker in taking economic decisions and make investment planning that will lead to an increase in their income.
- This study suggested that policymakers should take initial steps to focus on human psychology while making efforts to reduce the poverty level.
- The poverty reduction programs need a little extra expenditure or infrastructure for training the poor about how they can change their income level by slightly modification of their behavior and the ways of thinking.
- These psychological training programs will be helpful to get the poor out of the poverty trap.

ABSTRACT

The limitation and the complications which the economic agents are facing are studied in behavioral economics. The current study underhand is an attempt to explore the impact of psychological consequences on household incomes. The current study underhand used World Value Survey data for the years 2012-2014 for Pakistan. Simple Linear Regression analysis was used to measure the impact of psychological variables on the income of households in Pakistan. The results show that people with a more external locus of control positively affect their incomes, as they do believe in external factors like fate and luck for its success or failure. Creativity, loneliness, and positivity have a direct relation with income while mistrust and risk aversion have an inverse relation with income. Creative minds of individuals, freedom of choice to control their lives phenomenon have a strong, positive and significant association with income. Creativity at work increase income or regular work for just reward increase income. This means that the individuals who mistrust less are consequently quicker in taking economic decisions and would make investment planning that will lead to an increase in their income. A second estimated model of this study includes all socioeconomic variables which can determine the level of income. These variables cover a wide range of demographic and social variables. These socioeconomics variables are age, gender, level of education, number of children, marital status, interaction variable of marital status and age, a square of interaction variable of marital status and age, interaction variable of gender and age, a square of interaction variables of gender and age and dummies of the province. Results show that all these variables have a significant relation with income level. All the socioeconomic and demographic variables have a strong association with the level of income. It reveals that the dummy of marital status negatively influences the income, it means that an unmarried man can earn more than a married. This study suggested that policymakers should take initial steps to focus on human psychology while making efforts to reduce the poverty level.

Introduction

The phenomenon of poverty has multidimensional aspects. Low levels of wellbeing can be pronounced as poverty. Lack of necessities, low income, low education, bad health situations, lack of security and lack of

freedom are different dimensions of poverty. The determinants of poverty also have multi-dimensional characteristics; it can be psychological, socio-economic, economic and physical. The ratio of people living in intense poverty is fewer but the poverty declining rate has slowed. According to the report, about half of the world's countries have less than 3 percent of the poverty rate but the whole world is not moving on the track to attain target below 3 percent poverty rate by 2030. World Bank's report 2018 forecast that extreme poverty fell to 8.6 percent in 2018. Following table 1 shows the poverty estimates of all the World Bank regions for the years 2013 and 2015.

Table 1: Poverty Estimates for the Years 2013 to 2015

Region	Headcount ratio (%)		No. of Poor (million)	
Years	2013	2015	2013	2015
East Asia and Pacific	3.6	2.3	73.1	47.2
Europe and Central Asia	1.6	1.5	7.7	7.1
Latin America and the Caribbean	4.6	4.1	28.0	25.9
Middle East and North Africa	2.6	5.0	9.5	18.6
South Asia	16.2	12.4	274.5	216.4
Sub-Saharan Africa	42.5	41.1	405.1	413.3
World Total	11.2	10.0	804.2	735.9

Source: World Bank report, 2018

Psychological determinants defined by depression, lack of self-esteem and stress, etc. while the physical determinants of poverty mean lack of economic and physical infrastructure just like poor health, etc. Pakistan is facing both relative and absolute poverty. About 40% of the 107 countries are facing poverty; this estimation is according to the World Bank 2011. According to the definitions of the World Bank used in Pakistan that any person who is earning below $1.90 in a day is considered as poor. In Pakistan anyone who earns below Rs. 3243 per month is facing poverty. Pakistan is graded amongst 43 poorest countries in the world. In Pakistan when the prices of food items increased by 20% it will bring 8% poverty entirely (Thompson and Amjad, 2008). The previous studies revealed that in Pakistan, Poverty has varying nature and the majority of the people living below the poverty line (Tariq et al., 2014).

