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Behavioral Assumptions of Islamic Economics Revisited

Is the Giving Behavior of Muslims Different from Others?

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Abstract: Islamic economics (IE) assumes an altruistic economic agent who spends his income not only on himself but also on others through charity. Since this behavioral norm is attributed only to Muslims, this implies that the giving behavior of Muslims is different from others. This study aims to test the validity of this assumption by analyzing a cross-national survey measuring the attitudes, beliefs and behavior patterns of diverse populations in 19 European countries. The empirical results based on a logistic regression and Propensity Score Matching approach indicate no difference between Muslims and members of other religions in terms of the likelihood of involvement in giving activities. The impact of other explanatory variables on both donations and volunteer efforts were generally the same, with the exception of age and marital status. The increasing number of studies supporting the findings of this study or raising questions about the validity of Islamic economic assumptions may cause IE to reformulate its theory.

Keywords: Islamic economics, charity, religion, Muslims.

JEL Classification: B40

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Introduction

A true Muslim organizes his or her life according to the words of Allah (Quran) and the sayings of the Islamic prophet Muhammad (*Hadiths*). Teachings in the Quran and of Muhammad, in some aspects, are compatible with economic theory, like the recognition of private property and appreciation of market transactions. However, many teachings are in conflict with some basic economic principles such as interest (*riba*), overconsumption and the consumption of certain goods, such as alcoholic beverages, pork, gambling, etc., which are forbidden (*Haram*) in Islam. Due to these controversies, some Muslim economists and theologians have claimed that the conventional paradigm of economics is inadequate to understand Muslim societies, thus raising the need for Islamic economics (IE), which has grown outside the conventional realm in the last quarter of the twentieth century.[1] Although rapidly growing literature has emerged since then, IE is still in its infancy and far from being a comprehensive alternative to its conventional counterpart. The majority of the works are about "how IE is different" from conventional economics; in other words, they are about what IE is *not* rather that what IE *is* (Mahomedy, 2013).

This new subdiscipline is distinguished from its conventional counterpart by three characteristics (Kuran, 1995): the prohibition of interest, the redistribution of income through compulsory giving (*Zakat*) and analysis based on economic agents acting according to Islamic norms. Although being charitable and helping the unfortunate is promoted in almost all faiths, mandatory giving is found only in Islam and Judaism. Probably for this reason, special importance is given to charity in IE. It is considered a distinguishing feature of the discipline, and compulsory giving (*Zakat*) is always included in the Muslim economic agent's consumption function (the second characteristic). Giving in these functions does not refer only to *Zakat* but also to voluntary giving (*Sadakah*). Islamic economists emphasize that, unlike typical selfish economic agents of the conventional theory, Muslims behave in an altruistic way[2] and their utility not only depends on their own material consumption but also on helping others (the third characteristic). As this altruistic behavioral pattern is only attributed to Muslim economic agents, it would not be wrong to make the following inference: IE assumes that giving (behavioral) patterns of Muslims are different from those of members of other faiths.

1 Although the roots of IE go back to studies of Islamic thinkers like Ibn Khaldun and Al-Ghazali, IE has emerged as a formal discipline in the last quarter of the twentieth century.

2 It is worth considering the question of whether a Muslim or a member of another religion, who donates some amount of money to the needy -with the expectation of being awarded by the God in this world or hereafter- can be considered an altruistic person.

This paper explores the compatibility of this assumption with the real lives of Muslims. A major question posed by this paper, then, is: In general, do these behavioral assumptions of IE overlap with behaviors of Muslims in practice? Or, more specifically, is the giving behavior of Muslims different from others? The research question is of vital importance for the development and future path of IE for several reasons. First, followers of the discipline claim that IE is an alternative to the conventional economic theory, which is based on hypothetical or unrealistic assumptions (Askari , Iqbal, & Mirakhor, 2014). This implies at least raises the expectation that IE is based on realistic assumptions. Therefore, whether or not IE is based on realistic assumptions is a question that Islamic economists who criticize conventional economics must answer. Second, unlike conventional economics, IE is a normative theory that describes an ideal state that can only be achieved if certain behavioral norms are adopted. Do Muslims adopt these norms? If the answer is no, then why don't they adopt them and how can they be motivated to adopt these norms? These are the basic questions to be asked by a normative theory in order to achieve the ideal.

The validity of behavioral assumptions of IE and their results are rarely questioned in literature. Existing studies are usually based on anecdotal evidence and empirical studies in this regard are very limited. This study thus aims to contribute to this methodological issue in IE by empirically examining whether Muslims are more likely to give than other religious denominations using a survey data conducted in 19 European countries. Unlike the claim of IE, our empirical results indicate that the giving behavior of Muslims is not different from other religious groups. In addition to empirically refuting the IE assumption, the current study provides a contribution to empirical studies on charitable giving.

The remainder of this paper is organized as follows: Section two discusses the notion of giving in Islamic teachings while section three discusses the ideals of giving in IE. In section four, whether Muslims are more likely to give than other religious denominations is tested empirically. This section includes a brief overview of previous studies, a description of empirical methodology and the data sources, the presentation of the empirical results, robustness checks and a discussion of the findings respectively. The final section evaluates the findings and discusses the implications of these findings on IE.

Giving in Islam: Muslims Give

The eradication of poverty and the equal distribution of income are the major goals of all religions. A basic tool for achieving these goals is charitable giving, which can take the form of donating money, time, and resources to the needy. These types of giving have special names in many religions, like *dana* in Hinduism and Buddhism and *tzedakah* in Judaism. Islam is no exception. Muslims are both obliged and encouraged to give to those in need.

In Islamic teaching, it is believed that messengers of Allah were sent to earth to establish justice (Quran 57:25). Justice in the economic sphere basically refers to equality, or, more specifically, the equal distribution of income and wealth. However, inequality originating from differences in skill, effort, or risk is admitted, but extreme inequality is ruled out because it is believed that it would destroy the universal brotherhood of human beings, which is one of the most fundamental principles of Islam (*tawhid*) (Chapra, 1992, Kuran, 1989). This economic justice objective of Islam is expected to be reached through giving.

