Role of Islamic Religiosity in Predicting Academic Motivation of University Students

Shameem Fatima, Musferah Mehfooz, and Sumera Sharif

Role of Islamic Religiosity in Predicting Academic Motivation of University Students

Shameem Fatima and Musferah Mehfooz
COMSATS Institute of Information Technology

Sumera Sharif
University of Lahore

Previous research in the last 2 decades describes the connection between religiosity and academic outcomes, particularly in Christian samples. The present study was designed to find out the role of Islamic religious beliefs, practices, and positive religious coping in predicting academic motivation above and beyond the effects of demographic and academic-related factors among Muslim university students. Participants were 299 university students (mean age = 19.35 years, SD = 3.21, 68% males) registered under different undergraduate programs. They were assessed on the Islamic Beliefs, Islamic Religious Duty and Obligation, and Islamic Positive Religious Coping and Identification subscales as well as the Global Religiousness scale from the Psychological Measure of Islamic Religiosity. In addition, the Academic Motivation Scale was also administered to assess 3 intrinsic motivation outcomes, 3 extrinsic motivation outcomes, and amotivation. The results showed a significant incremental variance due to a differential contribution of religiosity factors over the demographic and academic factors in predicting type of academic motivation. Nevertheless, the number of siblings and current semester remained significant predictors of academic motivation even in the presence of other stronger predictors. However, moderation analysis showed an interaction effect of semester only in predicting intrinsic motivation to know and to accomplish things and extrinsic motivation of external regulation. It was worth noting that the religiosity level of students was more weakly correlated with extrinsic motivation of external regulation than it was with other motivation constructs of intrinsic and extrinsic motivation.

Keywords: Islamic religious beliefs, religious practices, positive religious coping, intrinsic academic motivation, extrinsic academic motivation

Religion as a psychosocial system has become the focus of attention of researchers and educational psychologists since the end of 20th century (Pargament & Abu Raiya, 2007; Sutantoputri & Watt, 2012). However, the research in the psychology of religion has focused almost exclusively on Christianity. Although Islam is the second largest but fastest growing religion in the world (Abu Raiya, Pargament, Mahoney, & Stein, 2008; Pew Research Center, 2015), empirical research on the psychology of Islam is very rare. To address this gap in the literature, the aim of the current study was to identify the role of Islamic religious beliefs, practices, and religious coping in the academic motivation of university students.

Shameem Fatima and Musferah Mehfooz, Department of Humanities and Social Sciences, COMSATS Institute of Information Technology; Sumera Sharif, Department of Arabic and Islamic Studies, University of Lahore.

The study has been conducted in accordance with the ethical standards of the American Psychological Association. It is stated that the findings reported in the manuscript have not been published previously and that the manuscript is not being simultaneously submitted elsewhere.

Correspondence concerning this article should be addressed to Shameem Fatima, Department of Humanities and Social Sciences, COMSATS Institute of Information Technology, 116-D, Izmir Society, Canal Bank, Lahore, Pakistan. E-mail: shameemfatima@ciitlahore.edu.pk

Religiosity describes a combined set of beliefs, practices, emotions, and thoughts regulated by a formalized system of beliefs associated with a particular religious tradition adopted by the person (Dedert et al., 2004). Islamic religiosity being an important socializing agency in the lives of Muslims provides comprehensive guidelines and a complete code of life for individuals' beliefs, motivations, cognitions, practices, and coping strategies (Abu'l-ʿAla Maududi, 2000). Religion makes one's life meaningful by providing purpose of life. Religiosity may also affect life's goals by providing direction, determination, and the motivation to achieve these goals.

Religion as a Multidimensional and Holistic System

Religion is considered as multidimensional and holistic, providing a complete guide for every aspect of life. The multidimensional nature of religion has been supported by various theories. The most important among these are presented by Allport and Ross (1967), describing two orientations of religion: (a) intrinsic religious orientation—religion acting as a primary motive, serving as an end, and integrated into individual's life and (b) extrinsic religious orientation—religion serving as a means to an end to gain social status by attending churches/mosques. Stark and Glock (1968) have presented five dimensions of religious orientations: the doctrinal (religious belief), the ritual (worship, prayer, attending ritual places and ceremonies), the experiential (sensitive and emotional relationship with religion and God), the intellectual (knowledge), and the ethical-consequential (effects of religion on an individual's

life). Islam is also considered holistic in nature, covering all aspects of life, including doctrinal, ritual, ethical, intellectual, linguistic, physical, practical, managerial (coping), and consequential (Abu Raiya et al., 2008; Ahsan, 1999).

Motivational Aspects of Islamic Religiosity

Islam motivates individuals toward goodness and perfection through attainment of knowledge (Ahsan, 1999; Al Quran, 96, 1–5). There are several references from Al Quran and ahadith about the motivational influence of Islam to learn knowledge. Allah (SWT) describes the importance of education at various points in Al Quran. For example in Surah al Alaq, Allah (SWT) describes education as a fundamental religious obligation (Al Quran, 96, 1–5), and in Surah al Zumar and Surah al Mujadala, He describes educated individuals to be superior to those that are uneducated (Al Quran, 39, 9; Al Quran, 58, 11). There are also several references from ahadith about how Islam inspires Muslims to seek and spread knowledge. On the authority of Abu-Umama (1998) and Abu-AdDarda (1998), many spiritual rewards and superiority are described in ahadith for a scholar over the worshipper (Imam Tirmidhi, Hadith 2682; Imam Tirmidhi, Hadith 2685). Succinctly, Islam demonstrates attainment of education as a religious duty and an obligatory act aiming at cultivation of mind or intellectuality to enjoy this life and the hereafter.

This notion is supported by countless examples of earlier Muslim scholars such as Ibn Sina, Al-Gazali, Ibn Khaldoun, Al-Farabi, and others who were motivated and inspired by such spiritual rewards and were deeply involved in learning activities. These scholars used all of their cognitive and metacognitive resources to comprehend superb knowledge. Moreover, many other scholars were involved in academic activities (teaching or acquiring knowledge) to seek Allah's (SWT) forgiveness, blessings, and contentment (Ahsan, 1999). Accordingly, academic motivation may directly be driven by Islamic religiosity; that is, more religiously committed Muslims who follow more religious practices may become motivated to seek education in the light of Al Quran and ahadith. They may also use religious coping strategies to deal with university life challenges.

