RELIGIOSITY/SPIRITUALITY, AFFECTIVE MORAL REASONING, AND GENERATIVE ALTRUISM: A STUDY ON STUDENTS IN MUSLIM SOCIETIES

Abstract: The aim of this study was to comparatively investigate the predictability of religiosity/spirituality and affective moral reasoning levels of Muslim and non-Muslim students in Muslim societies on their generative altruism. The data of the study were based on a sample of 6722 students in 9th, 10th, 11th, and 12th grade in 10 countries for which data collection and data entry were performed in Wave 1 of Advancing Education in Muslim Societies 2018-2019 fieldwork. Religiosity/Spirituality Scale, Affective Moral Reasoning Scale, and Generative Altruism Scale for Muslim and non-Muslim students were utilized for data collection. T-test and effect size were used for comparing sample means while the Multiple Linear Regression Analysis method was utilized in the regression analysis. The research results showed the level of generative altruism of Muslim students was statistically significantly higher than their non-Muslim peers. It was concluded with the regression model that religiosity/spirituality and affective moral reasoning levels explained generative altruism of Muslim students by 21% and non-Muslim students by 30%. What was noteworthy in this study was that the affective moral reasoning is a stronger predictor of the generative altruism of both Muslim and non-Muslim students than religiosity/spirituality. In light of these results, recommendations were provided about activities that can be conducted on students' generative altruism and future research.

Keywords: Religiosity, spirituality, affective moral reasoning, generative altruism, Muslim societies, Muslim students, non-Muslim students

Özkan, Umut Birkan, , PhD
Assistant Professor
Department of Educational Sciences
National Defence University
Turkey
Contact:
E-mail: uozkan@msu.edu.tr
ORCID: 0000-0001-8978-3213

DOI: 10.52963/PERR_Biruni_V10.N2.11

Psycho-Educational Research Reviews | Vol. 10, No. 2
London Academic Publishing, August 2021, pp 163– 175.
https://www.journals.lapub.co.uk/index.php/PERR

INTRODUCTION

Through education, it is aimed to provide individuals with knowledge and skills as well as positive attitudes and demeanours. Learning positive attitudes and demeanours contributes to "individuals being compassionate, fair, democratic, tolerant, responsible, and helpful" (Ümmet, Ekşi & Otrar, 2013, 303); supports their "success" immediate environment and "community" (Swank, Robinson & Ohrt, 2012, 69); enables "sharing", "working (or playing)" together, and "empathy" towards others (Robinson III & Curry, 2005, 68). These qualities are the product of the values that constitute basic human characteristics and at the same time form the perspective of the curriculum. One of these values is altruism.

Altruism is defined as "behaviors intrinsically motivated by internalized values, goals, and self-rewards, rather than by the expectation of a concrete or social reward, or the desire to avoid punishment or sanctions" (Eisenberg et al., 1999, 1360). In addition, generative altruism "focuses on direct encounters with those in need or others asking for help and subsequent reflexive intentions and concrete reactions towards it" (Büssing, Kerksieck, Günther & Baumann, 2013, 347). These reactions can include charitable values such as "concrete helping, consideration of concrete ways to alleviate suffering or relieve their distress, an empathic consideration of others' needs or giving money" (Büssing, Kerksieck, Günther & Baumann, 2013, 347).

Due to the growing demand for social responsibility in the world, the presence of generative altruism in curriculums as one of the values with the ultimate purpose and spirit of the educational process seems to be compatible with the needs of society. This is predisposed to logic, especially when it is taken into account that the behavior of avoiding helping in case of need turns into serious social problems observed in various societies of the world (Stürmer & Siem, 2017). It can be considered in this context that altruism is one of the root values of teaching programs in primary and secondary schools in Turkey whose population is mostly Muslim. (Republic of Turkey Ministry of National Education, 2018a-e).

Altruism is a "complex construct" that has been treated by different viewpoints (Moura, Filgueiras & Figueiredo, 2020, 127). One of the concepts associated with this complex structure is religiosity/spirituality (Bloom, 2012). While religiosity is defined as "the degree of influence one's faith has on his/her values, behaviors and everyday life", spirituality indicates "the ability to be a believer and a spiritual person but not necessarily a religious one" (Nasser, 2020, 15). Interestingly, almost all usual theoreticians and modern evolutionary scholars "underline the positive connection between religiosity/spirituality and altruism, although each approaches this issue from a different theoretical perspective" (Saroglou, 2013, 439). Studies examining altruism in the context of religiosity/spirituality are found in the literature (Az & Acar, 2020; Curry, Smith & Robinson III, 2009; Düzgüner, 2013; Huber & MacDonald, 2012; Sağır, 2020; Swank, Robinson & Ohrt, 2012; Şanlı & Koç, 2019). In the study of Az and Acar (2020), the relationship between the university students' levels of religiosity and altruism was investigated. In the study conducted with 510 undergraduate students, it was determined that there was a positive significant relationship between religiosity levels and altruism levels.