In Islamic teaching, everything is created by Allah; therefore, all property is ultimately owned by Him (Quran 5:20). A legal earthly owner is merely holding the property as a trustee, and his rights to the property are given by the ultimate owner. Allah, the owner and creator of everything, obliges and promotes His wealthy trustees to give part of their possessions to their poor brothers. Those who refrain from paying charity are warned about severe punishments from Allah on the day of resurrection in both the Quran and the *Hadiths*.[3] Those who fulfill their duties will both multiply their wealth in this world and be rewarded in the hereafter (paradise) (Quran 6:160). Therefore, charitable giving will help a society achieve two main economic objectives: "fair" income distribution and growth.

The most important categories of charity defined in Islam are *Zakat* (obligatory) and *Sadaqah* (voluntary). As one of the five pillars of Islam, *Zakat* is a yearly compulsory donation, which is similar to tax, imposed on wealthy Muslims to meet the redistributive aims of Islamic society. Wealth, above a minimum amount known as *Nisab*, is subject to *Zakat* at a varying rate, between 2.5 and 20 percent, that is paid once a year (Kuran, 1989). *Sadaqah* is another form of giving in Islam.

3 For example, in one *Hadith*, the Prophet Muhammad says, *"Whoever is made wealthy by Allah and does not pay the Zakat of his wealth, then on the Day of Resurrection his wealth will be made like a bald-headed poisonous male snake with two black spots over the eyes. The snake will encircle his neck and bite his cheeks and say, 'I am your wealth, I am your treasure'"* (Bukhari: Vol. 2 No. 486). See also Quran (64:17, 57:11, and 57:18).

Although it has the same aim as *Zakat* and the two words are used interchangeably in some Quranic verses, there are major differences between the two. First, *Sadaqah* is voluntary and given out of the "heart" rather than wealth. Second, unlike *Zakat*, which is given once a year based on a certain percentage of wealth, there is neither a time limit nor a material threshold for *Sadakah*. Third, only goods that have an economic value, like gold, camels, wheat, and so on, are considered *Zakat*, but *Sadakah* may take any form. Finally, while the poor and needy are the primary recipients of *Sadakah*, it can also be *given* to neighbors, friends, non-Muslims, and even the rich.

Besides material giving, doing something good for the others without worldly gain (giving time/voluntary work) is also encouraged in Islam. In a *Hadith* narrated by Al-Bara' bin `Azib it is mentioned that the prophet Mohammed ordered Muslims "to visit the sick, to follow the funeral (of a dead believer)... to help those who vow to fulfill it, to help the oppressed, to accept the invitation extended by the inviter" (Riyad as-Salihin 894). In another hadith, it is reported that the Prophet Mohammed said, "Your smile for your brother is *Sadakah*. Your removal of stones, thorns, or bones from the paths of people is *Sadakah*. Your guidance of a person who is lost is *Sadakah*."(Bukhari).

Beyond individual giving, Islam also promotes the institutionalization of giving through endowments (*waqf*). The creation of a *waqf* means the dedication of an asset to some charitable ends for the duration of this asset's existence. After the formation of the *waqf*, the property no longer belongs to an individual, but is owned by *Allah* and its ownership is non-transferable. The establishment of a *waqf* was first advised and promoted by the Islamic prophet Muhammad, and it has become the major institutional form of Islamic charity over the years. Endowments improved the efficiency of both the collection and the distribution of charitable giving and have been used extensively in Islamic societies to improve social services (like health, education, access to water, religious services, etc.) in addition to the well-being of the poor (Hasan, 2015).

Giving in Islamic Economics

As mentioned above, compulsory giving is one of the five pillars of Islam that will improve the material well-being of both individual Muslims (givers and receivers) and society as a whole. Therefore, Islamic economists adopt giving in their micro- and macroeconomic models as an element that differentiates their work from their conventional counterparts and obtains different results.

The adoption of giving in IE studies begins with a critique of the assumptions of conventional economics. For example, Khan (1987) states: "The economist assumes that human beings are selfish, rational maximizers of their own material well-being and possessors of perfect knowledge in the future... Islamic economics does not agree with any of these assumptions". Their alternative assumption is not as strict as its conventional counterpart: "...man is neither selfish nor altruistic; he is both. He has an inborn tendency to be selfish, to love wealth but he has also been endowed with the ability of being altruistic" (Khan M. A., 1987). The following supports this assumption: "Secondly, by education, altruistic behavior can be cultivated and made persistent. Thirdly, human beings have imperfect foreknowledge . . . Fourthly, in ultimate analysis, *falah* of the *Akhira* (well-being in the afterlife) is preferable over material progress in this world" (Khan M. A., 1987).

Based on the first and fourth assumptions, unlike the self-interested economic agent of conventional economics, a typical consumer in Islamic microeconomic analysis allocates his income to meet his (his family's) material needs and to meet the needs of others (charity). While material consumption shows a diminishing marginal utility property, as in conventional economics, the marginal utility of each additional expenditure for the sake of God is assumed to be constant, meaning a Muslim will get more individual satisfaction and will praise God more as he spends more on others. The lower limit for spending on others is determined by mandatory giving (*Zakat*), but it has no upper bounds. Those who want Allah to appreciate them more will voluntarily give more (*Sadaqah*) (Khan F. , 1984).

Islamic economists also apply these individual consumers' behavioral patterns to aggregate models to obtain some macroeconomic consequences. For instance, after discussing four hypothetical behavioral scenarios, Kahn (1984) concludes that the adoption of Islamic values by consumers (consume moderately, save more, and give to others as much as possible) will improve their well-being, the well-being of the poor, and the well-being of society as a whole (higher growth rate). In another study, Chowdhoury (1980) argues that, unlike tax, which may decrease the incentive to work, *Zakat* provides positive incentives to participate in the labor force and increases productivity, due to its moral base. He also asserts that the implementation of *Zakat* discourages hoarding and unproductive use of resources, which in turn results in higher investment and growth. Furthermore, studies suggest that institutionalized *Zakat* plays a vital role in eradicating poverty and achieving the aim of more equal income distribution (Malik, 2016).