In Pakistan, the poverty rate amplified 26.6% to 32.2% during the fiscal years 1993-1999 and more than 12 million people became poor in this period. History revealed that poverty in rural areas is greater than in urban areas. There is a sharp increase in rural poverty during 90's while during the financial year 1999 rural poverty was 36.3% which is higher than urban poverty of 22.6% (Asian Development Bank, 2002). According to the world poverty clock, it is estimated that 0.9% of the population living below the poverty line (GoP, 2018).

Behavioral economics is a fusion of economics and psychological theories. At the second piece of the twentieth century a top to bottom scan for the clarifications of such circumstances started, what's more, towards the start of the 21st century the Nobel Prize in Economic Sciences was granted to a researcher named Kahneman for the advancement of an origination that legitimizes the job of different mental and conservative viewpoints in the basic leadership process, It was originated by the seminal work of Kahneman and Tversky in sixties on decision-making process under uncertainty. After their work literature on behavioral economics expands. Ariely pointed out that economic models that assumed rational behavior are not appropriate because economic agents not always maximize utility. The neo-classical school of thought was of the view that economics does not include reasoning behaviors and hence it is "anti-behavioral" (Mullainathan and Thaler, 2000). The limitation and the complications which the economic agents are facing are studied in behavioral economics. The economic agents may be the firm, the consumers, the demanders, the suppliers, the farmer, and the bankers.

Psychological Consequences on Decision Making

Decisions made by the economic agents are always effected by psychological irrationalities named as cognitive biases. Insufficiency affects the cognitive capacity of the people, consequently, it affects the decision making styles of the economic agents. Cognition has two types, one is reasoning and the other one is intuition. The reasoning is completed intentionally and with effort while intuitions are the thoughts that

come naturally in human minds without any computational hard work. Methodical research revealed that human thinking and activities are linked to intuition (Kahneman, 2003). Some of the common biases are; Confirmation Biases the most special approach of human behavior in which people attracted to the information that favors their pre-existing opinion and disregarding the views which are against their interest no matter how important they are. Anchoring Bias is a human propensity to depend on the first portion of evidence in the time of making decisions. Ostrich Effect is misguided confidence that the problem faced by people will not affect them they just disregard them. Overconfidence, some of the people are too self-assured about their proficiencies and this will become the reason for many risks in their ordinary life. This bias normally exists in experts as they are more committed that they are always right. In negativity Bias, people are more convinced to give importance to bad news. For example, the war, crimes, violence, and other discriminations are decreasing day by day but people claim it is worsening. Negativity bias more influences the people at work. Current Moment Bias is a bias to which is more concerned by the economists. In this bias, people do not think about the future to change their attitudes accordingly. People feel pleasure in the current situation while leaving the discomfort for the future. The bandwagon effect is an emotional occurrence that shows that some people mostly do things similar to others and never think that it's not according to their own beliefs.

Mani et al. (2013) explored in his research that low income generates stress and hence it influences the cognitive abilities of the people. According to them insufficient money and time negatively affect the decision power of the people. As poverty is self-reinforcing phenomena so they suggested that people have to invest and reinvest continuously to escape from poverty. Shah et al. (2012) analyzed that due to scarce resources individuals have to do more mental efforts to meet the necessities. The outcomes of these theories concluded that due to lack of self-control the poor entrepreneurs lose self-control that resists them to invest in their business to escape from poverty. Haushofer and Fehr (2014) investigated that the psychological consequences are emerging due to poverty and these psychological beliefs affect the economic behaviors that lead the economic agents not to escape from the poverty trap. Many countries belonging to the Asia Pacific region become successful in achieving poverty reduction objectives. Chatterjee (2005) found the poverty reduction strategies followed in Asia and Pacific regions. We have arrived in the age where trust in government, across the different nations and on different institutions is decline with varying degrees. A wide literature on declining trust causes some serious problems to the people making decisions. Deutsch (1958) defined trust as an irrational selection of people facing uncertainty where estimated loss is higher than the estimated gain.