Another study revealing the relationship between altruism and religiosity/spirituality was carried out by Swank, Robinson and Ohrt (2012) in the UK. Examining the feasibleness of a proposed model for the development of altruism perceived by students studying at various universities in the UK, the study found that there was consensus among the study's participants that both religiosity and spirituality could contribute to participating in altruistic acts. At the same time, participants stated that spirituality had an effect on the manifestation of altruism.

The relationship between altruism and spirituality was investigated in a sample of 186 undergraduate psychology students studying at a Catholic-affiliated university in the USA (Huber & MacDonald, 2012). In the study, altruism was most strongly linked to spiritual experiences and then to spiritual cognitions. Regression analyses revealed that non-religious spiritual cognitions and spiritual experiences are the strongest predictors of altruism.

In another study on the relationship between spirituality and altruism was investigated in Turkish and American cultures (Düzgüner, 2013). A large number of participants in both Turkey and the USA indicated that altruism was related to spirituality.

In a study designed to explore the manifestation and development of altruism in the United States, altruism was investigated as defined by 34 participants over the age of 70 (Curry, Smith & Robinson III, 2009). 29 of them reported that they were "Jewish" (4), Quaker (5), Protestant (17), Unitarian/Universalist (2), ethical culture (1). Some of the participants with different religious beliefs said that altruism may depend on religion while others say religiosity can impose charity as ordered by a doctrine of faith.

In a study conducted to determine the relationship between altruism and religious attitude levels of individuals working in different professions, it was shown that there is a low-level and positively significant relationship between religious attitude and altruism (Sağır, 2020). In other words, it was concluded that altruism increases as religious attitudes increase. However, religious attitude is found to be a variable that significantly predicts altruism.

Another study examining the role of religiosity on altruism found a positive significant correlation between religiosity and altruism (Şanlı & Koç, 2019). In the study, in which 288 university students participated voluntarily, it was found that religiosity is a significant predictor of altruism. The authors have suggested that research on this subject may contribute to the development of curriculums.

Another variable that is thought to lead to a variation in altruism is moral reasoning (Ersanlı & Çabuker, 2015; Underwood & Moore, 1982). Moral reasoning is defined as “the ability to assess moral situations and to justify courses of action” (Villegas de Posada & Vargas-Trujillo, 2015, 409). It may be useful to briefly review the work done on this subject to examine how moral reasoning is associated with altruism. For example, the study of 550 adolescents from Turkey showed a statistically significant positive relationship between moral reasoning and altruism (Kumru, Carlo, & Edwards, 2004). Underwood and Moore's (1982) meta-analysis study found a .27 correlation between moral reasoning and altruism. Villegas de Posada and Vargas-Trujillo's (2015) study, which conducted a similar meta-analysis study, reported a .21 correlation between moral reasoning and altruism.

Students use “different moral reasoning to determine their behaviors” (Chin & Chou, 2013, 11). Although the reasoning is always assumed to be a cognitive process, affective processes are predominant in many reasoning (May & Kumar, 2019). This requires accepting that “knowledge is not absolute” and “the ability to regulate one’s emotional responses in choosing a moral course” (Morton, Worthley, Testerman, & Mahoney, 2006, 400). In this study, affective moral reasoning, a variable whose predictability on altruism has not been investigated before, was used to trace the contributions of the “affective factors such as the ability to empathize” that Kohlberg briefly mentioned in his theory (Kohlberg & Hersh, 1977, 57).