Empirical Support to Religiosity as a Correlate of Academic Outcomes

It is critical to note that the literature shows a little interest of researchers in religiosity as a correlate of academic outcomes until the end of 20th century (Trusty & Watts, 1999). However, since then there is an increasing trend in researches to explain academic issues in relation to the religious commitment of students (e.g., Sutantoputri & Watt, 2012). Several researchers currently describe a positive connection between religiosity and academic motivation and achievement in students, mostly in Christian samples (Brown & Gary, 1991; Glaeser & Sacerdote, 2001; Jeynes, 2002; Loury, 2004; Milot & Ludden, 2009; Reichard, 2011; Walker & Dixon, 1989). Studies finding a positive impact of religiosity on academic outcomes have typically focused on GPA, degree completion, and academic performance. It is unfortunate that little research has been done on analyzing the role of religiosity in explaining academic motivation. Therefore, it is important to study the role of religiosity in predicting academic motivation, particularly among Muslim university students.

Religious commitment is likely to affect academic motivation in many ways. For example, many social theorists and an extensive amount of literature describe the implications of religious commitment for greater individual wellbeing (e.g., Bergin, 1991; Joshi, Kumari, & Jain, 2008; Maslow, 1954) and in turn for academic motivation (Milot & Ludden, 2009). In addition, students with stronger religious affiliation are less likely to be involved in activities that undermine academic motivation and academic performance, such as sexual involvement and deviant behaviors (Litchfield, Thomas, & Li, 1997; Milot & Ludden, 2009; Regnerus, 2000; Wright, Frost, & Wisecarver, 1993).

Religious Internalization as a Self-Determination Approach to Motivation

Construct motivation is considered as the driving force arising from internal and external factors that compels or reinforces an action. Several humanistic theories of motivation, including hierarchy of needs theory (Maslow, 1943), self-determination theory (SDT; Deci & Ryan, 1985), and goal orientation theory (Kaplan & Maehr, 2002, 2007), describe the motivational influence of internal drives to attain growth, integration of self, and resolution of psychological inconsistencies leading toward self-actualization.

On the basis of SDT (Ryan & Deci, 2000), the present study differentiates between intrinsic and extrinsic motivations arising from internal and external factors. An intrinsic motivation is described as the force that is driven by the interest and the satisfaction within the task (Deci, 1975). Internally regulated behaviors are performed voluntarily irrespective of material rewards or external pressures (Deci, Vallerand, Pelletier, & Ryan, 1991; Vallerand & Blssonnette, 1992). Intrinsic motivation in the literature is described to be of three types: (a) intrinsic motivation to know is driven by intellectual, curiosity, learning, and exploration needs (Harter, 1981); (b) intrinsic motivation to experience stimulation is driven by sensory and aesthetic needs; and (c) intrinsic motivation to accomplish things is driven by the need to seek pleasure from surpassing (Vallerand, 2004).

Accordingly, extrinsic motivation describes an action as a means to an end and is driven by external rewards and constraints, not by self-satisfaction (Deci, 1975). SDT explains extrinsic motivation in three further types: (a) extrinsic motivation of external regulation explains actions driven by external rewards and constraints; (b) extrinsic motivation of introjected regulation explains actions that are driven by individuals' need to avoid an internal conflict/inconsistency and are regulated by internalizing the reasons for actions (external reasons become internal through internalization; Vallerand & Blssonnette, 1992); and (c) extrinsic motivation of identified regulation explains behaviors that become aligned with his or her values, that are chosen by the person without any external pressure, and are judged valuable for some reason (Fortier, Vallerand, Briere, & Provencher, 1995). SDT describes motivation along a continuum from self-determination to controlled behavioral regulation (Deci et al., 1991). Self-determined behaviors are engaged in volitionally and regulated by self whereas controlled behaviors are engaged in for instrumental reasons and are regulated by some interpersonal and intrapsychic force (Deci et al., 1991). Amotivation with no self-determination stands on the opposite side of self-determination along this continuum.

Being a comprehensive psychosocial system, religion is tied with systems of motivations to regulate individual's behaviors. When internalized, religious values and norms act as a motivation system to facilitate self-integration and growth. Religious internalization and identification reflect an individual's tendency to assimilate and integrate culturally transmitted religious beliefs and practices. Once these values are internalized, they become personal values that are autonomously chosen by the individual (Ryan, Rigby, & King, 1993). The behaviors these religious values entail are then experienced as self-determined. Because of the motivational influence of religion, adherents are motivated to behave personally and socially within a predefined set of religious norms (Guven, 2013).

A large body of research on motivation has been done during the past few decades. Major work on motivation research focuses on diverse antecedents (drives) and applications of motivation within an educational and psychosocial context. Religion being a strong psychosocial system comprising an internalized set of values may also be considered as an important driving force directing behaviors. Unfortunately, given the motivational influence of Islam in seeking knowledge as cited from Al Quran and ahadith, there is a lack of empirical research on Islamic religiosity among Muslims and on its effects on academic motivation.

Demographic and Academic-Related Controls

Further to this discussion are the demographic factors such as gender, number of siblings, birth order, current semester, previous grades, and so forth that are likely to play their roles in explaining the academic motivation. Much research suggests gender differences in academic motivation (e.g., Meece, Glienke, & Burg, 2006; Shekhar & Devi, 2012). Given the importance of the social and family environment in motivation (Ryan & Deci, 2000; Unal-Karaguven, 2015), the role of family factors, including number of siblings and birth order, was also focused on in the study as demographic controls. According to Adler's theory, the interaction, achievements, and motivation of siblings, as well as birth order, are likely factors determining motivation.

A different approach of research describing changes in academic motivation over time and context (Corpus, McClintic-Gilbert, & Hayenga, 2009; Otis, Grouzet, & Pelletier, 2005) also points out the potential role of earlier and later semesters in motivation. Ryan and Deci (2000) provide evidence of a declining tendency in motivation with students' progression from earlier to senior years. In light of these findings, the major objective of this study was to assess the role of Islamic religiosity in predicting academic motivation through incremental variance analysis after taking into account the effects of other potential predictors of motivation (e.g., demographics and academic-related factors) to be confident to conclude the findings.