Coleman and DeLeire (2003) and Williamson, (1993) argued that when an economic agent rendered himself on the risk of a resourceful act by another economic agent, this is the implication of the presence of trust. The world is facing the most tenacious problem of poverty. The world is trying hard to find the causes of how poverty stays longer. Literature shows the work done by economists to find the methods to get rid of poverty. Locus of control is a variable with greater significance to understand the different situations also to learn the difference in the consistency of individuals. "Internal-external" behaviors or Locus of control is an emotional perception (Rotter, 1966). Psychology described that people have general beliefs and behaviors about the characteristics of the association between a person's attitudes and its consequences which affect many daily life decisions. People have different beliefs that situational consequences are either because of their hard work or due to luck, fortune or other people's interference (Rotter, 1966). People believe their efforts are the reason of the situational consequences have an "internal locus of control" and the people having an "external locus of control" think that their success is due to luck (Maddux, 1995).

Rotter (1966) studied much experimentation on behavioral differences in different groups when noticeable rewards due to their behaviors or due to coincidence. The study developed some tests which described widespread behavioral differences of individuals in "internal-external control". These tests explored consistency and rationality in the data of test 1 also provided the details of the outcomes. Almost every economic decision is based on some risks and uncertainties. People make decisions differently according to their attitudes. Hence many economists explored differences in an individual's attitudes on many grounds (Blais and Weber, 2006). Individuals do not always have consistency in risk-taking or risk aversion (Schoemaker, 1990). Risk aversion is an individual's attitude in which they negatively respond to uncertainties they are facing i.e. they try to minimize this uncertainty. Risk seeking is an individual's behavior in which he prefers to face the risks. Ben-Ner and Putterman (2001) postulated that "greater risk aversion leads to less trusting". Trust plays an important role in economic decision making. In general, Individuals invest their capital in such projects about which they merely know nothing. In this way, they reveal trust to a certain entity. Following Coleman and DeLeire (2003) trust can be express as an action related to an individual putting his resources in the hand of trustee due to his confidence in the trustee.

One of the basic assumptions of most economic models is the completeness of information which in the real world is seldom. Freedom of choice refers to an individual's ability to have control over the choice he faces in life irrespective of its positive or negative outcome if he avails a certain choice. In an economic sense, this refers to the choices of the individual to have control in the economic resources to allocate according to his preferences. Lack of freedom of choice may lead to poverty (Sen, 1988; Mumtaz et al., 2019). Creativity refers to inner passion to work on a given task regardless of the associated reward. Creativity leads to intrinsic motivation. Haushofer (2013) found that low-income people have low intrinsic motivation. On the other hand, people who work for rewards are extrinsically motivated. This study tries to test the hypothesis of whether creativity at work increase income or regular work for just reward increase income.

Irrational Economic Decision Making

People make hundreds of economic decisions each day, from what they will eat or even to decide career move, research advocates that human behavior is strongly affected by some of the cognitive uncertain blocks and those blocks avoid them to act in accordance to their interests. Cognitive bias is an organized form of irregularity under which people do not remain rational. Economic models are created under some elementary norms. According to the old economists' people behave rationally, and it is the most fundamental and crucial assumption of economic models. Irrational behaviors and beliefs are first revealed as a rational emotive behavior theory in history which is presented by a psychologist Ellis in 1955 (Dryden, 2005). This theory discussed the individuals' problems and developed fundamental solutions for them. Literature exposed that certain emotions caught up the individuals (Ellis and Dryden, 1997).

The traditional economic hypothesis expects that people are rational. Be that as it may, in reality, we regularly observe silly conduct–choices that don't amplify utility, however, can cause lost financial welfare. These are called irrational behaviors. Irrational behavior isn't simply detached to a couple of irrational people yet can turn into the prevailing decision for the vast majority in the public eye. Irrational attitudes can prompt market disappointment, loss of monetary welfare and individual issues, for example, chronic drug use and weakness. Irrational behavior has suggestions for making economic policies. It implies business analysts need to consider the prospective for irrationality. Rational decision making says that any individual is a rational decision-maker to maximize its utility with the alternative uses of means. If a person chooses an inferior alternative it would be his irrational behavior. Cognitive research made known that even experts and professional's decisions are affected by some of the distinct emotions while making decisions. Rational decision making assumes that every individual is a rational decision-maker (March, 1988; Rich and Oh, 2000). However, it is against reality. There is a wide range of factors that affect our decisions, most of them are irrational.