Studies in the literature examining altruistic behavior in societies with different religious beliefs, whose results are presented above, associate moral reasoning and religiosity/spirituality with altruism. Similar to the religion of Islam, which is commanded to help neighbours, friends, relatives, and the needy (Köycü, 2018; Özarslan, 2005), some religions such as Judaism and Christianity encourage helping others as well as showing love for God (Scott & Seglow, 2007). Additionally, various religions including Judaism, Christianity, Hinduism, and Confucianism support the “Golden Rule” concept that can be summed up as "do unto others as you would have them do unto you" (Scott & Seglow, 2007, 6). The perception of morality, religiosity, and spirituality exhibits “a structure shaped by the culture in which it is located” (Düzgüner, 2013, 235). Considering generative altruism from the perspective of educational sciences in Muslim societies with different religious beliefs expresses the need to focus on the relationships of students' generative altruism with their level of religiosity/spirituality and affective moral reasoning.

In general, Muslim societies are considered to have a high tendency towards generative altruist behaviors such as charity. However, this does not mean that non-Muslim students in Muslim societies have lower levels of generative altruistic behavior compared to Muslim students. Moreover, the role of the collaborative environment and socialization, which integrated into Muslim societies, and effects of the personal efforts of students could reasonably be expected to increase the motivation of non-Muslim students to act generatively altruistically. In Muslim societies, revealing the possible relationship of altruism with religiosity/spirituality and affective moral reasoning is important in terms of being a situation that concerns different scopes of educational sciences. In determining the root values and acquisitions related to generative altruism in curriculum, the values that foster generative altruism are an issue that should be considered and known. The importance of understanding the predictability of religiosity/spirituality and

affective moral reasoning on generative altruism applies not only to academics working in the scope of the curriculum, but also to teachers who are practitioners of curriculum, decision-makers, and policymakers. In addition, the productive altruism discussed in this study is an extremely important factor for students' academic life and personal development, as it provides a feeling of "conflict-free pleasure in fostering the success and/or welfare of another" (Seelig & Rosof, 2001, 947). Therefore, the fact that the findings obtained when the relationship between generative altruism and students' level of religiousity/spiritually and moral reasoning has been investigated can contribute to the students' academic life, personal and social development of adolescents, and the provision of educational services more effectively increases the importance of the study. The notion that the findings reached by examining the relationship between generative altruism and students' level of religiosity/spiritually and moral reasoning levels can help to understand complex structures such as students' self-actualization and valuing others, and to set more effective educational goals, highlights the importance of this research. On the other hand, although there are researches that reveal the predictors of religiosity/spirituality and moral reasoning on altruism in societies with different religious beliefs, there is no study investigating the predictive value of Muslim and non-Muslim students living in Muslim societies on generative altruism. In this context, it is expected that the results of the current research will contribute to the curriculum to be designed and educational practices in Muslim societies. In this aspect, this study aims to comparatively examine the predictability of religiosity/spirituality and affective moral reasoning levels of Muslim and non-Muslim students in Muslim societies on their generative altruism. To achieve this goal, the following questions are tried to be answered:

1. Is there a statistically significant difference between the generative altruism levels of Muslim and non-Muslim students in Muslim societies?
2. Are the levels of religiosity/spirituality and sensory moral reasoning levels of Muslim students in Muslim societies significant predictors of generative altruism levels?
3. Are the levels of religiosity/spirituality and sensory moral reasoning levels of non-Muslim students in Muslim societies significant predictors of generative altruism levels?

METHOD

RESEARCH MODEL

This study is a relational survey model type quantitative research in which secondary data obtained from Advancing Education in Muslim Societies 2018-2019 (AEMS) are analysed. Secondary data analysis is a research method that "applies the same basic research principles as studies utilizing primary data" (Johnston, 2017, 619). With this method, an existing database is analysed to find answers to "the original research question(s)" with different research methods, or to answer "new questions with old data" (Turner, 1997, 5). The fact that studies using secondary data allow access to new and / or additional findings that aren't included in the original research (Sherif, 2018: 26) and they can be used for comparative research in different contexts, different time periods and between different social groups and cultures (Corti, 2008: 801) is the reason why this method has been preferred in this study.

PARTICIPANTS

The data of the study were obtained from 6722 students, who are in 9th, 10th, 11th and 12th grades, in ten countries participating in the first wave of AEMS fieldwork. In the countries covered by the study, "an effort was made to randomize as much as possible the selection of schools from each region, and the selection of students within each school" (Nasser, 2020, 17). However, due to factors such as "regional differences, financial budget, host-country approvals, samples were restricted to a few selected regions" (https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/WGCMP9 for further information about the sampling method) (International Institute of Islamic Thought, 2020, 2).

