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Effectiveness of Problem Solving Skills on Academic Help-Seeking and Self-Efficacy of Female High School Students

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The present study aimed to investigate the effectiveness of problem solving skills training on academic help-seeking and self-efficacy of students. The population consisted of high school female students during the academic year of 2011/2012 in Ghaemshahr, Iran. The sample consisted of 50 female students selected through multistage clustering and they were divided into control and experimental groups (25 students in each group). Research tools included help-seeking behavior questionnaire and general self-efficacy scale (GSES). Problem solving skills training during eight sessions (2 hours) was applied for one month. Data was analyzed using descriptive statistics and multivariate analysis of covariance (MANCOVA). Results showed that problem solving skills training influenced adaptive help-seeking, avoidance of help-seeking and self-efficacy of students, so that it increased adaptive help-seeking, reduced avoidance of help-seeking and increased self-efficacy of the experimental group compared to the control group. The results of this study have important implications in the field of improved performance and academic achievement of students.

Keywords: Problem solving skills training, adaptive help-seeking, avoidance of help-seeking, self-efficacy

Problem-solving is a skill vital for living in the current era. Today, whether in general or technical fields or in everyday or complex activities and especially those who have bigger responsibilities are drawn to high level thinking skills and

in most societies everybody believes that there should be a focus on increasing problem-solving skills. One of the important aims of the modern educational and training systems is training individuals who would be able to easily conquer their problems in daily life and social environment (Selcuk, Caliksan & Erol, 2007). These educational systems help individuals to acquire knowledge, skill and sight necessary for coping with their problems (Altun, 2003). In this matter, Students can seek help from some strategies whenever they are facing a problem. Educational help-seeking has been defined as a strategy for overcoming learning difficulties and improving conversance (Karabenick, 2002). Hence help-seeking is one of the learning strategies that by using it students can recognize their learning and educational difficulties and solve them by means of questioning and seeking help from others. They can use these strategies to achieve skills proficiency and better learning. In fact educational help-seeking includes behaviors such as asking questions from teachers, parents and classmates, asking for more explanation about the problem and getting hints and solutions for the problem and other educational helps(Karabenick and Newman, 2006).

Help-seeking behavior in research history has been studied under these two titles of adaptive help-seeking and avoidance of help seeking. Avoidance of help-seeking refers to a behavior in which a student who is in need of help rejects seeking help and on the other hand adaptive help-seeking refers to the behavior in which the student asks for some hints and explanations about the solution of the problem and this matter helps the student to solve the problems better (Ryan & Pintrich, 1997). Bartholomé, Stahl, Pieschl, and Bromme (2006) through a study concluded that help-seeking behavior improves the performance of a student with lower knowledge to that of students with higher level of

knowledge because students had been trained properly in help-seeking. Young (2009; according to Ryan & Huiyoung Shin, 2011) has found counter relationship between avoidance of help-seeking and cognitive strategies (problem solving strategies) among students. Also Ryan and Huiyoung Shin (2011) through a research reported that self-efficacy has a positive correlation with adaptive help-seeking and a negative correlation with avoidance of help-seeking. Gordon (2012) in studying the correlation among self-efficacy, help-seeking behavior and educational development concluded that self-efficacy and help-seeking behavior are predictors of students' educational development and there is a positive and meaningful correlation between self-efficacy and help-seeking.

Self-efficacy is a part of individual's self-image that is related to individual's beliefs about his/her abilities to do a task which he/she will face in the future (Bandura, 1997). Self-efficacy means that the individual can take the control of a situation and produce positive outcomes. Bandura mentions that self-efficacy has great effect on behavior. As an example, a student with low self-efficacy may not even study for the exam because he/she doesn't believe that it is beneficial (Bandura, 2001). Self-efficacy is one's firm belief in the fact that he/she can perform behaviors necessary for production of desired results. One's general trust is his/her ability in controlling dominating environmental requests (Zahrakar, 2009). Schunk (2001) has used the concept of self-efficacy for various aspects of students' development. According to his view, self-efficacy affects the selection of their exercises. Regarding the importance of students' self-efficacy in all aspects of life, especially in education, there are various ways to improve it that teaching problem-solving skill is one of them. Wollfolk (2004) has reported that if the students believe they can learn if they try

reasonably, they would try harder and in facing the problems they would be more persistent. Also they would focus on the problem and have more peaceful and successful feelings and benefit from more effective strategies. Zimmerman and Cleary (2004) in their case studies found out that one of the important reasons for unsuccessful education is low self-efficacy. They found that educational problems of some students are due to not implying self-regulation strategies. Failure in doing tasks and problem-solving lowers their self-efficacy and in result of that they trust their own abilities less and will face more educational problems. Zeraat and Ghafourian (2010) through a study showed that teaching problem-solving skill to students increases their abilities and promotes their educational self-image and development; hence it should be noticed in the curriculum. The results of the study conducted by Zaharakar, Rezazadeh and Ahghar (2010) indicated that the self-efficacy of the students trained with the problem-solving skills was more than that of students without those trainings. Also the self-efficacy of the students throughout the time enjoys reasonable stability.

In late 60s and 70s the application of problem-solving skill initiated as a part of the cognitive – behaviorist movement for reforming behavior. Dzurilla and Goldford as pioneers of this method have emphasized teaching problem-solving skills in the personal skills curriculum (Nezu and Dzurilla, 2001). Generally problem-solving is called to individual's innovative cognitive-behaviorist process that by using it He/she wants to set, discover or invent effective and contrastively adaptive strategies. In other words problem-solving is an important contrastive strategy that increases ability along with social and personal development and decreases psychological typology (Dzurilla and Sheedy, 1992). Theorists' position regarding the topic of research is that problem-solving skill needs purposeful, special strategies by

which one defines the problems decides to find a solution and applies the problem-solving strategy and monitors it (Elliot, et al, 1999). Different studies have suggested that cognitive-behaviorist therapy with focus on problem-solving can be effective on individuals' self-efficacy and help-seeking. A study by Agbaria (2011) showed that teachers of special education who perceived themselves as less involved in school activities reported symptoms of learned helplessness with respect to their work at school, expressed as unwillingness to expend effort, dissatisfaction and difficulty in perseverance. Also he found clear links between motivation and its components and participation in the process of choosing an academic institution (Agbaria, 2013).

The results of Morton's study (2005) showed the effect of teaching problem-solving in lowering the causes of educational downfall. Khaledian, Omid, Sepanta, and Tavana (2014) showed the effect of life skills training on the students' self esteem. According to Deguzman (2008) problem-solving skill in a task that is accompanied by help-seeking provides better criterion for students' learning. Thus using problem-solving skills must be taken into account with consideration of the consequences of adaptive help-seeking and its avoidance. He also believes that using results of help-seeking without any relation to a interfering skill is difficult. In addition to that students with high self-efficacy have higher chances preventing the avoidance of help-seeking behavior in condition that these opportunities are met in the classroom. The study results of Khoshkam, Malekpour and Moulavi (2008) regarding the effects of problem-solving group teaching on students' social skills showed that students' presence in group meetings has increased their social skills and decreased their behaviorist problems. The study conducted by Zarr'e, Pirkhaefi and Mobini (2010) showed

that teaching problem-solving skill as a technique can dynamize the metacognitive and characteristic elements of creativity.