In the context of this study, two further points about the new economic agent proposed by Islamic economists should be mentioned. The first point is about attribution of altruistic characteristics solely to Muslim economic agents. IE approach-

es the behavioral assumptions of conventional economics critically and proposes a new economic theory based on Islamic behavioral norms. In fact, conventional economics' behavioral assumptions (self-interested and rational agents) have been criticized by economists and other social scientists since they were first introduced by nineteenth-century economists (Rodriguez-Sickert, 2009). In recent decades the criticism has reached its peak with empirical and experimental evidence from behavioral economists mounting against these assumptions (Kahneman, 2003). All of these critics question the validity of the self-interested economic agent of conventional economics and offer a more realistic and more altruistic agent instead, like IE. However, while other critical theories consider all economic agents, IE attributes altruism only to Islamic economic agents. Hence, in IE, behavior patterns of altruistic consumers who spend part of their income on others (charity) are attributed solely to Muslims[4], which implicitly means that the giving behavior of Muslims is different from that of members of other faiths. [5]

The second point is the ambiguity about whether this new economic agent describes a Muslim in reality or an ideal Muslim. As studies in IE usually begin with a critique of conventional economics, which intends to explain how an economy works in reality, and as Islamic economics is presented as an alternative to the conventional theory, it is also expected that Islamic economics concerns reality.[6] However, in most studies in IE, Islamic economic models show an ideal that can be achieved only if the Muslim code of behavior is adopted. This is clearly mentioned by Khan (1987): "Islamic economics is a normative discipline. It explores the ways and means to change the existing economies into Islamic economies. Economics (mainstream), on the other hand, claims to be a positive science which studies the existing economic phenomena. Islamic economics is interested in changing the economic reality. Its predictions also relate to a world which has not yet been ushered in".

4 In the same vein, (Nienhaus, 2013) indicates a similar perception, saying: "The strong emphasis on the 'Islamic' dimension of the discipline and the religious justification of many prescriptive propositions of IE lead to the conclusion that the Islamic economic model gives guidance for Muslims only is rather irrelevant for non-Muslims." (pp. 191-2).

5 The inclusion of giving in Islamic economic models is justified by the references to charitable giving (both *Zakat* and *Sadakah*) in Islamic sources. The existence of references to charitable giving in Islamic sources is obvious, but in these sources no comparison is made with non-Muslims. From Islamic sources, we can only derive that Muslims do indeed give.

6 The following quote from Fahim Khan (2013) reveals the basic motivation behind and the aim of developing an Islamic theory of economics: "Dissatisfied with the conventional economics and its limitations to address economic problems of today, there is need to have more realistic generic theory of economics capable of explaining economic behavior of any society given the socioeconomic and institutional parameters of that society" (p.209). Again, for a comprehensive critique of conventional economics from an IE standpoint, see (Zaman, 2012).

To sum up, Islamic economists replaced the selfish economic agent of conventional economics with a Muslim economic agent who gives part of their income to others in the form of *Zakat* or *Sadakah*- and built their models on this assumption. Unlike conventional economics which is neutral towards individual characteristics like nationality and religion, IE attributes these altruistic characteristics only to Muslims (in actual life or ideally), which implies that the giving behavior of Muslims is different from others. [7]

Is the Giving Behavior of Muslims Different From Others?

Researchers from various disciplines have long worked on determinants of charitable giving (Bekkers & Wiepking, 2011; Lammam & Gabler, 2012; Gittell & Tebaldi, 2006; Mark & Nivison-Smith, 2006; Bekkers & Wiepking, 2012). The results of these studies and the studies examining determinants of giving in Muslims societies (Campbell & Çarkoğlu, 2019; Çarkoğlu, Aytaç, & Campbell, 2018) indicated that some individual-level characteristics (age, income, education, marital status, having children, etc.) have significant impact on giving behavior. Another important finding of the previous research -in the context of this study- is the positive correlation between religiosity and giving. There is ample evidence in the literature that religious people give more. However, evidence on the differences between religious groups or denominations is mixed. Although results of many studies demonstrated that members of one or more denominations outperform others in terms of involvement in giving activities, studies do not provide systematic evidence in favor of any denomination.[8] More importantly, in these studies, there is no specific

7 If IE is about the real world, we should expect the Islamic Economic theory to be built upon realistic assumptions. This is clearly mentioned by Islamic economists: "The Western economists ... have argued that the assumptions need not be empirically valid. In fact, some have gone to the extent of saying that valid predictions are possible only from invalid assumptions. [IE] does not accept this position on the basis of rationality and empiricism" (Khan, 1987). Even if Islamic economics is idealistic, behavioral assumptions are still important. If the majority of Muslims have already adopted the Islamic code of behavior, we may ask why Muslim societies economically perform below the ideal level. If Muslims (particularly the ones who are living in Muslim-majority countries) behave in a way that is inconsistent with the assumptions made based on Islamic teaching, then we may question why. As stated by Chapra (2000), "The task of Islamic economics does not . . . get fully accomplished if it does not show the causes of this deviation" (p.34). Therefore, studies examining the behavior of Muslims in their daily lives will help Islamic economists develop better theories to understand the real world and/or improve the well-being of Muslims.

8 Actually, it is not easy to compare the results of these studies and reach a conclusion in this regard because in each study performance of a denomination is compared to a reference group which is different in each study and classification of denominations used in the studies is not standard.

reference to Muslims, probably because most of these studies are based on surveys carried out in Western countries in which Muslims were represented in very small percentages and are, therefore, grouped under the title "other". This section exists in an effort to fill this gap. The major aim of this section is to determine, by using a comprehensive survey, whether Muslims show a significant difference in giving compared to members of other religions, which would justify the adoption of assumptions regarding giving in IE.

Data and Methodology

In order to investigate the giving behavior of Muslims, a survey carried out in European countries, namely The European Social Survey (ESS), was used. ESS is a cross-national survey that has been conducted every two years since 2001. In each survey, face-to-face interviews are held with newly selected, cross-sectional samples across Europe. The survey measures the attitudes, beliefs and behavioral patterns of diverse populations in more than thirty nations. It consists of a collection of questions that can be classified into two main sections: core and rotating. The core section focuses on a range of different themes that are largely the same in each round. The rotating part is dedicated to specific themes, which are sometimes repeated in later rounds. The questions about giving behavior were only asked in the first round of the survey conducted in 2002 under the "Citizen Involvement" section. Therefore, the first round of the ESS was used in this study.[9]

In the literature, giving is defined in two ways: donating and volunteering. Donating refers to the giving of money, whereas volunteerism is the giving of time to a cause. Both types of giving will be examined using the data obtained from the abovementioned survey. In ESS, respondents were asked if they had donated money or volunteered in the past year, and the possible answers to these questions were in binary form. Considering the discrete nature of the dependent variable, a binary logit model has been used to analyze the giving behavior of Muslims. Our model has the following form,

$$y_i^* = \beta' x_i + \varepsilon_i$$

where y_i is a latent variable measuring the giving attitude of the respondent *i* and takes an integer value. ESS respondents were asked whether they had donated to or volunteered with an organization for humanitarian aid, human rights,

9 The ESS data is also freely available for non-commercial use at http://www.europeansocialsurvey.org

minorities, or immigrants in the past year. Affirmative answers were coded as 1 and negative answers were coded as 0; hence, the dependent variable is binary.