Objectives

There is evidence from existing literature that religiosity is a significant predictor of academic output in adolescents. Researches describing the connection between religiosity and academics commonly focused on better performance, academic achievements, and semester grades. Unfortunately, sufficient research is lacking on the effects of religiosity on students' academic motivation. In addition, previously major research work is based on Christianity, and there are very few studies on other traditional faiths. However, it is worth considering that Islam is the second largest and fastest growing religion in the world, and that the number of Muslims is expected to be equal to the number of Christians around the world by 2050 (Pew Research Center, 2015). Nonetheless, research on Muslims, particularly on Muslim students, is very rare. To address this gap, the main objective of the current study was to assess the role of religious beliefs, religious practices, and positive religious coping in predicting academic motivation in Muslim university students after taking into account the potential confounding factors and global religiosity. Furthermore, given the empirical evidence of demographic effects on academic motivation, another objective of the study was defined to assess the moderating roles of demographics in predicting academic motivation from religiosity.

Method

Participants

Participants were 299 (68% males) university students with a mean age of 19.35 years (SD = 3.21) selected from different departments of a federal government university of Pakistan through cluster sampling. This university is 4th of 120 Higher Education Institutes in overall nationwide ranking and 2nd of 67 general-category universities in category-wise ranking of Pakistani universities (Higher Education Commission, 2015). The whole sample was taken from a South Asian ethnic background comprising Pakistani nationals. A sizable percentage of the sample was registered with the Faculty of Information Technology (n = 136, 45%). The remaining 55% of the sample was registered with engineering (n = 62, 21%), sciences (n = 33, 11%), management sciences (n = 47, 16%), and social sciences (n = 19, 1%). Nearly all of the participants were single and never married (n = 296, 99%). Approximately half (45%) of the sample reported themselves to be middle born, one fourth (25%) reported being first born, nearly one fourth (28%) reported being last born, and a minor proportion (2%) reported being single born. Many participants (52%) reported having three or fewer siblings, and few (6%) reported having seven or more siblings. While describing the length of time in university, 43% participants reported themselves to be registered in their first year (first and second semesters), 15% in their second year (third and fourth semesters), 28% in their third year (fifth and sixth semesters), and 14% in their fourth year (seventh and eighth semesters) of a bachelors program.

Instruments

Religiosity measures. Three subscales taken from the Psychological Measure of Islamic Religiousness (Abu Raiya et al., 2008) were used to assess religious beliefs, religious practices, and religious coping.

Islamic Beliefs subscale. The Islamic Beliefs (IB) subscale consists of five items assessing Islamic religious beliefs. Responses to items (e.g., item 1—I believe in the existence of Allah (SWT); item 2—I believe in the day of judgment) were assessed on a 3-point format (0 = *no*, 1 = *uncertain*, 2 = *yes*).

Islamic Religious Duty and Obligation subscale. The Islamic Religious Duty and Obligation (IRDO) subscale consists of 10

items used to assess religious practices. Respondents responded to items from the religious duty subscale (e.g., How often do you pray?) on a 6-point format ranging from 0 (*never*) to 5 (*five times a day or more including nafl prayer*). They responded to items from the obligation subscale (e.g., items; I pray because if I do not, Allah (SWT) will disapprove of me) on a 4-point format from 1 (*not at all true*) to 4 (*very true*).

Islamic Positive Religious Coping and Identification subscale. The Islamic Positive Religious Coping and Identification (IPRCI) subscale consists of 12 items assessing the extent to which participants used religious coping mechanisms and the extent to which participants identified with the religious values. Responses to items (e.g., item 1—When I face a problem in life, I look for a stronger connection with Allah) were scored on a 4-point response format from 1 (*not at all*) to 4 (*very much*).

Scores on each of these subscales were computed by adding all item scores comprising the subscale. Higher scores on the IB, IRDO, and IPRCI subscales reflect stronger religious beliefs, more use of religious practices, and greater use of positive religious coping and identification of religious values, respectively. Evidence of discriminant, convergent, predictive, and incremental validities for the subscales is provided by Abu Raiya et al. (2008). Cronbach's α reliabilities of the IB, IRDO, and IPRCI subscales in the current study are 1, .80, and .80, respectively.

Global Religiousness. Global Religiousness (GR) was assessed by two items from the Psychological Measure of Islamic Religiousness. These two items (Item 1—How do you describe your religiousness?; item 2—How do you describe your spirituality?) were scored on a 5-point scale from 1 (*very low*) to 5 (*very high*). Scores on these items were summed to yield a single score of GR.

Academic Motivation Scale. The Academic Motivation Scale (AMS; Vallerand et al., 1992) is a 28-item, self-administered scale. On the basis of the self-determination theory of motivation, the scale comprises seven subscales including (a) intrinsic motivation to know, (b) intrinsic motivation to accomplish things, (c) intrinsic motivation to experience stimulation, (d) extrinsic motivation of introjected regulation, (e) extrinsic motivation of identified regulation, (f) extrinsic motivation of external regulation, and (g) amotivation. Each of these seven subscales comprises four items (e.g., item 3—I go to university because I think that a university education will help me better prepare for the career I have chosen; item 16—I go to university for the pleasure that I experience in broadening my knowledge about subjects which appeal to me). Items were scored on a 7-point response format from 1 (*does not correspond to me at all*) to 7 (*exactly corresponds to me*). Subscale scores were calculated by adding scores on items comprising the particular subscale. Empirical validity of its scores has been provided in several studies (Cokley, 2000; Cokley, Bernard, Cunningham, & Motoike, 2001; Vallerand & Blssonnette, 1992; Vallerand et al., 1993). Adequate internal consistency represented by good α values and an adequate fit of the seven-factor model was demonstrated by Fairchild, Horst, Finney, and Barron (2005). Alpha reliabilities of the subscales in the current study are also good, ranging between .70 and .89.

Demographic Questionnaire

A demographic questionnaire was designed to gather subject's demographic and family-related information (gender, age, number

of siblings, and birth order) and university life information (e.g., discipline, semester, previous grade point average [GPA], etc.).