Regarding the fact that problem-solving is considered an important topic in educational and cognitive psychology and also as an important strategy in learning and with respect to its importance and the effect of self-efficacy and help-seeking on education and learning of the students, this study attempted to find out whether problem-solving skill affects students' self-efficacy and educational help-seeking? In order to find an answer to this problem, the following two hypotheses were proposed:

- 1) Getting trained in problem-solving decreases avoidance of help-seeking among students.
- 2) Training in problem-solving increases self-efficacy among students.

Method

The present study regarding the practical purpose and administration is experimental and in the pre-test post-test model with the control group.

Population, sample and sampling method

The sampling population of this study includes all the female high school students of the city Ghaemshahr who have been enrolled there in the educational year of 1391-92. The number of female high schools of this city was 33 schools and the population of female students was 4146 students. Regarding that the research method of this research is experimental and for each subgroup at least 15 students should be taken into account, for the external validity of the research 50 students were selected (25 students for the experimental group and 25 other for the control group). The research method of this study was done

by multi steps clustering meaning that first geographically the Ghaemshahr city is divided into two schooling areas and then from those two areas one area randomly was chosen and from 19 female high schools of this area randomly one school was selected and from three grades of this high school, first grade was randomly selected. In next stage 170 questionnaires were distributed among the students and 68 students got grades with one standard deviation lower the average in both questionnaires of the educational help-seeking and general self-efficacy and among them 50 students were selected randomly and paced in experimental and control groups.

Instruments

Help-seeking behavior questionnaire. This questionnaire is a self-reporting instrument that has been set by Ghadampour and Sarmad (1382) according to the points made by Newman (1998), Newman and Goldin (1990) and Ryan and Pintrich (1997) and has 14 items that measures help-seeking behavior by two components of adaptive and avoiding help-seeking. For studying the questionnaire analytic-operative method has been used in main components style and after analysis based on the perceived outcomes questions 3-6-7-11 due to low load of operation has been omitted. Altogether this scale has 10 questions. In Ghadampour and Sarmad' research (2005) by using the Cronbach's alpha method for adaptive or avoiding help-seeking, the validity of this questionnaire is respectively .68 and .68. Also in the study done by Rezaei and Pashaei (2010) the stability of this scale by using Cronbach's alpha method for adaptive help-seeking was .74 and for avoiding help-seeking it was .72. In this study the final coefficient of this study by using the Cronbach's alpha method for adaptive or avoiding help-seeking, the validity of this questionnaire is respectively 0/75

and .72.

The General Self-Efficacy Scale (GSES). This questionnaire has been made by Sherer, et al (1982) and measures individual's beliefs about his abilities to conquer different situations (AziziAbarghouei, (2008). This questionnaire has 17 items that the respondent answers according to the Likert's five degree scale (from firmly against to absolutely fore). High grades show individual's feeling of high self-efficacy. Barati (according to Keramati and Shahraraye, 2004) reported the admissibility of the structure of this test in a 100 members group .61 which was meaningful in the level of .05. The final correlation of the test has been achieved .76 by Spearman Brown formulawith even length, .76 without even length and .76 by Gutman's two halves method or general similarity of the questions was .79 which is pleasing. Keramati and Shahraraye (2004) by Cronbach's alpha method have reported the final correlation of that 0/85. In present research, the questionnaire demonstrated a Cronbach's alpha reliability coefficient of 0.75 and 0.72 for help seeking and avoidance of help seeking.

Problem-solving skill educational sessions. In this study of the interfering program of teaching problem-solving skill in groups and after implication of pre-test on the experimental and control group, the experimental group took part in 8 two-hours sessions of teaching problem-solving skill programs within a month (two sessions each week). The interfering program by using various references especially Goldfried and Division' behavior therapy book (1976) was made and implied as following:

First session (orientation stage). Introduction and familiarity with group members, mentioning the group's rules, discussing the importance of problem-solving skill. Second session (reinforcing the orientation): encouraging tidy individuals,

reporting the previous session's tasks and giving feedback and making smaller groups. Third session (exact definition of the problem): brief review of the previous session's tasks, discussing about the necessity of the more exact definition of the problem and prioritizing of problems. Forth session (making a list of different solutions), fifth session (assessing different solutions and selecting the best one), sixth session (making decision and implying different solutions), seven's sessions (emphasis on instrumen-purpose thinking), eights session (reviewing previous stages).

Administration Method. After coordination and getting the permissions from the education bureau and by the help of the dean and staff of the school, 170 questionnaires were distributed among first year students of the high school and among them students with one standard deviation below the average in two variables were selected and randomly were divided into control and experimental groups. Then by coordination with the dean of the school within 8 two-hour sessions for two times a week problem-solving skill was taught in groups to the experimental group. After the teaching period was finished a post-test was given to both experimental and control group. Eventually for analyzing collected data, descriptive and comprehensive methods were used in a way that for describing collected data, mean tables and standard deviation and for comprehensive dimension, Multivariate analysis of covariance (MANCOVA) was used. For analyzing the mentioned items, statistical software (SPSS19) was used. According to rules of statistical analyses, multiple covariates can be used for statistical differences on multiple continuous dependent variables by an independent grouping variable, while controlling for a third variable called the covariate depending on the sample size. Also covariates are added so that it can reduce error terms and the

analysis eliminates the covariates' effect on the relationship between the independent grouping variable and the continuous dependent variables.

Results

The participants of the study were in the first grade of high school with the average age of fifteen. For assessing the hypothesis of research, mean and standard deviation of the grades, small scales of the students' academic help-seeking and self-efficacy in stages of pre-test and post-test were compared.

Table 1
Mean and Standard Deviation of the Grades of Adaptive and Avoidance of Help-seeking and Self-efficacy of the Female Students of the both Experiment and Control Group I Pre-test and Post-test

Variation		Experiment		Control	
		M	SD	M	SD
Adaptive help-seeking	Pre-test	16.92	2.30	16.20	1.75
	Post test	21.28	2.20	15.92	2.01
Avoidance of help-seeking	Pre-test	10.36	1.63	10.00	1.84
	Post-test	6.40	1.52	10.12	1.83
Self-efficacy	Pre-test	34.92	4.77	35.08	3.68
	Post-test	50.08	4.42	34.566	4.65

Table 1 includes mean and standard deviation of pre-test and post-test in both groups of experiment and control. Results show that in pre-test there isn't a great difference between mean grades of adaptive and avoidance of help-seeking and self-efficacy in experiment and control groups but in the post-test the

mean grades of the adaptive help-seeking and self-efficacy in experiment group has increased and also the mean of avoidance of help-seeking in experiment group compared to control group has decreased.

Before using covariance analysis parametric test for observing its assumptions, Box and Levene's tests were used. According to BOX test which was meaningful for none of the variables, homogeneity of variance/covariance matrixes was observed properly (Box's =8.58, F=1.33, P=0.238).

According Levene's Test for Equality of Variances and its meaningfulness for no variables, the equality of inter groups variances has been observed.

Table 2
Validity Criteria of Multi Variables Covariance Test

Effect	Value	F	Hypothesis df	Error df	Sig
Pillai's Trace	.924	175.38	3	43	.001
Wilks' Lambda	.076	175.38	3	43	.001
Hotelling's Trace	12.33	175.38	3	43	.001
Roy's Largest Root	12.33	175.38	3	43	.001

Table 2 illustrates the F tests for the multivariate effect of groups. These tests are based on the linearly independent pair wise comparisons among the estimated marginal means. Results showed that there is a meaningful difference at least between one of the variables among the studied groups.