X_i is a (1×k) vector of observed non-random explanatory variables hypothesized to affect giving attitude; β is a (k×1) vector of unknown parameters; and ε_i is the error term, which is assumed to follow the standard logistic distribution. The main explanatory variables comprise Income, Age, Education, Gender, Marital Status, Religiosity, Religious Affiliation, and Country fixed effect.

Income is one of the major determinants of charitable giving and, as expected, studies indicate that high-income individuals and households contribute more to charities (Bekkers & Wiepking, 2012; Lammam & Gabler, 2012; Çarkoğlu, Aytaç, & Campbell, 2018). The relationship is valid at the macro level as well. Gittel and Tebaldi (2006) found that an increase in a state's per capita income increases the average charitable giving in the US. World Giving Index (WGI) Reports[10] also indicate a higher percentage of the population involved in giving activities in richer countries. In ESS data, respondents were asked to scale household's income from 1 to 4, in which higher values refer to lower income levels. The scale is then reversed; therefore, a positive relationship between income and giving, particularly in the form of monetary donation, is also expected in this study.

Age refers to the age of the respondents and *Education* refers to the highest degree received by the respondent, which takes a value on a scale from 1 to 5 in which higher values refer to higher degrees. Despite a few exceptions, there is typically a positive relationship between both variables and giving in the literature (Bekkers & Wiepking, 2011; Lammam & Gabler, 2012; Çarkoğlu, Aytaç, & Campbell, 2018). Some studies (Bekkers & Wiepking, 2011) found that the age relationship decreased at older ages.

Marital Status and *Gender* are binary variables that take the value of 1 if the respondent is married or a woman, zero otherwise. Marriage is mostly positively related to giving, while findings on the impact of *Gender* on charitable giving is ambiguous (Bekkers & Wiepking, 2012).

One of the most important explanatory variables of our model is *Religiosity*. Major religions have much in common, and adherents to these religions are expected to adopt similar behavioral codes, like protecting the needy, being honest, working hard, living modestly, and respecting others' rights. Hence, the level of religiosity has always been considered an influential variable in social research, and

10 Available at https://www.cafonline.org/

studies have shown that religiosity affects some behavioral outcomes positively (Iannacconne, 1998). All religions promote giving, and studies in this realm find a positive association between religious involvement and giving (Bekkers & Wiepking, 2011; Lammam & Gabler, 2012; Gittell & Tebaldi, 2006; Mark & Nivison-Smith, 2006; Çarkoğlu, Aytaç, & Campbell, 2018). In ESS, survey participants were asked how often they attend religious services and their answers were scaled from 1 to 7, where higher values reflect a lower level of attendance to religious services. This variable is used as a proxy for religiosity. To provide a comparative analysis with previous studies, we reversed the scales; therefore, a positive relationship between religiosity and giving is expected in this study.

Beyond individual factors, in some countries, laws, regulations and culture provide a more conducive environment for charitable giving. Particularly, the importance of a strong civil society is mentioned in many studies (Einolf, 2017; Wiepking & Handy, Explanations for Cross-National Differences in Philanthropy, 2015). For instance, in the WGI Reports (Charities Aid Foundation, 2010-2015), the higher giving scores associated with Australia and New Zealand compared to the other countries of Oceania were attributed to the strength of the civil society in these countries, and in all reports, the promotion of civil society is recommended to stimulate giving. In order to grasp country-specific factors that may affect the giving behavior of respondents, country dummies (*Country*) are added to the model. *Country* refers to the country in which the survey was conducted. ESS is a cross-country survey conducted in 22 countries in Europe, but data for donating money and volunteering is only available for 19 countries. This variable is expected to be significantly positive or negative if the environment in the country is favorable or unfavorable for charitable giving compared to other countries.

Religion refers to the religious affiliation of the respondent, which takes the value 1 if the respondents were Muslim and 0 otherwise. As all religions promote giving, no difference is expected between the giving behavior of Muslims and non-Muslims. Empirical studies in this realm (Bekkers & Wiepking, 2011) have countervailing results and do not provide systematic evidence supporting the superiority of one faith over the others in terms of giving. However, if the giving behavior of Muslims is different from others, as claimed by IE, we expect the coefficient of the *Islam* dummy to be significant and positive. In addition to this dichotomous variable, a set of seven dummy variables were generated using Muslims as a reference group and added to both models later in the analysis. ESS classifies participants in eight categories according to their religious denomination: Roman Catholic, Protestant, Eastern Religions, Jewish, Muslim, Other non-Christians, Eastern Orthodox, and other Christian. Besides the binary variable, these dummy

variables are useful to compare the giving behavior of Muslims with members of other religious denominations.

Summary statistics of the variables are given in Table 1. From this table, several points deserve to be highlighted. First is the lower rate of volunteerism compared to monetary donations, which is probably because it is easier for people to give money than to give time. Second, about half of the respondents were women and half were married. Third, only 3 percent of the respondents were Muslim; the vast majority of the respondents were non-Muslim, which is understandable for a survey conducted in Europe, a continent with a Christian majority.[11]

Table 1
Summary Statistics for Selected Variables

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
GivCharity	38,784	0.114	0.317	0	1
VolCharity	38,784	0.0186	0.135	0	1
Income	36,994	3.046	0.837	1	4
Age	38,646	46.24	18.32	14	110
Education	38,655	2.883	1.331	1	5
Gender	38,913	0.527	0.499	0	1
Married	37,275	0.547	0.498	0	1
Religiosity	38,800	2.708	1.583	1	7
Islam	24,527	0.0316	0.175	0	1
Roman Catholic	24,527	0.522	0.500	0	1
Protestant	24,527	0.248	0.432	0	1
Eastern Orthodox	24,527	0.103	0.304	0	1
Other Christian denomination	24,527	0.0292	0.168	0	1
Jewish	24,527	0.0552	0.228	0	1
Eastern religions	24,527	0.00477	0.0689	0	1
Other non-Christian religions	24,527	0.00632	0.0792	0	1

11 Note that respondents who are not affiliated to any of the religious groups, such as atheists, are excluded from the analysis since we compare attitudes of Muslims and the affiliates of other religions.