Irrational thoughts are the solutions created by man himself for his problems. These beliefs appear in a person's mind and they affect his life (Ozer and Akgun, 2015). Ellis was the first who discussed Irrational behaviors in Rational Emotive Behavior Theory in 1955 (Dryden, 2005). People are captivated by some sentiments which they are incapable to define them precisely. Previous studies named them "irrational behaviors" that are illogical. These attitudes create negative thinking in people and become the causes of failures (Ellis and Dryden, 1997). Irrational attitudes are generated in two different circumstances. First, when someone is going through some hard situations which influence their sentiments and then this irony of life generates some irrational attitudes in their life. Second, the new irrational beliefs are attached to some old irrational beliefs which are happened previously (DiGiuseppe & Leaf, 1990). The chain of irrational thinking creates emotional disturbances in individuals (Dryden & Branch, 2008). Individuals did not know the main reason for these negative thinking hence these attitudes lead them to failures, depression, sorrows, and worry.

There are several socio-economic determinants of the level of income. Behavioral economics pointed out that irrational behavior or cognitive biases can also affect the level of income. Previous literature more specifically in the case of Pakistan ignores cogitative biases that can affect the rationality of individuals which in turn affects the level of income of the individuals. The current study takes into account cognitive biases. Further, economic models that assumed rational behavior are not appropriate because economic agents not always maximize utility due to their irrational behavior. As emphasized by Sen (1977) that this assumption is flawed. Decisions made by the economic agents are always effected by psychological irrationalities. Haushofer (2013) also suggested that poverty may have a significant emotional price that affects welfare. Along with cognitive biases, this study also included a wide range of economic, demographic and geographic determinants of the level of income.

Methodology

The study is conducted to find the impact of psychological variables of individuals that determine the level of income. This study utilized Wave 6 of World Value Survey data. This data is collected from 1200 individuals from the four provinces of Pakistan which are shown in table 2.

Table 2: Sample Distribution among the Provinces of Pakistan

Province	Total	Gender		Age		
		Male	Female	Up to 29	30-49	50 and more
Punjab	57.60%	55.50%	59.80%	55.70%	57.20%	65.80%
Sindh	23.60%	24.80%	22.30%	23.50%	22.90%	26.40%
KPK	13.70%	14.20%	13.20%	15.90%	14.40%	4.10%
Baluchistan	5.10%	5.50%	4.70%	4.90%	5.50%	3.70%
Total	1200	618	582	456	602	142

Source: World value survey, 2014

The first estimated model of this study includes mistrust, risk aversion, external locus of control, freedom of choice, creativity, loneliness, and positivity as independent variables and level of income of individuals as a dependent variable. An estimated model of this study is presented below:

$$Y_i = \alpha_0 + \alpha_1 MT_i + \alpha_2 RA_i + \alpha_3 LOC_i + \alpha_4 LFOC_i + \alpha_5 Cr_i + \alpha_6 L_i + \alpha_7 Po_i + \epsilon_i \quad (1)$$

Where:
$Y_i = $ LevelofIcome
$MT_i = $ Mistrust
$RA_i = $ Risk Aversion
$LOC_i = $ Locus of Control
$LFOC_i = $ Freedom of choice
$Cr_i = $ Creativity
$L_i = $ Loneliness
$Po_i = $ Positivity

Income: Income is used as a dependent variable in the current study underhand. To evaluate the level of income of the respondents this study utilized the question of WV6 for Pakistan that asks individuals "We would like to know in what group your household is. Please, Specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in." to choose from 1 to 10 where 1 refers to "Lowest income group in Pakistan" and 10 refers to "Highest income group in Pakistan". Their responses were then Z-scored before utilizing the model.