Table 3
Result of MANCOVA Analysis of Grades from Adaptive Help-seeking, Avoidance of Help-seeking and Self-efficacy Tests in Experiment and Control Groups

Variables	Change Sources	SS	df	MS	F	Sig
Adaptive Help-seeking	Pre-test	73.07	1	73.07	35.25	.001
	group	292.10	1	292.106	140.91	.001
	error	93.28	45	2.07	-	-
Avoidance of Help-seeking	Pre-test	18.85	1	18.85	7.78	.008
	group	163.47	1	163.47	67.50	.001
	error	108.98	45	2.42	-	-
Self-efficacy	Pre-test	304.46	1	304.46	35.68	.001
	group	2981.92	1	2981.92	349.48	.001
	error	383.96	45	8.53	-	-

As seen in table3 the amount of calculated F for grades of adaptive help-seeking, avoidance of help-seeking and self-efficacy in experiment and control groups, after stabilizing the effect of pre-test, is meaningful. In result there is a meaningful difference between the mean of post-test grades of the adaptive help-seeking, avoidance of help-seeking and self-efficacy in experiment and control group after stabilizing the effect of pre-test. The comparison between means of two groups shows that the mean grade of adaptive help-seeking in experiment group with (M=21.28) is higher than that of control group with (M=15.92) and the mean grade of self-efficacy in experiment group with (M=50.08) is higher than that of control group with (M=34.56). But the mean grade of avoidance of help-seeking in

experiment group with (M=6.40) is lower than that of control group with (M=10.12). So we can say that in contrast to the control group students, the problem-solving skill teaching program has its effects in adaptive help-seeking, avoidance of help-seeking and self-efficacy on the experiment group students that have been exposed to the program in a way that it has increased the adaptive of help-seeking and decreased the avoidance of help-seeking in experiment group students.

Discussion

The purpose of this study was to assess the effectiveness of problem-solving skill training on students' self-efficacy and academic help-seeking. The results from first hypothesis showed that problem-solving skill training increases adaptive help-seeking and turned out that the tests of the experiment group who were taught the problem-solving skills showed a remarkable increase in their help-seeking and self-efficiency in the post-test. This increase in comparison to the control group that had never been taught was meaningful. In fact the experiment group students by benefiting from problem-solving skills teaching and its stages learnt that in facing a problem they should not think straightly about the solution but rather they should know what is the problem first and after defining and reintroducing the problem they should consider different solutions possible for that problem and finally among those solutions they should choose the best solution. In this way it is observed that the experiment group in contrast to the control group has great difference in adaptive academic help-seeking. Findings of this research that is problem-solving training has increased help-seeking is in line with the findings of the studies done by Karabenick and Newman, (2006), Wolters, (2003), Bartolome et al, (2006), DeGuzman (2008), Gordon (2012),

Ahmadpour (1998), Pakdaman, et al, (2007), Khoshkam,et al, (2008) and Zare'e and Mobini (2010) .In defining of these findings one can say that students who use the help-seeking strategy, by using metacognitive strategies can recognize their academic problems and become aware of their need to others' help much better. In result these students by relying on effective metacognitive strategies for solving academic and learning problems use help-seeking strategy and get better academic achievement (Ghaddampour and Sarmad, 2005). Since help-seeking is one of the self-regulative strategies, these strategies help students to manage the facilities in class and the environment. This kind of help-seeking acts as a strategy for preventing academic failure. By help-seeking not only students' academic problems would decrease but also they would grasp skills and knowledge that would act as a method of problem-solving and professional learning in other situations (Nelson-le-Gall,1987). Regarding the fact that the problem-solving skill is on the highest level of human's cognitive and metacognitive activities, creating the problem-solving ability in students makes these people well-prepared in facing life conditions and new situations they would be exposed to. In this way, problem-solving skill teaching to students lets them have better countering in facing the problems and not to lose their hope. It also helps them to make themselves able to encounter any problem and to seek help from others. In conclusion, according to these results, one can say that acquiring problem-solving skill reinforces the help-seeking behavior in students.

The results from second hypothesis showed that problem-solving skill teaching in experiment group in comparison to the control group has decreased students' avoidance of help-seeking. This decrease in comparison to the control group which had seen no training was meaningful. The finding of this study

which is problem-solving skill teaching has decreased the avoidance of help-seeking was similar to the results of the following studies: Ames and Archer(1988), Butler and Newman (1995), Ryan and Pintrich (1997), Elliot, et al, (1999), Kavanagh, (1999), Morton, (2005), Ryan and Hyuang Shin, (2011, Izadyfard and Sepasi Ashtiani, (2009).

Ryan and Pintrich (1997) show that avoidance of help-seeking comes in two patterns: 1) help-seeking is not exclusively academic but also relies on social interactions and 2) the learner's social competency has its effect on help-seeking. Students avoid help-seeking because there is no practical rule against help-seeking. A student might feel that no one can help him/her. As time passes, the student might feel hopeless to receive any help.

In addition students might have their own concerns about too much of tendency toward independence and fear from threats to their own competency. In fact social and cognitive competency of the students plays an important role in help-seeking. Students, who are less successful, won't ask for help because if they do, their help-seeking is the confirmation to this assumption that they are disabling. On the other hand, successful students worry a lot less about what others think about him/her and it is more probable for them to seek help. In addition students, who feel more socially competent, seek help with higher probability. So the probability of help-seeking relies on social interactions (Ryan and Pintrich, (1997).

In this study for problem-solving skill training, we have used methods of group discussions, question and answer and practicing in small groups using Goldfried and Division (1976) general and organized pattern. This method by using students' educational, occupational and personal life experiences which are the taught basics of the problem-solving skill has put them in

real life problematic situations. Therefore by teaching this skill that utilizing social problem's solution is one of its important features, one can expect that avoidance of help-seeking as a behavior with social consequences would decrease. This is because the first stage of this protocol is the general orientation toward the problem which focuses on controlling human's excitements and reactions in facing the problems and factors that cause these feelings. Then students in the following stages of this pattern, by having problem-adaptive belief as a life reality and by an optimistic look toward the future and using logical thinking instead of spontaneous and elusive decisions, learn to make a firm decision and also learn to recognize his/her weak and strength points and in facing problems, he/ she learns how to use other solutions. Therefore problem-solving skill teaching through group work has its role in students' cognitive, affective and professional maturity. So according to the importance of decision-making power and ability to solve the problems and by reinforcing problem-solving skill, one can expect to see increase in help-seeking acceptance behavior and decrease in avoidance of help-seeking behavior.

Also the outcomes of the third hypothesis of this study showed that by reinforcing problem-solving skill has increased students' self-efficacy which is similar to the outcomes of the following studies: Schunk (2001), Warnecke, et al (2001), Bornstein, (2003), Wollfolk (2004), Litt, et al (2009), Jafari (2006), Zeraat and Ghafourian (2010), Zaharakar, et al (2010). Problem-solving teaching method is being considered as the most important problem-oriented collation method and enjoys a good support having the aim of recognizing the effective sources for collation and increasing individual's general self-efficacy in facing the problems. Possible reasons for the increase in self-efficacy may be that competent individuals in problem-solving

have the ability to recognize inefficient thoughts and neutralize them and also they can control their negative feelings and thoughts. These individuals do not see the existence of the problem as a sign of their weakness, incompetency, untalentedness and disability and can predict the solutions along with the results of their decisions. When individuals use problem-solving skill properly, their feelings of competency, domination and self-efficacy would be reinforced (Zahrakar, et al 2010). In addition, one can say that problem-solving cognitive skills can be taught in small groups which in most educational and real life cases improve the performance and also improves individuals' attitude towards their abilities, especially their academic ability and eventually increases academic improvement (Rozenhan and Silgman, 1989; cited in Zeraat and Ghafourian, 2010).