Empirical Results

Table 2 reports bivariate correlations among selected variables. Again, several points are worth mentioning here. First, the results indicate a positive correlation between donating money and volunteering, implying that they are complementary and that factors affecting donating money also affect volunteering behavior in a similar manner. Second, both types of giving are positively correlated with women and those who are educated, religious, married and wealthy. Third, the Islam dummy is insignificantly and negatively correlated with both types of giving.

Table 2

Correlation Matrix for Selected Variables

	GivCharity	VolCharity	Age	Education	Gender	Income	Married	Religiosity	Islam
GivCharity	1								
VolCharity	0.212***	1							
Age	-0.00106	0.00108	1						
Education	0.176***	0.0805***	-0.246***	1					
Gender	0.0269***	0.0180**	0.0352***	-0.0630***	1				
Income	0.154***	0.0564***	-0.0531***	0.261***	-0.0654***	1			
Married	0.0337***	0.0103	0.179***	0.0427***	-0.0523***	0.0481***	1		
Religiosity	0.00217	0.0295***	0.117***	-0.0815***	0.0904***	-0.0737***	0.0655***	1	
Islam	-0.00892	-0.00733	-0.133***	-0.0263***	-0.0500***	-0.0852***	-0.000752	-0.00894	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Our two giving variables are regressed on the abovementioned explanatory variables separately by using the binary logit model, and the results are reported in Table 3.[12] First, the relationship between our basic explanatory variables and giving is estimated (Model 1 and Model 3). Then, we added our variable of interest, *Islam,* which takes the value 1 if the respondents were Muslim, to our base model (Models 2 and 4) to show whether the giving behavior of Muslims is different from those affiliated with other religions.

Our first estimation, including basic explanatory variables (Model 1), implies that all our explanatory variables were found to have significant effects on donating money at the p=0.05 level. These results suggest that women and people who are married are more likely to give compared to their counterparts. The likelihood of giving also increases with *Age* -at a decreasing rate-, *Income*, *Education* level, and *Religiosity*. The results also indicate that some country-specific factors affect giving behavior. These findings are consistent with previous literature.

The estimation result of factors affecting volunteering activity is reported in the third column of Table 3 (Model 3) and show that *Education, Gender, Income* and *Religiosity* positively affect the propensity of volunteering activity. However, unlike in the "donating money" (Model 1) estimations, *Age* and marital status do not have a significant impact on propensity of engaging in volunteering activities. Again, some country specific factors affect volunteering behavior.

12 In all estimations, the survey weight 'pspwght' was used in order to account the survey design as recommended by ESS (see https://www.europeansocialsurvey.org/download.html?file=ESS1e06_6&y=2002). The Likelihood Ratio statistics for all regressions are significant at the 1 percent level. Thus, we can conclude that all the variables together do significantly influence giving. Note that the reported coefficients indicate marginal coefficients estimated at mean.

Table 3
Logistic Regression Results of Donating and Volunteering

	(Model 1)	(Model 2)	(Model 3)	(Model 4)
	Dependent variable: Donating money		Dependent variable: Volunteering	
Age	0.00192***	0.00171***	0.000285	0.000263
	(0.000479)	(0.000543)	(0.000198)	(0.000212)
Age^2	-0.0000176***	-0.0000169***	-0.00000250	-0.00000236
	(0.00000480)	(0.00000538)	(0.00000192)	(0.00000203)
Education	0.0245***	0.0201***	0.00405***	0.00391***
	(0.00113)	(0.00128)	(0.000472)	(0.000523)
Gender	0.0211***	0.0136***	0.00460***	0.00338***
	(0.00279)	(0.00313)	(0.00116)	(0.00123)
Income	0.0162***	0.0154***	0.00287***	0.00238**
	(0.00209)	(0.00233)	(0.000925)	(0.00100)
Religiosity	0.00852***	0.00866***	0.00303***	0.00312***
	(0.00101)	(0.00112)	(0.000400)	(0.000432)
Married	0.00620**	0.00705**	-0.00232*	-0.000207
	(0.00310)	(0.00354)	(0.00121)	(0.00124)
Islam		-0.0109		-0.00154
		(0.0119)		(0.00496)
# of observations	36113	23687	36113	23687
Country dummies	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

In the context of this study, one of the most important findings derived from these estimations is the positive relationship between religiosity and both forms of giving. These estimations mean that more devoutly religious people, measured by how frequently they attend religious services, are more likely to give irrespective of their religious denomination.[13] This finding is consistent with our expectations and previous studies, as well.

In order to compare the giving behavior of Muslims to others, a dummy variable was added to the base models (Models 2 and 4). If Muslims give more than other religious groups, this dummy variable would be positive and significant. The estimation results, however, indicate that the dummy variable is neither significant nor positive for both models. Hence, it implies that the giving behavior of Muslims is not different from other religious groups.

With the aim of examining whether the giving behavior of Muslims differs from a specific religious group, seven dummy variables were added in Models 1 and 3. The estimation results are reported in Table 4, where the first column presents estimated marginal coefficients of donation equation while the second column presents estimated marginal coefficients of volunteering. As can be seen from the table, Roman Catholics and Protestants give more compared to Muslims. However, Jews were found to be less likely to give compared to Muslims. The results further demonstrate that there is no significant difference between Muslims and the remaining religious denominations in terms of donating money. As reported in the second column of Table 4, none of the religious denominator dummies are significant in the volunteering model, providing further evidence that there is no distinction in volunteering frequency across religions.[14]

13 Other than the frequency of attendance to religious services, other proxies of *Religiosity* were used as a robustness check, and the two models were re-estimated. The empirical results are consistent to the estimate reported in Table 3. These proxies are a variable which directly asks respondents how religious they are by asking 'How often do you pray apart from at religious services', and a variable which asks the respondent to what extent religion is important in their life.