Procedure

Participation in the study was made voluntary as students were asked whether they were willing to participate or not. Those who agreed were administered stimulus booklets containing a demographic sheet, religiosity measures, and the AMS. The order of scales was counterbalanced in the booklet to balance any effect due to order. Written instructions were provided along with scales, and they were asked to read these instructions carefully before responding. They were requested to provide genuine responses. There were no time constraints to complete the questionnaire. After collecting data, participants were cordially thanked for their participation. There was no benefit for participation in the study.

Data Analysis

Means, standard deviations, α reliabilities, interscale correlations, and Pearson correlations were calculated between study variables.

Next, seven separate regression equations were constructed for each of the seven motivation outcomes. For each separate equation, four stepwise linear regression analyses were conducted: first with demographics (gender, number of siblings, and birth order) as one block of independent variables in the first model and one motivation outcome (e.g., intrinsic motivation to know) as the dependent variable; second with academic-related variables (semester, quiz and assignments scores, and GPA) as a second block of independent variables in the second model with the same motivation outcome as the criterion measure; third with GR as an independent variable in the third model and demographic and academic variables being present in the regression equation; and fourth with the IRDO and IPRCI subscales as the fourth block of independent variables and the same motivation outcome as the criterion measure. Significance of explained variance, incremental variance, and model fit were then estimated for all of the four models. Likewise, seven separate regression analyses were computed for seven motivation outcomes to predict different forms of motivation from religious practices and religious coping after taking into account the effects of demographics, academic factors, and GR.

Finally, another series of stepwise linear regressions were conducted to examine moderated relations between GR and type of academic motivation. The analysis strategy was to predict academic motivation outcomes first from GR, then from demographics, and finally from interaction term (GR × Demographics). Then, any significant change in R^2 in Model 3 was tested to assess the moderation effect.

Results

Reliabilities for religiosity measures were very good and ranged from 1 to .80. Interscale correlations between religiosity measures were moderate to low (from .46 to .23), showing versatility of the measures in comprehensive understanding of religiosity among university students. A noteworthy finding was that the IB subscale was not correlated with other measures of religiosity. Descriptive

statistics showed that religious beliefs of the current Muslim sample were very much strong, as evident from negligible standard deviation and from a mean score of nearly 10. Accordingly, being a constant IB score, correlation calculation did not yield significant correlation indexes (see Table 1).

Internal reliabilities of academic motivation subscales were also good, concentrating around .80, except for the extrinsic motivation of external regulation (.63) and amotivation (.70) subscales. Inter-scale correlations of academic motivation subscales were from good to moderate (from .72 to .39) for all subscales except for the amotivation subscale, which was not significantly related to other subscales, reflecting the assessment of a different aspect (opposite to motivation).

In general, correlations of IRDO, IPRCI, and GR indicated significant associations with three intrinsic motivation subscales and three extrinsic motivation subscales (only the IPRCI subscale was not significantly correlated with extrinsic motivation of external regulation). However, the IB subscale did not show any correlation with any of the motivation outcomes, perhaps because of a constant response of strong belief on all items comprising the subscale. Therefore, the IB subscale was not used as a predictor in further regression analyses in Table 2. Of note, the amotivation subscale was only negatively correlated with GR. In addition, among all of the correlations the weakest correlations of religiosity measures were with extrinsic motivation of external regulation.

Correlation analyses were supplemented with hierarchical regression analyses to assess the incremental variance due to religious practices and religious coping in predicting different motivation outcomes after taking into account the effect of demographics, academic variables, and GR. Because demographics and academic variables such as gender, birth order, number of siblings, semester, and grades can affect individuals' motivation level, it was reasonable to control these variables before looking for other predictors of academic motivation. In regression analyses, demographics were entered in Model 1, academic variables were added in Model 2, GR was added in Model 3, and religious practices and religious coping (assessed from IRDO and IPRCI) were added in Model 4 as predictors of different motivation outcomes. Table 2 indicates that there was a significant increase in variance in Model 3 and 4 due to religiosity factors in predicting intrinsic motivation to know (incremental variance, Model 3 = 4%, Model 4 = 6%), toward accomplishment (incremental variance, Model 3 = 4%, Model 4 = 6%), to experience stimulation (incremental variance, Model 3 = 6%, Model 4 = 6%), and extrinsic motivation of introjected regulation (incremental variance, Model 3 = 5%, Model 4 = 6%) and identified regulation (incremental variance, Model 3 = 4%, Model 4 = 5%). However, extrinsic motivation of external regulation was neither significantly predicted from demographics nor from religiosity variables. In addition, amotivation was not significantly predicted from religiosity factors but from a demographic variable (i.e., siblings). Of note, significant religiosity predictors varied as a function of different motivation outcomes. After noticing the significant change in R^2 in four regression models, an examination of significant β weights of religiosity subscales indicated that GR contributed significantly in predicting three intrinsic motivation outcomes and one extrinsic motivation of identified regulation. Religious practices as assessed from the IRDO subscale contributed significantly in predicting two extrinsic motivation outcomes: extrinsic motivation of introjected (β = .16, p < .05)

Table 1
Descriptive Statistics, α Reliabilities, Interscale Correlations, and Correlations Between Religiosity Measures and Academic Motivation Outcomes

Study variables	GR	IB	IRDO	IPRCI	IM1	IM2	IM3	EM1	EM2	EM3	Am
M (SD)	7.22 (1.64)	9.98 (.29)	33.92 (4.95)	42.68 (4.76)	21.96 (4.7)	20.36 (4.6)	19.65 (5.1)	22.96 (4.6)	20.86 (5.3)	21.91 (5.6)	12.24 (6.1)
α	.87	1	.80	.80	.78	.80	.77	.80	.78	.63	.70
Likely range	2–10	5–10	5–45	12–48	4–28	4–28	4–28	4–28	4–28	4–28	4–28
GR Global religiousness	—										
IB Islamic Beliefs subscale	.06	—									
IRDO Islamic Religious Duty and Obligation	.23***	-.06	—								
IPRCI Islamic Positive Religious Coping and Identification	.29***	-.02	.46***	—							
IM1 IM to know	.30***	.03	.22***	.33***	—						
IM2 IM to accomplish	.29***	.01	.22***	.32***	.63***	—					
IM3 IM to experience stimulation	.37***	.02	.25***	.37***	.72***	.66***	—				
EM1 EM of indentified regulation	.27***	.00	.29***	.23***	.67***	.61***	.59***	—			
EM2 EM of introjected regulation	.21***	.01	.23***	.28***	.56***	.59***	.55***	.67***	—		
EM3 EM of external regulation	.15*	-.03	.14*	.09	.40***	.45***	.39***	.67***	.56***	—	
Am Amotivation	-.18***	-.04	-.02	-.06	-.12*	-.02	-.07	-.08	-.07	-.02	—

Note. IM = intrinsic motivation; EM = extrinsic motivation.
* p < .05. ** p < .005. *** p < .005. **** p < .001.