In a general conclusion, we can say that problem-solving is an important issue in educational and cognitive psychology and also it is known as an important strategy in learning matter. According to O'Neil (1999), both students and educational staff should develop problem-solving skills for becoming competent in their work context. Mayer (2002) showed that effective teaching and evaluation of problem-solving strategies is very important in developing competency in school or workplace. So regarding the importance of self-efficacy and help-seeking in students' academic achievement and also its effectiveness in other occupational and personal aspects of individuals' life, problem-solving skill can pave the way for students to be more successful in their educational, occupational and personal lives. The results of this study can present suitable solution for the education and training organization and families who are the core of students' and teenagers' training and pave the way for further researches about students. Also the outcomes of this

research and results from implication of this method would make the job of school authorities and consulting centers easier to spread this educational method.

This study like any other scientific work was exposed with some limitations. In this study all the data was collected from one city and also limiting all the samples to females can put our generalization of findings to boys into doubts. So it is suggested that a similar study be conducted on male students and also on students of other grades and especially on schools for students with special needs. It is also suggested to introduce this educational method to teachers and education specialists so that by having this skill, they would help students to become more successful.

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Moderators and Mediators in the Tendency toward Cosmetic Surgery: Media Influences, Appearance Perfectionism, and Appearance Investment

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This study examines the relationships among sociocultural attitudes toward appearance, perfect physical appearance, appearance investment and the tendency for cosmetic surgery. Data was collected from 631 students (male and female), aged between 18 and 49 years ($M=21.83$, $SD=4.09$). Results indicated that all of the predictors examined correlated with positive attitudes toward cosmetic surgery. Furthermore, worry about imperfection as one of perfect physical appearance subscales moderated the relation between sociocultural attitudes toward appearance and appearance investment. Likewise, sociocultural attitudes toward appearance had a direct and indirect effect (via appearance investment) on the tendency for cosmetic surgery. That is, appearance investment partially mediated the association between media influences and attitudes toward cosmetic surgery. These findings suggest that a greater perfectionist tendency and a greater psychological investment in physical appearance among mass media messages about beauty predict more favorable attitudes toward cosmetic surgery.

Keywords: appearance investment, cosmetic surgery, media influences, perfectionism

Over the past decade, there has been a dramatic growth of

cosmetic surgery in the world. According to statistics released by the American Society of Plastic Surgeons (ASPS), there were 14.6 million cosmetic plastic surgery procedures, including minimally invasive and surgical, in the United States in 2012 which was up 5 percent since 2011 (ASPS, 2013). Unfortunately, there is no official statistic on this in Iran but according to journalistic statistics Iran has become one of the world's leading centers for cosmetic surgery. This increasing rate highlights the identification of underlying factors affecting the desire for cosmetic surgery. The present study aimed to examine some of these factors. By considering mediator and moderator variables it has tried to cover more expanded areas of appearance related issues and linked behaviors.

Previous research suggests that body dissatisfaction can motivate individuals to pursue cosmetic surgery (Henderson-King & Henderson-King, 2005; Sarwer, 2002; Sarwer et al., 2005). The term "body dissatisfaction" is usually used to explain the tendency to enhance the appearance and often occurs among individuals who compare themselves with ideal images presented in the media. In fact, the most supported explanations for increases in body dissatisfaction are derived from sociocultural models that identify social factors (e.g., media, friends, family) as the motivation behind an individual's tendency to follow unrealistic appearance standards and developing body image disturbances (Cafri, Yamamiya, Brannick, & Thompson, 2005; Neziroglu, Khemlani-Patel, Veale, 2008). Communication theories such as cultivation theory, social learning theory and social cognitive theory suggest that as individuals are repeatedly exposed to media content, they begin to accept the portrayals as part of reality (Grabe, S., Ward, L.M., & Hyde, J. S., 2008). It is noteworthy that due to Islamic culture the women's appearance has the least

role in the Iranian mass media and the presented ideal image of women differs completely from the one in western culture in such a way that it gives no concept of women's body image at all. Even though accessibility to satellite programs is highly prohibited watching western movies and series is an undeniable part of most Iranians' daily life. Furthermore, magazine advertisements of the latest advances in cosmetic surgical procedures are an effective way to increase awareness and information about such procedures (Atiyeh, Rubeiz, & Hayek, 2008). Illustrating "before and after" pictures of cosmetic surgery results can be seen as a positive reinforcement for those who have a tendency forenhancement behavior.

Normalization is one process that may account for the media's effect. According to cultivation theory (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002), heavy media exposure, particularly television, to certain events, values, and people gradually shapes the individual's perception of societal expectation, often without awareness. Therefore, continued exposure and internalization of specific messages about physical appearance in the media may gradually modify attitudes which bolden the role of mass media as one of the key factors increasing body dissatisfaction and the tendency toward self-enhancement through cosmetic surgery (Cash, 2011; Farshidfar 2013; Markey & Markey, 2009, 2010; Salehahmadi, Rafie, 2012; Slevic, & Tiggemann, 2010; Swami et al., 2008, 2009; Tavassoli & Modiri, 2012). While this is in contrast to the results of Brown et al. (2007) who reported no effect of media exposure on the likelihood of having cosmetic surgery, it implies that not all individuals get affected by mass media and develop body dissatisfaction. To fully understand how and why beauty ideals provided by media impact specific individuals, it is important to take other perspectives as well which highlight

the effects of mediators and moderators in this area.

There is also evidence that perfectionism with body dissatisfaction and the desire to have cosmetic surgery are related (Buhlmann, Etcoff, & Wilhelm, 2008; Sherry, Hewitt, Lee-Baggley, Flett, & Besser, 2004; Wade, & Tiggemann, 2013). Although perfectionism as a trait, it can be an adaptive one (e.g. intrinsic drive for improvement), it is more often regarded as maladaptive. Perfectionists' high expectations along with intense self-criticism and fears of showing imperfection and others' negative evaluations may lead them to invest their self-worth in an unrealistic ideal physical appearance and risk feeling dissatisfaction (Cash, 2011), which predispose them to consider cosmetic surgery (Hewitt, Sherry, Flett, & Shick, 2003; Sherry, Hewitt, & Lee-Baggley, 2004). The belief that perfectionism influences individuals to have a tendency for cosmetic surgery stems partly from perfectionists' concerns about their physical appearance. Evidence that perfectionism is linked with body dysmorphic (Buhlmann, Etcoff, & Wilhelm, 2008), social physique anxiety (Haase, Prapavessis, & Glynn Owens, 2002) increased disordered eating habits (Hewitt, Flett, & Ediger, 1995) and excessive exercise (Hall, Hill, Appleton, & Kozub, 2009) suggests that perfectionists are usually obsessed about their physical appearance and often attempt to perfect themselves. But the extent to which an individual's attention, thoughts, and actions focus on their looks and define their sense of self or the importance of appearance to their sense of self-worth is one of the basic components of body image (Cash, 2002, 2011).

