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MSc Programme in Urban Management and Development

Rotterdam, The Netherlands

September 2016

Thesis

Title: Religion and economic development

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Specialization: Urban Competitiveness and Resilience (UCR)

UMD 12

MASTER'S PROGRAMME IN URBAN MANAGEMENT AND DEVELOPMENT

(October 2015 – September 2016)

Religion and Economic Development

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Pakistan

Supervisor: Dr. Martijn Burger

UMD 12 Report number: 943

Rotterdam, September 2016

Summary

Historically, plethora of researchers has investigated the role of religion across multiple facets of human existence. Research in the field of religion and economic development is in its initial stage, and now many researchers are concerned about the non-economic factors and their role in the development of an economy. Religion is considered as the most important non-economic factor that construct the basic institutional infrastructure of a society. The role of religion is reflected in many aspects of human life i.e. personal as well as professional. Scholars have been examining the impact of religion on economic growth such as Weber Max, Robert Baro, Rachel McCleary etc. to mention few. All the previous studies have tried to examine the impact of religiosity on economic growth directly, but next to none has tried to examine the indirect relationship of religion and economic development via different channels. This study is thus aimed at exploring the indirect channels through which religion can influence economic growth such as ethics, poverty alleviation, political participation, social capital and mental health. This research also intends to investigate how religion can contribute to eliminate conflict that arises due to fractionalization (ethnic, religious and linguistic), polarization (ethnic and religious), ethnic and religious tensions etc. In addition, the association between religiosity and economic development at continental level is examined coupled with an effort to know the role of religion in the economic growth of developed and developing countries.

In this study religion has a positive direct effect on economic development and it is very significant. No strong evidence is found for the channels i.e. ethics, poverty alleviation, political participation, social capital and mental health through which religion mediates its effect on economic growth. Religion do mediate its effect through poverty, political participation and mental health, but it is not significant. It is hard to find any evidence that shows mediation effect of religion through ethics, and social capital. In case of fractionalization (ethnic, religious and linguistic), polarization (ethnic and religious), ethnic and religious tensions, they all have negative impact on economic growth. When their respective interaction terms with church attendance is included in the equation, all the coefficients of interaction term turnout to be positive except religious polarization, and these results are not significant. In economic development, religion also plays its role in various regions particularly in Asia and Europe where its impact is positive and is highly significant; Africa shows somewhat positive but insignificant results and in case of American region, the linkage of religion and economic development is not robust. Developing countries show the positive impact of religion on economic development but these results are not robust. In developed countries effect of religiosity on economic development is positive and it is robust as well.

Keywords

Acknowledgements

First of all, I would like to say thanks to ALLAH Almighty, Who bestowed on me the precious opportunities, that opened new doors of knowledge, success and achievements. It's the great blessing of My Allah that enabled me to work hard with full zeal, zest and enthusiasm.

I must say thanks to my considerate and esteemed supervisor Dr. Martijn Burger, who was a big source of guidance throughout my thesis. My sincere thanks goes to Dr. Spyridon Stavropoulos, Dr. Ronald Wall, Ms. Monserrat Budding-Polo, Ms. Marina Salimgareeva and Ms. Dorcas Nthoki Nyamaifor for their kind guidance, valuable suggestions and technical support. I am thankful to Mr. Abdul Wajid and Yasir Masood for the proof reading of my research work.

I wish my heartfelt gratitude to my husband Sohail Anjum for his keen interest in my research work, his encouragement, emotional and moral support to accomplish my degree. Above all, are the prayers of my parents and due to their great concern regarding my educational achievements, I have completed my studies.

Unbreen Qayyum

November 2016

Dedicated in gratitude and affection to

My beloved Husband Sohail Anjum and Son Abdul Aalee.

May ALLAH give them long life and health (Ameen).

Abbreviations

EVS	European Values Survey
FBO	Faith Based organizations
GDP	Gross Domestic Product
WCE	World Christian Encyclopaedia
SUR	Seemingly Unrelated Regression Model
IIDEA	International Institute for Democracy and Electoral Assistance
IV	Instrumental Variable
ICRG	International Country Risk Guide
WDI	World Value Indicators
WV	World Vision
LSDVC	Bias Corrected Least Square Dummy Variable technique
GMM	Generalized Methods of Moments
WVS	World Value Survey

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Chapter 1: Introduction

1.1 Background

It has now been widely accepted that just accessibility of resources or the capital accumulation is not sufficient to explicate the large differences in the economic performance of various nations. (Scully, 1988; North, 1990; North, 1992; Barro, 1991; Knack and Keefer, 1995; Banerjee and Iyer, 2002; Rodrik et.al., 2004; Acemoglu and Robinson, 2012). Conventional neoclassical growth models put a lot of emphasis on disparity in saving rates (Solow, 1956), total factor productivity, discount rate (Cass-Koopmans, 1965) and technological progress (Romer 1986; Romer, 1990; Lucas, 1988). However, according to North and Thomas (1973) education, innovations, capital accumulation and economies of scale are not the main causes of growth. Instead, they can be considered the consequences of economic growth. They further argue that the indispensable elucidation of growth divergence lies in institutions. North (1990, p. 3) defines institutions as "the rules of the game in a society, humanly devised set of constraints that shape human interaction". He says that institutions "structure incentives in human exchange, whether political, social, or economic" (North, 1991, p.477). Nations with a well-established set of institutions enjoy the fruits of prosperity, as these institutions ameliorate the development process through efficient distribution of resources. John Locke, Adam Smith, John Stuart Mill, Douglass North, Robert Thomas, Daron Acemoglu and Rodrick are amongst those scholars who emphasize the role of institutions in the development process of different countries.

Now a question arises that if institutions are determined within a society, then what are the factors that contribute in the development of these institutions? Institutions are humanly devised rules that come out of a thinking process of a society as a whole (North, 1990). What are the factors that shape the thinking process of a society? This inquisitiveness has motivated me to work out those factors, and analyse their crucial role in the formulation of institutions. Among many other factors, I am interested to find out the part of religion that has a great impact on the thinking process of human beings. If we put a quick glance on the human history, we will come to know about the great influence of religion on the human conduct, and the social construct. Human perceptions and their activities are highly affected by religion. Religion shapes behaviour; behaviour shapes preferences and these preferences, we may say informal institutions, are transformed into formal institutions. On the one hand, it affects development directly through its belief system by altering the behaviour/preferences of agent (Barro, 2003). While on the other, it indirectly contributes through the channel of established institutions. Nations have unique origin and ideology, which usually comes from the religion they inherit. These nations also face different economic development levels and this raises a more complex question, namely whether these differences in origin and ideology translate into the institutional differences that could affect economic outcomes today?

Unfortunately, religion could not get much importance in the field of economics, and it remains a highly neglected research area especially in institutional economics. Many economists are of the view that the narrative and metaphor do not come within the sphere of rational choice theory. However, Smith (1776) in his book "*The Wealth of Nations*" argued that self-interest motivates a clergy in the same way as it does a secular agent. Market forces constrain the churches as well as a secular firm in a similar manner. Other features like perfect competition, monopoly, regulatory hazards are as factual for a religion as for any other sector of an economy. After long time nearly 200 years, economists realized the rationality of religious behaviour and revisit Smith's approach. Over last decade, economists are showing remarkable

interest in the political economy of religion. In the light of critical theory approach, it is argued that religion, faith and spirituality are imperative to the future of sustainable development (Lunn, 2009). Religious beliefs especially those of hell and heaven are positively linked with the economic growth, development responds more towards believing rather than belonging. It is emphasized that output of a religion is belief and religious beliefs influence individual behaviour that boost performance of the economy (Barro and McCleary, 2003). Religious associations enhance the social networks (Clarke et.al. 1990; Wald et.al., 1990), longevity (Zuckerman et.al., 1984; Schoenbach et.al., 1986) and wellbeing (Idler, 1987; Jarvis and Northcott, 1987; Levin and Vanderpool, 1987; Dwyer et.al., 1990; Ellison, 1991). The church can bridge old and new values, reshape culture, resolve structural inequities and can provide resources as well as communal solidarity (Smith, 1976). Faith based organizations work more efficiently and does their job with immense devotion (Bradley, 2005). In Marshal (2001) view, Millennium Development Goals can be achieved at the intersection of worlds of religion and development.

1.2 Problem Statement

Economic development is a complex phenomenon and it has never been an easy task for economists to divulge all those dimensions that are crucial to growth in a real world scenario. Overall, economists have different perspectives regarding the economic growth process, among several factors that are taken as essential for development there are few about which economists are sceptical such as the role of religion in the development. Apparently, there exists very strong connection between individual behaviour, institutions, governance and economic development (Acemoglu and Robinson, 2012) but if further investigated, it will come to our knowledge that institutions and governance are deep rooted in social setup or so to speak, values and norms are ultimately reflected in an individual's behaviour. These so-called social norms and values are evolved gradually from the religion that is followed by humans since its very inception. Religion is as old as is the civilization on earth; it is in one or the other form of religion where man always look for internal peace and satisfaction. Majority of people around world follow religion and it is obvious that it is very important in the lifespan of its followers and carried a defining impact on the thinking process. Based on their belief system people interact, perform their jobs and other chores in daily life. Honesty, hard work, contentment, selfishness these all are the attributes that shape their behaviour at personal and public spheres. In this regard, religion offer very strong ground to our belief system and it reflects in all the economic and non-economic activities that ultimately affects the overall wellbeing and sustainable economic development. Therefore, there is a dire need to investigate the role of religion in economic development.

In last few decades, organizations that are working in the field of development have realised that religion can be used constructively in the course of stimulating economic development. World Bank also examined the influence of religion and discussed it in various reports. The issue of religion seeks attention of many researchers and the model of rationality in economics becomes questionable. They investigated the role of religion in economic growth qualitatively as well as quantitatively. In a seminal work of Barro and McCleary (2003), they examined the impact of religious belief in hell and church attendance on economic growth. Belief in hell is positively linked to growth and coefficient of belief in heaven is often insignificant. They also take into account, share of different religions (it includes seven types) and found that church attendance has negative impact on the economic development and it is highly significant which means that the people can utilise time productively by not spending it in church. The authors maintain as it is not the net negative effect of church attendance on economic development, as increase in church attendance strengthen beliefs that ultimately promotes economic

development. In view of Guiso, et al. (2003), on average religiosity is positively associated to economic growth by formulating such behaviours that are more conducive to better institutions and free markets. Religious people usually trust governments, people in general as well as the legal system. They usually follow the laws in a society and believe on the fairness of market's outcome. Iyer (2015) takes religion as "spiritual capital" and religious network provides its attendant opportunities that can foster economic development. Research in the field of religion further calls for investigation in detail, about the mediators (channels), through which religion actually play its vital role in economic development.

The model of Barro and McCleary (2003) has been re-estimated by incorporated few more control variables such as traditional Solow variables, institutional and geographical as well as the societal fractionalization variables. In all the specifications, Durlauf et al. (2005) could not find religious variable that is significant at 5 percent except belief in heaven that is marginally significant in few regressions. Young (2009) also argued that by making little workable variations in Barro and McCleary's (2003) regression equations might result in larger changes in its estimates. Empirical estimates should be robust to various model specifications and it must not be just evaluated based on significance. The results are not consistent with the variation in time and the instrumental variables are weak. He further added that association between religion and economic development is not applicable to the West; this might be a feature that holds best in Asia and Africa. When countries that lie in the region of Africa and Asia are taken out of regression the coefficient that measure religiosity dropped near to zero, while the church attendance turns its sign from negative to positive. The coefficients for church attendance and belief in heaven and belief in hell are twice as large for African and Asian countries then for the Western countries.

Religious adherence is very important in explaining the effect of individual religion on economic development (Barro and McClearly, 2003; McCleary and Baro, 2006). They find out that Protestantism, Orthodox Christianity, Islam and Hinduism have adverse effect on economic development. In view of Sala-i-Martin et al (2004), Islam and Confucianism have positive influence on economic growth. Noland (2005) also worked with the religious adherence and its impact on economic growth; based on his findings he said that Jewish, Catholicism and Protestantism are negatively linked with the economic development during the period of 1970 to 1990. He further argued that for a smaller sample of countries Catholicism and Protestantism together with Orthodox Christianity have positive effect on economic growth for the period of 1913-1998. Countries where the main religions are hierarchical face low institutional quality and bad governance that ultimately reflects into the inefficient utilization of resources and lower level of economic development (La Porta et al., 1997).

Jong (2008) reviewed studies that explore linkage between religiosity and economic growth, he concluded that literature on this subject is highly ambiguous and inconclusive. Specifically, no religion can be considered as pro-growth or antigrowth. Causality is not just directing from religion to economic growth, economic growth also has an impact on religion that give rise to the existence of reverse causality. Another stream of existing research found no significant effect of religion on economic development or it might have negative effect on economic growth subject to sample and data being considered for analysis, so it is of immense importance to address the conditions under which religion is not conducive for growth. Literature on the subject under discussion further calls for research to unveil all those issues and dimensions that must be explored to fill the gap between the two extreme viewpoints. As religion has a positive effect on the economic development in one set of studies, and in another stream of research it comes out as a hurdle in the economic development. One of the reasons

due to which literature remains inconclusive and gives mixed results is that, no one has paid attention to the channels such as religiosity, ethics, social capital, political participation, poverty alleviation and mental health etc. through which religion can contribute to economic growth. There is a need to understand the conditions for example ethnic polarization, religious polarization, ethnic fractionalization, religious fractionalization, linguistic fractionalization, ethnic and religious tensions etc. that can be controlled using the tool of religion.

This study thus, investigates the effect of religion on economic growth. An important offshoot has strived to reveal the role of religion in economic growth which including studies like Barro and McCleary (2003), Guiso, et al. (2003), Iyer (2008), Durlauf et al. (2005) etc. Although, these studies have analysed the role of religion vis-à-vis economic development, but none of these actually pay attention to the indirect channels through which religion can influence the economic growth. What distinguishes this study from rest of the literature is that it investigates indirect channels through which religion can influence economic growth. This study provides novel perspectives in the research concerning role of religion in development process and research results provide valuable insights regarding the development process in general. These indirect channels which this study focuses include ethics, social capital, poverty, political participation, and mental health. Each one of these aspects has a latent effect on the development process and is directly or indirectly affected by religion. Although, there may be many more things which have the potential to indirectly affect economic development due to religion but we take these aspects as in our view these have the most prominent impact on religion. One other reason for only banking on these themes is the availability of data.

This study also investigates another important area in which religion can make positive contribution is maintaining peace and harmony in the country. Conflicts arise due to ethnic, religious as well as linguistic fractionalization and polarization; these ethnic and religious tensions are very harmful for the proper functioning of economy. This study also examines all these conditions that are detrimental for economic growth and intends to address how religion can culminate them to build an environment that is more conducive and propitious for the proper nourishment of an economy. One aspect which has often been overlooked by researchers is the regional differences in the level of religious beliefs/the sternness which can explain the impact of religion on economic development of different regions over the years. This stratification can also provide us with valuable insights and can help us answer our research questions. The study splits observations across continental lines. This will give us the results pertaining to different continents. Furthermore, this is going to capture the effect of religiosity through which religion can make the difference across continents. Lastly, this study also investigates the effect of religiosity on economic development by distinguishing among developing and developed countries.

1.3 Research Objectives

Up till now many scholars have contributed to the literature by investigating the role of physical capital, human capital, institutions as well as religion in development. What makes my idea unique from rest of studies lies in the objectives that I have articulated in the lines written below.

1.3.1 Main Research Objective
    a) To analyse the relationship between religion and economic development.

1.3.2 Sub Objectives

a) To investigate the channels through which religion can affect economic development.
b) To analyse the conditions under which religion promote economic development.
c) To understand the differences in the relationship between religion and economic development across countries.

1.4 Research Question

In order to achieve the objectives of this study research questions have been framed that are written below.

1.4.1 Overall Research Question

a) What is the role of religion in economic development?

1.4.2 Sub Question

a) What are the channels through which religion affects economic development?
b) What are the conditions under which religion is more conducive to economic development?
c) What are the differences in the relationship between religion and economic development across countries?

1.5 Significance of the Study

1.5.1 Academic Relevance

Nowadays it becomes very important to understand the religion and its force that has strong influence on the environment in which economic agent's operates. The study of religion in the field of economics is relatively a new area of research and it demands extensive research. Research till date gives mix results and literature is salient in providing reasons as to why it is inconclusive? This study will be a meaningful contribution in the existing literature by investigating the channels through which religion play its positive role in development. It is very important to analyse channels through which religion can effect economic growth. As it is not just the belief in hell and heaven that formulate the behaviour of economic agents, there are many other channels via religion can effect several aspects of personal and economic prospects. Among several others, the most important channels are ethics, political participation, social capital, poverty alleviation and mental health that can be directly or indirectly affected by the religiosity of a person and they also strongly impact on the economic development. This study will also try to explore condition such as ethnic and religious polarization, ethnic, religious and linguistic fractionalization, ethnic and religious tensions that are very important for economic growth, if controlled by using tool of religion. As religion can play, very important role in reducing these religious and ethnic conflicts if properly advocated for the wellbeing of whole society and this will ultimately ameliorate the economic growth process.

1.5.2 Social Relevance

This study has strong implications for the society as a whole. Religion shapes the personal, social, institutional, political and economic spheres of human beings. Religion has several positive aspects along with some negative aspects that further calls for investigation of channels and conditions that are conducive for economic growth. By exploring channels and

conditions under which religion can contribute to the development does not only contribute in the economic and political sector but it also establishes an environment that is necessary for the general wellbeing of society. As it is widely accepted that religion can regulate behaviour and it provides mental peace and self-confidence (mental health) for some people, inculcates social virtues (ethics), promote socialization, recreation, social cohesion, solidarity (social capital), political participation and welfare (poverty alleviation). No single way can uniformly boost economic development, so there is a need to segregate the effect of religion on economic development through channels and conditions imperative to development.

1.6 Scope and Limitations of the Study

This research tries to disintegrate the overall effect of religion on economic growth at a global and regional level. It explores potential channels such as ethics, social capital, mental health, political participation and poverty alleviation etc. through which religion can spur the growth process. It also addresses the issue of polarization (ethnic and religious), fractionalization (ethnic, linguistic and religious); ethnic and religious tensions etc. It examines how religion can play its constructive role in the elimination of these conflicts that creates hurdles in the path of economic development.

There are few limitations, as this study considers secondary data at a global and regional level, it will not be able to present in depth analysis of a country that is also very important. For few channels such as social capital and poverty alleviation, the data is also missing for many countries and that is a big limitation in understanding or implying results at a global level. There may exist several other channels through which religion may effect economic growth but due to non-availability of data and time constraint, they are not incorporated. This study considers all the religions, as a whole and do not takes into account the individual impact of each religion on economic growth through these channels and conditions.