FATIMA, MEHFOOZ, AND SHARIF

Table 2
Standardized Regression Estimates of Motivation Outcomes on Psychological Measure of Islamic Religiosity Subscales After Controlling for Demographics

Study variables	Intrinsic motivation to know				Intrinsic motivation to accomplish things				Intrinsic motivation to experience stimulation				Extrinsic motivation of introjected regulation				Extrinsic motivation of identified regulation				Amotivation			
	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4
Gender	.01	.02	.01	.01	.01	.03	.02	.03	.01	.04	.02	.04	.02	.02	.01	.03	.07	.06	.05	.09	−.14	−.11	−.11	−.12
Siblings	.22**	.21**	.15	.09	.28***	.29***	.23**	.17*	.29***	.29***	.22**	.15*	.19*	.19*	.15	.09	.18*	.18*	.12	.07	.17*	.19*	.17*	.18*
Birth order	−.12	−.11	−.07	−.06	−.07	−.08	−.05	−.05	−.09	−.09	−.04	−.03	−.02	−.01	−.01	.01	−.05	−.04	.002	.01	.02	−.01	.01	.01
Semester		−.25*	−.25*	−.25*		−.10	−.10	−.11		−.15*	−.15*	−.15*		−.09	−.08	−.08		−.22*	−.22*	−.20*		.13	.13	.13
Quiz		−.06	−.07	−.06		−.09	−.09	−.09		−.04	−.05	−.04		−.01	−.01	.001		−.09	−.09	−.09		−.08	−.08	−.08
Ass.		.11	.07	.07		.16	.13	.13		.09	.06	.05		.10	.08	.07		.10	.07	.05		.09	.08	.08
GPA		−.07	−.03	−.05		−.10	−.04	−.07		−.19*	−.14	−.16		−.06	−.04	−.06		.004	.05	.03		−.07	−.05	−.05
GR			.22**	.16*			.21**	.15*			.27***	.20*			.12	.05			.22**	.17*			.08	.09
IRDO				.10				.10				.13				.16*				.22*				−.05
IPRCI				.19*				.21*				.18*				.15*				.02				.00
R^2	.05*	.13***	.17***	.23***	.08**	.12**	.16***	.22***	.09**	.15***	.21***	.27***	.04	.05	.06	.12*	.04	.09**	.13***	.18***	.05	.08	.08	.08
R^2 change	.05	.08	.04	.06	.08	.04	.04	.06	.09	.06	.06	.06	.04	.01	.05	.06	.05	.05	.05	.05	.05	.03	.00	.00

Note. Significant β weights are underlined. M1 = Model 1; M2 = Model 2; M3 = Model 3; M4 = Model 4; Ass. = assignment scores; GPA = grade point average; GR = Global Religiousness; IRDO = Islamic Religious Duty and Obligation; IPRCI = Islamic Positive Religious Coping and Identification. Extrinsic motivation of external regulation was not significantly predicted from any of the religiosity or demographic factors yielding nonsignificant R^2 (3% in all models).
* $p < .05$. ** $p < .005$. *** $p < .001$.

and identified regulation ($\beta = .22$, $p < .05$). Religious coping as assessed from the IPRCI subscale explained significant variance in predicting three intrinsic motivation outcomes (βs are .19, .21, and .18, respectively, for Intrinsic motivation to know, to accomplish things, and to experience stimulation) and one extrinsic motivation of introjected regulation ($\beta = .15$, $p < .05$).

Although demographics were controlled in predicting academic motivation, Table 2 indicates that some of the demographic variables including number of siblings and current semester do affect the academic motivation of university students, even in the presence of other stronger predictors such as religiosity factors. Therefore, the role of these variables as potential moderators of association between GR and academic motivation was assessed by another series of regression analyses. Table 3 indicates that semester interacted significantly with GR in predicting intrinsic motivation to know ($\beta = .60$, $p < .05$), intrinsic motivation of accomplishment ($\beta = .53$, $p < .05$), and extrinsic motivation of external regulation ($\beta = .67$, $p < .05$). However, the number of siblings did not interact with GR to add a significant variance in the third model for seven different motivation outcomes.

Discussion

Previous studies in Western contexts on Christian samples have shown that students' religiosity can affect their academic activities and academic motivation (e.g., Milot & Ludden, 2009; Reichard, 2011). The purpose of the current study was to analyze the effects of Islamic religious beliefs, practices, and positive religious coping above and beyond the effects of demographic and academic factors and global religiosity on intrinsic and extrinsic motivation of Muslim university students through empirical and rigorous statistical analysis. Guided by Stark and Glock's (1968) multifaceted nature of religiosity, the present study assessed students' religiosity from three dimensions: religious beliefs, religious practices, and positive religious coping assessed from the IB, IRDO, and IPRCI subscales, in addition to their global religiosity level. With a particular focus on the consequential dimension of religiosity (Stark & Glock, 1968), the study aimed at assessing the effect of students' religiosity on intrinsic and extrinsic motivation described according to SDT theory. The theory differentiates between self-determined and controlled type of behaviors driven by internal and external reasons. The results of this study generally supported our hypotheses that global religiosity, religious practices, and positive religious coping predicted intrinsic and extrinsic academic motivation except for the extrinsic motivation of external regulation. Overall, there were several noteworthy findings to be discussed.