Mistrust: Trust plays an important role in economic decision making. In general, Individuals invest their capital in such projects about which they merely know nothing. In this way, they reveal trust to a certain entity. Following Coleman and DeLeire (2003) trust can be express as an action related to an individual putting his resources in the hand of trustee due to his confidence in the trustee. One of the basic assumptions of most economic models is the completeness of information which in the real world is seldom. Economic agents involved in an economic transaction not always provide complete information their trust in the willingness of the opposite party and ability of the opposite helps them in doing the transaction. For instance, a financial advisor cannot be successful without gaining the trust of the investors. Following this, Individuals who trust more will be quick in economic decision making and making investment plans than one person who mistrust on economic agents. This may affect the earning of both kinds of individuals. This study tries to empirically investigate this complex relationship that mistrust determines the income of the respondent. Following (Rotter, 1967; Haushofer, 2013) this study utilized question of WV6 for Pakistan that asks individuals to choose on likert scale from 1 to 4 where 1 refers to "I will trust completely the people that I meet for the first time." and 4 refers to "I will not trust at all the people that I meet for the first time.". Their responses were then Z-scored before using the model.

Risk Aversion: Risk behaviors are subdivided into three forms: one is risk-averse, second is risk preferring and the third one is risk-neutral. One of the fundamental characteristics of economic activities is risk aversion. As the risk avoiders prefer to avoid risks in income-generating process or investment. The policy point view addressed the importance of risk and suggested that an economic agent can transfer such risks to capital markets, insurance and government. If this process is not appropriately handled then it upsurges risk aversion which will decrease the economic growth. Following (Zuckerman; Haushofer, 2013), this study utilized the question of WV6 for Pakistan that asks individuals "Would you please indicate how much this person is like you? Adventure and taking risks are important to this person" to choose on likert scale from 1 to 6 where 1 refers to "Like you" and 6 refers to "Not at all like you". Their responses were then Z-scored before utilizing the model.

Internal-External Locus of Control: Locus of control is a psychological variable to evaluate the thinking of

individuals about the connection between individuals' behavior and its outcomes. Individuals who trust that outcome are driven by their actions endorse internal locus of control. Conversely, Individuals who trust that outcome are not driven by their actions endorse external locus of control (Maddux, 1995). For instance, an individual who believes his/her feature wellbeing depends on his/her efforts in human capital investments. That individual does not believe in fate but he/she believes in an internal factor that is responsible for his/her feature outcome. Most probably he/she will invest more in education. As education attainment determines to income level. So, these incentives can affect individual financial wellbeing. Alternatively, an individual who believes his/her feature wellbeing depends on his/her fate and he/she believes in an external factor that is responsible for his/her feature outcome. That individual will be reluctant toward investment in human capital that can negatively affect his/her future financial wellbeing. Maddux (1995) argued that the locus of control plays an important role in the decision-making ina career. Same as Rotter (1966) argued that persons who have an internal locus of control are more optimistic towards their life improvement goals. Moreover, Bandura (1990) argued they are also optimistic under constraints. Conversely, Individuals with an external locus of control are reluctant to take benefit from opportunities. Further, Andrisani (1977) provides empirical evidence that individuals' earnings are determined by the locus of control. Following Haushofer (2013) this study utilized question of WV6 for Pakistan that asks individuals to choose on likert scale from 1 to 10 where 1 refers to "In the long run, hard work brings a better life" and 10 refers to "Hard work doesn't generally bring success, it is more matter of luck and connections". Their responses were then Z-scored before utilizing the model.

Freedom of Choice: Freedom of choice refers to an individual's ability to have control over the choice he faces in life irrespective of its positive or negative outcome if he avails a certain choice. In an economic sense, this refers to the choices of the individual to have control in the economic resources to allocate according to his preferences. Sen (1988) expressed that the lack of freedom of choice may lead to poverty. This study utilized question of WV6 for Pakistan that asks individuals "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them" to choose on likert scale from 1 to 10 where 1 refers to "a great deal of choice" and 10 refers to "no choice". Their responses were then Z-scored before using in the model.

Creativity: Creativity refers to inner passion to work on a given task regardless of the associated reward.

Creativity leads to intrinsic motivation. Haushofer (2013) found that low-income people have low intrinsic motivation. On the other hand, people who work for rewards are extrinsically motivated. This study tries to test the hypothesis of whether creativity at work increase income or regular work for just reward increase income. This study utilized question of WV6 for Pakistan that asks individuals "Are the tasks you perform at work mostly routine tasks or most creative tasks?" to choose on likert scale from 1 to 10 where 1 refers to "mostly routine tasks" and 10 refers to "mostly creative tasks".