In this study, the data of the students who answered all of the scale items were used. Students who left any item in the scales empty or did not specify their religious beliefs were excluded from the study. As a result, data from four countries with very few students (Azerbaijan, Indonesia, Palestine, and Sudan) were not

used, although 14 countries participated in the first wave of AEMS fieldwork. The distribution and religious beliefs of the students within the scope of the study by country are offered in Table 1.

Table 1. Distribution of the Students Participating in the Study by Country According to Their Beliefs

Countries	Number of Students	Muslim	Non-Muslim
Bangladesh	1258	1179	79
Bosnia	648	558	90
India	751	738	13
Kenya	451	214	237
Kyrgyzstan	695	636	59
Malaysia	1095	860	235
Mauritius	369	178	191
Tanzania	466	427	39
Tatarstan	734	361	373
Uganda	255	227	28
Total	6722	5378	1344
		6722	

The countries given in Table 1 are those located in Europe, Asia, and Africa. Looking at the number of students participating in the study, it is seen that the most students participated from Bangladesh (n=1258) and the least from Uganda (n=255). There are more Muslim students in seven countries, while three countries have more non-Muslim students. Table 2 presents descriptive data about the participants.

Table 2. The Distribution of the Participants by Demographics (N=6722)

Countries	Gender			Age			Grade				
	Female	Male	Empty	Less than 18	18 and over	Empty	9	10	11	12	Empty
Bangladesh	708	537	13	1228	15	15	515	651	36	6	50
Bosnia	346	296	6	318	327	3	1	1	323	316	7
India	362	381	8	679	61	11	153	139	296	154	9
Kenya	247	196	8	310	141	0	36	106	168	79	62
Kyrgyzstan	389	300	6	618	73	4	240	172	213	14	56
Malaysia	732	352	11	1056	32	7	255	353	435	39	13
Mauritius	295	71	3	341	26	2	0	130	150	69	20
Tanzania	272	187	7	406	55	5	7	101	184	143	31
Tatarstan	422	309	3	705	14	15	311	283	96	9	35
Uganda	159	96	0	156	92	7	13	1	2	5	234
Total	3932	2725	65	5817	836	69	1531	1937	1903	834	517

58.5% of the students were female whereas, the remaining 40.5% were male (1% of the students left it empty). 86.5% of the students were less than 18, and 12.5% were 18 and over (1% of the students left it empty). The percentage of students studying in the 9th, 10th, 11th, and 12th grades is 22.8%, 28.8%, 28.3%, and 12.4%, respectively (7.7% of the students left it empty).

MEASURES

RELIGIOSITY/SPIRITUALITY SCALE

The religiosity / spirituality levels of the students were measured using the Centrality of Religiosity Scale (CRS) designed by Huber & Huber (2012). The Centrality of Religiosity Scale gives a measure of the importance and clarity of religiosity in students and consists of 7 items. Students are asked to choose one

of the "not important", "slightly important", "moderately important", "important", or "very important" options for the given statements in 5 Likert-type scale. The items of the scale are given scores between 1 and 5; thus, possible scores range from 7 to 35. To find out the students' religiosity / spirituality scores, a score between 1.0 and 5.0 was calculated for each student by dividing the sum scores through the number of scale items scored. Huber & Huber (2012, 720) propose the following thresholds in their study: "1.0 to 2.0: not-religious, 2.1 to 3.9: religious, 4.0 to 5.0: highly-religious." In this study, Cronbach's Alpha internal consistency coefficients of the scale are presented in Table 3.

Table 3. Cronbach's Alpha Internal Consistency Coefficients of the Centrality of Religiosity Scale

	Cronbach's Alpha
Muslim students	.895
Non-Muslim students	.962
Total	.933

According to the Cronbach's Alpha coefficients presented in Table 3, it can be said that the questions used to measure the religiosity/spirituality levels of the students have a high level of reliability coefficient. (Hajjar, 2018).

AFFECTIVE MORAL REASONING SCALE

Graham, Haidt & Nosek's (2009) Moral Foundations Questionnaire (MFQ) was used to determine the affective moral reasoning levels of the students. 5 items of the first part of the MFQ scale was used for the affective subscale (Nasser, 2020; International Institute of Islamic Thought, 2020). To determine the extent to which statements on a five-point scale are relevant to students' thoughts, students have chosen one of the "moderately agree", or "strongly agree" options. The items of the scale are given scores between 1 and 5; thus, possible scores range from 5 to 25. To find out the students' affective moral reasoning scores, a score between 1.0 and 5.0 was calculated for each student by dividing the sum scores through the number of scored scale items. High scores from the scale indicate a high level of affective moral reasoning. The Cronbach's Alpha internal consistency coefficients of the scale for this study are presented in Table 4.