First, reliability indexes of all religiosity measures were greater than .80, showing good internal consistencies of the subscales as suggested by Nunnally (1978). Of note, it was found that Islamic religious beliefs of Pakistani Muslims were very much strong and that this subscale did not show any correlation with any of the religiosity measures or any of the study variables, perhaps because of a constant response with negligible standard deviation. In addition, interscale correlations for all religiosity subscales were moderate. All of these findings provided psychometric strengths to the current study assessing multidimensional aspects of religiosity using related but nonoverlapping subscales.

Likewise, reliabilities of AMS subscales were also good, except for extrinsic motivation of external regulation and amotivation

Table 3
Coefficients From Regression Model for Predicting Academic Motivation From Global Religiousness as Moderated by Semester

Predictors	Intrinsic motivation to know			Intrinsic motivation to accomplish things			Extrinsic motivation of external regulation		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
GR	**.30*****	**.30*****	.12	**.29*****	**.29*****	.13	**.15***	**.15***	−.06
Semester		**−.21*****	**−.76****		−.11	**−.59***		−.06	**−.67*****
Semester × GR			**.60***			**.53***			**.67***
R^2	.09	.13	.15	.08	.10	.11	.02	.03	.05
Incremental R^2	.09	.04	.02	.08	.02	.01	.02	.01	.02
Model fit	290, 1 = 27.61***	290, 2 = 22.01***	290, 3 = 16.72***	288, 1 = 26.29***	288, 2 = 15.17***	288, 3 = 11.55***	292, 1 = 6.42*	292, 2 = 3.77*	292, 3 = 4.58**

Note. GR = Global Religiousness. Significant β weights are shown in **bold**. Values shown are standardized β weights.
* $p < .05$. ** $p < .01$. *** $p < .001$.

subscales. Good to moderate interscale correlations further supported comprehensive assessment of academic motivation in the current sample with multiple nonoverlapping variables.

Second, although religious practices and positive religious coping were significantly correlated with all measures of intrinsic and extrinsic motivation, in regression analyses these religiosity factors contributed differentially in predicting type of motivation (see Table 2). Furthermore, IRDO and IPRCI subscales demonstrated evidence of significant incremental validities after controlling for the potential effects of demographics and global religiosity. Thus, findings of association between students' use of religious practices and religious coping strategies and academic motivation can be relied on more confidently and that this link as explained beyond the effects of potential confounding variables seems real rather than spurious. The results are justified in several ways. First, when Muslim students with stronger religious affiliation consider learning processes as an Islamic obligation, they would have more intrinsic and self-determined motivation to learn. Another justification for stronger association between religious practices and extrinsic motivation of introjected and identified regulation is that religious values as a set of social value are internalized to provide internal, introjected, and identified regulation of academic behavior. With stronger religious commitment, students may internalize and identify with Islamic teachings regarding education attainment to use these as a source of motivation as quoted in the introduction section (Ahsan, 1999). Therefore, on the basis of the current study findings, it may be concluded that religion provides an internalized and self-controlled regulation of academic behavior. In addition, with greater use of positive religious coping, students may deal effectively with their academic issues/challenges and may in turn become highly internally motivated to learn knowledge, to complete academic tasks, and to experience satisfaction.

Third, extrinsic motivation of external regulation was not predicted from global religiosity, religious practices, or religious coping and identification. It might be because religion as a system of values holds a central position in the cultural and psychological lives of individuals (Ryan et al., 1993), and religious beliefs, practices, and values when internalized serve the purpose of internal and self-determined force to motivate university students rather than serve as an externally imposed force to provide them external regulation.

Fourth, amotivation was not significantly predicted from any of the religiosity factors, but from siblings. Results indicated that level of amotivation was higher in students having more siblings as compared with students having few siblings. An earlier study found that students' amotivation decreased when they had siblings as compared with when students were single born (Unal-Karaguven, 2015); however, the study under consideration is meant to assess the effect of few versus more siblings. Furthermore, although the current study could not find support for the effects of religiosity on amotivation, it would be appealing if future studies examine amotivation as a separate construct, not as a subsystem of motivation types.

Finally, regression analyses in Table 2 indicated that some of the demographics such as current semester and number of siblings are significant predictors of some of the academic motivation outcomes as previously reported by (Corpus et al., 2009; Otis et al., 2005; Ryan & Deci, 2000). Therefore, the role of these demographic variables was assessed as moderators between global re-

ligiosity and academic motivation. Regression analysis yielded no significant incremental variance due to interaction of number of siblings with religiosity level in predicting seven motivation outcomes. However, semester interacted significantly with GR in predicting intrinsic motivation to know, intrinsic motivation to accomplish, and external motivation of external regulations. More specifically, results indicate that global religiosity is weakly associated with these motivation outcomes in earlier semesters but is strongly associated with these motivation outcomes in higher semesters. It is worth pointing out that although Table 2 indicates that students' intrinsic motivation to know is higher in earlier semesters than in later semesters, GR is more strongly correlated with IM in higher semesters but weakly correlated with IM in earlier semesters. It seems that the students are highly internally motivated to study as they are registered in university. However, as they proceed toward higher semesters, they are more likely to be motivated if they are more religious than their counterparts who are less religious.

Strengths, Limitations, Future Directions, and Implications

Given the need of empirical studies to be conducted among Muslims, this study presents a comprehensive analysis of the effects of religiosity on academic motivation in Muslim university students. An important methodological strength of this study over previous studies is that the level of religiosity was assessed using multiple measures instead of using a few items (e.g., prayer frequency, Musjid attendance, etc.) to make the results more informative and comprehensive by covering multifaceted aspects (i.e., doctrinal, ritual, consequential) of Islam (Abu Raiya et al., 2008; Pargament, 1997). In addition, the results showed reasonably large effect sizes and good incremental variances even after controlling the effects of potential confounding variables and of global religiosity.

Critically, the generalizations based on the results should be cautious. The cross-sectional method and self-report measures must be considered while interpreting the findings. The cross-sectional design of the study limits us from making causal inference. It is quite likely that individuals who are highly motivated in an academic setting may have more inclination toward religion than those who are less motivated in an academic setting. Nevertheless, theoretical support for the effect of religiosity on academic motivation is provided by the consequential dimension of Stark and Glock's theory, and empirical support is provided by Milot and Ludden (2009) and Ahsan (1999).