14 Because of the fact that the decision to donate money and time might be made jointly and/or that unobserved factors affecting one decision also impact the other, we re-estimated the giving model using bivariate probit model that considers the joint significance of both donation and giving time. The estimation results corroborate the reported estimates.

Table 4

Logistic Regression Results of Donating and Volunteering with Religious Denomination Dummies

	(1)	(2)
	Dependent variable: donating money	Dependent variable: volunteering
Age	0.00169***	0.000271
	(0.000540)	(0.000212)
Age^2	-0.0000169***	-0.00000244
	(0.00000534)	(0.00000203)
Education	0.0201***	0.00388***
	(0.00128)	(0.000524)
Gender	0.0135***	0.00336***
	(0.00312)	(0.00123)
Income	0.0150***	0.00241**
	(0.00230)	(0.00100)
Religiosity	0.00879***	0.00309***
	(0.00114)	(0.000437)
Married	0.00713**	-0.000275
	(0.00352)	(0.00124)
Roman Catholic	0.0251***	0.00134
	(0.00936)	(0.00487)
Protestant	0.0304***	0.00269
	(0.00983)	(0.00508)
Eastern Orthodox	0.0401	0.00369
	(0.0260)	(0.00854)
Other Christian denomination	0.0178	0.00485
	(0.0116)	(0.00587)
Jewish	-0.0305***	-0.00126
	(0.00839)	(0.00405)
Eastern religions	0.0309	-0.00214
	(0.0198)	(0.00634)
Other non-Christian religions	-0.00427	-0.00465
	(0.0144)	(0.00563)
# of observation	23687	23687
Country dummies	Yes	Yes

Standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$

Robustness Check with Propensity Score Matching (PSM) and Global Data

Propensity Score Matching (PSM)

There are various reasons why Muslims in our sample are less likely to give than other religious denominations. First, one might argue that Muslims and non-Muslims are different in terms of various socio-economic and demographic characteristics in Europe. For instance, in our sample Muslims have lower incomes, are younger, less educated, more religious, and most of them are married. Although we account for all these economic and demographic factors in our estimations, an insignificant Muslim dummy may be due to other socio-economic factors that are not accounted for in the current study (Khader & Siddiqui, 2018). In fact, it is debatable if the explanatory variables used in the regression analysis are comprehensive and there is no omitted variable. Second, the non-significance of the Islam dummy in logit regression may largely be due to self-selection or the small sample size of the target observations. For instance, out of 24,406 observations used for regression analysis, Muslims constitute only 3%. Third, logistic regression imposes linearity assumption of independent variables and log odds, indicating that it is model specification dependent.

Considering the aforementioned reasons, we conducted PSM analysis to further test the giving behaviors of Muslims and non-Muslims. The PSM approach not only addresses the above-mentioned limitations of logistic regression analysis but also provides an objective causal inference. The main idea of PSM is to match each Muslim with a non-Muslim based on their propensity score and then calculate the average difference in probability of donating or volunteering within each matched pair. In short, PSM is conducted in four steps: 1) run a logistic regression where the dependent variable is T=1 if the interviewee is Muslim, 0 otherwise, 2) obtain the predicted probability of being Muslim (log $[p/(1-p)]$, 3) match each Muslim observation with the non-Muslim whose propensity score is closest, 4) compare the outcome variables (donation and voluntary) of the matched observation.[15] Although this approach is popular for the impact evaluation of a project, studies have employed the PSM approach to analyze questions similar to ours (Burge , 2013).

Before conducting PSM, we tested the difference in means between two groups (Muslims and non-Muslims) using simple t-test as reported in the following table.

15 For detailed discussion on PSM approach see Pan & Bai (2015) and Khandker, Koolwal, & Samad (2010)

As expected, even the simple t-test comparison indicates that there is no significant difference between Muslims and non-Muslims regarding donation and voluntary activities at conventional statistical significance levels.

Table 5
t-test of Donation and Volunteering Between Muslim and non-Muslim

	(1)	(2)
	Donation	Volunteering
Mean	0.0141	0.00393
t statistics	(1.26)	(0.80)
# of observations	24406	24406

Notes: t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The above t-test statistics, however, do not take into account the difference in socio-economic and demographic differences between the treated (Muslims) and non-treated (non-Muslims). Therefore, the PSM approach has been conducted to further investigate whether there is a significant difference between Muslims and non-Muslims. Before estimating the Average Treatment effects on the Treated (ATT), we tested the quality of the matching process as reported in Appendix 1. A visual inspection of both the covariate imbalance test and graph indicate that the common support condition was satisfied. After ensuring the matching quality of the estimated propensity score, the ATT of Muslims on giving is estimated using the three matching algorithms and the result is presented in Table 6.[16]

Table 6
Average Treatment Effect of Muslims on Giving

	Nearest Neighbour Matching		Kernel Matching		Radius Matching	
Outcome variable	ATT	Std. Err.	ATT	Std. Err.	ATT	Std. Err.
Donation	0.014	0.013	0.013	0.012	0.015	0.012
Volunteering	-0.0032	0.0054	-0.0028	0.0049	-0.0027	0.0049

Note: The subscript *, ** and *** imply significance levels at 10, 5 and 1 percent respectively.

16 Note that logistic estimation is used to derive the propensity scores of being Muslim.

A range of matching algorithms can be used to calculate the closest match such as the nearest neighbor matching (NNM), the radius matching (RM), and the kernel matching (KM). The NNM approach is to compare the outcome of the treated variable with the closest and most similar non-treated observation based on their propensity scores. The RM, on the other hand, compares the outcome of the treated observation with non-treated observation that fall within a specified radius (r). The KM is such that each treated observation "i" is matched (using the propensity scores) with other control observations that have weights that are inversely proportional to the distance between the two groups (Cerulli, 2015). To ensure the robustness of the result, we applied all three matching algorithms as reported in the above table. The empirical results indicate that the ATT is not significant at a conventional significance level, regardless of whether the outcome variable is donating or volunteering, under the three matching algorithms used in this study. This result thus reaffirms our claim that there is no significant variation between Muslims and non-Muslims in terms of the probability to donate or volunteer.