Loneliness: People are impoverished by weak connections with, and minimal support from, family and friends. According to professor Kahneman happiness derives most from strong relationships, especially with loved ones. A growing body of evidence shows that those without strong relationships are more likely to have poor physical and mental health outcomes, including increased propensity to depression, sleep deprivation, problems with the cardiovascular and immune systems, early morbidity and even dementia. When loneliness is combined with material deprivation, the result is toxic. A cycle of wordlessness, indebtedness, and depression is so much harder to escape. This study utilized the question of WV6 for Pakistan that asks individuals "I see myself as someone who is reserved" to choose on likert scale from 1 to 5 where 1 refers to "agree strongly" and 5 refers to "disagree strongly". Their responses were then Z-scored before using in the model.

Positivity: Research revealed that having positive thoughts doesn't mean being happy or showing an optimistic attitude. Positive thinking truly makes valuable life also shapes the individual's abilities that sustain longer in his/her life. Positive thoughts have a significant impact on an individual's work, health and overall his/her life. Literature viewed that individuals can escape from poverty by their determinations using basic tools of creating hope, being active role models and also by improving their psychological well-being. The study utilized question of WV6 for Pakistan that asks individuals "It is important to this person to do something for the good of society" to choose on likert scale from 1 to 6 where 1 refers to "very much like you" and 5 refers to "not at all like you?". Their responses were then Z-scored before using in the model.

Second estimated model of this study includes employment, age, gender, level of education, no. of children, marital status, marital status and age, (marital status and age)^2, gender and age, (gender and age)^2, Punjab, Sindh and Khyber Pakhtun Kha (KPK) as independent variables and income level as dependent variable as given in the following equation.

$$Y_i = \alpha_0 + \alpha_1 Emp_i + \alpha_2 A_i + \alpha_3 G_i + \alpha_4 Edu_i + \alpha_5 C_i + \alpha_6 M_i + \alpha_7 MA_i + \alpha_8 SMA_i + \alpha_9 GA_i + \alpha_{10} SGA_i + \alpha_{11} P_i + \alpha_{12} S_i + \alpha_{13} K_i + \epsilon_i \quad (2)$$

Where:
$Emp_i = $ Employment
$A_i = $ Age
$G_i = $ Gender
$E_i = $ Level of Education
$C_i = $ No. of Children
$M_i = $ Marital Status
$MA_i = $ Marital status and Age
$SMA_i = $ (Marital status and Age)^2
$GA_i = $ Gender and Age
$SGA_i = $ (Gender and Age)^2
$P_i = $ Punjab
$S_i = $ Sindh

It is generally accepted that employed people can increase their income level than unemployed. The study used an employment dummy in the model where 1 means employed and 0 means unemployed. The question was taken from WV6 of the World Value Survey of Pakistan. Gender bias at the workplace causes the earning gap between females and males. In general, females are paid less compared to males. Therefore females are expected to earn less and males are expected to earn more. This study used gender dummy in the estimated model where 1 is assumed for males and 0 is assumed for females. It is expected that the age of an individual can also affect the income level of an individual. As age increases, due to an increase in life experiences the individuals earn more. Education is an

important indicator describing the quality of life and to determine the ability of the poor to take benefits from income-earning opportunities. Literature reveals that there are more chances for an educated person to increase income level than an uneducated person. Hence literacy can raise the income level of individuals. Family size or the number of dependent children is a bias in increasing income levels. Smaller the family size more chances to increase the income level for an individual. Moreover, marital status often affects the income level in various ways. Unmarried people are more mobile to switch jobs for better rewards as compared to married people. Therefore this study used the marital status dummy in the estimated model where 0 is assumed for unmarried and 1 is assumed for married. This study includes three dummies of provinces in the estimated model that is Punjab, Sind, and KPK. The reference category in this model is Baluchistan. In this estimated model an independent variable is used about interaction terms of marital status with age and its square. The interaction term of gender with age and its square is also used as an independent variable.

Results and Discussion

This section represents the second estimated model of this study which includes all psychological variables which can determine the level of income. These psychological variables include the behavior of individuals that directly affects economic decision making which in turn determine the level of income. These variables are risk aversion, freedom of choice and mistrust, locus of control, creativity, loneliness, and positivity as shown in table 3.