Table 4. Cronbach's Alpha Internal Consistency Coefficients of Affective Moral Reasoning Scale

	Cronbach's Alpha
Muslim students	.574
Non-Muslim students	.579
Total	.578

Cronbach's Alpha coefficients presented in Table 4 are found to be close to the acceptable limit ($0.6 \leq \alpha < 0.7$) (Hajjar, 2018). There may be several reasons why the reliability coefficient of the affective moral reasoning scale is slightly lower than the acceptable limit. One of these reasons may be that the reliability coefficient produces values below the true reliability because the factor loads (.507, .603, .621, .643, and .679) of the scale items are not equal to each other (congeneric) (Lucke, 2005). In addition, considering that the scale of sensory moral reasoning is generally developed for the participants from North America or Western Europe, the scale may not have performed very well in countries that are "mostly located in Africa, the Middle East, and Central Asia" (Nasser, 2020, 41). The fact that this value, which is .64 for Bosnia, a country in Europe, is within acceptable limits supports this view.

GENERATIVE ALTRUISM SCALE

Büssing, Kerksieck, Günther, and Baumann's (2013) Generative Altruism Scale (GALS) was used to determine the generative altruism levels of students. The 7-item GALS includes both affective and behavioural items. Students responded to the expressions presented to them with one of the "strongly disagree", "moderately disagree", "undecided", "moderately agree", or "strongly agree" options. The items of the scale were given scores between 1 and 5; thus, possible scores ranged from 7 to 35. To find out the students' generative altruism scores, a score between 1.0 and 5.0 was calculated for each student by dividing the sum scores through the number of scored scale items. High scores from the scale indicate a high level

of generative altruism. Within the scope of this study, the Cronbach's Alpha internal consistency coefficients of the Generative Altruism Scale are presented in Table 5.

Table 5. Cronbach's Alpha Internal Consistency Coefficients of the Generative Altruism Scale

	Cronbach's Alpha
Muslim students	.787
Non-Muslim students	.824
Total	.797

DATA ANALYSIS

In this study, firstly, an independent sample t-test has been conducted to analyse whether there is a significant difference between the generative altruism levels of Muslim and non-Muslim students in Muslim societies. In the next step of the research process, multiple linear regression analyses have been conducted using the generative altruism levels of students as dependent variables and the students' levels of religiosity/spirituality and affective moral reasoning as independent variables.

Since the data of 6722 students have been analysed in this study, it can be accepted that the distribution is normal. Lumley, Diehr, Emerson and Chen's (2002, 166) study shows that "the t-test and least-squares linear regression do not require any assumption of normal distribution in sufficiently large samples". However, for large samples, the "Law of Large Numbers" and "Central Limit Theorem" mechanisms both work. Because "the sample mean of the large number of observations will be close to the mean or will have a distribution close to normal, even if the observations themselves do not have normal distribution" (Shatskikh & Melkumova 2016, 767). However, the mean, mode, median, skewness, and kurtosis values of the variables are given in Table 6 to give an idea about whether the data show normal distribution or not.

Table 6. Descriptive Statistics for Variables

Variables	Mean	Mode	Median	Skewness	Curtosis
Religiosity/spirituality	4.15	5.00	4.57	-1.48	1.54
Affective moral reasoning	3.97	4.20	4.00	-.75	.52
Generative altruism	3.77	3.71	3.71	-.51	.56

According to the values in Table 6, the mean, mode, and median values are very close to each other, and therefore the data is distributed symmetrically around the central tendency measures. In cases where these values are not equal, the normality of the series can be found out by interpreting the skewness and kurtosis values. Various opinions regarding kurtosis and skewness values suggest that these values can be accepted in the range of -1 to +1 (Morgan, Leech, Gloeckner & Barrett, 2004) or -2 and +2 (George & Mallery, 2016) to provide normality assumptions. In this study, it can be said that the scores show a normal distribution because of the skewness and kurtosis values within the specified ranges. Besides, the tolerance, variance inflation factor (VIF), and condition indices (CI) values of the predictor variables included in the analysis are given in Table 7.