Chapter 2: Literature Review / Theory

2.1. Introduction

In this chapter, an attempt is made to synthesize the qualitative as well as quantitative work done by researchers to analyse the role of religion in development economics. In last few decades we can see an increase in research papers that investigate the impact of religious beliefs and attendance at worship places on individual's attitude towards different dimensions of social and economic life such as time preference, savings, free riding, honesty, work etc. It is highly criticized that in many studies the issue of potential endogeneity is not addressed sufficiently and this put into question the reliability of results. This chapter presents those studies that are designed very cautiously and fulfil the standards being set by economists. In the second section of this chapter religion and economic growth is discussed in general, in section 3 channels through which religion can effect economic growth are discussed specifically in detail. Section 4 discussed all those conditions such as fractionalization (ethnic, linguistic and religious), polarization (ethnic and religious), ethnic and religious tensions that are considered as hurdles in the path of economic development. It explains how can we use tool of religion to control these unfavourable conditions for the betterment of economic development. Section 5 describes the conceptual framework and a theoretical model based on the theoretical review and objectives of this study.

2.2 Religion and Economic Growth

Investigation in the area of economics of religion is not new it goes back to the seminal work of Weber (1935) who maintained that religion has strong influence on economic development through its belief system and practices. Late in twentieth century economist start paying attention to the subject of religion and explore various dimensions via it influences development process of an economy. The definition of religion usually followed in the literature is "shared set of beliefs, activities and institutions premised upon faith in supernatural forces set of activities, institutions premised upon faith in supernatural forces" (Iannaccone, 1998).

Religion has strong influence on the everyday life of people, it plays very important role in different dimensions of life whether it is a personal domain i.e. morality, ethics, values, etc.; social domain i.e. social relationships, personal or professional networks or public domain i.e. politics, institutions, governance etc. Religion influence economic growth through various channels; it promotes social capital by increasing trust and connection within society, political participation by providing awareness, good governance by improving rule of law, bureaucratic quality and reducing corruption, poverty alleviation through charity and humanitarian basis and mental health by eliminating all those possible factors that increase depression.

Religion can play more conducive role in stimulating economic development if elements like linguistic, ethnic and religious fractionalization, ethnic and religious polarization, as well as religious and ethnic tensions are controlled. We can control adverse effects of these conditions using the tool of religious teachings that promote peace and harmony among its followers. Here the role of religious leaders and media comes into play, as they have the power to change the mind-set of society. In order to realize the objectives of this research study we consider economic development as a dependent variable; religiosity as an independent variable, mental health, social capital, political participation, poverty alleviation and ethics as mediator while fractionalization, polarization and ethnic tensions are taken as control variables. Detailed

explanation of these variables are discussed in the following pages and chapter 3 under operationalization.

2.3. Channels through which Religion Affects Economic Growth

2.3.1. Religiosity

In view of Barro and McCleary (2003) religious beliefs such as belief in hell and belief in heaven have positive influence on economic development of a society while Guiso et al. (2003) stated that religious beliefs give strong basis to such behaviour or might be said as attitudes that are very conducive to economic growth. McCleary and Baro (2006) further explained that believing is much more important than belonging (church attendance) and it is the beliefs of individual that actually create difference in the economic matters. Dehejia et al. (2007) in United States found that people who are religious and participates in religious activities usually enjoy a smooth pattern in their life. Keeping all the other factors constant religious households are generally less vulnerable to income shocks than the non-religious ones. It is also very interesting that African-Americans have more smooth consumption overtime then the counterpart White Americans. Chen (2010) investigated a query analogous to Dehejia et al. (2007), in the context of Indonesia at the aftermath of 1997-98 financial crisis. A link between religious activities of individuals (attending Islamic institution to learn Quran) and economic distress was examined by using sharp variation of prices induced by financial crisis. His findings suggest that institutional setup framed within religion smooth consumptions shocks and this influence is quite evident for non-religious individuals.

Guiso et al. (2003) investigated the consistency of the impact of religiosity on individual behaviour within different religions. They also measure the extent to which intensity of individual's religious beliefs changes the behaviour. Using World Value Survey (WVS) from 1981 to 1997 for the sample of 66 countries, they measured religiosity by the belongingness to a certain religious denomination, intensity of religiosity by participation/attendance in religious activities and find its impact on attitude towards legal rule, government, market economy, cooperation, women and thriftiness. Based on analysis they conclude that there exist strong association between the religious beliefs and economic behaviour that are more conducive to economic growth. They argued that attitude is effected asymmetrically by religious upbringing as well as intensity of religiosity. In another study by Clark and Lelkes (2009) using data set from twenty-six European countries indicated that religious organizations not only insures a smooth wellbeing of affiliated religious households but also non-religious households get benefit due to non-pecuniary spill over effects. Regions where average level of religiosity is high, non-religious people are comparatively more satisfied then those non-religious individuals who are residing in regions where average religiosity is low. On the same lines it is also argued that all those regions where the proportion of atheists are relatively high have negative spill over effect on religious household's overall subjective wellbeing.

Hinduism, Islam, Orthodox Christianity and Protestantism have adverse effect on economic growth as compared to Catholicism (Barro and McCleary, 2003). In view of Sala-i-Martin et.al. (2004), using an expanded sample size indicated that Islam is not negatively associated to economic growth. Noland (2008) tested the proposition that Islam is hostile to economic growth; he argues that data does not support this hypothesis. When we consider all the developing countries in a sample then results do not find any negative correlation between Islam and growth. Two other investigations from economic history highlight the effects on economic outcomes by religiosity in Judaism. Botticini and Eckstein (2005) pointed that Jews who were in agriculture before 8th and 9th centuries AD, they aggressively enter into urban occupation after the creation of Islamic empire. This transformation was not under any

restriction but voluntary they have choice to remain in farming or not. The author also pointed that transition from agriculture to high skills urban occupation was the outcome of religious and educational reforms in 1st and 2nd century AD. In a later study, Botticini and Eckstein (2007) provided a convincing argument that under Jewish norms a father was under duty to educate their son that eventually contributed to this persistence dynamic.

2.3.2. Social Capital

In classical economics physical capital, land and labour are considered as the basic factors of production that fuel the growth process in an economy. In the 2nd half of twentieth century, a new wave of arguments raised the significance of human capital in economic development. For example, neoclassical economists such as Schultz (1961) and Becker (1962) presented the concept of human capital and they question the productivity of conventional factors of production. In their view, healthy, well-educated and trained workers actually create the difference in a society's growth trajectory. Any brilliant idea in the mind of a competent person may not be of much use if it is not discussed, improved and disseminated at any podium. Life at either workplace or home can be more productive, worthwhile and rewarding whenever colleagues, customers and contractors are able to pool their distinctive expertise, efforts and assets in an atmosphere of trust, collaboration and commitment to gain communal objectives. All around the world people have connections within the community where they live, work and worship. They become part of various distinctive groups that help them to shape their own identity and values. The membership of these social groups gives them affection, attention, companionship and moral encouragement. These communities also provide with access to cultural elites, political insiders and professional networks (Woolcock, 1998).

Political scientists, Sociologist and some economists working within the field of economic sociology have starting to speak of social capital; this broader term encompasses the networks and collective efforts for mutual gains (Parsons and Smelser, 2005). The communities blessed with abundance of social capital shall be safer, educated, better governed, wealthier, able to overcome disputes amicably and responsive to citizenry rights. Such communities also display higher degree of happiness because its members can obtain and keep good jobs; use existing sources efficiently, initiate ventures of public interest, and effectively monitor community behaviour without incurring any extra cost (Putnam, 1995a; Putnam, 1995b). This is conclusion from seminal research work of Putnam's, it provides strong implication for economic development theory, and policy i.e. establish, nurture, and sustain social capital. Social capital first recognized by Glenn Loury, Pierre Bourdieu, Jean-Claude Passeron and Jane Jacobs and later more extensive work by Alejandro Portes, Robert Putnam, Ronald Burt and James Coleman. It has wide variety of meanings and it been cited in many studies of social, political and economic studies. As quite often, new concepts introduced with less attention given to its conceptual and historical status. Baron and Hannan (1994) criticized indiscriminate application of social and other capitals as part of newly emerged plethora of capitals what they believe sociologists started to refer each aspect of social life as a kind of capital.

Researcher have argued that social capital such as often measured in terms of the level of trust significantly influence political and economics phenomena. Jacobs (1961) defined social capital as "Neighbourhood Capital". According to Putnam (1995), social capital is also attributed as networks, trust, norms and characteristics of social life that allow individuals to perform competently to achieve common objectives. Theories of social capital discourage individual heterogeneity and focus on community level aggregates. It is considered as feature of group rather an individual. However, social capital at group level is function of action and attributes by the individuals. Networks does not emerge as historic accident merely, but outcome of energy, time spend by the individuals to connect others. In order for economist to

understand social capital, we must start it with decision maker who actually involve in social connection. Level of trust strongly influences the economic success of society as argued by Arrow (1972) and Fukuyama (1995). This is also argued by Knack and Keefer (1997), increase in trust level in country will shift (upward) economic growth. The higher civic engaged and efficiency of local government witnessed by a cross-regional data from Italy used by Putnam, (1993). Another study by La Porta, et.al., (1997) showed that increase in trust level enhance the judicial efficiency and reduce corruption.

According to Max Weber's place of worship formulates networks and built social capital that reinforce traits that influence economic growth. Following Putnam (2000), Barro and McCleary (2003) stated that church not only enhance the belief of individuals but it also provides place for networking and increase in social capital. They believe that church attendance may have positive influence on economic growth by improving social capital. Further added by Lunn and Lybrt, (2008) that Faith Based organizations (FBOs) contributed a lot in the formation of social capital. Glaeser et.al. (1999) investigated role of religion and found individuals who goes to church are more trustworthy. Either they interact more with the churchgoers or they have certain traits that propel them to church and make them trustworthy. Across denominations, it has been found that Presbyterians, Episcopalians and Lutherans appear more trusting on the other hand Jews and Baptists are least trusting and Catholics are moderate by trust. Goldin and Katz (1999) stated that current measure of social capital at the early part of century predicts the proportion of the population who are Lutheran in an area. Another study by La porta et.al. (1997) showed that hierarchal religion entails less cooperative integration between general public which results in reducing the social capital at country level. Religion plays important role, there could be significant trust among certain members of religious group (Iannacone, 1990). Guiso et al. (2003) stated that participation in religious services promotes more trust in a society while religious upbringing has nothing to do with the attitude towards trust. In case of trust in government both, the religious upbringing along with intensity of participation in religious activities effects trust on government. The impact of religiosity differs noticeably across various religious denominations. In Christianity, religious participation is positively associated with trust and this relationship is more prominent in Protestants than Catholics.

2.3.3. Poverty Alleviation

Religion and poverty is not merely need of present time or incidental phenomena, as in Islam, Christianity and Hinduism helping the poor is ingrained as basic goal of individual's belief and part of their ethical system. Hindu's teaching of dharma as divine law and code of life, which define custom duties for individual's gender, age, caste etc. Dharma play a significant role in order to help understand material prosperity, stable and happy life for the whole society. Sahajanad swami attribute social deterioration among Gujrati is result of deterioration of Dharma. According to him, personal growth and prosperity can be only achieved through restoration of Dharma. Concern for poor and needy is basic criterion for righteousness.

Love for God and neighbours is the basic commandment according to Jesus, as Jews follow tradition earlier. When inquired by a young man about achieving eternal life in heaven, Jesus replied him to sell his everything to serve poor (Mark 10:17). Jesus also pointed to the impoverished people and their reward in heaven. Jesus also stressed on helping poor, needy other less privileged population, such as one in prison or any other incarceration is basic criterion for achieving a place in paradise (Matthew 25:34-40; Luke 6:20). As Jesus promised his companionship on the other hand admitted that "it would be harder for rich to enter into paradise" (Mark 10:25; Matthew 26:11). Jesus described helping poor as primary standard for

personal piety and moral code. Inspired of Jesus teaching his first follower sold his personal property to serve less privileged (Acts 2:45; Acts 4:32).

Islam condition any economic activity to alleviation of poverty (Nanji, 1993); all the resources (wealth) of this earth is property of Allah and it is Man's duty to use these resources to please Allah (God). Less privilege people has right on this wealth; there must be equal distribution of wealth. Poverty is stated as ill of society which must be tackled properly. Justice and compassion two most valued principles be used while responding to needs of poor in the society. Wealth accumulation is positive if it is used for the welfare of mankind (Guner, 2005). First distributive mechanism of wealth is 'Zakat' which is obligatory almsgiving, second is 'Saddaqah' which gives money to needy and poor voluntarily; third is 'Waqf' which is to donate an asset or property or any gift to support long-term (Guner, 2005).

Almsgiving in the middle ages played significant role by creating institutions dedicated to provide help to the needy via housing and shelter, monasteries, education and healthcare. Healthcare and education was pivotal part of Christian mission in third world countries. Catholic Relief Services currently reinforced concern for poor people with the help of United Nations, United States and other non-governmental agencies. In the United States Christian churches certain anti-poverty groups actively lobbying for the cause like "Bread for the World". Religious organizations and international development communities argue that religious agencies offering unique to developmental program, designed to alleviate poverty. Infect, all across the world among the religious people it is moral practice to work for the poor. To cater these communities have devoted poor substantial material and spiritual resources. Martin et al. (2007) investigated potential of their ethical and institutional commitment on world poverty. The findings suggest that religious belief affects economic development and strategies used by religious agencies to alleviate poverty work well within the popular development theories. Jones and Peterson, (2011) discussed the growing body of research from scholars and practitioner on religion and development. Education, health, microfinance and humanitarian relief are key activities by the faith based organizations,[1] in developing world where hundreds of millions of people neglected by government (Kaplan, 2009).

Literature in economics remains inconclusive on the bidirectional association of poverty and economic development (Perez-Moreno and Weinhold, 2012). The role of economic growth in poverty alleviation has been examined by many researchers (Adam, 2004; Ravallian and Datt, 2002; Ravallion, 1995; Ahluwalia et.al., 1979) but little attempt is made empirically to understand the reverse causality of poverty alleviation on economic development. Still there exists literature that presents lot of theoretical arguments to support the causal effect of poverty on economic development. Scholars have proposed various mechanisms through which poverty can hinder the economic growth process. These channels include nutritional and related cognitive deficiencies (Ravallion, 1997) credit constraints (Aghion et al., 1999), socio-political instability (Benhabib and Rustichini, 1996), taxation, and redistribution (Persson and Tabellini, 1994). We can say that by reducing poverty through the channel of religion may overcome these constraints and in the long run faith based poverty alleviations, programmes might have an overall positive effect on economic development. As Lustig et.al. (2002) maintained that

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[1]The role of FBOs in development supported by Tyndale (2006) and proposed that FBOs can be a better way to the mainstream counterparts. The study by Narayan, (2000) also argued that FBOs play very important role in economic development. In Marshall and Keough (2004) view these organisations draw better affinity and to reach out to people at grassroots. Religious organizations are well connected and rooted into community, which in return make their work more effective. FBOs provide best network for services delivery due to their connectivity to poor people. In addition to network, these FBOs are connected to other donors of same faith across world. It is reported that significance of FBOs is due to confound connectivity to faith in developing world.

poverty and economic growth relationship is bidirectional, in their opinion manifold complementarities exists between poverty reduction and economic growth. They point out that all those actions being taken to eradicate poverty can engender virtuous cycles that will promote economic development and this sequentially reinforce poverty alleviation. Le, (2008) examined the consequences of initial level of poverty on economic growth in case of Vietnam. They observe that poverty place a negative impact on economic growth of Vietnam provinces and these results are robust. Based on their results they argue that by focusing more on poverty alleviation strategies we can shape an equitable society devoid of forfeiting economic growth.

2.3.4. Mental Health

In the literature of depression among various other factors,[2] religious involvement has received considerable attention of scholars. Several high impact studies (e.g. Bram et al., 2001; Koenig, et.al, 1998; Murphy et al., 2000) explains that some features of religiosity such as religious gatherings, internal religious inspiration etc. might have an inverse relation with depression. A study by Bram et al. (2001) about older individual from European countries involved with church activities showed inverse relation to depression. Koenig, et.al. (1998) reported that among older individual's depression episodes abated linked to their intrinsic religiousness. Similar evidence reported by Koenig, et.al. (2001) and McCullough and Larson, (1999).

The hypothesis called *Main effect hypothesis* states that religiousness and depression association would be significantly negative when averaged across all level of stress in life. It is also conceived that likelihood of negative association between religiousness and depression is high for those individuals who have gone through severe stress attacks. This view is known as the *buffering hypothesis* (Cohen and Wills, 1985). Both of these hypothesis is not considered as mutually exclusive, few studies have found evidence for both hypothesis (Kendler, et.al. 1999). Individuals with high level of depressive symptoms not only lack pleasure in former religious involvement but also over time, it erodes their religious persona in public. This lack of energy to pursue former religious activities, make them seem less religious on religiosity measurement. Depression might push some individuals to get mental peace by participating in religious services and reciting Holy Scripture (Ferraro and Kelley-Moore, 2000).

Numerous studies indicate substantive psychological mechanism play significant role while religiousness reduce vulnerability to depressive symptom (Koenig et al., 2001). Result of survey at national level indicates higher depressive signs are associated with drug abuse (Grant, 1995). It also reflects lower use of substance with religious involvement by teenagers (D'Onofrio, et al., 1999) and adults (Kendler, et. al, 1997). The religious effect in discouraging substance usage can be endorsed by moral interdictions (D'Onofrio, et al., 1999). Another mechanism is religious support, religiously active people tend to mix up community well which in return protect them against depression (Koenig et al., 2001; George, et.al., 2000). Religious activities engage them with more informal contacts and civic engagements (Putnam, 2000). Religious individuals believe that their lives are under the control of a supreme power (God) or negative events of life just an opportunity for spiritual enrichment, they may perceive negativity of such life events less threatening (George et al., 2000). Positive appraisal of life events may protect them from depressive symptoms.

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[2]The well-established risk factors like Gender (Nolen-Hoeksema, 2012); events that create stress (Monroe and Simons, 1991); personal traits like introversion, dependency and neuroticism (Barnett and Gotlib, 1988); Social exclusion (Barnett and Gotlib 1988; Jointer and Coyne, 1999) and factors related to genetics (National Institute of Mental Health Genetics Workgroup, 1998) are studied by several over last century (McCullough and Larson, 1999).

There are studies with difference of results about degree of association between faithfulness and depressive symptoms across socio-demographic groups (e.g. Taylor, et. al., 1996; Nolen-Hoeksema et al., 1999). This is conceivable that linkage of faithfulness to depressive symptoms is not same across various age groups, gender and ethnicity etc. and disparities among different results of studies by investigators might be caused by nature of different sample under study. For example, results show stronger relationship of religiousness and depression among female then their male counterparts, elders than the young's do, or Afro-American than for European American (Blaine and Crocker, 1995). McCullough and Larson (1999) observed negative relationship between religiosity and depression when measured as public religious participation and less when measure as private religiousness like strength to which individual hold their faith.