Table 3: Impact of Psychological Variables on Income

Independent Variables	Coef.	Std. Err.	T	P>|t|
Constant	6.94	0.0278	0.00	1.000
Mistrust	-0.059	0.0286	-2.06	0.040
Risk Aversion	-0.061	0.0294	-2.09	0.037
External Locus of control	0.151	0.0284	5.30	0.000
Freedom of choice	0.183	0.0290	6.33	0.000
Creativity	0.057	0.0288	1.99	0.047
Loneliness	0.022	0.0282	0.79	0.432
Positivity	0.009	0.0291	0.31	0.756

Source: Author's calculations

This study found a negative relation between mistrust and income. The coefficient for mistrust is 0.05 which is significant at $P < 0.05$. This can be interpreted as if there is 1 standard deviation decrease in mistrust then there are 0.05 increases in the standard deviation of the income. This means that the individuals who mistrust less are consequently quicker in taking economic decisions and would make investment planning that will

lead to an increase in their income. This study found a negative relationship between risk aversion and income. The coefficient for risk aversion is 0.61 which is significant at $P < 0.05$. This can be interpreted as if there is 1 standard deviation decrease in risk aversion then there is an increase in 0.06 standard deviation of the income. This study found a positive relationship between the external locus of control and income. The coefficient

for the external locus of control is 0.15 which is significant at $P < 0.10$. This can be interpreted as if there is 1 standard deviation increase in an external locus of control then there are 0.15 increases in the standard deviation of income.

This study found a positive relationship between freedom of choice and income. It can be seen in table 3 that the coefficient for freedom of choice is 0.18 which is significant at $P < 0.05$. This can be interpreted as if there is 1 standard deviation increase in control on life then there are 0.18 increases in the standard deviation of income. This study found a positive relation between creativity and income. The coefficient for creativity is 0.05 which is significant at $P < 0.05$. This can be interpreted as if there is 1 standard deviation increase in creativity then there is a 0.05 increase of standard deviation in the income. Creativity at work increase income or regular work for just reward increase income. This study found a positive relationship between loneliness and income. The coefficient for loneliness is 0.02 which is insignificant at $P < 0.10$. This study found a positive relationship between positivity and income. The coefficient for positivity is 0.009 which is insignificant at $P < 0.10$.

The finding of this estimated model found a significant relation of mistrust, risk aversion and freedom of choice with income level. Furthermore, people who have a more external locus of control lies in the high-income group those who have an internal locus of control lies in the low-income group. Creativity and positivity also relate positively to income. Moreover, individuals who feel lonely lie in the high-income group.

Table 4 represents the second estimated model of this study which includes all socioeconomics and demographic variable which can determine the level of income. These independent variables are age, gender, level of education, number of children, marital status, interaction variable of marital status and age, square of interaction variable of marital status and age, interaction variable of gender and age, square of interaction variable of gender and age and dummies of province as shown in table 4.

It can be seen that the coefficients of variables are other than zero and highly significant. This study found a positive relation between employment level and income. The employment intercept dummy is significant at $P < 0.005$. Here the assumed reference category is unemployed. Therefore, for employed intercept is -0.22 (-0.58 + 0.36) and for unemployed it is -0.58. It can be interpreted as keeping all other factors as a constant average value of income for employed (-0.22) is more than unemployed (-0.58).

This study found a positive relationship between the age of an individual and income but this relation is insignificant. It can be seen that the coefficient for age is 0.01 which is insignificant at $P > 0.0.5$. It can be seen in table 4 that the coefficient for gender dummy is 1.174 which is significant at $P < 0.05$. Here the assumed reference category is female. Therefore for male, intercept is 0.6 (-0.58 + 1.174) and for female intercept is -0.58. It can be interpreted as keeping all other factors as constant, the average value of income for female (-0.58) is less than male (0.6).