Another concern of the study is using self-assessment measures, leaving the findings to be susceptible to subjectivity bias. Future researches should use multiple techniques for the assessment of religiosity, such as observation, frequency counts, and so forth. Finally, this study does not address the comparative effects of religiosity level on academic motivation among Muslims across different cultures—a question that goes beyond the objectives of the current study.

Nonetheless, the random sampling strategy, the choice of an internationally recognized and a nationwide fourth highest ranked university, and a very good response rate provides a representative sample of the university student population. However, the sample was not selected from different countries to generalize the results

to the whole Muslim population. In future studies it would be important to study cross-cultural differences in Islamic religiosity and its effect on academic motivation among Muslims across Western and Eastern countries. In addition, although the findings of the study are similar to that of studies on other religious traditions as described in the introduction, comparative studies are needed to discover similarities and differences between Islam and other religious faiths as well as the comparative impact of different religions on different aspects of life to widen the knowledge about the psychology of religion.

Although the current study is considered an initial and exploratory study to provide directions for future researchers, the results of this study have many implications. First, consistent with Abul-Ala-Maududi's (2000) view of Islam as a complete code of life, this study highlights the need for greater attention of academic counselors to Islamic teachings and values when dealing with academic issues of Muslim students. Although this study supports a connection between Islamic religious practices and religious coping and academic motivation, students' academic issues can be comprehensively understood and resolved in the light of religious teachings and practices. Second, religion, being a sociopsychological resource, can be implemented in building relationships with teens and their families. Building religious bonds among counselors, teachers, youth, and parents may facilitate developing trust with youth and in learning about youth's ambitions, issues, and needs; in turn, it may facilitate youth in internalizing religious values and practices. These internalized values as positive personal resources may aid them in resolving academic issues and in enhancing their motivation. Third, positive religious coping techniques can be taught and implemented by teachers and counselors in classroom settings to provide encouragement, to deal with university life challenges and academic issues, and to increase motivation to facilitate positive youth outcomes.

References

Abu-AdDarda. (1998). Book on knowledge: What has been related about the superiority of fiqh over worship, Hadith 2682. In I. Tirmidhi (Ed.), *Al-Jāmiʿ Al- Tirmidhī*. Beruit, Lebanon: Darul-Gharb Al-Islami.

Abu Raiya, H. A., Pargament, K. I., Mahoney, A., & Stein, C. (2008). A psychological measure of Islamic religiousness: Development and evidence for reliability and validity. *The International Journal for the Psychology of Religion, 18,* 291–315. http://dx.doi.org/10.1080/10508610802229270

Abu-Umama. (1998). Book on Knowledge: What has been related about the superiority of fiqh over worship, Hadith 2682. In I. Tirmidhi. *Al-Jāmiʿ Al- Tirmidhī*. Beruit: Darul-Gharb Al-Islami.

Abu'l-ʿAla Maududi. (2000). *Tafhimul Qur'an* (Vol. 1, p. 170). Lahore, Pakistan: Islamic publications.

Ahsan, M. (1999). The twenty-first century and human development in the Muslim world: A multi-dimensional approach with particular reference to education. *Muslim Education Quarterly, 16,* 4–23.

Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5,* 432–443. http://dx.doi.org/10.1037/h0021212

Al Quran. *Surah al Alaq, 96,* verses 1–5.

Al Quran. *Surah al Mujadala, 58,* verse 1.

Al Quran. *Surah al Zumar 39,* verse 9.

Bergin, A. E. (1991). Values and religious issues in psychotherapy and mental health. *American Psychologist, 46,* 394–403. http://dx.doi.org/10.1037/0003-066X.46.4.394

Brown, D., & Gary, L. (1991). Religious socialization and educational attainment among African Americans: An empirical assessment. *Journal of Negro Education, 60,* 411–426. http://dx.doi.org/10.2307/2295493

Cokley, K. O. (2000). Examining the validity of the Academic Motivation Scale by comparing scale construction to self-determination theory. *Psychological Reports, 86,* 560–564. http://dx.doi.org/10.2466/pr0.2000.86.2.560

Cokley, K. O., Bernard, N., Cunningham, D., & Motoike, J. (2001). A psychometric investigation of the Academic Motivation Scale using a United States sample. *Measurement and Evaluation in Counseling and Development, 34,* 109–119.

Corpus, J. H., McClintic-Gilbert, M. S., & Hayenga, A. O. (2009). Within-year changes in children's intrinsic and extrinsic motivational orientations: Contextual predictors and academic outcomes. *Contemporary Educational Psychology, 34,* 154–166. http://dx.doi.org/10.1016/j.cedpsych.2009.01.001

Deci, E. L. (1975). *Intrinsic motivation.* New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4613-4446-9

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4899-2271-7

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist, 26,* 325–346. http://dx.doi.org/10.1080/00461520.1991.9653137

Dedert, E. A., Studts, J. L., Weissbecker, I., Salmon, P. G., Banis, P. L., & Sephton, S. E. (2004). Religiosity may help preserve the cortisol rhythm in women with stress-related illness. *International Journal of Psychiatry in Medicine, 34,* 61–77. http://dx.doi.org/10.2190/2Y72-6H80-BW93-U0T6

Fairchild, A. J., Horst, S. J., Finney, S. J., & Barron, K. E. (2005). Evaluating existing and new validity evidence for the Academic Motivation Scale. *Contemporary Educational Psychology, 30,* 331–358. http://dx.doi.org/10.1016/j.cedpsych.2004.11.001

Fortier, M. S., Vallerand, R. J., Brière, N. M., & Provencher, P. (1995). Competitive and recreational sport structures and gender: A test of their relationship with sport motivation. *International Journal of Sport Psychology, 26,* 24–39.

Glaeser, E., & Sacerdote, B. (2001). *Education and religion (*Paper no. 1913). Cambridge, MA: National Bureau of Economic Research, Harvard Institute of Economic Research. http://dx.doi.org/10.2139/ssrn.263258

Guven, M. (2013). Relation of motivation and religiosity: An empirical research on the relation of academic motivation and intrinsic religious motivation. *Ekev Akademi Dergisi, 17,* 151–165.