Economists are much concerned about depression and its impact on productivity loss (Dunnette and Hough, 1991; McGrath and Dunnette, 1976; Lazarus et.al. 1952). Depression increases cost of doing business in many ways such as by deterioration in intellectual capital, absenteeism from workplace, interpersonal conflicts, judgemental errors, bad decision-making, accidents, violence, litigation, grievances absenteeism, Worker's Compensation claims, problems in customer services etc. (Kalia, 2002). Each year billions of dollars have been spent across the world to deal with the cost of stress and it is expected that by 2020 disorders related to depression, stress and anxiety will be on second place after ischemic heart disease (World Health Organization). Depression also increases mortality rate in heart patients (Roose and Spatz, 1999) and 75% to 90% patients that visit doctors are facing issues related stress (American Institute of Stress). Depression not only levy a large amount of burden on individual personally but it also effects society as a whole due to its adverse effect on routine activities, work efficiency, productivity as well as cost incurred on health services received (Lecrubier, 2001). As stress is the usually considered as the main condition that promotes depression so there is a need to pay more attention to explore its causes and ways of its management and preventions (Duhault, 2002).

Yerkes and Dodson (1908) explained that the linkage between stress and performance is like an inverted U-shaped curve. When stress is between low to moderate range it has positive impact on performance but when stress level raise from moderate to high it reduces the performance of worker. Activation theory gives explanation for this inverted U shaped relationship i.e. increase in the level of stress stimulate physiological arousal that actually prevents worker to focus on relevant work and this ultimately reduces his performance. Groot and Van Den Brink (1999) tried to measure in monetary terms the price of stress and test stress theories i.e. demand/control theory. They said that 'good stress' has very small economic relevance and stress related to job is not desirable so employees must pay extra money for stress related jobs. Several factors at work place and home are the reasons behind stress and depression. Stress at work place can be related to pressure at work place such as tensions with employer, colleagues, anxiety and strain etc. while home stress include factors for example conflict with household members, strain, financial responsibilities, relationships etc. (Netemyer et.al., 1998). Recently researchers examine the impact of home stress on performance at work place and they are of the view that stress at home is negatively associated to the performance of employee at work place (Van Dyne, et.al., 1998; Zedeck, 1992; Frone, 1992).

2.3.5. Political Participation

Gerber et al. (2010) investigated the relationship between religiosity and political participation. The individuals who participate actively in religious activities and has regular attendance, have high probability to vote, but it is not easy to establish this linkage as there exists unobservable factors specific to the characteristics of individuals that may affect religiosity and political

participation simultaneously. They considered rescind of the 'blue laws' to quantify the impact of external changes in involvement in religious activities on political participation. Based on their result it turns out that the repeal of 'blue laws' decreases religious attendance by 5% which ultimately decreases the turnout of voter by 1% and we cannot take this effect as negligible. Using bottom up approach religious organizations (church, mosque, temples etc.) promote political participation by providing a platform for networking and civic engagement activities. Using the instrument of holy scriptures that encompass various dimensions of social life, they influence the attitude of society towards politics and economics. At numerous instances Bible, Quran, Vedas etc. pointed at certain rulers for their harsh treatment to public and poor in particular. They provoke sense of responsibility of every individual towards the welfare of whole society and it is considered as religious obligation to raise their voice. Their influence could be positive or negative but still significantly alter thinking of masses (Jong, 2008).

Religious leaders can criticize tyrant leaders without being specific to situation by using Holy Scriptures. This strategy can be successful to repel cruel ruler to commit atrocities. Sakwa (2006) describes how religious leaders used biblical texts both during and post-colonial times. Religious leaders used sermons to convey their protests to oppressors. He made a reference to one of Bishop Gitari's sermon (during 1987) in which the story of prophet Denial was simply conceived by general public as a criticism over government for illegal amendments of constitution to bring changes in the laws. Sermons like these successfully received public attention towards corruption, human rights and political freedom. Many religious leaders like Poland (Roman Catholic Church), the Evangelische Kirche (former Deutsche Demokratische Republik), and Bishop Tutu (South Africa) played significant role in shaping up the opinion in their respective societies.

There are several studies reporting use of religion as an argument to make their policies acceptable in public. Platteau (2008) argued that since inception political actors to manipulate masses have used Islam. He investigates historical examples from various territories to affirm his argument of malpractices of rulers by using Islam as a tool in order to consolidate their powers. He calls it an instrumentalization of Islam. The rulers and religious leaders supporting them often glorify the past and call for renaissance. This stands true for both Mubarak of Egypt and royal family of Saudi Arabia that highly divided religious class; serve them better to misuse religion for their own interests. The divided religious class will pose less challenge to ruling class. Platteau argued that absence of centrally controlled explanation of Qur'an has made Islamic teachings more exposed to misuse and leaders usually select imam of their own choice that best suits their motives. Christendom due to its centrally dictated interpretation makes it less open to instrumentalizaton. The protestant branch of Christendom is also having conflicting views on material matters as it lacks central interpretation.

Political participation by the public is always advocated by social scientists. Blair (2000) explained that increase in political participation raises the voice of common people in public policy circles and it will make government in power to be more accountable, they will improve public service delivery such as basic infrastructure, good living environment, resource mobilization etc. and in this way, it promotes economic growth. He further adds that a democratic governance both at local or national level can enjoy success and meet its targets only in the presence of accountable public servants i.e. all government administrative personnel must be answerable to elected representatives and these elected leaders must be accountable to public. This system of accountably works at its best when public play its important role through political participation by not only casting vote but also working closely with political persons.

La Porta et.al. (1997) stated that all those counties where hierarchical religions are more dominant such as Islam, Orthodox Christianity and Catholicism etc. have judiciaries with low efficiency, bureaucracy is of low quality, higher level of corruption, low civic activity participation rate more tax evasion, low quality infrastructures and higher level of inflation. Pryor (2006) explains the existence or absence of particular economic institutions is not related to the share of Muslim population. When we exclude those Muslim states that are very rich or too small and limit data up to developing countries than this share of Muslim population do not show any change in the economic growth. It is concluded that the null hypothesis i.e. economic performance is uncorrelated to religious affiliation, can be rejected frequently. But the estimates based on regressions are not robust to sample size and religious affiliation.

2.3.6. Ethics

Ethics based on religion do effect partly individual's worldview but they have very strong influence on culture (Huntington, 1993). Although criticized on other accounts, Weber (1935) argued that religion based ethics influence the rise of capitalism in Europe and the protestant ethics viewed religiosity actor that stimulate economic development. The economy can be effected by the traits like honesty, trust, hospitality to unknown, charity, thrift and so on. There exists strong connection between these traits to religious teachings in various religions and enhancement of these traits spur investment and economic growth. For example, in Islam, the relationship between employer and employee is of social nature where employer is under obligation to treat employee well and in return, employee will perform his duties honestly. How religion based ethics effect organization's work behaviour is first step towards understanding a link between religion and development (Olson, 2008). Wesley (1951) equated Christian ethics to hard work and honesty in one of his sermon "On the use of money". Weber and Wesley have similar views over this, Wesley stressed his congregants to "achieve all you can, save and give all you can". Wesley noted that his devout emphasized more on gaining and saving then third doctrine of giving to others. He also regretted that his followers become prosperous their religiosity declined (see Hill, 2011).

Arrunada (2010) examined the values in Christianity that are relevant to economic development as mentioned by Weber in 'work ethic' argument that motivates Protestants to work hard and efficiently and a 'social ethic' argument due to which their conducts are monitored within the society, they support legal as well as political institutions and have homogeneous set of values. Arrunada used data set from International Social Survey Programme 1998 and found considerable evidence in favour of 'social ethic' argument instead of 'work ethic' argument. He further explained that Protestantism give strong basis to capitalist economic system not by the psychological channel as explained by Weberian work ethics arguments. The social ethics promotes impersonal trade and growth. Following the Max Weber's 'work ethic' argument Guiso et al. (2003) stated that Protestants are the only among various other religious denomination that are highly motivated towards economic incentives. In a subsequent study, Cantoni (2015) added another contribution to economic history. To test the Weberian hypothesis that Protestantism favour economic growth, by using micro econometric. To achieve this, he developed dataset of 272 German cities in the period of 1300-1900, and suggests no association between Protestantism and economic development.

Over the year's ethics based on religion played significant role in many other aspects of development. De Kadt (2009) highlighted public health condition in Africa in 1970 was so abysmal in rural sector that it was religious organizations provided with resources, missionaries mostly working under extreme condition to deliver healthcare to poor people. These missionaries played significant role in the wake of structural restrictions imposed by IMF on

these countries to reduce social provision in medical sector (Clarke 2006). Further religious motivation protected human rights under dictatorship through Faith Based Organizations (FBO's), one of example is in 1970-80's by Catholic Church in Latin America (De Kadt 2009). Association of religion and development play significant role in south as compared to European society (Martin 1990; Chesnut 2003). The regional manager of World Vision in Zimbabwe found Christian aspect of organization make their work operative and effective (Bornstein 2002). In many developing countries, spiritual dimension of religion based ethics appeared to be on advantage. It is argued that secular societies also have roots in religious customs and it might not be logical to disregard aboriginal devoutness in the southern region of the World (Holloway and Valins 2002). Tripp (1999) argued that faith of the members of World Vision (WV) enables them how religion manifest itself in culture and day to day life, secular methods might not be much effective and rational.

Hill (2011) did not approve completely Trip's (1999) judgement; in his view to be religious is not a requirement, religious cognizance and sympathy are traits that can be attained by secular organizations. He further adds that religion is not prerequisite to be good and ethical; people can be more ethical and behave well without any religious involvement. However, there exist very few such secular mediums that provide direction, assistance, communion, models, involvement and institutional structure and this is what religious bodies propose. Religious institutes propagate ethics, moralities, values and proper guidelines to registered members by offering wide-ranging services, assemblies, indoctrination, lectures, reading materials, models etc. Although, in the secular circles we do not find any organizational structure that provide such facilities; there are few exceptions such as Boy Scouts (secular organization) who are trustworthy, sympathetic, considerate, parsimonious etc. but not affiliated technically with any religion. It is the case with Alcoholic Anonymous model, not associated with any specific religion; they offer moral doctrines such as veracity, scrupulousness and responsibility. Apparently, religiousness is not necessary to be ethical but presence of a proper organizational structure being offered by religion might reassure and strengthen ethical values and attitude. Yes, there are exceptions but largely trend recommends that religion promote and help individuals in living ethically and virtuously.

2.4. Conditions under Which Religion Promotes Economic Growth

2.4.1. Fractionalization, Polarization, Ethnic and Religious Tensions

Globalization imbedded with deep and complex roots, where the religious elements cannot be segregated from economics. The religious growth coincided with economic development. Economic forces historically affected in positive or negative way by religion and it often mitigated or aggravated religious tensions. The realization of mutual economics benefits forced Islamic powers and Christian in Europe to end long-standing conflicts. The economic and political configuration of religious and commercial interest does not infer that they work for each other, for example in Africa European Missionaries working and receiving funds from their government often criticized the policies of their home country (Oliver, 1952).

Economic literature is much engrossed on the effect of economic factors, with the surge of empirical growth, few authors for example Barro (1991) have also discussed non-economic factors. Ethnic diversity is one of important element among non-economic factors. The question like religion and religious diversity and its effects on prosperity have gained importance recently within the literature of economics and religion. The debate on the theory of Samuel Huntington (1997) about the cultural fragmentation in the world does contain these

facts as focus point of discussion. In the studies that deals with the social conflicts and growth, give very importance to religious diversity. The modern religious conflict of Lebanon and Israel, a conflict of religious communities like in Algerian government against fundamentalist religious groups, Nigerian Government against Islamist groups, Malaysian tension between Muslims and Christians, in India its Hindu vs Muslim, Ethiopian crisis and many others.

According to García-Montalvo and Reynal-Querol, (2000) there are two major reasons for religious conflicts to have negative effects on growth; firstly, to obtain political influence religious groups spend some resources like, time, labour which considered as social cost that leads to influence economic growth. Secondly, during a conflict communication diminishes across individual due to polarization of society. Social friction does not allow good communication to take place. The similar effect will be true when society is structured in multiple collectives. This communication breakdown influences the flow of ideas and technological innovation in the country.

The countries around the world face ethnic conflicts and within divided societies, it remains centre of politics. Ethnic issue leads to domestic and international problems. There are countries like Afghanistan, Nigeria, Sudan, Chad, Lebanon and Kosovo etc. embroiled with ethnic tensions. The ethnic conflicts and its impacts on economic process received little attention in economic literature. The literature failed to find growth determinants and social characteristics of the countries. Political instability, low income, lack of education, population growth and low investment are few determinants affects the economic growth. Ethnic characteristics not only contribute to political instability and investment but also affect economic growth. The inclusive concept of ethnicity covers differences based on colour, religion, language etc. Horowitz (1985). Enid Schildkrout defines ethnic unit minimally, as one with idea of commonplace of origin, connected through kinship, and notion of distinctiveness irrespective of it consists of unique cultural features.

Religious polarization is a friction among different religious groups that leads to social unrest, political instability and communication breakdown among workers. The instability brings uncertainty and lack of investment and it could trigger civil unrest. Further government could exacerbate situation by spending public funds to mitigate crisis. The effect of ethnic conflict is indirect on economic growth through these channels. However, another argument about the direct channel which is breakdown of communication due to diversity or conflict. Economic growth affects negatively due to failure of communication, which in turn diffuse new ideas and innovation in a country. García-Montalvo and Reynal-Querol, (2000) study channels explaining the religious polarization and diversity and if there is any impact of these two on economic development. Though polarization indicate no direct influence on growth, still it explains the investment rate, probability of civil unrest and government expenditures. While animist diversity presents a direct affect to economic growth.

Guiso et al. (2003) argued that behaviours like intolerance are more effected by the religious upbringing of individuals then intensity of religious participation. Tolerance and religiosity has also linkage in all religious denominations but Muslims and Hindus have relatively less tolerance for other races and immigrants as compared to Christians where attitude of Protestants and Catholics are considerably similar. In case of Buddhists it comes out that, they are comparatively more tolerant than non-religious persons.

Up till now most of the scholars put lot of stress on the downside of religion in conflict generation and less attempts are made to highlight the positive aspects of religion in mediating peace and harmony (Johnston, 2003). There are many cases in which religious institutions and leaders play positive role in promotion of peace-making and conflict resolution such as peace agreement in Sudan, peace transition in South Africa, an end to Mozambique's civil war etc.

(Hume, 1994; Johnston and Sampson, 1995). Douglas Johnston as a president at the International Centre on Religion and Diplomacy states that conventional diplomacy often fails to address the issue of peace in conflict management and several time they used faith based intervention in conflict resolution. In his view religious leaders can facilitate in peace-making by promoting credibility in terms of trusted institutions, values that are most respected, moral critiques against government in case of injustice, reconciliation in case of conflict among different groups, humanity in protracted conflicting zones, community mobilization and political settlement as well as international assistance in peace generation (Johnston, 2003).

Hizkias Assefa also appreciated the praiseworthy role that can be played by religious leaders in conflicting areas; he considered them as a valuable asset in peace generation. Religious leaders of different faith based communities should work together to eradicate conflicts and facilitate peace effectively. Religious leaders can be a source of great inspiration to common people by practicing values that are common across all religions such as kindness, forgiveness, justice etc. He accentuated to critically analyse behaviour and actions at personal level and bring the spiritual aspects of religion into the course of peace-making process, in this way we can create difference in its true sense. Rational argumentations often fail to change the conflicting attitude of people that is more based on emotions then cogent reasons. It is not essential that cognitive verdicts and vows always render into sentiments and actions (TerHaar, 2005). Gopin (2005) pointed toward two critical rudiments that he believes to be an essential part of religious life is compassion and empathy; these values can contribute positively in conflict resolution process.

According to TerHaar (2005) religious resources can be confined into four major elements that erects the structure of religion i.e. philosophy (Faith), practices (Sacraments), social organization (Community) and Spirituality. These resources can be used as instruments against conflict generation. Clingingsmith et al. (2008) examined the casual effect on the attitude of individuals after participation in pilgrimage to mecca. Results show that participation in pilgrimage increase sense of equality and harmony among ethnic groups, more importantly enhanced identification with Islamic world does not seem to be accompanies by hostilities to non-Muslims. It increases the belief in amity and harmony among followers of different religions. The results also proposed that change in the attitude is due to exposure and interaction with other Muslims from across the globe, then merely by change of social role upon return from pilgrim.

2.5 Conceptual Framework

The conceptual framework describes the channels through which religion can stimulate economic growth (independent variable) and the conditions like decreasing the ethnic and religious tensions usually caused by ethnic, linguistic and religious polarization and fractionalization with the help of religious services. Religion is taken as independent variable, channels i.e. religiosity, ethics, social capital, political participation, poverty alleviation and mental health etc. are considered as mediators while conditions i.e. ethnic tensions, religious tensions, polarization and fractionalization are moderators.