Body image is a multidimensional construct consisting of cognitive, behavioral, and emotional elements which can be categorized as appearance evaluation and appearance investment, which involve self-schema (Cash, 2002). Markus

(1977) described an individual's beliefs and cognitive generalization about one's self derived from past experiences as self-schema. Body image schemas denote one's core beliefs about the meaning and importance of appearance in one's life and self-worth. Sarwer (2002) implies that people with an elevated body image valence (i.e., the degree to which body image is important to one's self-esteem) believe that much of their self-esteem depends on their body image and thus may be more prone to pursue appearance-enhancement behaviors to improve their appearance. In a study investigating factors that influence attitudes toward cosmetic surgery, media and appearance investment were found to be predictors of social motivation and actual consideration of cosmetic surgery (Slevec, & Tiggemann, 2010).

The concept of the interaction between socio-cultural attitudes toward appearance as media influences, physical perfectionism, appearance investment and tendency for cosmetic surgery can be enlightened by social cognitive theory. In Albert Bandura's social cognitive theory (2001), termed triadic reciprocal causation, there is a bi-directional interaction among society, personal factors and an individual's behavior. Furthermore, from the cognitive-behavioral perspective (Cash, 2002, 2011), cultural messages about appearance standards or expectations through mass media, as cultural socialization, social interactions and communications, as interpersonal experiences and personality factors among physical characteristics are developmental variables that form basic body image perceptions and attitudes (e.g., body image evaluation and investment).

This study examines the socio-cultural attitudes toward appearance in a sample of Iranian students. The study has three goals: (a) to verify the possible relationships among socio-

cultural attitudes toward appearance, physical appearance perfectionism, appearance investment and tendency for cosmetic surgery; (b) to examine whether physical appearance perfectionism moderates the relationship between online socio-cultural attitudes toward appearance and appearance investment; (c) whether appearance investment mediates the relationship between socio-cultural attitudes toward appearance and the tendency for cosmetic surgery.

Hypotheses

In this study, it was hypothesized that physical appearance perfectionism (with two subscales including worry about imperfection and hope for perfection) moderates the relationship between socio-cultural attitudes toward appearance and appearance investment. We also expected that appearance investment would have a mediating role between socio-cultural attitudes toward appearance and a tendency for cosmetic surgery.

Method

Participants

Participants were recruited from among Islamic Azad University students ($n=650$) of the North, South, East, West, and Central Medical Sciences and Dentistry branches of Tehran (Iran) with different degree levels during the first semester of the academic year 2013-14. From 638 returned questionnaires 631 (98.9%) were eligible to be used in the analysis. The sample included 400 (63.4%) women and 231 (36.6%) men between ages 18 to 49 ($M=21.83$, $SD=4.09$). 11.7% reported one previous cosmetic surgery, 1.7% reported two or more previous cosmetic surgeries.

Assessments and measures

One stage cluster sampling was used to select the universities. An approval was obtained from the office of every branch's research and before gathering data each university administration was informed and the necessary consent was acquired. Participants were recruited by random selection and presented with a series of paper-based questionnaires regarding demographics and measures assessing media influences, appearance perfectionism, appearance investment and attitudes toward cosmetic surgery. The aim of the study was explained to them and it was also clarified that "cosmetic surgery" refers to a range of minimally invasive (e.g., Botox injections, laser skin resurfacing and hair implantation) to more invasive procedures like rhinoplasty and liposuction. All 650 sets of questionnaires were coded and the participants who completed and returned the questionnaires could receive a printed slip of an email address provided by the researcher to follow up the test result anonymously by sending their own code. They were also free to quit at any time. All questionnaires were translated from English into Persian. In order to achieve a reliable translation, first the questionnaires were translated by the support of an English lecturer to Persian and then they were translated back into English independently. Second, the final translation was discussed with some of the psychology faculty members of Islamic Azad University who were requested to evaluate all items on a 7-point scale for: a) scientific acceptance b) necessity and c) simplicity and clarity. The necessary changes were made to the questionnaire in line with applicable recommended feedback. Third, a pilot study was conducted on 30 students of Islamic Azad University who were of similar ability and background to that of the survey target population. This was done to obtain an assessment of the validity of the questions, as

well as the possible reliability of the data that would be collected. Although, coefficient alpha was widely used to estimate the reliability of the questionnaires, research indicates that coefficient alpha shows a negatively biased estimate of the theoretical reliability for Likert type rating response scales (Zumbo, Gadermann, Zeisser, 2007). Thus, ordinal coefficient theta was used to compute the reliability of the questionnaires.

Socio-cultural Attitudes toward Appearance Questionnaire-3 (SATAQ-3). Participants' perceptions of media messages about appearance issues were assessed using a 30-item in Persian translated of the Sociocultural Attitudes toward Appearance Questionnaire-3 (SATAQ3, Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). The questionnaire includes four subscales: the nine-item Internalization-General subscale (e.g., "I compare my body to the bodies of TV and movie stars") measures internalization of the ideal body as presented by the media; the five-item internalization-athlete subscale measures the internalization of the athletic body ideal (e.g., "I wish I looked as athletic as sports stars"); the nine-item information subscale measures the perceived importance of the media in providing information about the ideal body (e.g., "Movies are an important source of information about fashion and 'being attractive'"); and the seven-item pressures subscale measures perceived pressures from the media to follow body ideals (e.g., "I've felt pressure from TV or magazines to lose weight"). Due to differences between pictures represented on Iranian Islamic national TV and satellite channels both "TV" and "satellite" are mentioned in the Persian version.

Participants were asked to indicate their level of agreement with each statement on a five-point scale ranging from 1 (definitely disagree) to 5 (definitely agree). As the subscales

define a common factor and the ordinal theta of .960 showed a high internal reliability in this study, the total score of all 4 subscales were considered to assess overall media influence. Scores in this measure range from 30-150, with higher scores indicating greater information, pressure and/or internalization of society's attractive ideal.

Appearance Schemas Inventory–Revised (ASI-R). The Persian translated of the revised version of the Appearance Schemas Inventory–ASI-R (Cash, Melnyk, Hrabosky, 2004) was used to assess core beliefs and assumptions regarding the importance, meaning, and influence of appearance in everyday life. The 20-item scale includes two subscales. The first factor assesses a persons' self-evaluative salience of their appearance (e.g., “When I see good-looking people, I wonder about how my own looks measure up“). The content of the 12 items reflects the extent to which individuals define or measure themselves by their physical appearance, which they believe has an influential role in their social and emotional experiences. The second factor consists of eight items that reflect the respondents' motivational salience or the extent to which they attend to their appearance and engage in appearance-management behaviors (e.g. “Before going out, I make sure that I look as good as I possibly can“). This scale has shown validity for students, individuals with body dysmorphic disorder and individuals who are interested in cosmetic surgery (Grochowski, Tuschen-Caffier, Margraf, & Heinrichs, 2011).