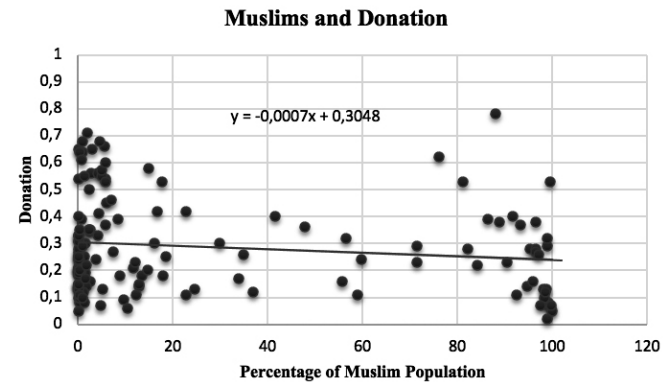
Global data

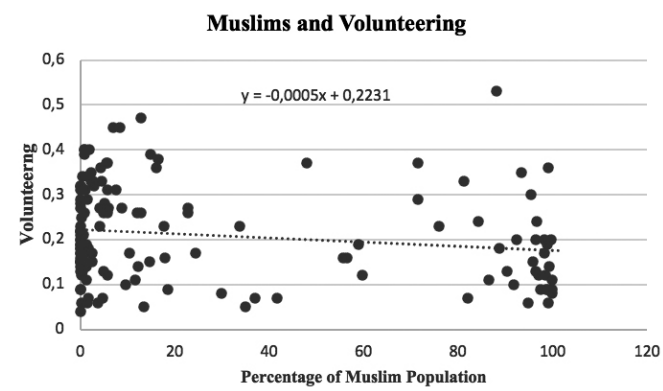
The data used so far is a survey data of European countries, where the Muslim population accounts for only a small portion of the total population. In most EU countries, Muslims make up less than 1% of the population. Therefore, it is possible that the giving behavior of Muslims would not differ in Europe, but Muslims in other parts of the world may give more than their European counterparts. Besides, ESS data is relatively old and the giving behaviors of Muslims might have been changed since then.

Testing these hypotheses would require individual level data as used in the above analysis, which is unfortunately not available for other parts of the world. However, we thought that aggregate level data obtained from WGI, an annual report published by the Charities Aid Foundation, may provide some insights in this regard. WGI data is gathered by Gallup from over 150,000 people in over 153 countries in the world. Survey respondents were asked which of the following three charitable acts they had undertaken in the past month: (1) helping a stranger or someone they didn't know who needed help, (2) donating money to a charity, and (3) volunteering time to an organization. A country's score shows the average percentage of people involved in one of these three activities. Data from WGI was taken for each country (in 2018) and compared with the percentage of Muslims in

the country.[17] The following graphs shows the percentage of Muslims and the two components of giving: Donating and volunteering. It is apparent from these graphs that there is no relationship between percentage of Muslims and giving score.

Figure 1
Percentage of Muslim Population and Giving





Discussion

The validity of the IE's behavioral assumptions in real life have been examined, although limited in number, by other researchers as well. These studies do not support the view that Islamic behavioral codes are adopted by the vast majority of Muslims in their daily lives (Kuran, 1995), even in the countries ruled with

17 Muslim population data from http://pewforum.org/docs/?DocID=450 and giving data from https://www.cafonline.org/

Sharia (Behdad, 1994). More specifically, studies examining the charitable giving (particularly *Zakat*) practice of Muslims, which is the focus of this study, also demonstrate similar results. These studies reveal that collection of *Zakat* has always been a problematic issue for Islamic societies. Even in the early years, some tribes refused to pay *Zakat* to the caliph Abu Bakr, the successor of the Islamic prophet Muhammad. In those times, the existing *Zakat* system was very far from reaching socially desired outcomes due to evasion, legal controversies and inconsistencies in distribution (Kuran, 2003).

Not much has changed since then. Evasion is still pervasive in Muslim societies. Low *Zakat* collection rates in Muslim countries which made *Zakat* mandatory in the last quarter of the twentieth century prior to the passage of the ordinance (Powell, 2009) can be interpreted as a lack of adopting the behavioral norms imposed by Islam and a reluctance to pay *Zakat* without enforcement by an earthly authority, even more than one thousand years after these rules were imposed. Massive withdrawals, which in turn cause liquidity shortages, from the banks in Pakistan where *Zakat* is compulsory and banks deduct *Zakat* from the balances held by Pakistani Muslims, indicate the urgency of the evasion problem, at least in this country (DAWN, 2002).

The same is also true for distribution of *Zakat*. It is asserted that in the case of individual distribution, the giver selects the recipients more or less arbitrarily rather than by using the criteria determined by Sharia. In giving decisions, those who have proper connections with, and who are in the interest of the giver, are favored. Institutionalized distribution mechanisms, which have been brought into practice in order to eliminate the inefficiencies of the individualistic system, are also far from perfect. Anecdotal evidence shows that these institutions both governmental and non-governmental suffer from corruption, nepotism, and political influence, which, in turn, cause a misallocation of *Zakat* resources (Kuran, 1989).

However, so far no researcher has specifically discussed the question of whether Muslims behave differently than other religious groups in terms of giving. This study set out with the aim of examining this issue and the validity of IE assumptions in real life. In a nutshell, the findings of this study suggest that the giving behavior of Muslims is not different from other religious groups, albeit a slight difference exists when Muslims are compared to some other religious denominations. It is worth mentioning that both logistic regression and PSM approach produced consistent results, indicating the robustness of our findings. These results corroborate the findings of the abovementioned studies and indicate that Muslims give, but do not give more than members of other religions. This finding contra-

dicts assumptions by Islamic economists, probably because the majority of Muslims worldwide do not behave as altruistically as is assumed in IE.