Figure 1. Conceptual Framework
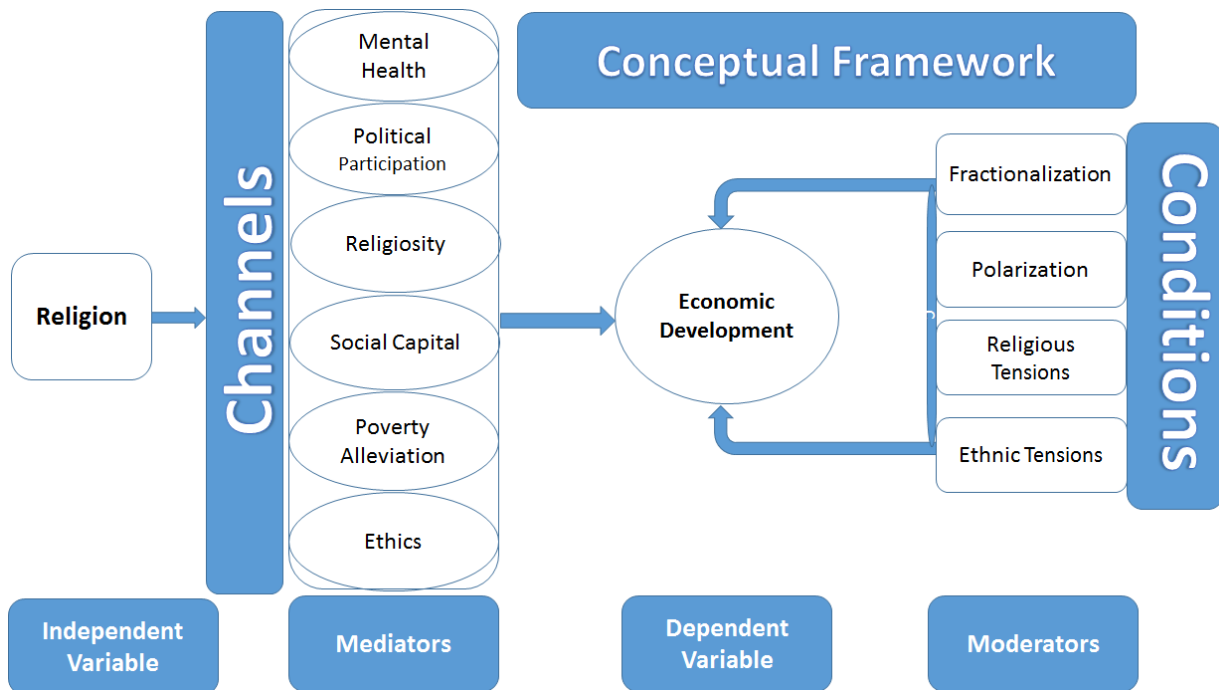
Source: Author (2016)

As mentioned before neo classical economics emphasis on saving rate, discount rate and technological progress as a key factors that contribute in the economic development. In economics of religion Weber Max advocates, the role of religion in motivating people's saving behaviour or you may say thriftiness in the Protestants, due to which they progress much more than their counterpart catholic followers. Various studies such as Chiswick (1983), Tomes (1983), Meng and Sentence (1984) provided evidence about the role of religious teachings in transforming attitude towards work and capacity building. They argued that Jews as compared to Catholic, Protestant and other religions have obtained values from their faith that increase their earning capacity and increase productivity of human capital, elevate their rate of return on human capital. Barro and McCleary (2003) and Durlauf et al. (2005) investigated the role of religion where the first one considers religiosity as an independent variable and the latter one also included traditional Solow variables in a growth equation. In the space below, I formulated a theoretical framework to come up with estimatable behavioural equation based on my conceptual framework presented in the last section. By extending the Solow-Swan growth model, a theoretical model has been derived and it is empirically estimated in the next chapter. Here output is taken as a function of Labour (L), Capital (K) and technology (A) as exogenous, as shown in equation 1.

$$Y(t) = A(t)F(K(t), L(t)) \tag{1}$$

Where   K (t) = Capital Stock at time t.
             L (t) = Aggregate Labour at time t.
             A (t) = Total Factor Productivity or Solow Residual at time t.

Production function can be translated into Cobb-Douglas production function as

$$Y(t) = A(t)K(t)^\theta L(t)^{1-\theta}$$

(2)

Where, $0<\theta<1$, represents capital share and $(1-\theta)$ is labour share. We can write above equation in an intensive form by dividing equation 2 with labour:

$$y(t) = A(t)k(t)^\theta$$

(3)

By taking first and second derivatives, we know that marginal productivity is positive but it is diminishing as shown below

$$f'(k(t)) = A(t)\theta k(t)^{\theta-1} > 0, \text{ and } f''(k(t)) = -A(t)\theta(1-\theta)k(t)^{\theta-2} < 0$$

By using Inadda-Conditions i.e.

$$\underset{k\to\infty}{Limit} f'(k(t)) = 0 \quad \text{and} \quad \underset{k\to 0}{Limit} f'(k(t)) = \infty$$

From this, we can conclude that Cobb-Douglas production function satisfies neo-classical production function's properties. Equation (4) represents the equation of motion of Capital stock.

$$k(t)^\bullet = s.f(k(t)) - (n+\delta).k(t)$$

(4)

By substituting $y(t) = f(k(t)) = Ak(t)^\theta$ in equation (4), we get:

$$k(t)^\bullet = s.A(t)k(t)^\theta - (n+\delta)k(t)$$

(5)

In above equation $(n+\delta)$ is considered as the effective depreciation rate for Capital-Labour ratio $k \equiv K(t)/L(t)$. By rearranging equation (5), we get following equation:

$$k(t)^\bullet / k(t) = sA(t)k(t)^{\theta-1} - (n+\delta)$$

As we know that

$$y(t) = A(t)k(t)^\theta$$

or

$$y(t)^\bullet = A(t)\theta k(t)^{\theta-1}$$

,

By rearranging above equation we can come at equation (6)

$$y(t)^\bullet = A(t)\theta k(t)^\theta.k(t)^{-1}$$

Or

$$y(t)^\bullet / y(t) = \theta\left[1/k(t)\right]$$

$$y(t)^\bullet / y(t) = s.f'(k(t)) - (n+\delta)\theta$$

(6)

Where $f'(k(t)) = A\theta k(t)^{\theta-1}$

From equation (6), we can say that per capita output growth rate is a function of parameters used in this model.

$$y(t)^{\cdot}/y(t) = g(s,\theta,\delta,A(t),n) \tag{7}$$

Here A(t) that is assumed as total factor productivity that can be increased by improvement in social capital (SC), mental health (MH), political participation (PP), poverty alleviation (PA), ethics (E) and religiosity (R). We can write total factor productivity as a function as

$$A(t) = f(SC(t), MH(t), PP(t), PA(t), R(t), E(t)) \tag{8}$$

Using equation (8), we can write equation (7) as

$$\dot{y(t)}/y(t) = g(s, \theta, \delta, SC(t), MH(t), PP(t), PA(t), R(t), E(t) \tag{9}$$

The above reduced form version of Solow and Swan's behavioural equation can be expressed in empirically estimateable equation as:

$$y_{it} = \alpha_0 + \alpha_1 (x_{it}) + \alpha_2 (z_{it}) \tag{10}$$

Where, x indicates channels through which religion effects economic growth while z shows set of control variables as per conceptual framework.

Chapter 3: Research Design and Methods

This chapter presents in detail the operationalization of conceptual framework by choosing appropriate variables and indicators as well as suitable research strategy backed by the literature for data collection and analysis. At the end, validity and reliability are also discussed comprehensively.

3.1 Research Question
The research questions are formulated below in order to achieve the objectives of this study.

3.1.1 Overall Research Question

1. What is the role of religion in economic development?

3.1.2 Sub Question

1) What are the channels through which religion affects economic development?
2) What are the conditions under which religion is play more conducive role in economic development?
3) What are the differences in the relationship between religion and economic development across countries?

3.2 Operationalization

Table 1 indicates operationalization of main concepts into variables and indicators along with the data sources. It presents dependent variable i.e. economic growth rate, channels such as religiosity, social capital, mental health, political participation, poverty and ethics as mediator. Conditions (mediators) are measured in terms of ethnic, linguistic and religious fractionalization, ethnic and religious polarization, ethnic and religious tensions while primary education, urbanization, investment, trade openness and inflation are used as control variables.

3.2.1 Variables Description

Independent variables are divided into channels and conditions. Data for all the mediators except poverty and political participation has been taken from World Values Survey and European Values Survey. Data for poverty has been used from World Development Indicators and for political participation we get information from International Institute for Democracy and Electoral Assistance. Religiosity is measured as an index that is composed of church attendance, belief in hell and belief in heaven. Church attendance is measured as percentage of people that goes to church weekly and monthly basis, belief in hell and belief in heaven is measured as proportion of people who belief in hell and heaven. Social capital is operationalized using indicators of trust and membership in religious organizations where trust is measured as percentage of people who trust people in general and membership in religious organizations is measured as percentage of people who belongs to some religious organization. Mental Health is measured in terms of percentage of people who faced depression in their past while ethics are measured as percentage of people who say it is never justified to claim government benefit they are not entitled, percentage of people who belief that it is never justified to avoid tax or bribe for personal gain. Poverty is measured as headcount ratio at $1.90 a day and voting turnout is measured as percentage of people who cast vote i.e. total number of valid or invalid votes casted divided by population that can vote.

Data for ethnic, linguistic and religious fractionalization has been used from data provided by Alesina et al. (2003). They calculated ethnic fractionalization index by subtracting Herfindahl index for ethnic group share from one and it shows the probability that any randomly selected persons from the given population associates to different ethnic groups. Same formula has been used to calculate indexes for linguistic fractionalization and religious fractionalization that indicates probability of any randomly selected individual of a given population belongs to different linguistic and religious group respectively, the formula used is written below, where s_{ij} represents share of group I that ranges between 1 to N in country j.

$$FRAC_j = 1 - \sum_{i=1}^{N} s_{ij}^2$$

Data for religious polarization index and ethnic polarization index has been taken from Montalvo and Reynal-Querol (2003) and Montalvo and Reynal-Querol (2004) respectively. The polarization indexes range between 0 to 1 and the value of polarization index will be maximum whenever there exist two religious or ethnic groups of equal size. This index carefully considers not just the number of groups that exists but also the perception of these groups for each other, whether they consider other group as a threat for their personal interests. If we take number of groups fixed, then the potential threat will be higher when the size of other group is high relatively. The formula used for these polarization indexes are written below where π shows proportion of individuals who belong to religious (ethnic) group i and N represents number of countries.

$$POL_i = 1 - \sum_{j=1}^{J} \left(\frac{0.5 - \pi_{ij}}{0.5} \right)^2 \pi_{ij}$$

The variable ethnic tension measures the degree of tensions or conflicts that are attributed to language, racial and national divisions. The lower rating is assigned to countries that are facing high risk of potential conflict or you may say they have high tensions due to intolerant opposing groups who are not willing to compromise. The variable of religious tension measures the religious conflicts that arise from the authority of society (governance) by one religious group or it might be a desire of a religious group to command the society in such a way through which they can swap civil law by religious law and this excludes other religious groups from participation or suppress freedom or identity of other religious denomination. Data for ethnic and religious tension has been taken from International Country Risk Guide.

Primary education, investment, urbanization, trade openness and inflation are used as control variables and all the data has been collected from World Development Indicators (WDI). Primary education is taken as primary school gross enrolment ratio both sexes in percentage, gross fixed capital formation as a percentage of GDP is used as proxy for investment, urban population growth rate is taken as a measure for urbanization, trade openness shows percentage of the ratio of imports plus export to gross domestic product (GDP) and inflation is measured as annual growth in the consumer price index. Economic development is measured as a percentage annual growth of gross domestic product (GDP).

3.3 Research Strategy

Secondary data has been used to understand the channels through which religion play its role in economic development and under which conditions religion is conducive to economic growth. Data is collected from World Development Indicators, International Country Risk Guide (ICRG), World Value Survey (WVS) and European Values Study (EVS). This research considers all developed and developing countries. In order to achieve our main research

objective, it is better to include all countries in the data set so that we can understand accurately the role of religion in economic development across the globe. As we have to analyse all those countries that are very developed but have lower level of religiosity as well as those countries with higher level of religiosity but have low economic development. Advantage of using secondary data is that it is available for most of the countries that is otherwise not possible to collect personally due to financial and time constraints. As the scope of this study is broad, so it is a most appropriate strategy to utilise secondary data and understand the underlying linkages and association between religion and development prospective. Data selected for the study is purely cross sectional and we can say that it is stationary but due to endogeneity between variables, selected Generalized Methods of Moments (GMM) will be applied using STATA (see details in chapter 4).

3.4 Validity and Reliability

In view of McGoey et al., (2010) research work is reliable if it is accurate and consistent over time and under various situations while validity is referred as internal as well as external validity. Internal validity can be accomplished by accurately achieving the intended research objectives with the use of appropriate research question, conceptual framework and its operationalisation. The research objectives and research question of this study are very relevant and focused and they are translated into conceptual framework very effectively. All the variables such as dependent variable (economic growth), mediators (ethics, mental health, political participation, poverty alleviation, social capital and religiosity), moderators (ethnic, linguistic and religious fractionalization, ethnic and religious polarization, ethnic and religious tensions) and control variables (investment, inflation, trade liberalization, education and urbanization) are defined based on the literature review and they are operationalized successfully into indicators. These indicators are extracted from reliable data sources and estimation techniques such as System GMM are used that deal with the issue of heteroscedasticity, serial correlation, omitted variable bias, endogeneity, and measurement error to ensure internal validity of the study. External validity is intended to generalize the research findings to a broad range of research units. As this study is considering all the developing and developed countries and it provide analysis at global level so we can generalize its findings that confirm the external validity. In this study, the variables are selected very cautiously by looking very minutely the existing literature on religion and economic development. Up to my knowledge it can be said that based on the literature research strategy and methodology is used very prudently that ultimately make this study valid and reliable.

Table 1. Operationalization of conceptual Frameworks

Variables	Indicators	Data Sources
Dependent Variables		
Economic Development	GDP Growth rate	World Development Indicators
Independent Variables		
Religiosity	Church Attendance	WVS/ESV
	Belief in Hell	WVS/ESV
	Belief in Heaven	WVS/ESV
Social Capital	Trust	WVS/ESV
	Membership in Religious Organizations	WVS/ESV
Mental Health	Depression	WVS/ESV
Political Participation	Voting turnover	IIDEA
Poverty	Poverty headcount ratio $1.90	World Development Indicators
Ethics	Claiming government benefits not entitled	WVS/ESV
	Cheating on taxes	WVS/ESV
	Bribe acceptance	WVS/ESV
Fractionalization	Ethnic Fractionalization Index	Alesina et al. Data
	Religious Fractionalization Index	Alesina et al. Data
	Linguistic Fractionalization Index	Alesina et al. Data
Polarization	Ethnic Polarization Index	Marta Reynal-Querol Data
	Religious Polarization Index	Marta Reynal-Querol Data
Religious Tensions	Religious Tensions Index	International Country Risk Guide
Ethnic Tensions	Ethnics Tensions Index	International Country Risk Guide
Control Variables		
	Primary Education	World Development Indicators
	Urbanization	World Development Indicators
	Investment	World Development Indicators
	Trade Openness	World Development Indicators
	Inflation	World Development Indicators

Source: Author, (2016). World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014),Alesina et al. Data (2003), Marta Reynal-Querol Data (2002, 2005).

Chapter 4: Research Findings

This chapter presents empirical findings based on theoretical framework mentioned in chapter 2. In this chapter three-research sub-questions are discussed using the tools of descriptive statistics, graphics and regression analysis.

4.1 Data Collection

Secondary data has been used for the analysis of this study. Data for religiosity, ethics, mental health and social capital has been collected from six waves of World Values Survey (WVS) i.e. 1981-1984, 1990-1994, 1995-1998, 1999-2004, 2005-2009 and 2010-2014. Wave 1 includes all together 10 countries from America, Europe, Australia, Asia and Africa, wave 2 covers a survey of 18 countries, wave 3 compiled data for 57 countries, wave 4 surveyed around 41 countries, wave 5 covers 58 countries and wave 6 includes 61 countries. In addition to World Values Survey, data from European Values Survey (EVS) has also been used which expands the data set considerably. European Values Survey considers European as well as non-European countries and it has generated four waves of data from 1981 to 2008. Wave 1 is conducted during the period of 1981 to 1984 and it includes 16 countries, wave 2 covers 29 countries during 1990 to 1993, wave 3 starts in 1999 and completed survey for 33 countries until 2001, wave four compiles data for 47 countries during 2008 to 2010. Both data sets of World Values Survey and European Values Survey are compatible and we can combine the data set that result into a panel data that covers the period from 1981 to 2014 for almost 113 countries/regions. Every ensuing survey is based on a new questionnaire, adding some new questions and shunning other for each wave being surveyed, due to which we face some constraints in availability of data for few variables in each wave such as social capital and mental health. The exact sample size being used in our longitudinal data set depends on the list of variables being used in each estimated model. Data for political participation has been taken from International Institute for Democracy and Electoral Assistance (IIDEA) and it is available from 1945 to 2016 for around 180 countries. Data for religious and ethnic tensions has been extracted from International Country Risk Guide and this study could get data from 2003 to 2012 for 110 countries. Fractionalization data has been used from data set formulated by Alberto Alesina who made these indexes using information from *CIA's* World Fact book (2000), Minority Rights Group International's World Directory of Minorities (1997), Levinson's Ethnic Groups Worldwide (1998) and Encyclopaedia Britannica (2001) and all this data is primarily collected from national censuses for around 215 countries. Ethnic polarization index has been taken from Marta Reynal-Querol Data set who formulated it for 137 countries using the World Christian Encyclopaedia (WCE) as primary source. They formulated index for religious polarization from the data mainly collected from L'Etat Des Religions Dans Le Monde for 137 countries. Data for GDP growth, trade openness, inflation, primary education, poverty and investment is available online for 217 economies from 1960s onward.

4.2 Descriptive Statistics

4.2.1 What are the channels through which religion affects economic development?

Religion's effect on the growth process is not limited to a single channel. It has many other aspects through which it can mediate the economic growth process. This study considers religiosity, social capital, ethics, mental health, poverty alleviation and political participation as mediator. Table 2 shows descriptive statistics for dependent variable, independent variables (mediators and moderators) and control variables.

Table 2. Descriptive Statistics: Mediators and Control Variables

Variables	Mean	SD	Min	Max	Obs
Belief in Hell	48.95	27.39	7.20	100	262
Belief in Heaven	59.15	25.04	11.50	100	209
Church Attendance	37.24	26.67	0.80	96	308
Religiosity Index	-2.14e-10	1.56	-2.50	3.37	209
Claim State Benefits Not Entitled	56.49	20.13	1.10	92	309
Avoid Taxes	59.10	19.13	1.90	100	309
Bribe	70.16	20.33	2.30	99	314
Ethics Index	-2.07e-09	1.55	-5.22	3.04	307
Belong to Religious Organizations	26.48	23.97	0.60	96	296
Trust	29.16	15.74	3.20	76	275
Voting Turnout	65.37	17.61	12.93	101	290
Depression	20.14	8.25	6.90	46	56
Poverty; Head Count Ratio $1.90 a day	12.44	18.13	0.00	85	155
GDP Growth	3.62	3.62	-8.76	40	302
Primary Education	102.57	8.32	67.77	142	282
Gross fixed Capital Formation	22.73	5.28	6.09	45	294
Inflation	29.85	148.28	-0.49	1706	295
Trade Openness	78.21	53.24	15.57	445	298
Urbanization	1.68	5.70	-2.45	97	306

Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014) and World Development Indicators (2014).

All the figures shown in this chapter indicate correlation of various variables between countries. Figure 2 shows the simple correlation between economic growth and various aspects of religiosity such as attendance at place of worship, belief in hell, belief in heaven, belief in afterlife, belief in God and a person's views about his own level of religiosity. We can see that all these aspects of religiosity are positively correlated with the economic growth.

Figure 3 demonstrates scatter plot between social capital, religion and economic growth. Based on literature i.e. Putnam (2000); Barro and McCleary (2003), Knack and Keefer (1997) etc. trust, belongingness to religious organization and attendance at worship place (church attendance) are used as a measure for social capital. We can see from the graphs that trust is negatively correlated with the religiosity of people, persons who have high attendance at worship places or belong to some religious organizations. When we look at the scatter plot of trust and economic growth might be due to omitted variable bias, correlation between these variables come out negative.