Participants used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to indicate their level of agreement with the 20 statements. Higher scores represented higher appearance investment or the greater degree of importance of one's appearance to self-worth. The items were

summed up to obtain a total appearance investment score, with possible scores ranging from 20 to 100. The ordinal theta showed a relatively high reliability ($\alpha = .857$)

Physical Appearance Perfectionism Scale (PAPS). To measure perfectionism traits regarding appearance, a Persian translation of the physical appearance perfectionism scale (PAPS - Yang & Stoeber, 2012) was used. PAPS are a brief measure consisting of 12 items with two subscales: Worry About Imperfection (7 items, e.g. "I am never happy with my appearance no matter how I dress.") and Hope For Perfection (5 items, e.g. "I hope others admire my appearance."). As a rating scale, a five-point scale was used from 1 (strongly disagree) to 5 (strongly agree). Yang & Stoeber (2012) pointed out the differential validity of the two subscales which has been proved by correlation analyses. The subscale of Worry About Imperfection has negative correlations with positive self-perceptions of one's appearance (e.g., appearance self-esteem) and positive correlations with maladaptive aspects of perfectionism, physical appearance concerns (e.g., body image disturbances), while Hope For Perfection shows positive correlations with positive motivational aspects of perfectionism, positive self-perceptions, and impression management. That means Worry about Imperfection shows a positive correlation only with the maladaptive concerns subscale, and Hope for Perfection only with the positive striving subscale, while the PAPS total score has positive correlations with both subscales. The two factors also have a significant positive correlation ($r = 0.20, p < 0.05$). Thus, as it was recommended by Yang & Stoeber, (2012) each subscale was studied, separately. The ordinal theta in this study was .777, which shows an acceptable reliability of this scale in Persian.

Acceptance of the Cosmetic Surgery Scale (ACSS). The Persian version of the Acceptance of the Cosmetic Surgery Scale–ACSS (Henderson-King & Henderson-King, 2005) was used to assess participants’ attitudes toward cosmetic surgery. The scale assessed both general attitudes and the likelihood of actually undergoing a cosmetic surgical procedure. The 15-item scale consists of three 5-item subscales: Intrapersonal, Social, and Consider. The Intrapersonal subscale is an other-oriented measure, assessing attitudes and beliefs about cosmetic surgery for people in general (e.g., “Cosmetic surgery is a good thing because it can help people feel better about themselves”). In contrast, the Social and Consider subscales are self-oriented measures. The Social subscale assesses personal social motivations for cosmetic surgery (e.g., “If it would benefit my career I would seriously consider having cosmetic surgery”), whereas the Consider subscale assesses the likelihood that the respondent would consider having a cosmetic surgical procedure (e.g., “In the future, I could end up having some kind of cosmetic surgery”). Using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), participants were asked to indicate their level of agreement with the 15 statements. A total score for each of the three subscales was obtained by summing up the five relevant items, with possible scores for each ranging from 5 to 35. The ordinal theta of this scale indicates its high reliability in this study ($\alpha = .941$).

Demographic

Demographical data consisted of questions referring to respondents’ age, gender, marital status, majorand degree levels. The Participants also indicated the number (never, once, twice, and more than twice) they had had cosmetic surgery in the past.

Results

Correlation analysis

Statistical analysis was carried out on SPSS. First one-sample K-S test was utilized to examine the normal distribution and linear association between independent variables as the related assumption for multiple regression analysis. By the endorsement of these assumptions the regression analysis was done. The ineligible data was excluded from the analysis process by using adjusted scores to conform the parametric assumptions. Table 1 presents the descriptive statistics (*M* and *SD*) and zero-order correlations between the independent variable (Socio-cultural Attitudes toward Appearance), the mediator variable (Appearance Investment), the moderator variable (Physical Appearance Perfectionism) with its two subscales (worry about imperfection and hope for perfection), and the dependent variable (Tendency Toward cosmetic Surgery).

Table 1
The Descriptive Statistics and Bivariate Correlation Coefficients (Pearson's r)

	SATAQ	PAPS		ASI	ACSS
		WAI	HFP		
SATAQ	1				
PAPS	WAI	.343***	1		
	HFP	.297***	.285***	1	
ASI	.485***	.379***	.496***	1	
ACSS	.437***	.309***	.248***	.454***	1
M	87.08	16.69	20.00	66.21	57.00
SD	24.315	5.021	2.594	11.245	21.635

Note. SATAQ= Socio-cultural Attitudes toward Appearance; PAPS= Physical Appearance perfectionism, WAI= Worry about Imperfection, HFP= Hope for Perfection; ASI= Appearance Investment; ACSS=Attitudes toward Cosmetic Surgery.

*** $p < .001$

As can be seen, media influences socio-cultural attitudes toward appearance; appearance investment as well as both subscales of physical appearance perfectionism was positively related to positive attitudes toward cosmetic surgery. These results indicate that individuals who are affected more by media and/or have perfectionistic attitudes toward physical appearance and/or invest more in their appearance show more tendencies toward cosmetic surgery. Furthermore, all predictors were themselves significantly correlated.

The Effect of Moderator

Multiple regression analyses were conducted separately for each subscale of physical appearance perfectionism (worry about imperfection and hope for perfection) to investigate the moderator role of each of them between socio-cultural attitudes toward appearance and appearance investment. Analyses were conducted according to the procedures set forth by Baron and Kenny (1986). Socio-cultural attitudes toward appearance as predictors, worry about imperfection or hope for perfection as moderators and the interaction of multiplying these two variables entered in the regression equation.

For worry about imperfection (Fig.1), results indicated that there was a significant main effect in the interaction of multiplying socio-cultural attitudes toward appearance, worry about imperfection subscale and appearance investment (Table 2), which accounted for 27% of the variance in appearance investment's score.

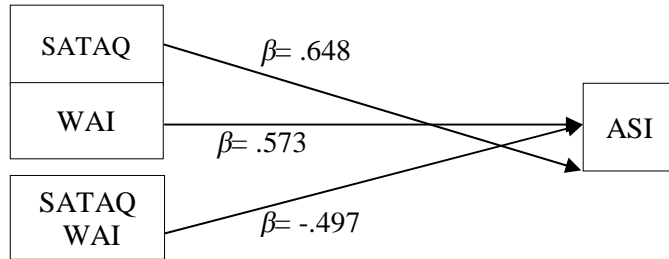


Figure 1

The relationship between socio-cultural attitudes toward appearance (SATAQ) and appearance investment (ASI) moderated by worry about imperfection (WAI)

For hope for perfection, separate multiple regression analyses were conducted and the result of the interaction of the predictor, socio-cultural attitudes toward appearance, and the moderator, hope for perfection, were not significant ($\beta = -.758, p = .083$). Hence, only the subscale of worry about imperfection moderated the relationship between socio-cultural attitudes toward appearance and appearance investment.

Table 2
Regression Coefficients of Moderator Effect of Worry about Imperfection

	Predictors	B	B	t
Step 1	SATAQWAI	.007	.481***	12.965
Step 2	SATAQWAI	.005	.317***	5.463
	SATAQ	.093	.212***	3.651
	SATAQWAI	-.007	-.497*	-2.544
Step 3	SATAQ	.285	.051***	5.624
	WAI	1.188	.273***	4.358

Note. Dependent variable: ASI, * $p < .05$, ** $p < .01$, *** $p < .001$

The Effect of Mediator

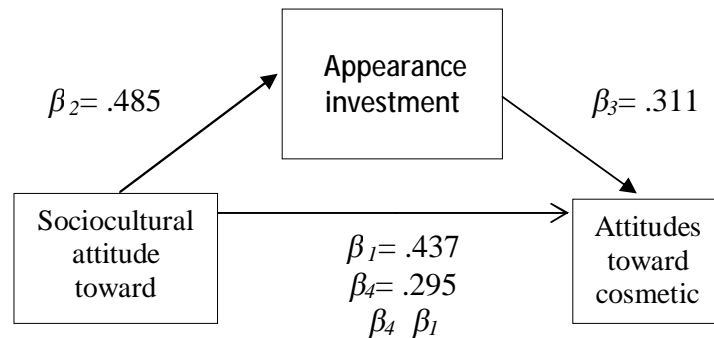


Figure 2

The relationship between socio-cultural attitudes toward appearance (SATAQ) and attitudes toward cosmetic surgery (ACSS) were mediated by appearance investment (ASI)

Hierarchical multiple regression analyses were conducted to investigate whether appearance investment mediated the relationship between media influences and attitudes toward cosmetic surgery.