Harter, S. (1981). A new Self Report Scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology, 17,* 300–312. http://dx.doi.org/10.1037/0012-1649.17.3.300

Higher Education Commission. (2015). *Ranking 2014 of Pakistani Higher Education Institutions (HEIs).* Retrieved from http://www.hec.gov.pk/InsideHEC/Divisions/QALI/Others/RankingofUniversities/Documents/Final_Doc.pdf

Jeynes, W. H. (2002). Why religious schools positively impact the academic achievement of children. *International Journal of Education and Religion, 3,* 16–32. http://dx.doi.org/10.1163/157006202760182418

Joshi, S., Kumari, S., & Jain, M. (2008). Religious belief and its relation to psychological well-being. *Journal of the Indian Academy of Applied Psychology, 34,* 345–354.

Kaplan, A., & Maehr, M. L. (2002). Adolescents' achievement goals: Situating motivation in sociocultural contexts. In F. Pajares & T. Urdan (Eds.), *Academic motivation of adolescents.* Charlotte, NC: Information Age Publishing.

Kaplan, A., & Maehr, M. L. (2007). The contributions and prospects of goal orientation theory. *Educational Psychology Review, 19,* 141–184. http://dx.doi.org/10.1007/s10648-006-9012-5

Litchfield, A. W., Thomas, D. L., & Li, B. D. (1997). Dimensions of religiosity as mediators of the relations between parenting and adolescent deviant behavior. *Journal of Adolescent Research, 12,* 199–226. http://dx.doi.org/10.1177/0743554897122004

Loury, L. (2004). Does church attendance really increase schooling? *Journal for the Scientific Study of Religion, 43,* 119–127. http://dx.doi.org/10.1111/j.1468-5906.2004.00221.x

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50,* 370–396. http://dx.doi.org/10.1037/h0054346

Maslow, A. H. (1954). *Motivation and personality.* New York, NY: Harper & Row.

Meece, J. L., Glienke, B. B., & Burg, S. (2006). Gender and motivation. *Journal of School Psychology, 44,* 351–373. http://dx.doi.org/10.1016/j.jsp.2006.04.004

Milot, A. S., & Ludden, A. B. (2009). The effects of religion and gender on well-being, substance use, and academic engagement among rural adolescents. *Youth & Society, 40,* 403–425. http://dx.doi.org/10.1177/0044118X08316668

Nunnally, J. C. (1978). *Psychometric theory.* New York, NY: McGraw-Hill.

Otis, N., Grouzet, F. E., & Pelletier, L. G. (2005). Latent motivational change in an academic setting: A 3-year longitudinal study. *Journal of Educational Psychology, 97,* 170–183. http://dx.doi.org/10.1037/0022-0663.97.2.170

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice.* New York, NY: Guilford Press.

Pargament, K. I., & Abu-Raiya, H. (2007). A decade of research on the psychology of religion and coping: Things we assumed and lessons we learned. *Psyke & Logos, 28,* 742–766.

Pew Research Center. (2015). *The future of world religions: Population growth projections, 2010–2050.* Retrieved from http://www.pewforum.org/2015/04/02/religious-projections-2010-2050/#fnref-22652-2

Regnerus, M. D. (2000). Shaping schooling success: Religious socialization and educational outcomes in metropolitan public schools. *Journal for the Scientific Study of Religion, 39,* 363–370. http://dx.doi.org/10.1111/0021-8294.00030

Reichard, J. D. (2011). Individual religious commitment and interdisciplinary academic achievement: Student religiosity as a factor in a national academic competition. *Christian Perspectives in Education, 4,* 2. Retrieved from http://digitalcommons.liberty.edu/cpe/vol4/iss2/2

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25,* 54–67. http://dx.doi.org/10.1006/ceps.1999.1020

Ryan, R. M., Rigby, S., & King, K. (1993). Two types of religious internalization and their relations to religious orientations and mental health. *Journal of Personality and Social Psychology, 65,* 586–596. http://dx.doi.org/10.1037/0022-3514.65.3.586

Shekhar, C., & Devi, R. (2012). Achievement motivation across gender and different academic majors. *Journal of Educational and Developmental Psychology, 2,* 105–109. http://dx.doi.org/10.5539/jedp.v2n2p105

Stark, R., & Glock, C. Y. (1968). *American piety: The nature of religious commitment.* Berkeley, CA: University of California Press.

Sutantoputri, N. W., & Watt, H. M. G. (2012). Attribution and motivation: A cultural study among Indonesian university students. *International Journal of Higher Education, 1,* 118–129. http://dx.doi.org/10.5430/ijhe.v1n2p118

Trusty, J., & Watts, R. E. (1999). Relationship of high school seniors' religious perceptions and behaviors to school, career, and leisure variables. *Counseling and Values, 44,* 30–39. http://dx.doi.org/10.1002/j.2161-007X.1999.tb00150.x

Ünal-Karagüven, M. H. (2015). Demographic factors and communal mastery as predictors of academic motivation and test anxiety. *Journal of Education and Training Studies, 3,* 1–12. http://dx.doi.org/10.11114/jets.v3i3.648

Vallerand, J. R. (2004). Intrinsic and extrinsic motivation in sports. *Encyclopedia of Applied Psychology, 2,* 427–435.

Vallerand, R. J., & Blssonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of Personality, 60,* 599–620. http://dx.doi.org/10.1111/j.1467-6494.1992.tb00922.x

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., & Vallières, E. F. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement, 52,* 1003–1017. http://dx.doi.org/10.1177/0013164492052004025

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., & Vallières, E. F. (1993). On the assessment of intrinsic, extrinsic and amotivation in education: Evidence on the concurrent and construct validity of the Academic Motivation Scale. *Educational and Psychological Measurement, 53,* 159–172. http://dx.doi.org/10.1177/0013164493053001018

Walker, K., & Dixon, V. (2002). Spirituality and academic performance among African American college students. *Journal of Black Psychology, 28,* 107–121. http://dx.doi.org/10.1177/0095798402028002003

Wright, L. S., Frost, C. J., & Wisecarver, S. J. (1993). Church attendance, meaningfulness of religion, and depressive symptomatology among adolescents. *Journal of Youth and Adolescence, 22,* 559–568. http://dx.doi.org/10.1007/BF01537716