Figure 2. Religiosity and Economic Growth
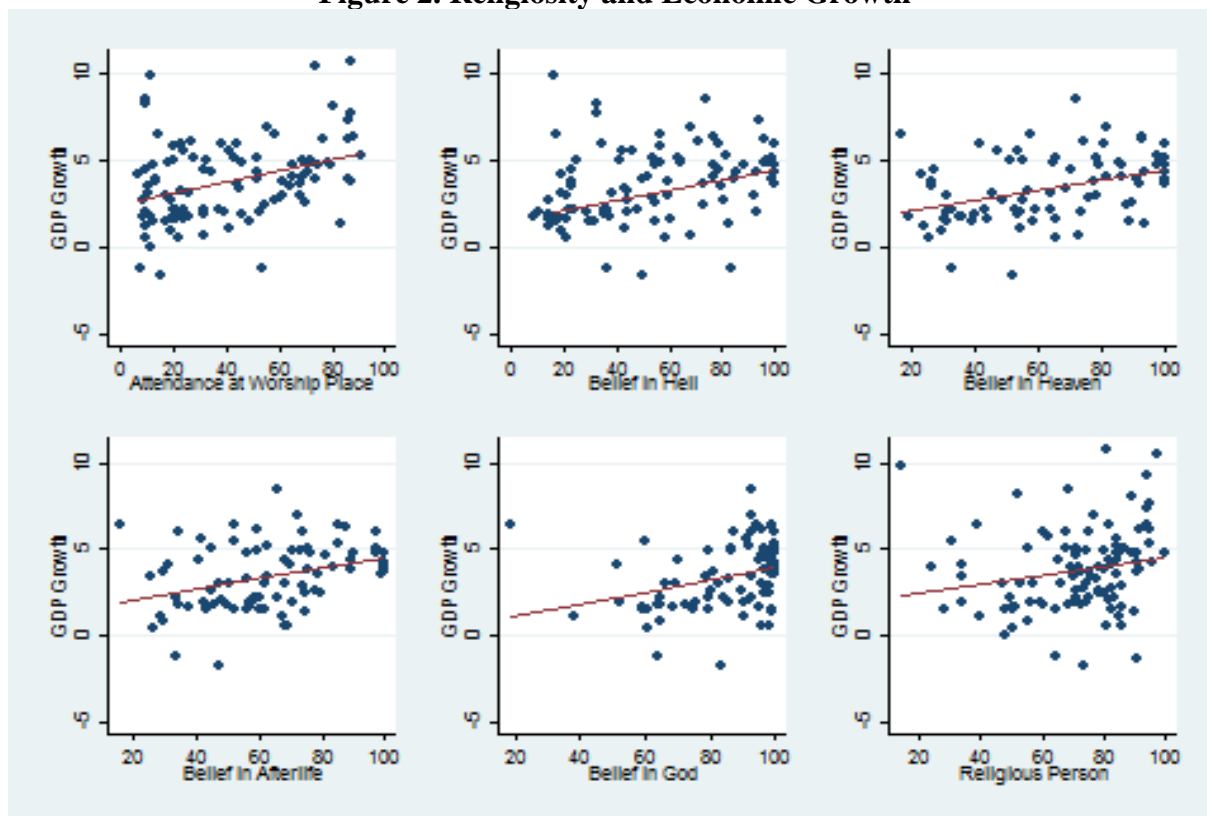
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Figure 3. Social Capital, Religion and Economic Growth
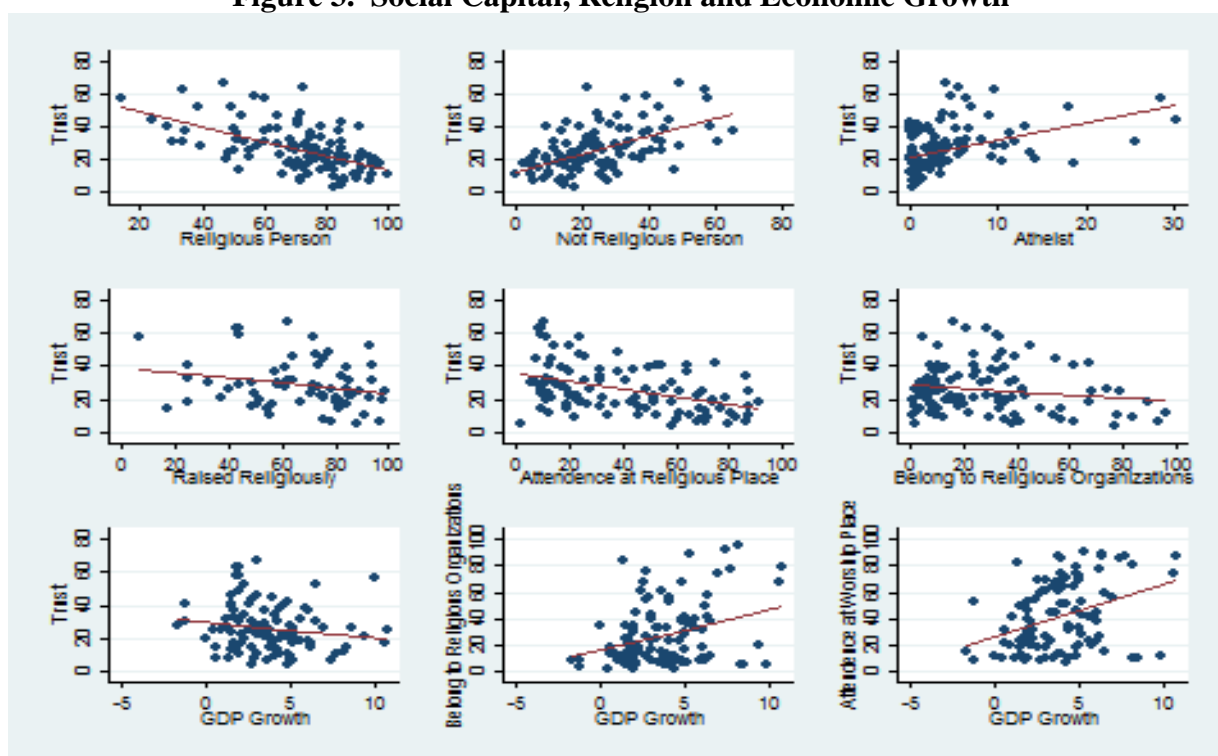
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Poverty is measured as headcount ratio at $ 1.93 a day, figure 4 indicates that poverty is positively associated to attendance at worship place and we can say that people who are poor usually go more to the worship places and also belongs to some religious organizations. Here poverty is positively linked with economic growth. Figure 5 shows that voter's turnout is negatively associated to the attendance at worship place but positively linked with belongingness to religious organizations and economic growth.

Figure 4. Poverty, Religion and Economic Growth
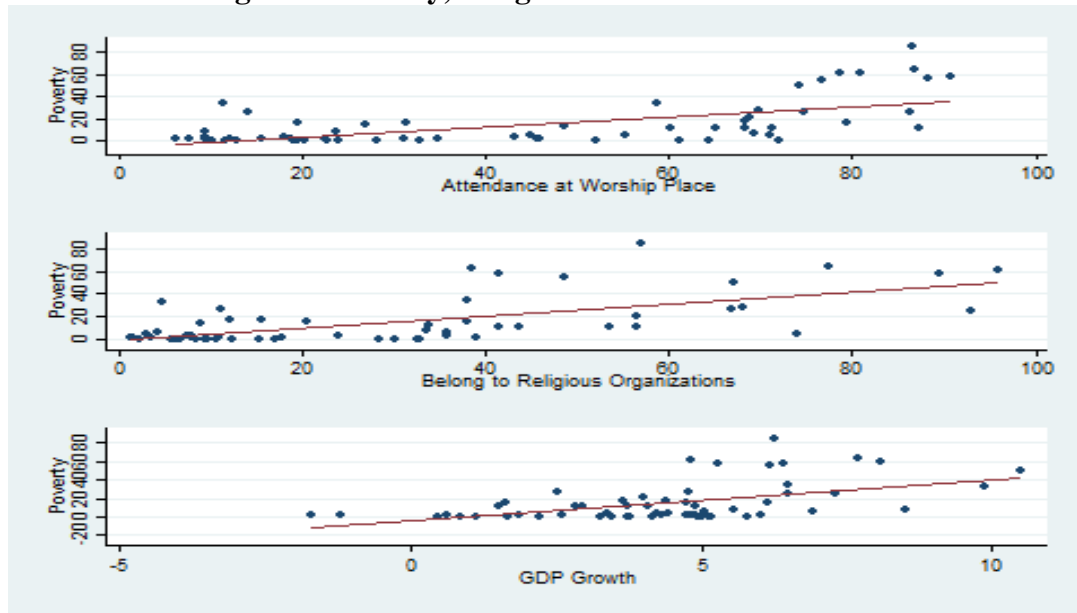
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Figure 5. Political Participation, Religion and Economic Growth

Source: Author, (2016). World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014) and World Development Indicators (2014).

In case of mental health we can see in Figure 6 that belief in hell, belief in heaven, attendance at worship places and religious persons are positively linked with depression while the graph for non-religious persons and confirm athiests shows negative association with depression. Figure 7 reflects the negative correlation between depression and economic growth.

Figure 6. Mental Health and Religion
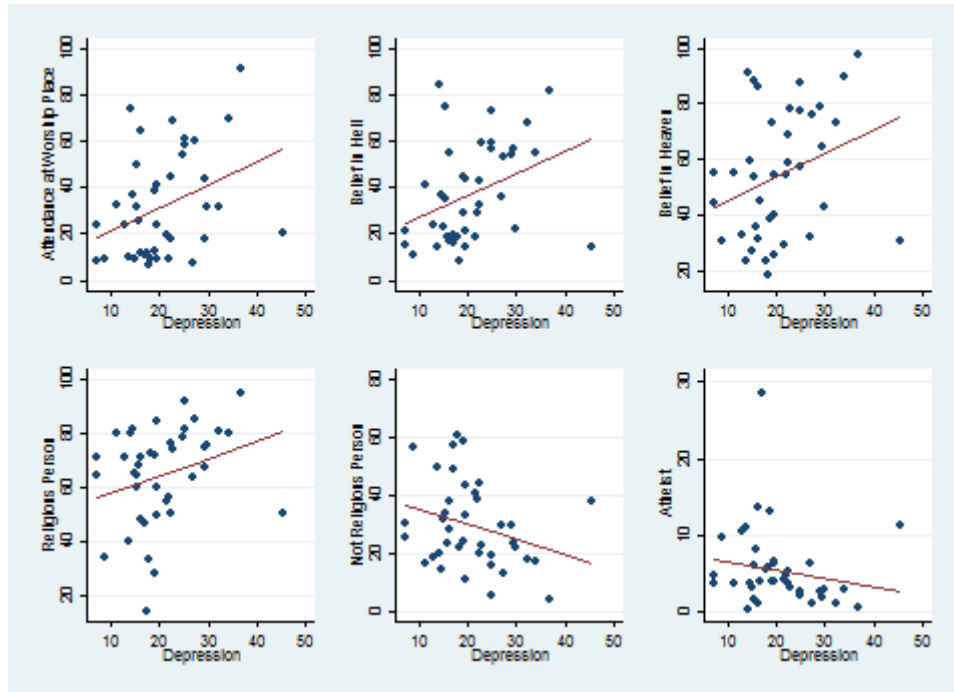
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Figure 7. Mental Health and Economic Growth
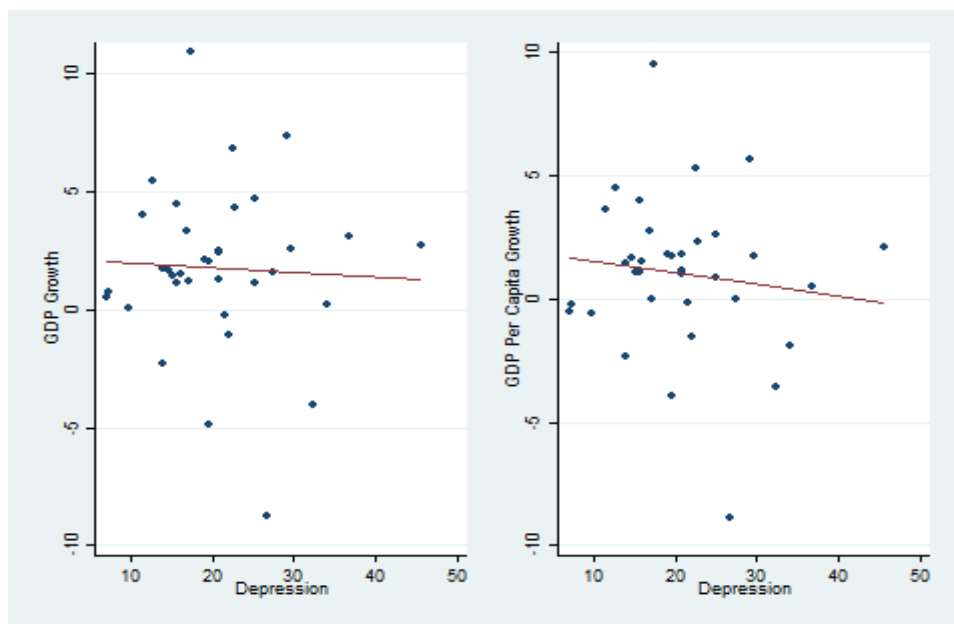
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Ethics are measured using the variables such as it is never justified to claim on state benefits that you are not entitled, to avoid taxes and to bribe. Figure 8 shows positive correlation between ethics and religious persons and it is negative for non religious and athist people. Figure 9 shows relationship between ethics and economic growth, It is very clear that all aspects of ethics are positively corelated to the economic growth.

Figure 8. Ethics and Religion
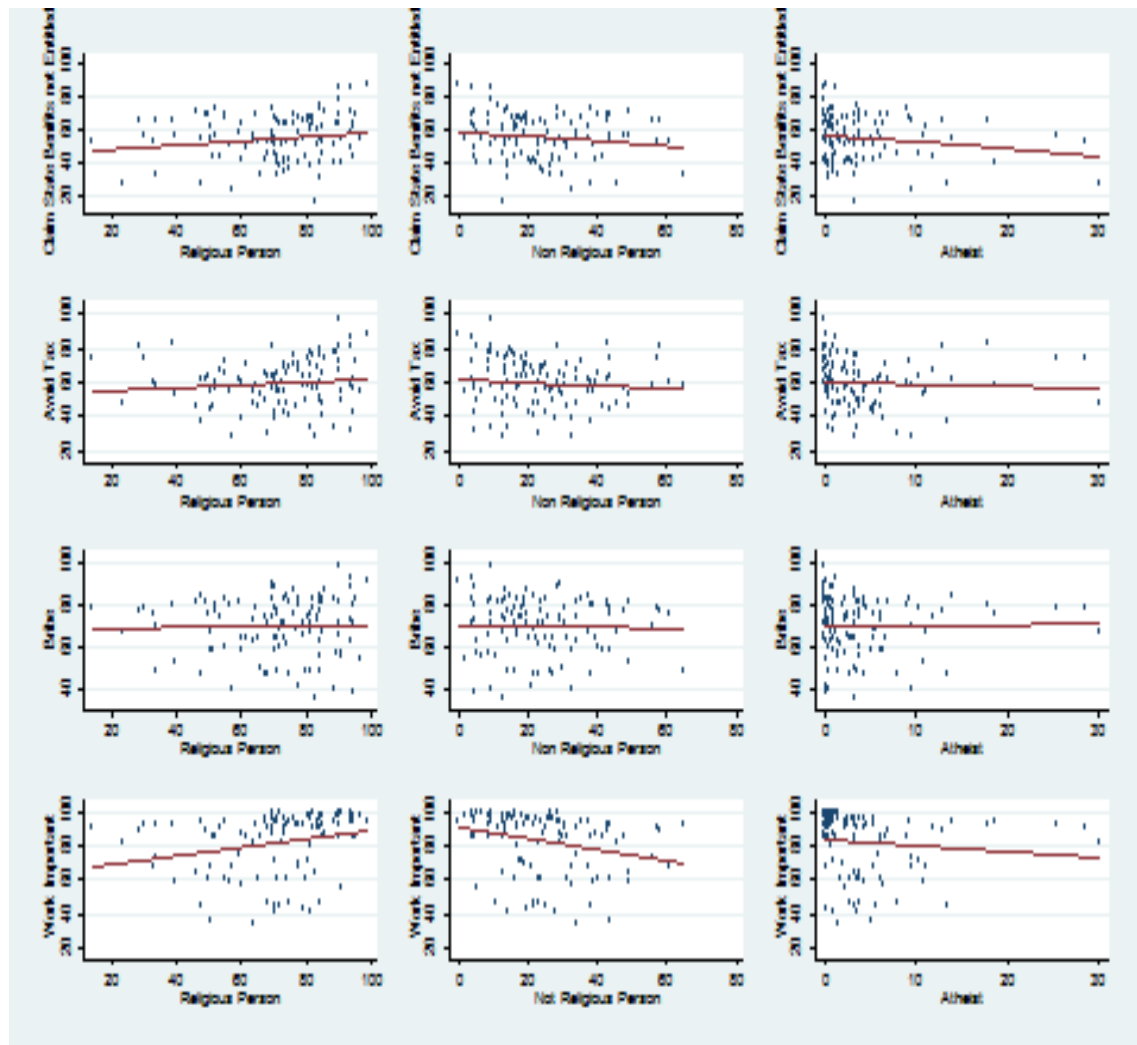
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Figure 9. Ethics and Economic Growth
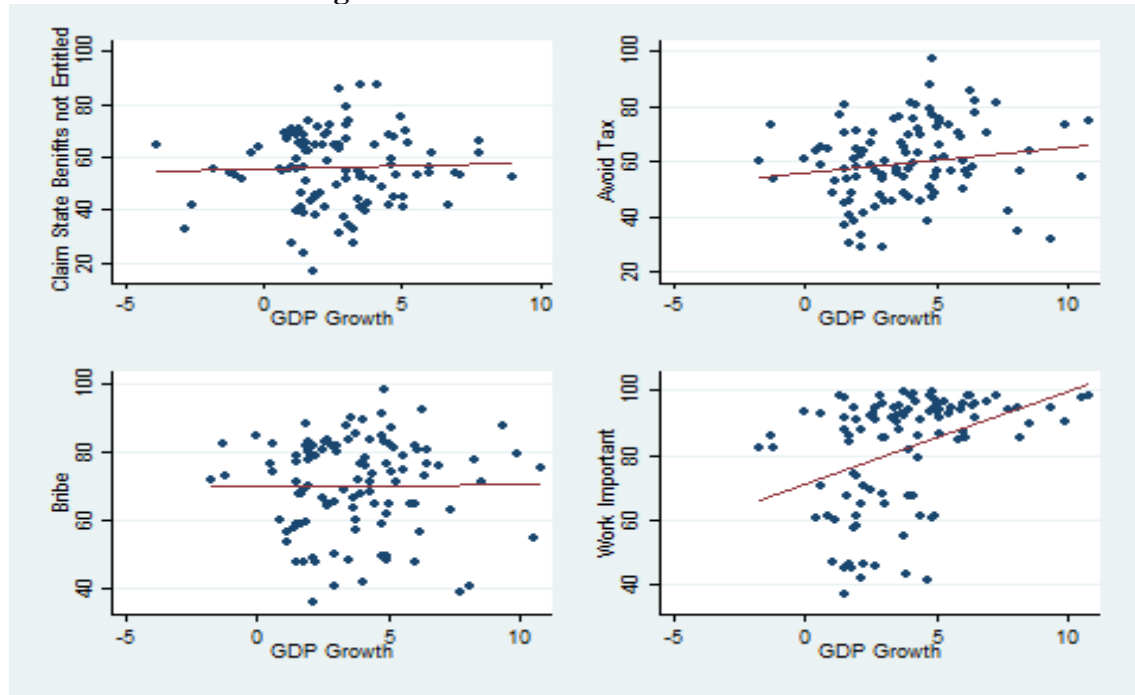
Source: Author, (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

4.2.2 What are the conditions under which religion can play more conducive role in economic development?

Religion plays an important role in economic development and it has controlling impact on those conditions that are usually considered as hurdle in the path of economic development. Ethnic, linguistic and religious fractionalization, ethnic and religious polarization as well as ethnic and religious tensions are not often conducive for economic growth. Table 3 shows the descriptive statistics for all these variables. If we look, at scatter plots in figure 10 we can see that attendance at worship place is negatively associated with the religious tensions. Similarly, people who are raised religiously also have less tendency to create religious conflict. People who belong to some religious organization may be involved in activities that generate religious tensions. Religious tensions and economic growth are negatively associated.