Table 7. Tolerance, VIF and CI Values of the Predictive Variables

Variables	Tolerance	VIF
Religiosity/spirituality	.923	1.083
Affective moral reasoning	.923	1.083
CI: Dimension 1= 1.00, Dimension 2= 9.25, Dimension 3= 13.45		

When the values in Table 7 are examined, the tolerance value of the independent variables greater than .20, the VIF value below 10 and the CI value below 30 indicate that there is no multicollinearity between the

variables (Petrini et.al. 2012; Robinson & Schumacker, 2009). IBM SPSS Statistic 22 package program has been used in the analysis.

FINDINGS

For the first research question, the results of the t-test analysis conducted to determine whether there is a significant difference between the generative altruism levels of Muslim and non-Muslim students are presented in Table 8.

Table 8. T-Test Results for Comparing Generative Altruism Levels According to Students' Religious Beliefs

Variable	Religionial Belief	N	$\bar{x}$	Ss	t	Sd	Cohen's d
Generative Altruism	Muslim	5378	3.80	.70	6.449*	1950	.20
	Non-Muslim	1344	3.65	.77			

* p<.01.

As a result of the independent groups t-test analysis on the generative altruism levels of the research groups, the mean of the generative altruism levels of Muslim students is 3.80, and that of the non-Muslim students is 3.65. When the generative altruism scores of the students have been examined, a significant difference has been found in favor of Muslim students ($t_{(1950)}$=6.449, p=.000). In other words, the generative altruism levels of Muslim students ($\bar{X}$=3.80) are statistically significantly higher than non-Muslim students ($\bar{X}$=3.65). It can be stated that the effect size of the difference (Cohen's d=.20) found is low (Cohen, 1988). The second research question aimed to determine the predictions of religiosity/spirituality and affective moral reasoning levels of Muslim students on their generative altruism. Multiple linear regression analysis has been performed to answer this research question. The model summary and regression coefficients of multiple linear regression analysis are given in Table 9.

Table 9. Findings Related to Religiosity/Spirituality and Affective Moral Reasoning to Predict the Generative Altruism of Muslim Students

Predictors	R= .461 R^2= .212 $F_{(2,5375)}$= 723.958 p= .000				
	Coefficients				
	B	Std. Error	Beta	t	Sig.
Religiosity/Spirituality Level	.145	.011	.162	13.118	.000
Affective Moral Reasoning Level	.388	.012	.399	32.299	.000

In the multiple linear regression analysis conducted to predict the generative altruism levels of Muslim students (Table 9), the religiosity/spirituality and affective moral reasoning variables show a significant relationship (R=.46, R^2=.21) with the generative altruism levels in the context of their mutual interactions ($F_{(2\text{-}5375)}$=723.96, p<.01). Together, these variables explain 21.2% of the generative altruism level. According to the standardized regression coefficients, the relative importance order of variables on generative altruism; affective moral reasoning (β=.40), and religiosity/spirituality (β=.16). Considering the t-test results regarding the significance of the regression coefficients, it is seen that the religiosity/spirituality level (t= 13.12; p<.01) and affective moral reasoning level (t= 32.30; p<.01) are significant predictors of generative altruism. In other words, it can be said that a 1-unit increase in religiosity and reasoning levels will cause an increase of .15 and .39 in the altruism levels of Muslim students, respectively.

The third research question of the study aims to determine the predictors of non-Muslim students' level of religiosity/spirituality and affective moral reasoning on their generative altruism. Multiple linear regression analysis was performed to answer this research question. The model summary and regression coefficients of multiple linear regression analysis are given in Table 10.

Table 10. Findings Related to Religiosity/Spirituality and Affective Moral Reasoning to Predict the Generative Altruism of Non-Muslim Students

Predictors	$R= .552$ $R^2= .304$ $F_{(2,1341)}= 293.083$ $p= .000$				
	Coefficients				
	B	Std. Error	Beta	T	Sig.
Religiosity/Spirituality Level	.177	.014	.310	12.426	.000
Affective Moral Reasoning Level	.354	.025	.348	13.966	.000

In the multiple linear regression analysis conducted to predict the generative altruism levels of non-Muslim students (Table 10), the religiosity/spirituality and affective moral reasoning variables show a significant relationship ($R=.55$, $R^2=.30$) with the generative altruism levels in the context of their mutual interactions ($F_{(2\text{-}1341)}=293.08$, $p<.01$). Together, these variables explain 30.4% of the generative altruism level. According to the standardized regression coefficients, the relative importance order of variables on generative altruism; affective moral reasoning ($\beta=.35$), and religiosity/spirituality ($\beta=.31$). Considering the significance tests of the regression coefficients, it is seen that both variables are significant predictors of generative altruism ($p<.01$). Considering the t-test results regarding the significance of the regression coefficients, it is seen that the religiosity/spirituality level ($t= 12.43$; $p<.01$) and affective moral reasoning level ($t=13.97$; $p<.01$) are significant predictors of generative altruism. In other words, it can be said that a 1-unit increase in religiosity and reasoning levels will cause an increase of .18 and .35 in the altruism levels of non-Muslim students, respectively.