These results need to be interpreted with caution nonetheless. First, it should be clearly stated that the results do not imply that Muslims do not give *Zakat* or other forms of Islamic charity but rather indicate that Muslims contribute to humanitarian organizations, in terms of donation and volunteering, in the same way as other religious groups. It is evident that Muslims may prefer to donate to those in need directly rather than through a humanitarian organization, which could be explained by doubts about the reliability and trustworthiness of Islamic charities even in the West[18]. Second, one may think that using relatively old data in estimations may limit the explanatory power of the study. As discussed before, data on giving behavior was only available in the first round of the ESS survey; hence, unavailability of data prevented us from employing a more recent dataset. Yet it is not unrealistic to assume that the giving behavior of individuals would not vary significantly over time and the implications of this study still offer considerable insight into the behavioral patterns of Muslims today. Thirdly, the small percentage of Muslims sampled in the survey might be considered a drawback. Again, as explained above, this is due to the fact that the survey used in this study was conducted in European countries where Muslims constitute a small percentage of the population. Actually, if having a small percentage of Muslims in the survey causes a bias, it should be in favor of Muslims, because people belonging to a religious minority have a higher likelihood of giving (Wiepking, Bekkers, & Osili, 2014). Furthermore, we employed PSM analysis and used a global dataset as robustness analysis in order to address these concerns. Fourthly, the ESS data provides information only about whether an individual gives or not. This type of data is commonly used in giving studies. However, using the total amount of money donated and the time spent as a dependent variable would have been preferable to compare relative generosity across denominations. Hence, repeating the same analyses with newer data providing information about the amount of money donated and time spent, and including a higher percentage of Muslims from other parts of the world, would improve our understanding of the giving behavior of Muslims.

18 For instance, it is alleged that, in Pakistan, Zakat committees openly demand up to 50 percent of the amount claimed, and if the claimant declines the offer, the committee refuses to release the funds (DAWN, 2003). In another case, directors of a Turkish Islamic charity were convicted of using the money that had been raised in Germany to help needy Muslims for purposes outside of the charity like buying real estate, setting up private businesses, and financing pro-government media (The Economist, 2008).

Conclusion

Literature on economics has witnessed the revival of IE over the last few decades. It began with a critique of conventional economics. Islamic economists reacted to the value-free nature of conventional economics and mentioned the need for an approach that is equipped with Islamic values for a more efficient use of resources and a more just economic and social order. The second stage was to construct an alternative theory based on Islamic values and teachings. Islamic economists have devoted extensive effort to building economic models reliant on the adoption of value-based behavioral assumptions such as interest ban and giving, which are distinctive features of Islamic economic theory. These models have suggested that an economy operating according to Islamic principles would produce more efficient and fairer results.

In the third stage, we may expect new studies from both inside and outside this subfield that test the assumptions, hypotheses and promised results of these newly developing models in this newly developing subfield. This study, comparing the giving behavior of Muslims with members of other religions, was an effort in this regard. By using a comprehensive survey from 19 European countries, we have examined whether Muslims are more likely to engage in giving activities, specifically donating money and volunteering. Our empirical investigation based on logistic regression illustrates that there is no difference in the likelihood to give neither in terms of donation nor volunteering between Muslims and members of other religions. This is also the case even if an alternative approach, PSM approach, and the global dataset is used. In addition, the results showed that women as well as educated, wealthy, and religious people are more likely to give charitably than others. The likelihood of donating money also increases with *Age* but at a decreasing rate. While country-specific factors were found to be influential on both types of giving, being married had a significant positive impact on donating money only.

Our findings indicate that, as ordered to in Islam, Muslims do indeed give. Yet, unlike as suggested by IE, the probability of their involvement in giving activities and their giving characteristics are not much different from members of other religions. Even though this result is reasonable considering other religions also promote giving, it is contradictory to the behavioral assumptions of IE. Moreover, the lesser involvement of Muslims in donating money, when compared to Protestants and Roman Catholics, raises more questions about this assumption.

The present study provides supplementary evidence on the giving behavior of Muslims and makes several contributions to the development of IE in many ways. First, Islamic economists have criticized conventional economics due to its

unrealistic assumptions. IE simply replaces a theory based on unrealistic assumptions with another theory based on different unrealistic assumptions, which is akin to expecting "two wrongs to make a right". Secondly, some say that IE is about an ideal that would be reached if the majority of a society adopted Islamic teachings. This raises the question of why the majority of Muslims have not adopted the behavioral patterns prescribed by the Quran about 1,500 years ago, even in Muslim-majority countries. Third, as other religions also promote charitable giving and Islam itself does not compare its giving behavior with others, Islamic economists may reconsider the compatibility of Islam and the behavioral assumptions of IE regarding giving. Therefore, if this result is not an exception, more effort should be put forth by Islamic economists to explain and correct this phenomenon. Fourth, increasing numbers of studies supporting the findings of this study or raising questions about the validity of IE's assumptions may cause IE to reformulate its theory, similar to the evolution that conventional economics experienced during the seventeenth and eighteenth centuries.

Finally, although this study contributes to the literature with its unique perspective by empirically testing the behavioral assumption of IE, it solely relies on secondary data. It would have been interesting to use primary data to enhance the quality of the data and the study. Thus, the direction for future studies would be to use a mixed-methods approach which would employ both secondary and primary data to combine the strengths of the different sources and methods.

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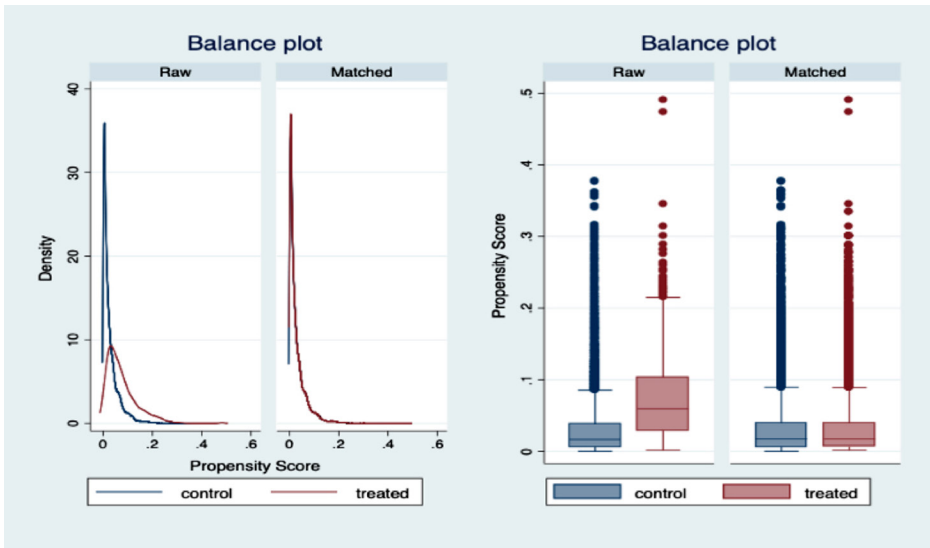
Appendix 1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Propensity Score
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control
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