Table 3. Descriptive Statistics: Moderators

Variables	Mean	SD	Min	Max	Obs
Ethnic Fractionalization	0.37	0.24	0.00	1	309
Language Fractionalization	0.33	0.27	0.00	1	312
Religious Fractionalization	0.43	0.24	0.00	1	316
Ethnic Polarization	0.46	0.27	0.02	1	232
Religious Polarization	0.34	0.34	0.00	1	232
Ethnic Tensions	3.92	1.19	1.00	6	113
Religious Tensions	4.32	1.46	0.83	6	113

Source: Author (2016) calculated based on Alesina et al. Data (2003), Marta Reynal-Querol Data (2003, 2005) and International Country Risk Guide (2012).

Figure 10. Religious Tensions, Religion and Economic Growth
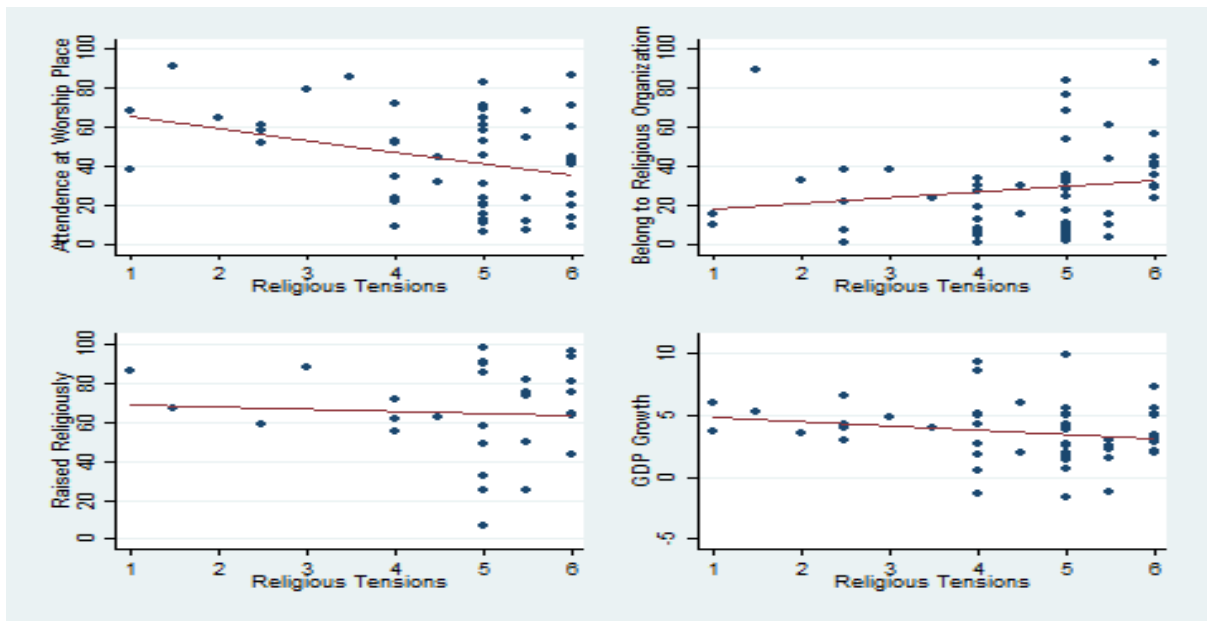
Source: Author (2016) calculated based on World Development Indicators (2012) and International Country Risk Guide (2012).

Figure 11 depicts the correlation between religiosity, ethnic tensions and economic growth. Graphs for not religious and athiests are positive associated with ethnic tensions. They are comparatively more concerned about ethinic identities etc. Graphs for people who attend religious places more frequently or they are member of any religious organization are negatively linked with ethinic tensions. The correlation between ethnic tensions and economic growth is positive and this might be due to omitted variable bais.

Figure 11. Ethnic Tensions, Religion and Economic Growth
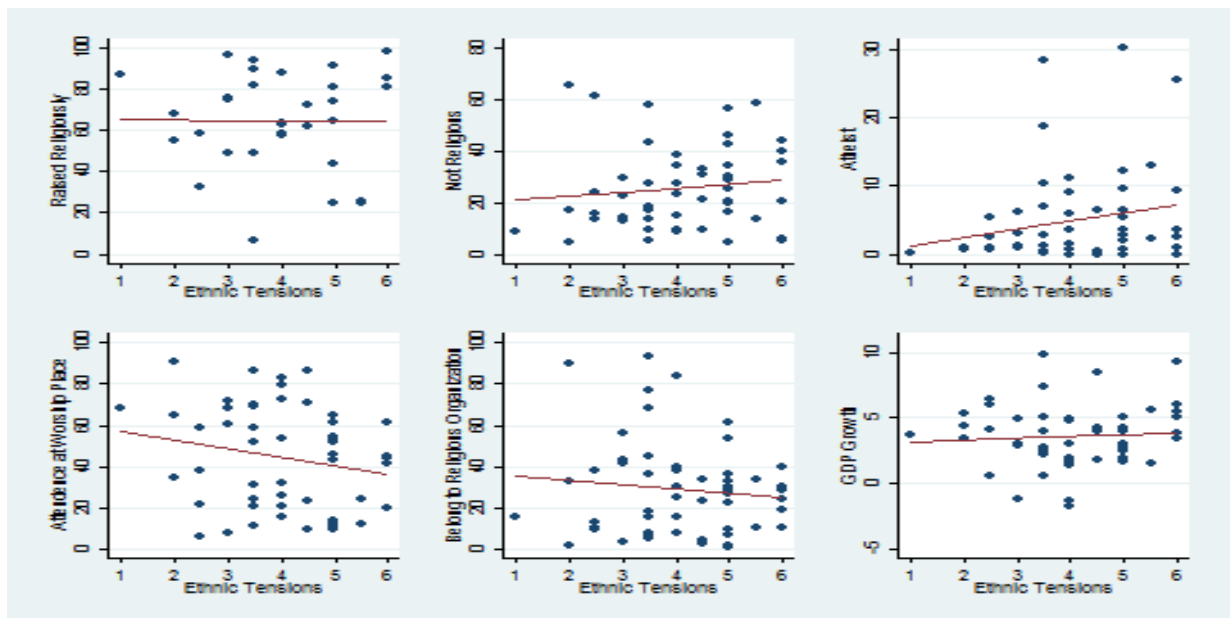
Source: Author (2016) calculated based on World Development Indicators (2012) and International Country Risk Guide (2012).

4.3 Methodology of Data Analysis

This study uses longitudinal data for the empirical analysis of religion and economic growth. In the literature, panel data is estimated using fixed effect model or random effect model but these estimation techniques do not deal with the issue of endogeneity. As Jong (2008) states that it is not just the religion, which is effecting economic growth, reverse causality also exists that give rise to endogeneity problem. In this study, although variables do not suffer from multicollinearity but the regression models being estimated have problem of endogeneity. Many researchers used Bias Corrected Least Square Dummy Variable technique (LSDVC) for dynamic panel data analysis to deal with the issue of endogeneity. It works best if number cross sections are small i.e. between 10 to 20 (Bun and Kiviet, 2003) and Monte Carlo experiments indicates that it out performs Generalized Method of Moment's estimators that are consistent in small sample case (Judson and Owen, 1999). According to Judson and Owen (1999) and Bruno (2005) method that deals with the unbalanced panel data using LSDVC has not yet developed. They further argue that results of Least Square Dummy Variable are inconsistent in the presence of large number of units (N) and in the presence of regressors that are endogenous or weakly exogenous no version of Bias Corrected Least Square Dummy Variable technique works best.

The data set being used in this study has large number of cross sections and small number of years and the ideal estimation technique in this scenario would be GMM. As the estimates of GMM, are unbiased, precise and consistent if number of cross sections are large and time period is short. According to Caselli et al. (1996) and Bond et al. (2001) in dynamic panel GMM deals with the problem of endogeneity, measurement error, omitted variable bias and eliminate heteroscedasticity and serial correlation especially in growth equations. The added benefit of GMM over Instrumental Variable (IV) estimator is the efficiency in the presence of heteroscedasticity, even if heteroscedasticity is not present it does not make GMM estimator less efficient asymptotically when compared with IV estimator. Arellano and Bover (1995) and Blundell and Bond (1998) developed System GMM and they found it more efficient and superior to difference GMM. Bond et al. (2001) state that system GMM has the ability to correct the unobserved cross sectional heterogeneity, endogeneity, omitted variable bias and error in measurement of variables that usually create issues in growth Models. Difference GMM suffers from potential bias and imprecision of estimates that can be reduced by replacing it with system GMM (Blindell and Bond (1998) and Arrelano and Bover (1995). In the presence of persistent explanatory variables that are estimated through difference GMM, using lagged instruments of these variables this may influence the performance of estimator asymptotically due to weak instrumentalization problem (Alonso-Borrego and Arellano, 1999). Monte Carlo experiments also confirms the biasedness of coefficients due to weak instruments.

Estimators of Blundell-Bond/Arellano-Bover assumes that instruments with first difference are not correlated with fixed effects and in this way, they augment Arellano-Bond estimator. It allows adding more instruments and this increase the efficiency of estimators dramatically by building a system of two equations; one will be the original equation and other is the transformed one and this is generally known as System GMM. Following Arellano and Bond (1991), Arellano, and Bover (1995) we used Sargen test and Hansen tests of over identifying restrictions to test the overall validity of instruments. It is hypothesized that all instrument being used are exogenous as a group. Arellano-Bond test for AR (2) is also applied and it has

null hypothesis that error term is not serially correlated at second order AR (2). In these entire tests, the probability should be higher and closer to one is much appreciated.

4.4 Principle Component Analysis

Principle component analysis is a statistical tool to transform orthogonally set of highly correlated variables into a group of components that are not correlated linearly and these components are often called principle components. The number of principle components are either equal to or less then the number of variables included in original set. In the transformation process principle component analysis, most of the variation is captured in first component and then in each subsequent component. The resultant components cover all the variance in data and they are uncorrelated.

This study uses three variables i.e. never claim state benefits not entitled, avoid taxes and bribe to measure ethics and three variables i.e. belief in hell, belief in heaven and attendance at worship place to measure religiosity. Principle component analysis is applied and indexes for religiosity and ethics has been generated. The general rule of thumb for the selection of principle component is to pick all those components that explains more than 60% of the total variation. In the table 3 principle components and their respective Eigen values are given, column 4 indicates proportion of variation explained by each component while column 5 shows cumulative proportion of variation. We can see from the column 4 and 5 (table 4) that in case of ethics 80% of the variation is captured by component 1 so this component is used as an index to measure ethics. When we apply principle component analysis on religiosity we find that first component measures 82% of the total variation so we choose this component as an index for religiosity for further analysis.

Table 4. Principle Component Analysis

Components	Eigenvalue	Difference	Proportion	Cumulative
Ethics				
Comp1	2.41	2.08	0.80	0.80
Comp2	0.34	0.08	0.11	0.92
Comp3	0.25		0.08	1.00
Religiosity				
Comp1	2.46	2.00	0.82	0.82
Comp2	0.46	0.38	0.15	0.97
Comp3	0.08		0.03	1.00

Source: Author, (2016) calculated based on World Value Survey (2014) and European Value Study (2008).

4.5 Mediation Tests

Sobel (1982) and Goodman (1960) test is used to check the mediation affect between dependent and independent variables. It is hypothesized that the independent variable has an indirect effect on dependent variable through a third variable (mediator). When a mediator is added in the regression equation, it reduces the effect of independent variable and the mediator remains significant. The Sobel Goodman test is a type of t test in which the decrease in the effect of independent variable by introducing a mediator in regression is tested and on the basis

of results we can conclude either the mediation effect is significant or not. Three different regression equations are estimated to capture the mediation effect.

Model 1: $Y = a_1 + bR + e_1$

Model 2: $M = a_2 + cR + e_2$

Model 3: $Y = a_3 + b'R + dM + e_3$

In this study, the first sub question is to test the mediation effect of religion on economic growth. In the above equations Y is dependent variable i.e. GDP growth rate, R is independent variable that shows religiosity, M is mediator i.e. ethics, social capital, mental health, poverty and political participation. *a_1, a_2, and a_3* are intercepts in these three models while *e_1, e_2 and e_3* are error terms for respective three models. In model 1, *b* is a parameter that shows the direct impact of religiosity on economic growth while *c* shows impact of religiosity on various channels that are considered as mediator here. The coefficient *b'* indicates the direct impact of religiosity on economic growth controlling for mediator. The effect that is mediated is calculated as *b-b'* and it shows the actual effect of religiosity on economic growth after controlling for mediators and we can say from above equations that *b-b'=cd, where c* represents the magnitude of impact of religiosity on mediator and *d* shows impact of mediator on economic growth after controlling for religiosity. The product of *c and d* represents the variance in economic growth due to the indirect impact of religiosity that is being mediated through mediators. The significance of this mediation effect is calculated using t statistics where SE shows pooled standard error.

$$t = \frac{b - b'}{SE} \qquad OR \qquad t = \frac{cd}{SE}$$

Table 5 reported three main versions of mediation test i.e. Sobel test, Aroian test and Goodman test. Two tailed z-test is calculated using formulas given by MacKinnon and Dwyer (1993) and MacKinnon et.al, (1995), where the null hypothesis assumes no mediation effect. Baron and Kenny (1986) highly recommends Aroian test due to the absence of assumption that propose the product of both variances to be diminishing. Goodman test subtracts the product of variances from its denominator and this may produce negative variance estimate. A Monte Carlo study also proposed that Aroian test as well as Sobel test perform better than Goodman test.

Sobel test: $\qquad z = \dfrac{cd}{d^2 s_c^2 + c^2 s_d^2}$

Aroian test: $\qquad z = \dfrac{cd}{d^2 s_c^2 + c^2 s_d^2 + s_c^2 s_d^2}$

Goodman test: $\qquad z = \dfrac{cd}{d^2 s_c^2 + c^2 s_d^2 - s_c^2 s_d^2}$

Software's like STATA and SPSS do not take into account the panel data while applying mediation tests so firstly, we estimate all the three equations to test mediation effect for each mediator using fixed effect model than values for each test is calculated manually using formulas written above. Table 5 shows result for three types of mediation tests. The coefficients for mediation tests are highly insignificant, except for ethics. Ethics seems to

mediate the effect of religion on economic growth according to Sobel and Goodman test but it is significant at the level of 10%. Mental health, poverty, social capital and political participation do not mediate the effect of religion on economic development as given by all the three mediation tests, we cannot reject the null hypothesis of no mediation effect.

Table 5: Sobel Goodman Test

Mediators	Sobel Test	Prob	Aroian Test	Prob	Goodman Test	Prob
Ethics	1.66	0.10	1.60	0.11	1.71	0.09
Mental Health	0.04	0.97	0.004	0.99		
Poverty	0.56	0.58	0.43	0.66	0.95	0.34
Social Capital (Trust)	0.83	0.40	0.72	0.46	1.01	0.32
Social Capital (Belong to Religious Organization)	0.86	0.39	0.75	0.46	1.04	0.30
Political Participation	0.67	0.50	0.57	0.57	0.85	0.40

Source: Author, (2016). World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014) and World Development Indicators (2014).

4.6 Regression Analysis

In this section, regression equations are estimated to find out the effect of religion on economic growth through mediators and moderators. Equation 4.1 indicates effect of religion on economic growth that is mediated through ethics (E), social capital (SC), political participation (PP), poverty alleviation (PA), mental health (MH) and Z_{it} is a set of control variables. In equation 4.2, X_{it} is a set of variables such as fractionalization (ethnic, linguistic, religious), polarization (ethnic and religious), religious tensions and ethnic tensions, $X_{it}*R_{it}$ shows interaction term where R_{it} stands for religiosity.

$$Y_{it} = \alpha_0 + \alpha_1 R_{it} + \alpha_2 E_{it} + \alpha_3 SC_{it} + \alpha_4 PP_{it} + \alpha_5 PA_{it} + \alpha_6 MH_{it} + \alpha_7 Z_{it} + v_{it} \qquad 4.1$$

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it}*R_{it} + \beta_3 Z_{it} + \eta_{it} \qquad 4.2$$

Most of the regression equations have been estimated using System GMM with few exceptions that are estimated using other techniques due to small sample size. In case of social capital regression equation has been estimated using Fixed Effect model as well as seemingly unrelated regression model (SUR Model). Due to small number of observations for these variable neither difference GMM nor system GMM works. LSDVC has also been applied but it also could not estimate regression equation. We applied Hausman test and get the probability 0.00 that rejects the null hypothesis i.e. Random Effect model is appropriate, so we estimated equation using Fixed Effect model. In addition, following Baro and McCleary (2003) SUR Model has also been applied as this estimation technique allows combining countries from where data has been collected by two different surveys (WVS and EVS). According to Baro and McCleary (2003) observations that are collected at various times or collected from different data sources for a country might not be considered as independent; so it is better to use SUR model that estimate the correlation of error terms for different data sources of a given country. In case of mental health, ethnic and religious tensions number of observations are so small that it is not possible to apply Hausman test, difference GMM, System GMM or LSDVC so regression equations are estimated using SUR Model.