DISCUSSION AND CONCLUSION

This study aims to examine the predictability of religiosity/spirituality and affective moral reasoning levels of Muslim and non-Muslim students on their generative altruism in Muslim societies. For this reason, some questions have been answered.

For the first question of the study, it was tested whether there was a statistically significant difference between the generative altruism levels of Muslim and non-Muslim students in Muslim societies. According to the findings, the level of generative altruism of Muslim students was statistically significantly higher than their non-Muslim peers. Considering that there are significant differences in altruistic behaviors even among the members of the same religion in the same society (Wuthnow, 2012), it may be normal that the generative altruism levels of people with different religious beliefs differ. The results of other studies also support this finding (Bennett & Einolf, 2017; Reitsma, Scheepers, & Grotenhuis, 2006; Wiepking, Bekkers, & Osili, 2014). Bennett & Einolf's (2017) study of 179961 participants from 126 countries showed that Muslims were more likely to exhibit altruist behavior than members of other religions, excluding Jews. It was found that non-Christians in England were more willing to engage in altruistic behaviors compared to Catholics (Reitsma, Scheepers, & Grotenhuis, 2006). In a study involving 21 European countries and the United States, it was reported that people belonging to any type of religious group were more likely to engage in altruistic behaviors compared to people who are not affiliated with religion (Wiepking, Bekkers, & Osili, 2014). There may be some reasons of the high levels of generative altruism of Muslim students in the current study. One of these reasons may be that generative altruism is further encouraged by the religious traditions of Muslims, since the research is conducted in Muslim societies. Worships and institutionalized religious traditions, which are manifestations of generative altruism, such as distributing the meat of sacrificed animals, giving zakat[4], fitrah[5], and charity to the poor, have-nots, orphans, solitaries, and those in need (Özcan, 2018), can be more effective for Muslim students. In schools and formal/informal institutions providing religious education in Muslim societies, Muslim students may be more exposed to

[4] "Literally, zakat means to grow and to increase, while in Shari'ah, zakat is a concept referring to the redistribution of wealth prescribed by God to the deserving category of people" (Nadzri, Rahman, & Omar, 2012, 64).

[5] Fitrah is "a special form of Islamic alms-charity" (Uzun, 2007, 161).

the doctrine included in the holy book of Muslims that "they prefer their other siblings over themselves, even when they are in need" (Sancaklı, 2006, 34), which can be another reason. Although there is a positive understanding of generative altruism in other religions (Bennett & Einolf, 2017; Özcan, 2018), non-Muslim students may have lower levels of generative altruism due to the difficulties in introducing this positive understanding to students of other religions through education and cultural transmission in a Muslim society. Although there is a statistically significant difference, the reason for the low effect size (Table 8) may be due to the encouragement of altruism in all religions (Saroglou, 2013) and the stronger messages of generative altruism by non-Muslim students in the minority who want to be accepted in the wider society (Bennett & Einolf, 2017).