Regarding the results of the correlation matrix between the studied variables (Table 1), the primary assumptions set forth by Baron and Kenny (1986) for correlation between the predictor, mediator and dependent variables were obtained. To examine the mediator role of appearance investment there are three criteria. First, the dependent variable (attitudes toward cosmetic surgery) regressed on the predictor variable (socio-cultural attitudes toward appearance) to show that the predictor is significantly correlated to the independent variable. The result of multiple regression analysis demonstrated that socio-cultural attitudes toward appearance was associated with attitudes toward cosmetic surgery ($\beta_1 = .437$, $p = .001$, Fig. 2). In the second regression analysis the mediator variable (appearance investment) regressed on the predictor variable. The result

revealed that media influences were significantly related to appearance investment ($\beta_2 = .485, p < .001$, Fig.2). Finally, in the last regression, the dependent variable regressed on both media influences and appearance investment as predictors and mediator variables (Table 3).

Table 3
Coefficients of the Mediational role of Appearance Investment

	Predictors	Adj.R ²	B	B	t
Step 1	ASI	.21	.871	.454***	12.699
Step 2	ASI	.27	.597	.311***	7.937
	SATAQ		.262	.295***	7.531

Dependent variable: ACSS, *** $p < .001$

The result indicated that the mediator variable was related to the dependent variable and accounted for 21% of the relation between the predictor and the dependent variable ($\beta_4 = .295, p < .001$, Table 2; Fig. 2). Although, the beta value for media influences reduced (.437 to .295), clearly remained significant, providing evidence for partial mediation. That is, media influences had direct and indirect (via appearance investment) effect on the tendency for cosmetic surgery.

Discussion

The dramatic increase in the number of cosmetic surgery procedures in the world has called the attention of many researchers to identify the underlying motives to go under the knife. Although there is no reliable data on the number of procedures done in our country, Iran has been known as the center for nose job operations. It is an undeniable fact that people's lives are strongly shaped by the personal and cultural

attitudes toward physical appearance (Cash, 2005). The previous studies have identified mass media messages about physical appearance and body dissatisfaction as basic factors in engaging in appearance- enhancement behaviors. (Delinsky 2005; Swami et al. 2008, 2009; Markey & Markey 2009,2010; Henderson-King & Henderson-King 2005; Sarwer, 2002; Sarwer, Cash, 2005). Other researchers mention perfectionism as a psychological factor affecting the desire to have cosmetic surgery (Buhlmann, Etcoff, & Willhelm, 2008; Sherry, Hewitt, Lee-Baggley, Flett, & Besser, 2004; Wade, & Tiggemann, 2013).

This study aimed to investigate the relationship between media influences, appearance perfectionism, appearance investment, and attitude toward cosmetic surgery. Media influences were hypothesized to exert both a direct and indirect effect on attitudes toward cosmetic surgery. It was examined to see whether appearance investment mediates the relationship between media influences and attitudes toward cosmetic surgery. Additionally, this study was conducted to inspect the moderator role of perfectionism in association between media and appearance investment.

The first findings indicate that media, appearance perfectionism, and appearance investment are significantly correlated and they are linked to attitudes toward cosmetic surgery. The positive correlation between socio-cultural attitudes toward appearance and acceptance of cosmetic surgery shows that individuals who are influenced by media messages to a greater degree than their peers, are more likely to enhance their appearance. In other words, it seems that persons who accept and internalize media messages about appearance and refer to this information for what their appearance should look like are also more likely to be interested in pursuing cosmetic surgery to

fit in with societal norms. The present results indicate the important role of media influences in the tendency for cosmetic surgery. As various literature reviews have highlighted, mass media have a more influential role in the socialization of people's physical appearance standards and expectations than other socio-cultural influences like peers and parents (Tiggemann, 2002). While this is in contrast to the results of Brown et al. (2007) who reported no effect of media exposure on the likelihood of having cosmetic surgery, it is nevertheless in line with most studies in this regard (e.g., Delinsky 2005, Swami et al. 2008, 2009, Markey & Markey, 2009, 2010). This result is also consistent with other research regarding media influences on the tendency for cosmetic surgery in Iran (e.g., Farshidfar, 2013; Salehahmadi, & Rafie, 2012; Tavassoli, & Modiri, 2012).

Furthermore, there was a significant correlation between media influences and appearance investment. Although there is very little research on the association between socio-cultural influences and appearance investment this finding is consistent with the result of Cash, & Melnyk's research (2004) on assessing the correlation between appearance investment and socio-cultural attitudes toward appearance. Similarly, Tiggemann (2005) found that socio-cultural attitudes toward appearance correlates with appearance investment, while Slevic & Tiggemann (2010) implied that only magazine exposure has a significant correlation with appearance investment. This result indicates that media messages regarding appearance have an impact on self-schemas about appearance and evaluating one's self-worth.

In addition, Pearson's correlation shows the positive relationship between media influences and physical appearance perfectionism subscales. Although this study is the first of its

kind that assesses appearance perfectionism regarding tendency for cosmetic surgery, to date no research has been done on the relationship between appearance perfectionism and media influences, the result indicates that there is a significant correlation between these two variables. It means that people who worry more about showing imperfection and hope for more perfection are impacted relatively more by the media's messages about appearance standards. Although, just one of the subscales of physical appearance perfectionism, Worry about Imperfection, moderated the relationship between media influences and appearance investment and Hope for Perfection it could not establish the moderator role. This findings support the idea that each facet of perfectionism has a distinguishing effect on appearance investment and it is consistent with Yang & Stoeber (2012) who indicated that Hope for Perfection has only a positive correlation with positive motivational aspects of perfectionism and positive self-perceptions, while the subscale of Worry about Imperfection has a negative correlation with positive self-perceptions of one's appearance and positive correlations with maladaptive aspects of perfectionism and physical appearance concerns. Thus, highly perfectionistic individuals are more sensitive to socio-cultural attitudes provided by mass media, perhaps because they are more worried about showing imperfection and how perfect they must look . This is also consistent with the findings of Williams (2009) which examined the moderator role of perfectionism between media and body related attitudes. For the individual with idealistic goals, evaluating the appearance as undesirable and inadequate could initiate enhancing-behaviors. The idealized appearance promoted by mass media associated with the moderator role of a perfectionist's high standards and worries about showing imperfection as maladaptive aspects of

perfectionism can lead to emphasizing the importance of appearance in their self-worth which suggests that perfectionists may feel pressure to obtain a perfect appearance even through cosmetic surgery (Sherry et al., 2004). Hence, it may be a useful construct to include perfectionism as a personality trait in prevention programs for body image disorders or the development of health-risk behaviors.