4.6.1 What is the role of religion in economic development?

To understand the relationship between religion and economic development two regression equations has been estimated (Table 6). Model 1 estimates equation 4.1 that shows the overall impact of religiosity on economic growth. Here the religiosity is measured as an index based on belief in hell, belief in heaven and church attendance. We can see from model 1 that religiosity is positively associated with economic growth and it is significant at 1%. If the index of religiosity raised by 1 unit, it will increase GDP growth by 1.14 units. Model 2 split religiosity in to its component and check the individual effect of each variable on economic growth. Church attendance is positively associated with economic growth and it is highly significant. It is very important to note that in the previous literature church attendance comes out as negative (Baro and McCleary, 2003). Current study includes the expanded data until 2014 and may be due to large number of observations the church attendance turns out to be positive. Belief in hell has negative impact on economic growth and it is significant as well. Believe in hell may create fear and agony in its believer and reduce the productivity that ultimately negatively effects the economic growth. The coefficient of belief in heaven is positive but insignificant, concept of heaven cultivates positivity and persons who belief in heaven may get a sense of relief in it. This thought of relief and beautiful future motivates believer to work hard to get rewards in this world and in afterlife. The value of Sargen and Hansen test verifies that instruments are not weak and Arellano-Bond test AR (2) shows that the regression equations do not suffer from autocorrelation.

Table 6. Religion and Economic Growth

VARIABLES	System GMM	
	1	2
Religiosity	1.14***	
	(0.29)	
Attendance at Worship place		0.11***
		(0.04)
Belief in Hell		-0.17**
		(0.08)
Belief in Heaven		0.17
		(0.12)
Investment	0.19***	0.26***
	(0.06)	(0.07)
Inflation	0.00	-0.006***
	(0.01)	(0.002)
Trade Openness	0.01	0.02**
	(0.01)	(0.01)
Primary Education	-0.01	-0.07
	(0.03)	(0.05)
Urban Population Growth	-0.40	-0.65
	(0.39)	(0.42)
Constant	-0.08	-2.44
	(3.68)	(5.05)
Observations	81	183
Number of Countries	46	74
Sargan test	0.62	0.97

Hansen test	0.97	0.73
Arellano-Bond test AR(2)	0.25	0.15

Source: Author, (2016). World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).Robust standard errors in parentheses (*** p<0.01,** p<0.05, * p<0.1)

4.6.1.1 Lessons Learnt

1. From the regression equations, we can see that religiosity has positive impact on economic development.
2. Church attendance play very important role in stimulating economic growth, as long as belief in hell is concerned it has negative significant impact on growth while that of belief in heaven has positive but insignificant effect on economic growth.
3. Based on results given in table 6 it can be concluded that religion play positive role in the economic development.

4.6.2 What are the channels through which religion effects economic development?

To answer the first sub question various regressions has been estimated to understand the indirect impact of religion on economic growth. As there exists issue of endogeneity, so system GMM has been used to tackle it. In table 7a, model 1, indicates that religiosity is positively associated with economic growth and it is significant at 1%. If religiosity increases by one unit, it will increase economic growth by 1.14 units. In addition to religiosity further control variables are also included i.e. investment, inflation, trade openness, primary education and urbanization. In model 2 variable for ethics is added in the main equation of model 1 and we can see that although ethics are positively linked with economic development but it is not significant. By adding ethics, we do not find any change in the significance of our main independent variable i.e. religiosity. This shows that ethics do not play much significant role and they do not mediate the effect of religiosity on economic growth.

In model 3, we added poverty into main regression equation and it turns out that poverty is negatively associated with economic growth but this effect is not significant. By adding poverty, the religiosity turns its sign from positive to negative and becomes insignificant and this describes that poverty do propel mediation effect but this effect is not significant (see model 3). One unit increase in poverty reduced economic growth by 0.08 units. In case of political participation (model 4), we can see that it has positive impact in economic growth that means if political participation increases by 1%; it will increase economic growth by 0.003% but it is not significant. When we add political participation variable in the main equation it becomes insignificant and makes religiosity insignificant as well. In all these models the probability for Sargen test and Hansen test are greater than 5% and they are closer to upper limit that shows instruments are valid and robust. In case of Arellano-Bond test for AR (2) in second difference, probabilities in all models are greater than 5% and this indicates no autocorrelation at second difference.

Model 5 & 6 shows that social capital is also not mediating the effect of religion on economic growth. Trust has a negative while belongingness to religious organization is positively associated with economic growth but they are not significant. Model 7 shows that mental health is negatively associated with economic growth. By adding mental health in main equation makes religiosity less significant this shows that mental health does mediate the impact of religiosity but it is not much significant.

Table 7c included all the channels in one regression equation through which religion can affect economic growth. This model is estimated using SUR model and due to small number of observations for few variables, it is not possible to apply difference or system GMM, fixed effect model etc. Again due to insufficient number of observations that challenged degree of freedom of the model, all the control variables has been excluded so that the equation can be estimated by including all channels. Religiosity is positively associated to economic growth and it is significant at 1%. Increase in religiosity by one unit may increase GDP growth by 2.69 units. Ethics have positive impact on economic growth but it is not significant. Poverty effects economic growth negatively and it is significant at 5%. If poverty increases by one unit, it may reduce economic growth by 0.25 units. Political participation as well as social capital has positive influence at economic growth. Whenever political participation increases by one unit it will increase economic growth by 0.12 units and it is significant at 1%. In case of social capital that is measured in terms of trust and belongingness to religious organization seems to play positive role in economic development. One-unit increase in the level of trust in general and belongingness to religious organization will stimulate economic growth by 0.28 unit and 0.57units respectively and these results are significant at 1%. Depression is although negatively associated with economic growth but it is not significant.

From this analysis it becomes clear that although ethics, poverty alleviation, political participation, mental health and social capital are very important factors that play crucial role in the economic development but they do not act as mediator through which religion can effect economic growth significantly. The reason behind this insignificant mediation effect might be the non-availability of data for all variables, may be variables operationalized by this study do not actually capture the effect in its true spirit. This study undertakes research at a cross-country level and may be by doing this work at a country level with individual level data may give more appropriate analysis of the given research question. Several other channels may exist through which religion can affect the economy so there is a need to explore all other aspects as well.

4.6.2.1 Lessons Learnt
1. Religiosity has a positive impact on economic growth and it is highly significant.
2. Ethics are positively linked with economic growth but it is not significant. Ethics do not mediate the effect of religiosity on economic growth.
3. Poverty is negatively associated with economic growth and its impact is insignificant. It mediates the effect of religion on economic growth but this effect is not significant at all.
4. Political participation has positive impact on economic growth, it does mediate the effect of religion on economic growth but it is not significant.
5. Mental health is negatively effecting economic growth but its impact is not significant. It mediates the effect of religion on economic growth and makes religiosity less significant when added in main equation but this mediation effect is not significant in itself.
6. Social capital is measured in terms of trust, which is negatively linked with economic growth while belongingness to religious organization has positive impact on economic growth. These results are also not significant. Social capital does not mediate the impact of religion on economic development.

7. Poverty, political participation, mental health has mediated the effect of religion on economic growth but it is not significant. We do not find any evidence that shows mediation effect of religion through ethics, and social capital.

Table 7a. Religion and Economic Growth: Mediation Effect

| VARIABLES | System GMM | | | |
	1	2	3	4
Religiosity	1.14***	1.58***	-0.26	0.53
	(0.29)	(0.18)	(0.91)	(0.39)
Ethics		0.87		
		(0.62)		
Poverty			-0.08	
			(0.08)	
Political Participation				0.003
				(0.03)
Investment	0.19***	0.18**	0.11**	0.16**
	(0.06)	(0.07)	(0.05)	(0.07)
Inflation	0.00	-0.01	-0.008***	0.004
	(0.01)	(0.01)	(0.00)	(0.01)
Trade Openness	0.01	0.03	0.00	0.01
	(0.01)	(0.02)	(0.02)	(0.01)
Primary Education	-0.01	0.04	-0.04	-0.06
	(0.03)	(0.06)	(0.06)	(0.06)
Urban Population Growth	-0.40	-0.91**	1.338**	0.40
	(0.39)	(0.38)	(0.59)	(0.49)
Constant	-0.08	-4.55	5.18	4.89
	(3.68)	(6.80)	(6.09)	(6.12)
Observations	81	79	88	74
Number of Countries	46	46	43	41
Sargan test	0.62	0.82	0.83	0.69
Hansen test	0.97	1.00	0.77	0.61
Arellano-Bond test AR(2)	0.25	0.27	0.21	0.20

Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)
Source: Author, (2016). World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014) and World Development Indicators (2014).

Table 7b. Religion and Economic Growth: Mediation Effect
SUR Model

VARIABLES	(5) FE GDP	(6) SUR GDP	(7) SUR GDP
Religiosity	4.33***	0.82***	0.54**
	(0.67)	(0.21)	(0.26)
Trust	-0.0004	-0.003	
	(0.02)	(0.02)	
Belong to Religious Organization	0.03	0.004	
	(0.04)	(0.01)	
Mental Health			-0.01
			(0.05)
Investment	-0.002	0.15***	0.08
	(0.07)	(0.054)	(0.09)
Inflation	-0.008**	-0.01***	-0.008***
	(0.003)	(0.003)	(0.003)
Trade Openness	0.06***	0.005	-0.002
	(0.02)	(0.005)	(0.009)
Urbanisation	-0.14***	0.13	1.11***
	(0.05)	(0.24)	(0.41)
Primary Education	0.72	-0.06	0.08
	(0.66)	(0.04)	(0.05)
Constant	12.99**	5.25	-8.34
	(5.41)	(3.92)	(5.79)
Observations	149	149	45
R-squared	0.44	0.24	0.48

Robust standard errors in parentheses (*** $p<0.01$, ** $p<0.05$, * $p<0.1$)

Source: Author, (2016). World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014) and World Development Indicators (2014).

Table 7c: Religion and Economic Growth: Mediation Effect

SUR Model

VARIABLES	(1) GDP
Religiosity	2.69***
	(0.32)
Ethics	0.64
	(0.49)
Poverty	-0.25**
	(0.10)
Political Participation	0.12***
	(0.03)
Trust	0.28***
	(0.08)
Belong to Religious Organisation	0.57***
	(0.10)
Mental Health	-0.02
	(0.09)
Constant	-18.24***
	(5.13)
Observations	11
R-squared	0.956

Robust standard errors in parentheses (*** $p<0.01$, ** $p<0.05$, * $p<0.1$)
Source: Author, (2016). World Value Survey (2014), European Value Study (2008), International Institute for Democracy and Electoral Assistance (2014) and World Development Indicators (2014).

4.6.3 What are the conditions under which religion can play more conducive role in economic development?

Table 8 shows results for ethnic tensions, religious tensions, religiosity and economic growth. Due to small number of observations for religiosity index that actually match with the available data for ethnic, and religious tensions we do not used religiosity index for the analysis of this section. Here religiosity is measured in terms of church attendance as it plays main role in the generation and resolution of conflict. All the models are estimated using seemingly unrelated regression model as other estimations techniques like difference GMM, system GMM and LSDVC could not be applied because of small sample size.

Model 1 shows that ethnic tensions have negative impact on economic growth. One percent increase in ethnic tensions may reduce economic growth by 0.08% but it is not significant. In Model 2 an interaction term, i.e. ethnic tension and church attendance is introduced and it is positive but insignificant. It can be said that religion can play positive role in the elimination of ethnic conflict but the data shows its effect is not significant.

Model 3 reports that religious tensions are negatively linked with economic growth, one-unit increase in religious tension will reduce economic growth by 0.36 units and this result is significant at 10%. However, when an interaction term is introduced in model 4 we find that religious tensions become more significant and has strong negative impact on economic growth while the interaction term is not significant. In all these regression models, we keep investment,

inflation, trade openness, primary education and urbanization as control variables. Religion may reduce the conflict raised due to ethnic and religious tensions but the role of religion does not come out significant. From these results we can say that role of religion as a moderator is very important and it can reduce conflict but either religious leaders are not paying full attention to this aspect of religiosity and do not use religion as a tool to promote peace and harmony at a large scale.

Table 9 shows impact of ethnic and religious polarization on economic growth. Model 1 demonstrates that religious polarization has negative impact on economic growth. One percent increase in religious polarization decreases economic growth by 0.55% but this result is insignificant. In model 2 an interaction term of religious polarization and church attendance has been added and both variables i.e. religious polarization and interaction term turnout insignificant. The interaction term is negative and this shows that if church attendance increases it may aggravate the religious polarization and this ultimately reduce economic output of an economy.

In model 3, ethnic polarization has been regressed and we see its negative impact on economic growth. One percent increase in ethnic polarization decreases economic growth by 3.95% but this coefficient is not significant. Model 4 combines the ethnic polarization along with its interaction term with church attendance. Ethnic polarization remains negative but the interaction term is positive but insignificant. This shows that church attendance have the potential to reduce the negative impact of ethnic polarization on economic development. Religious leaders can play their positive role in reducing the negativity raised due to ethnic polarization in society. All these models are estimated using system GMM and values for Sargen and Hansen test shows that instruments are valid and robust. Values for Arellano-Bond test for AR (2) in first differences indicates no autocorrelation.

Table 10 presents estimation results for ethnic, religious and linguistic fractionalization. Religious fractionalization has negative impact on economic growth. One percent increase in religious fractionalization reduces economic growth by 2.94% but this coefficient is not significant (see model 1). Interaction term of religious fractionalization and church attendance shows that visits to religious places vanishes the negative impact of religious fractionalization on economic growth but this result is not significant (model 2).

Ethnic fractionalization has negative impact on economic growth and it is significant at 5%. One percent increase in ethnic fractionalization can reduce economic growth by 7.15% (see model 3). When we combined interaction term with the ethnic fractionalization, it reduces the impact of ethnic fractionalization on economic growth and make it insignificant (model 4). Interaction term of ethnic fractionalization and church attendance is positive that means religious teachings do reduce the negative impact of ethnic fractionalization on economic growth but this result is not significant.

Linguistic fractionalization is also negatively associated with economic growth and its coefficient is significant at 5%. One percent increase in linguistic fractionalization reduced economic growth by 3.97% (model 5).We regressed a model with interaction term of linguistic fractionalization and church attendance, results show that religiosity creates harmony among its believers and tries to decrease the detrimental impact of linguistic fractionalization on economic growth but this result is not significant (model 6). When interaction term is added in equation, ethnic fractionalization that was significant previously now turns insignificant. All these models are estimated using system GMM and the values for Sargen test, Hansen test and Arellano-Bond test AR(2) in first differences indicates that our model is good that do not suffer

from the problem of weak instruments and auto correlation.

From the analysis of conditions that can be controlled using the tool of religion in order to promote economic growth it is concluded that religion might play positive role in eliminating conflicts due to ethnic and religious tensions, ethnic and religious polarization or ethnic, religious and linguistic fractionalization but the analysis do not provide any significant evidence. Although the interaction terms in various models turns out to be positive that indicate the positive role of religion that can be played to avoid ethnic and religious conflicts usually detrimental for economic growth, but these interaction terms are not significant at all.

4.6.3.1 Lesson Learnt

1. Ethnic and Religious tensions are negatively associated with economic growth where the former is significant and later is not. The interaction terms of these respective variables are positive but insignificant.
2. Ethnic polarization has negative impact on economic growth and the interaction term is turnout as positive but these results are not significant. In case of religious polarization and its interaction term, the coefficients are negative and insignificant.
3. Religious, ethnic and linguistic fractionalization has negative impact on economic growth with the first one insignificant effect while the latter two has significant coefficients. The interaction terms of all these variables are positive but have insignificant impact on economic growth. When we combine both variables i.e. fractionalization and its respective interaction term all results get insignificant.

Table 8. Ethnic Tensions, Religious Tensions, Religiosity and Economic Growth

	SUR Model			
	(1)	(2)	(3)	(4)
VARIABLES	GDP	GDP	GDP	GDP
Ethnic Tensions	-0.08	-0.16		
	(0.24)	(0.25)		
Ethnic Tensions*Church Attendance		0.003		
		(0.003)		
Religious Tensions			-0.36*	-0.42**
			(0.18)	(0.20)
Religious Tensions* Church Attendance				0.002
				(0.002)
Investment	0.18***	0.19***	0.19***	0.20***
	(0.04)	(0.05)	(0.04)	(0.04)
Inflation	-0.04**	-0.04**	-0.03**	-0.04**
	(0.02)	(0.02)	(0.02)	(0.02)
Trade Openness	-0.006	-0.006	-0.005	-0.005
	(0.005)	(0.006)	(0.005)	(0.005)
Urbanization	0.07**	0.06**	0.07**	0.06**
	(0.03)	(0.03)	(0.03)	(0.03)
Primary Education	-0.04	-0.04	-0.03	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)
Constant	5.15	4.41	5.43*	5.11
	(3.30)	(3.39)	(3.19)	(3.22)
Observations	98	96	98	96
R-squared	0.26	0.27	0.29	0.29

Robust standard errors in parentheses (*** $p<0.01$, ** $p<0.05$, * $p<0.1$)

Source: Author (2016) calculated based on International Country Risk Guide (2012), World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Table 9. Ethnic Polarization, Religious Polarization, Religiosity and Economic Growth

System GMM

VARIABLES	(1) GDP	(2) GDP	(3) GDP	(4) GDP
Religious Polarization	-0.55	6.32		
	(3.12)	(3.81)		
Religious Polarization*Church Attendance		-0.02		
		(0.06)		
Ethnic Polarization			-3.95	-4.79
			(5.20)	(4.48)
Ethnic Polarization*Church Attendance				0.06
				(0.06)
Investment	-0.22	-0.11	0.02	0.06
	(0.20)	(0.08)	(0.08)	(0.12)
Inflation	0.10	0.006***	-0.09	-0.07
	(0.19)	(0.001)	(0.10)	(0.06)
Trade Openness	0.03	0.004	-0.02	-0.02
	(0.06)	(0.009)	(0.017)	(0.02)
Primary Education	0.12	0.06	0.07	0.01
	(0.10)	(0.05)	(0.07)	(0.05)
Urbanization	0.99	0.53	1.64***	1.30**
	(0.66)	(0.45)	(0.59)	(0.56)
Constant	-8.17	-2.67	-2.32	2.02
	(16.59)	(5.33)	(7.81)	(6.69)
Observations	114	115	114	110
Number of Countries	50	52	50	50
Arellano-Bond test AR(2) in first differences	0.38	0.28	0.23	0.25
Sargan test	1.00	0.93	1.00	1.00
Hansen test	0.24	0.97	0.64	0.89

Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

Source: Author (2016) calculated based on Alesina et al. Data (2003), World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Table 10. Ethnic Fractionalization, Religious Fractionalization, Linguistic Fractionalization, Religiosity and Economic Growth