For the second and third questions of the study, it was tested whether the religiosity/spiritually and affective moral reasoning levels of Muslim and non-Muslim students in Muslim societies predicted their generative altruism levels. According to the findings, the religiosity/spirituality and affective moral reasoning levels of both Muslim and non-Muslim students statistically significantly predicted their generative altruism. It can be said that this result is consistent with the results of studies showing that individuals' level of religiosity/spirituality and affective moral reasoning positively contribute to their altruism (Az & Acar, 2020; Curry, Smith, & Robinson III, 2009; Düzgüner, 2013; Huber & MacDonald, 2012; Kumru, Carlo & Edwards, 2004; Sağır, 2020; Şanlı & Koç, 2019; Swank, Robinson, & Ohrt, 2012; Villegas de Posada & Vargas-Trujillo, 2015; Underwood & Moore, 1982). In both the scientific and religious literature, religiosity and spiritual awareness have been “linked to the expression of positive traits such as altruism” (Huber & MacDonald, 2012, 207). Religiosity might increase one’s altruism, and altruism “might be triggered by messages that religions convey or might somehow emerge from the very nature of religious practice and activity” (Bloom, 2012, 185). As Cohen (2003, 811) points out, “people base their attitudes on social meaning”, and at this point religious teachings make obvious claims such as generative altruism that religious people can embrace. From this perspective, religiosity/spirituality can be expected to predict students' generative altruism. What is noteworthy here is that the affective moral reasoning is a stronger predictor of the generative altruism of both Muslim and non-Muslim students than religiosity/spirituality (Table 9-10). This result propounds that the generative altruism levels of students whose affective moral reasoning skills are developed through formal education may have increased. As a matter of fact, the detection of “a moderate relationship (r=.54)” between moral reasoning and education in the study carried out by Colby et.al. (1983, 71) supports this idea. In addition, although students in both samples are from different countries, they may have acquired sufficient critical reasoning skills that may be necessary for affective moral reasoning that may developmentally influence their generative altruism. Moreover, students with a higher ability to make affective moral reasoning may be more likely to understand, consider, and empathize with the situational and personal factors needed to engage in generative altruistic behavior (Carlo, Hausmann, Christiansen, & Randall, 2003; Eisenberg, Fabes, & Spinrad, 2006).

To sum up, the current findings broaden the current understanding of generative altruism. In studies conducted in some non-Muslim societies, there was evidence that altruism was linked to religiosity/spirituality and moral reasoning. Specifically, in this study, it was shown that religiosity/spirituality and affective moral reasoning were significant predictors of Muslim and non-Muslim students whose generative altruism levels were significantly different from each other. These results mean that generative altruism is a fundamental aspect of spirituality and morality that is not the monopoly of a particular religion. Pessi's (2011) study, which reveals that there is no significant connection between Christian values and exhibiting generative altruistic behaviors such as helping family members and friends, also supports this result.

It can be said that this study has some limitations. In this study, which is cross-sectional research due to the structure of AEMS, causality relationships between dependent and independent variables cannot be revealed. Longitudinal and experimental research can be designed to examine possible causal relationships between predictor and predicted variables. However, due to the limitations of the research sampling and data collection tools, only religiosity/spirituality and affective moral reasoning have been focused on to explain generative altruism. Another limitation is that data collection tools are based on self-reported statements that may indicate students' intentions rather than observation of concrete activities.

Several suggestions can be made based on the results obtained in the research. Generative altruism, especially as an intrinsic motivation tool, can be promoted by curriculums that include spirituality and affective moral reasoning in education. This can also be facilitated by providing peer support to students facing academic difficulties.

School administrators can make the learning, regeneration, and innovation environments at school available to foster students' generative altruism. Particularly, students can be encouraged to participate in social responsibility projects that can develop affective moral reasoning skills, which have high predictive power on generative altruism. In these social responsibility projects, it may be allowed to use environments such as school dining halls, school cafeterias, schoolyards, sports facilities. Such projects allow students to relate the consequences of their affective moral reasoning to their actions, thereby helping to create a mental scheme for generative altruistic intentions and behaviors.

Based on the result that non-Muslim students' levels of generative altruism are relatively lower, intervention programs to improve the generative altruism of non-Muslim students in schools in Muslim societies can be organized to support students' development as benevolent, generous and compassionate individuals.

Developing generative altruism in students can be facilitated by organizing workshops where affective moral reasoning dilemmas are presented and the importance of spirituality in solving social problems is shown to teachers who spend the most time with students, have direct relationships with students, and act as role-models for students. Besides, techniques of group discussion about affective moral judgments can be used to design educational situations. By using teaching techniques such as role-playing, drama, and brainstorming, positive thoughts can be formed in students about the results of their affective moral reasoning. In addition, generative altruism can be internalized as a manifestation of faith with the help of teaching techniques such as six thinking hats, opinion development, speaking circle, Socratic method, which will allow students to discover their personal values regarding their religiosity/spirituality.

Further studies can be carried out to overcome that will overcome the limitations of this study. In addition, this research is limited to 9th, 10th, 11th, and 12th graders in Muslim societies. Therefore, studies can be conducted to cover larger samples by including students from different societies and education levels. Future studies designed to examine whether the correlates of generative altruism in non-Muslim societies are similar may provide some insight into the fundamental structures of generative altruism.

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