Table 4: Impact of Socioeconomics and Demographic Characteristics on Income

Variables	Coef.	Std. Err.	T	P>|t|
Constant	-0.586	0.260	-2.26	0.024
Employment	0.360	0.079	4.53	0.000
Age	0.001	0.009	0.15	0.884
Gender	1.174	0.438	2.68	0.007
Level of Education	0.100	0.014	7.40	0.000
No. of Children	-0.051	0.020	-2.63	0.009
Marital Status	-1.231	0.456	-2.70	0.007
Marital status and Age	0.074	0.024	3.14	0.002
(Marital status and Age)2	-0.000	0.000	-2.94	0.003
Gender and Age	-0.085	0.024	-3.53	0.000
(Gender and Age)2	0.001	0.000	3.20	0.001
Punjab	0.055	0.085	0.65	0.518
Sindh	0.108	0.095	1.14	0.255
Khyber Pakhtoon kha	0.664	0.105	6.30	0.000

Source: Author's calculations

This study found a positive relationship between level of education and income. It can be seen that the coefficient for the level of education is 0.1 which is significant at $P < 0.05$. This can be interpreted as if there

is a 1 unit increase in the level of education then there are 0.1 unit increases in income. This study found a negative relation between no. of children and income. The coefficient for no. of children is 0.51 which is significant at $P < 0.05$. This can be interpreted as if there is a 1 unit decrease in no. of children then there are 0.51 unit increases in the income. The coefficient for a marital status dummy is -1.23 which is significant at $P < 0.0075$. Here assumed reference category is unmarried. Therefore, for married intercept is -0.65 (-1.23 + 0.58) and for unmarried is 0.078. It can be interpreted as keeping all other factors as a constant average value of income for unmarried (0.58) is more than married (-0.65).

The coefficient of interaction variable of marital status and age is positive and significant which can be interpreted as the age of a married person increases their earning also increases. The coefficient of a square of the interaction variable of marital status and age is negative and significant which can be interpreted as the age of married people increased return to scale of their earning decreases. The coefficient of interaction variable of gender and age is negative and significant which can be interpreted as the age of males increased their earning decreases. The coefficient of a square of the interaction variable of gender and age is positive and significant which can be interpreted as the age of males increased their earning return to scale increases.

It can be seen in table 4 that the coefficient for province dummy for Punjab is 0.05 which is significant at $P < 0.05$. Here assumed reference category is Baluchistan. Therefore, for Punjab intercept is -0.53 (0.05 - 0.58). The coefficient for province dummy for Sindh is 0.1 which is significant at $P < 0.05$ assuming the reference category is Baluchistan. Therefore, for Sindh intercept is -0.48 (0.1 - 0.58). The coefficient for province dummy for KPK is 0.66 which is significant at $P < 0.05$ assuming the reference category is Baluchistan. Therefore, for KPK intercept is 0.08 (-0.58 +0.66). The finding of this model reveals that a wide range of demographic and social factors also determine the level of income.

Conclusion

The results show that people with a more external locus of control positively affect their incomes, as they do believe in external factors like fate and luck for its success or failure. Creativity, loneliness, and positivity have a direct relation with income while mistrust and risk aversion have an inverse relation with income. Creative minds of individuals, freedom of choice to control their lives phenomenon have a strong, positive and significant association with income while positivity and loneliness have a weak association at $P<0.10$. Creativity at work increase income or regular work for just reward increase

income. This means that the individuals who mistrust less are consequently quicker in taking economic decisions and would make investment planning that will lead to an increase in their income. A second estimated model of this study includes all socioeconomic variables which can determine the level of income. These variables cover a wide range of demographic and social variables. These socioeconomics variables are age, gender, level of education, number of children, marital status, interaction variable of marital status and age, a square of interaction variable of marital status and age, interaction variable of gender and age, a square of interaction variable of gender and age and dummies of the province. Results show that all these variables have a significant relation with income level. All the socioeconomic and demographic variables have a strong association with the level of income. It reveals that the dummy of marital status negatively influences the income, it means that an unmarried man can earn more than a married. This study suggested that policymakers should take initial steps to focus on human psychology while making efforts to reduce the poverty level. By doing so, people can easily take rational decisions which will consequently improve the efficiency of poverty reduction programs and the policies for poverty reduction. These programs need a little extra expenditure or infrastructure for training the poor about how they can change their income level by slightly modification of their behavior and the ways of thinking. These psychological training programs will be helpful to get the poor out of the poverty trap. The success of poverty reduction programs will be more if a rational decision is taken by the households.

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