VARIABLES	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) GDP	(6) GDP
Religious Fractionalization	-2.94	-2.49				
	(2.35)	(3.11)				
Religious Fractionalization*Church attendance		0.05				
		(0.05)				
Ethnic Fractionalization			-7.15**	-2.27		
			(3.57)	(3.49)		
Ethnic Fractionalization* Church attendance				0.05		
				(0.05)		
Linguistic Fractionalization					-3.97**	-1.17
					(1.52)	(2.11)
Linguistic Fractionalization* Church attendance						0.03
						(0.04)
Investment	0.16***	0.18***	0.12***	0.16***	0.15***	0.15***
	(0.05)	(0.06)	(0.03)	(0.05)	(0.04)	(0.04)
Inflation	-0.005	-0.002	-0.002	-0.004	-0.0003	-0.005
	(0.01)	(0.008)	(0.009)	(0.008)	(0.008)	(0.01)
Trade	0.0002	0.005	0.009	0.008	0.008	0.001
	(0.007)	(0.007)	(0.01)	(0.008)	(0.01)	(0.01)
Primary Education	0.006	-0.002	0.02	0.02	-0.008	0.02
	(0.05)	(0.03)	(0.06)	(0.03)	(0.06)	(0.04)
Urbanization	0.82***	0.68**	1.33***	0.71**	1.18***	0.82**
	(0.25)	(0.33)	(0.31)	(0.33)	(0.26)	(0.32)
Constant	-0.55	-1.31	-1.82	-3.30	0.17	-3.65
	(4.90)	(3.35)	(6.30)	(3.46)	(6.04)	(3.76)
Observations	135	131	134	130	134	130
Number of Code	65	65	65	65	64	64
Arellano-Bond test AR(2)	0.37	0.15	0.28	0.20	0.37	0.22
Sargan test	0.36	0.28	0.30	0.14	0.75	0.15
Hansen test	0.68	0.59	0.84	0.59	0.61	0.82

Robust standard errors in parentheses   *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Author (2016) calculated based on Marta Reynal-Querol Data (2003, 2005), World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

4.6.4 What are the differences in the relationship between religion and economic development across countries?

List of countries that are used in this study is given in annex 1. This section presents the regional analysis based on continents, for this, we used regional dummies. In addition, regression equations have also been estimated for developing and developed countries to understand the role of religion in the economic development of low income and high-income economies. Table 11 shows results for regional analysis. Regression equations are estimated for Asia, Europe, Africa, South America and North America. Due to small number of observations available for Australia it is excluded from the analysis. Model 1 explains role of religiosity in Asian region and its coefficient is positive that means religion plays positive role in the economic development of Asia. One percent increase in the religiosity of Asian region will increase output by 1.47% and it is significant at 1%. In case of European region, religion seems to play positive role in economic development and it is significant at 5%. One percent increase in religiosity of European region enhance economic growth by 1.13%. In African region religiosity also play positive role, one percent increase in religiosity of Africa increases economic growth by 2.9% but it is not much significant. North America and South America shows that religiosity is positively associated with economic growth. In North America religion do play positive role in economic development but it is not significant while South America shows a significant impact of economic growth on economic development. One percent increase in religiosity of North America increases output of economy by 0.04% but this impact is not significant. 1% increase in religiosity in South America significantly increases output growth by 1.09%. When all the regions are combined in one equation, religion play very significant positive role in the economic development of Asian and European regions. In Africa the effect of religiosity is positive and it remains insignificant while in case of North America and South America it is negative and insignificant (see Model 6). It becomes clear from these results that for Asia, Europe and Africa are robust while coefficients for North America and South America are not robust to various model specification.

Table 12 describe results for developing and developed countries, the list of these countries are taken from World Bank. Model 1 estimate equation for developing countries and it shows that increase in religiosity of developing countries by 1% may increase economic growth by 1.2% and it is significant at level of 10%. Model 2 describes results for developed countries and here religiosity comes out to be very significant and plays positive role in the development of economy. 1% increase in religiosity will increase GDP growth by 0.8% and it is significant at 1%. Model 3 combines both developed and developing countries and here effect of religiosity on economic growth for developing countries gets insignificant while in developed countries, it is significant at level of 10%. All these models are estimated using system GMM and the values of Hansen test, Sargen test and Arellano-Bond test AR(2) also indicate that all these regressions do not suffer from the issue of weak instrumentation, robustness and autocorrelation.

4.6.4.1 Lesson Learnt

1. In Asia, religiosity plays positive role in economic development and its impact is very significant.
2. Religiosity also appears significant in European region and enhance economic growth.
3. In Africa although the coefficient of religiosity is positive but not significant.
4. North America and South America are the regions where impact of religiosity on economic growth is positive but they are not robust. In North America the coefficient of religiosity is positive but insignificant while in case of South America, it comes out to

be positive and significant. When all other regions are added in the equation American regions turns its sign from positive to negative that challenges the robustness of the impact of religiosity on economic growth in these regions.

5. In case of developing countries, the religiosity plays positive role but these results are not robust while developed countries show positive impact of religiosity on economic growth and these results are robust as well.

6. From the analysis, it can be deduced that religion plays important role in the economic development of various regions especially Asia and Europe, Africa shows positive but insignificant impact of religiosity on economic growth and in case of North and South American regions results are not robust.

Table 11. Religiosity and Economic Growth at Regional Level

VARIABLES	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) GDP	(6) GDP
Asia	1.47***					2.36***
	(0.28)					(0.75)
Europe		1.13**				1.92*
		(0.48)				(1.02)
Africa			2.90			0.24
			(3.72)			(1.45)
North America				0.04		-0.51
				(0.18)		(0.72)
South America					1.09**	-3.41
					(0.45)	(2.51)
Investment	0.15***	0.17**	0.16**	0.11**	0.18***	0.18***
	(0.04)	(0.08)	(0.07)	(0.04)	(0.06)	(0.05)
Inflation	-0.006***	-0.004	-0.007***	-0.006***	0.007**	-0.004**
	(0.002)	(0.01)	(0.002)	(0.002)	(0.003)	(0.002)
Trade Openness	0.006	0.006	0.009*	0.008	0.02**	0.003
	(0.005)	(0.01)	(0.005)	(0.005)	(0.008)	(0.01)
Primary Education	-0.01	-0.07	0.02	-0.02	-0.05	0.03
	(0.03)	(0.05)	(0.07)	(0.03)	(0.04)	(0.06)
Urbanization	0.41*	0.67**	0.008	0.65***	1.05***	-0.01
	(0.24)	(0.28)	(0.83)	(0.21)	(0.27)	(0.41)
Constant	-0.04	6.57	-3.16	1.28	1.42	-3.26
	(3.49)	(5.90)	(8.11)	(3.62)	(4.55)	(5.27)
Observations	183	74	183	183	74	183
Number of Code	74	41	74	74	41	74
Arellano-Bond test AR(2)	0.15	0.23	0.15	0.15	0.21	24
Sargan test	0.80	0.77	0.82	0.67	0.16	0.98
Hansen test	0.55	0.44	0.73	0.52	0.45	1.00

Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1) *Source: Author (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).*

Table 12: Religiosity and Economic Growth in Developed and Developing Countries

VARIABLES	(1) GDP	(2) GDP	(3) GDP
Religiosity*Developing Countries	1.19*		0.27
	(0.68)		(0.85)
Religiosity*Developed Countries		0.78***	0.74*
		(0.28)	(0.43)
Investment	0.15***	-0.22	0.16**
	(0.05)	(0.14)	(0.07)
Inflation	-0.005**	-0.01	-0.01
	(0.002)	(0.01)	(0.01)
Trade Openness	0.01**	0.02**	0.01*
	(0.005)	(0.01)	(0.006)
Primary Education	-0.02	-0.06	-0.05
	(0.03)	(0.06)	(0.05)
Urbanization	0.15	0.65*	0.63
	(0.40)	(0.36)	(0.63)
Constant	0.30	12.78	3.12
	(3.77)	(8.00)	(5.89)
Observations	183	74	74
Number of Code	74	41	41
Arellano-Bond test AR(2)	0.12	0.26	0.21
Sargan test	0.20	0.73	0.83
Hansen test	0.40	0.85	0.73

Robust standard errors in parentheses (*** $p<0.01$, ** $p<0.05$, * $p<0.1$)

Source: Author (2016) calculated based on World Value Survey (2014), European Value Study (2008) and World Development Indicators (2014).

Chapter 5: Conclusions and recommendations

5.1 Conclusion

This study has tried to investigate the role of religion in the economic development. Many researchers have investigated role of religion in various dimensions of human life. When it comes to economic development, several articles analyse the impact of religion on economic development i.e. Barro and McCleary (2003), Guiso, et al. (2003), Durlauf et al. (2005), Iyer (2015) etc. None of these studies actually pay attention to the indirect channels through which religion can influence economic growth. This paper investigated channels through which religion can influence economic growth such as ethics, social capital, poverty, political participation, mental health etc. We also examined conditions which are essential for economic growth such as ethnic and religious tensions, ethnic, religious, linguistic fractionalization and polarization etc. and they can be controlled by using religion as an instrument. It is also very important to understand the phenomena of religion and economic development at a regional level. Therefore, this study also investigated role of religiosity in economic development at regional level i.e. Asia, Europe, Africa, South America and North America. In addition, this study also investigated effect of religiosity on economic development of developing and developed countries.

Results of the study show that overall religiosity index measured in terms of belief in hell, belief in heaven and attendance at worship places (Church attendance) is positively associated with economic growth, these results are very significant and are in line with Barro and McCleary (2003), Guiso, et al. (2003), Iyer (2015) etc. When we regress equation using belief in hell, belief in heaven and attendance at worship places (Church attendance) as independent variables the results show that church attendance is positively associated with economic growth and it is very significant. Belief in heaven is positively associated with economic growth but it is not significant and belief in hell is negatively associated with economic growth and its coefficient is significant. These results are not in accordance with the findings of Baro and McCleary (2003), here church attendance is positive, while in Baro and McCleary (2003) it comes out as negative. It can be said as due to increase in sample size by adding more waves of surveys actually gives results that are comparatively batter then the results based on small samples available in 2003. Church attendance can play positive role through its teachings by motivating people to work hard, invest in education and giving the lessons of peace and harmony within society. It also provides a platform for networking and develop trust within society that will ultimately stimulate economic growth. Belief in hell is negatively associated with economic growth because there might be chances that the belief in hell and the concept of punishment make people more afraid of their life after death and this may make them more depressed, mentally sick and less productive. Concept of heaven may motivate its believers to work hard in this life for the betterment of life after death. This option of reward in heaven enhances their vision and makes them more determined and productive that reflects ultimately in the final output of an economy.

On a careful analysis of channels through which religion can influence economic growth mixed results were found out. Our first channel is ethics, in view of economic theory it should play a positive role in economic development, according to Sobel and Goodman test ethics mediates effect of religion on economic growth and it is significant at 10 per cent. Although ethics are positively associated with economic growth when we added ethics in our main regression equation we find that it does not mediated effect of religiosity on economic development. Our

second channel is social capital; it is measured in terms of trust and belongingness to religious organization due to networking capacity (Barro and McCleary (2003), Putnam (2000), Weber (1930)). According to Knack and Keefer (1997), trust is positively associated with economic growth, but in our case it comes out as negative, while belongingness to religious organization is positively associated with growth but these results are neither significant nor they have mediated the effect of religiosity on economic growth. Sobel, Goodman and Aroian tests for mediation also do not provide any evidence of mediation effect by social capital. However, when we regress social capital in an equation that combines all the channels then both trust and belongingness to religious organization comes out positive and significant as well. This shows that social capital is a very important factor and it contributes in economic development but it does not mediate effect of religion.

Our third channel is political participation and it is measured in terms of voting turn over. As we know, if more people will take interest in political activities and give their feedback on public policies through voting they will put pressure on government to work for the best of their economy. Our results indicate that political participation is positively associated with economic growth and it does mediate the effect of religiosity on economic growth but it is not significant. Fourth channel is poverty, it which is negatively associated with economic growth. It mediated the effect of religiosity but it is not significant. Mental health is considered as our fifth channel and measured in terms of depression, it is very important for the proper functioning of human capital, it reduces the productivity and ultimately has negative impact on economic development. Results indicate that mental health (depression) is negatively effecting economic growth but its impact is not significant. Sobel, Goodman and Aroian tests of mediation also indicate no mediation effect of political participation, poverty and mental health.

Poverty, political participation, mental health has mediated the effect of religion on economic growth, but it is not significant and we do not find any evidence that shows mediation effect of religion through ethics, and social capital. Based on our analysis we cannot conclude that religion do not have any effect on economic growth through these channels. There might exists several other channels through which religion may mediate its effect on economic growth. There might be some shortcomings in the operationalization of variables from its core concept. We can redefine these concepts and operationalise them in a better way that could actually capture the true concepts of these variables. As this study is restraint by the availability of data, time as well as financial constraints. In addition, this study focused much on cross country data set with six waves, may be by expanding our data further can give new insight or an analysis at a country level may seems to be a better choice to understand the mediation effect.

Economy can grow if there is peace and harmony in the society and people can live and work in a secure and peaceful environment. Ethnic, religious and linguistic fractionalization as well as religious and ethnic polarization usually cause ethnic and religious tensions. Conflicts either ethnic or religious they are not conducive for economic growth. This study investigated the impact of all these factors on economic growth along with religiosity. Results show that religious, ethnic and linguistic fractionalization has negative impact on economic growth. The coefficient of religious fractionalization is not significant while ethnic and linguistic fractionalization has significant coefficients and these results are in accordance with the economics literature (see Alesina, et al. (2003). To understand the role of religion we introduced interaction terms for fractionalization and church attendance. The interaction terms of all these three types of fractionalization are positive but have insignificant impact on economic growth. When fractionalization variables and their respective interaction terms are combined in one regression equation all results get insignificant.

Montalvo and Reynal-Querol (2003) discussed that religious polarization has negative impact on economic development, when we regressed religious polarization; our findings confirm that religious polarization is not good for economic growth but these results are not significant. We added interaction term of religious polarization and church attendance which indicates that attendance at religious places do not play positive role in decreasing the negative impact of religious polarization, but these results are not significant. Ethnic polarization has also negative impact on economic growth as mentioned by Montalvo and Reynal-Querol (2005) but it is not significant in our case. The interaction term of ethnic polarization and church attendance turns out as positive but again it is not very significant.

Ethnic tensions have negative impact on the economy and it is significant in our study. Religious tensions, although have negative impact but they are not significant at all. We also included interaction terms for ethnic and religious tensions with respect to church attendance, results show that the visits at worship places reduces the negative impact of these ethnic and religious tensions but these results are not significant. From these results, it can be seen that ethnic, religious and linguistic fractionalization, ethnic and religious polarization as well as ethnic and religious tensions they all have negative impact on economic growth, there is a need to resolve these issues, and religion can be used to eliminate differences and maintain patience in the society. Although, the results could not pass the test of significance, and this can be due to the non-directional use of religion. If we start using our religious assets in a positive way, more objectively to resolve the conflicts within society, it is possible to achieve long run sustainable development goals.

To analyse the impact of religion at regional level regional dummies has been included for Asia, Europe, Africa, North America and South America. Results shows that religion play significant positive role in the economic development of Asia and Europe, for Africa religion has positive association with economic growth but it is not significant. In North and South America, results are not clear and there is a need to reinvestigate the impact of religion on the economic growth of America. As the results of this study for the American region are not robust this means that they are subjected to change for various model specifications. Impact of religion on economic growth has also been checked for developing and developed countries and it comes out that, although religiosity is playing positive role for both developed as well as developing world but the results are more robust for developed countries.

5.2 Recommendations

This study has tried to investigate the role of religion directly through believe system such as religiosity and indirectly through various channels such as ethics, political participation, poverty alleviation, social capital and mental health. Although, the channels that we tried to explore do not give much significant evidence through which religion can effect economic growth, but we can expect that may be due to some constraints such as operationalization of key concepts, data availability and time limit etc. this study could not get results as per expectation. So it is recommended to re-operationalize these concepts into concrete variables that actually describes each channel more effectively. This study faces few limitations to the availability of data for few variables that might be an obstacle in achieving the set objectives of this study. As all the concepts used to check the mediation effect are subjective and there are always possibilities of defining concepts more objectively and concretely that capture the idea accurately. By rethinking the definitions and the operationalization of these given channels, one can get some more insightful results.

This study focused much at cross-country level data and it would be a good idea to investigate effect of religion through various channels on economic growth by using data at country level. By working with individual level data (micro data) it might be possible to get information that may support the mediation effect of these channels on economic growth. As suggested by the literature review religion has strong impact on ethics, poverty alleviation, mental health, political participation and social capital, so it is recommended to re-estimate these models using micro level data.

It is not just ethics, poverty alleviation, social capital, political participation and mental health through which religion can effect economic growth, there exists several other ways through which religion can influence the output of an economy such as: law and order in a society, property rights, political freedom, governance, democracy, institutions, women participation etc. Therefore, there is a need to further investigate channel and explore other paths through which religion can influence economic growth.

Based on our analysis we can say that religion plays positive role in the economy directly due to its belief system and attendance at worship places. As these places are the sources from where people get guidance and make changes in their attitude towards different aspects of life. Based on this study, it can be said that religious organizations or worship places like churches, mosques, temples, synagogue etc. can play positive role in eliminating the conflicts and tensions between various ethnic and religious groups. Religious leaders can use the support of holy text that promotes peace and harmony, love for humanity and they can help to culminate the root cause of these conflicts and tensions. There is a need to rethink the positive role of religion and it is highly recommended to use religion as an instrument to solve the problem of conflict arise due to ethnicity, language or religion itself.

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Annex 1:

Table 13. List of Countries

List of Countries			
Albania	Estonia	Lithuania	Saudi Arabia
Algeria	Ethiopia	Luxembourg	Serbia
Andorra	Finland	Macedonia	Singapore
Argentina	France	Malaysia	Slovakia
Armenia	Georgia	Mali	Slovenia
Australia	Germany	Malta	South Africa
Austria	Ghana	Mexico	South Korea
Azerbaijan	Greece	Moldova	Spain
Bahrain	Guatemala	Montenegro	Sweden
Bangladesh	Hong Kong	Morocco	Switzerland
Belarus	Hungary	Netherlands	Taiwan
Belgium	Iceland	New Zealand	Tanzania
Bosnia	India	Nigeria	Thailand
Brazil	Indonesia	Northern Cyprus	Trinidad and Tobago
Bulgaria	Iran	Northern Ireland	Tunisia
Burkina Faso	Iraq	Norway	Turkey
Canada	Ireland	Pakistan	Uganda
Chile	Italy	Palestine	Ukraine
China	Japan	Peru	United Kingdom
Colombia	Jordan	Philippines	United States
Croatia	Kazakhstan	Poland	Uruguay
Cyprus	Kosovo	Portugal	Uzbekistan
Czech Republic	Kuwait	Puerto Rico	Venezuela
Denmark	Kyrgyzstan	Qatar	Viet Nam
Dominican Rep.	Latvia	Romania	Yemen
Ecuador	Lebanon	Russia	Zambia
Egypt	Libya	Rwanda	Zimbabwe
El Salvador			

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