"In [the] transactional view of self and society, personal factors in the form of cognitive, affective, and biological events, behavioral patterns, and environmental events" which, as Bandura (2001, p.266) stated, all operate as interacting determinants that influence each other bi-directionally, perfectionism can play a role as a personal determinant, enhancing appearance through cosmetic surgery indicates behavioral pattern and mass media represent social attitudes. According to the cultivation theory (Gerbner et al., 2002), it cultivates ideas that are present in society and, in turn, maintains and propagates these so that eventually what is presented in the media becomes a "norm" which is nearly impossible to achieve without surgery. This can also be accurate for those who have high appearance investment. Because of the established role of appearance investment and body image in predicting the individual's desire to change bodies (Sarwer, Cash, 2005; Slevec, & Tiggemann, 2010), and past research investigating mediational models, hence appearance investment was examined as a mediator of the social influences when attempting to predict interest in cosmetic surgery. Hierarchical multiple regression analyses showed that appearance investment did partially mediate the relation between socio-cultural attitudes toward appearance and interest in cosmetic surgery. This result established that the media has both a direct and indirect effect on the tendency for cosmetic surgery but

individuals who define their self-worth by their physical appearance are more prone to engage in enhancement behaviors. Research clearly indicates the vital role that individuals' perception of their physical attractiveness has on their general sense of self-worth. Although, normative developmental concerns about physical appearance issues are likely worsened by socio-cultural messages presented by the media which conveys to individuals the importance of their body's appearance it is also necessary to consider that it may not be only media exposure per se that is important to encourage people to have cosmetic surgery, but rather the extent to which individuals evaluate theirself-worth through appearance and how harsh this evaluation is.

In conclusion, this study confirmed the important role of the media and personal factors in appearance evaluation and enhancement behaviors. These findings suggest that by developing the sense of self-worth that is not valued by the appearance and by targeting perfectionism among young adults it is possible to diminish the negative effect of media messages about physical appearance which can lead to positive attitudes toward cosmetic surgery.

This research should be interpreted within a number of limitations. Most obviously, the data is derived from self-report measures that, although psychometrically sound and well validated, are open to criticism. Second, the research has been conducted with university students with a mean age of 21.8 years and these results may not be applicable to other age groups or individuals without higher education. Furthermore, this research can also be extended by investigating each subscale's effects. Finally, as with all cross-sectional studies, temporal precedence and causation couldn't be established.

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Application of Fuzzy System in Psychological Tests: Optimize the Number of Questions for WHOQOL-BREF

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The WHOQOL-BREF is one of the best known questionnaires for measuring the quality of life. It is currently available in more than 40 languages and has been used frequently in cross-cultural comparison studies on subjective well-being and quality of life studies. Some research shows that due to certain cultural biases Iranian respondents have no tendency or willingness to respond to some questions, more specially, question 21, in WHOQOL-BREF. The main aim of the current research was to use the ability and flexibility of fuzzy systems to analyse the WHOQOL-BREF questions to reduce some unclear or doubtful questions. A fuzzy system model proposes to diminish the errors that produce ambiguous concepts by not responding to certain biased questions. The *WHOQOL-BREF* questionnaire was analyzed and both the traditional model and the fuzzy model analyses were compared for results using fuzzy systems. As a result, question 21 was removed from the WHOQOL-BREF questionnaire used by the fuzzy system.

Keyword: WHOQOL-BREF, psychological test, fuzzy system, Wang & Mandel method, Quality Of Life, Cultural Bias

The theoretical definitions of the “quality of life” and some related concepts such as “well-being”, “happiness”, “life satisfaction” and “good life” have preoccupied a wide range of

disciplines, dating as far back as Aristotle (384-19 BC) and early Greek philosophy (Bowling, 2001). Aristotle, using the Greek *eudaimonia* (a concept which for Aristotle meant having an understanding of the best way to live one's life), which is commonly translated as 'happiness', affirms that the quality of life is highly relative: it means different things to different people, and conditions for happiness vary according to a person's current condition. Happiness for Aristotle was the product of activities directed towards clearly defined goals which inform our whole life rather than being simply short-term (Chang, Killingworth, & Noaln., 1997).

Self-report rating scales are one of the most common methods to assess overall SWB. Sandvik, Diener, and Seidlitz (1993) suggest that standard self-report measures of SWB are adequate for most research as there is "a unitary core of experience for well-being, which self-reports reflect to a great extent. Thus, researchers using standard well-being scales can generally expect to obtain meaningful, interpretable information from these scales under ordinary conditions" (p.337). This is partly attributable to the moderate stability of SWB across situations and over the life span (Diener & Lucas, 2000). For example, SWB has been found to correlate 0.85 over a four-year period (Diener, Suh, & Oishi, 1997).

According to Andrich (1978) and Guilford (1954), there are four main reasons for the frequent use of the rating scale method of measurement:

1. Rating scales are relatively easy for researchers to construct and use compared with other scale formats.
2. They provide the respondent with a limited number of response options, facilitating data registration for both the subject and the researcher.
3. The numbering continuum provides respondents with a

ruler upon which they can mentally gauge the intensity and/or direction of their reactions to a statement.

4. Accuracy and reliability of one's ability to communicate mental maps increase with experience in using mental rulers. Also, conceivably, the repeated use of similar formats increases the accuracy and reliability of the measurement process. One internalized ruler can be used to measure directions and intensities across a variety of sentiments.

There are four major methods for constructing rating scales: Thurstone type or equal-appearing interval scales (Thurstone & Chave, 1929), Guttman type or cumulative scales (Guttman, 1950), Semantic differential scales (Osgood, Suci & Tannenbaum, 1957), and Likert-type or summated rating scales (Likert, 1932).

The Likert-type rating scale was recently proclaimed to be one of the most important tools in attitude and survey measurement (Bergstrom & Lunz, 1998). The use of this measuring device in psychological and educational settings is virtually universal. Attitudinal data in marketing and public opinion research and many types of organizational surveys rely heavily on the rating scale method of measurement (Green & Rao, 1970). On a Likert or Likert-type scale generally associated with the work of Likert (1932), respondents are presented with a series of statements and they are asked to indicate their degree of agreement (or disagreement) with each item. Responses are usually made on a 5- or 7-point scale, with response categories ranging from "strongly agree" to "strongly disagree", or other scale point labels referring to frequency or quality. All items are considered to be of equal value, and response to an item is weighed to reflect the degree of agreement or disagreement. The scale score may be either the total number of points (over all items) or the average of all the item scores. Since the total scale

score is obtained by adding the scores from individual items, a Likert scale is also referred to as a summative scale.

In light of the extensive use of rating scales, it would be also useful to have a clear understanding of how to optimize reliability and validity through use of the scale. The number of rating points used on the “ruler” can vary from 2 to 100 or more. There is a general consensus that the optimal number is from 5 to 7 points. However, the specific number of points eludes researchers. Whether to use an even or odd number of categories is another source of debate among practitioners (e.g., Gable & Wolf, 1993). Cox (1980; p.408) provides the following definition of the optimal number of rating points: “At a general level, a scale with the optimal number of response alternatives is refined enough to be capable of transmitting most of the information available from respondents without being so refined that it simply encourages response error. At that optimal number, the ratio of meaningful or systematic variation on total variation is maximized. At an operational level, the optimal number depends on the purpose of the scale and, thus, the nature of its systematic variation.”

The WHOQOL-BREF is one of the best known instruments that has been developed for cross-cultural comparisons of quality of life and currently it is available in more than 40 languages. The WHOQOL-BREF is a modified version of The World Health Organization Quality of Life Instrument. The abbreviated version contains 26 questions divided into four domains. The WHOQOL-BREF has 26 items derived from the WHOQOL-100. The items are rated on a 5-point Likert scale. The four domain scores are scaled in a positive direction, with a score range of 0-20, and with higher scores denoting higher QOL. It also includes one facet of overall quality of life and general health. These items are scaled in a positive direction,

with a score range of 1-5, and with higher scores denoting a better quality of life and general health.

(Fig. 1)

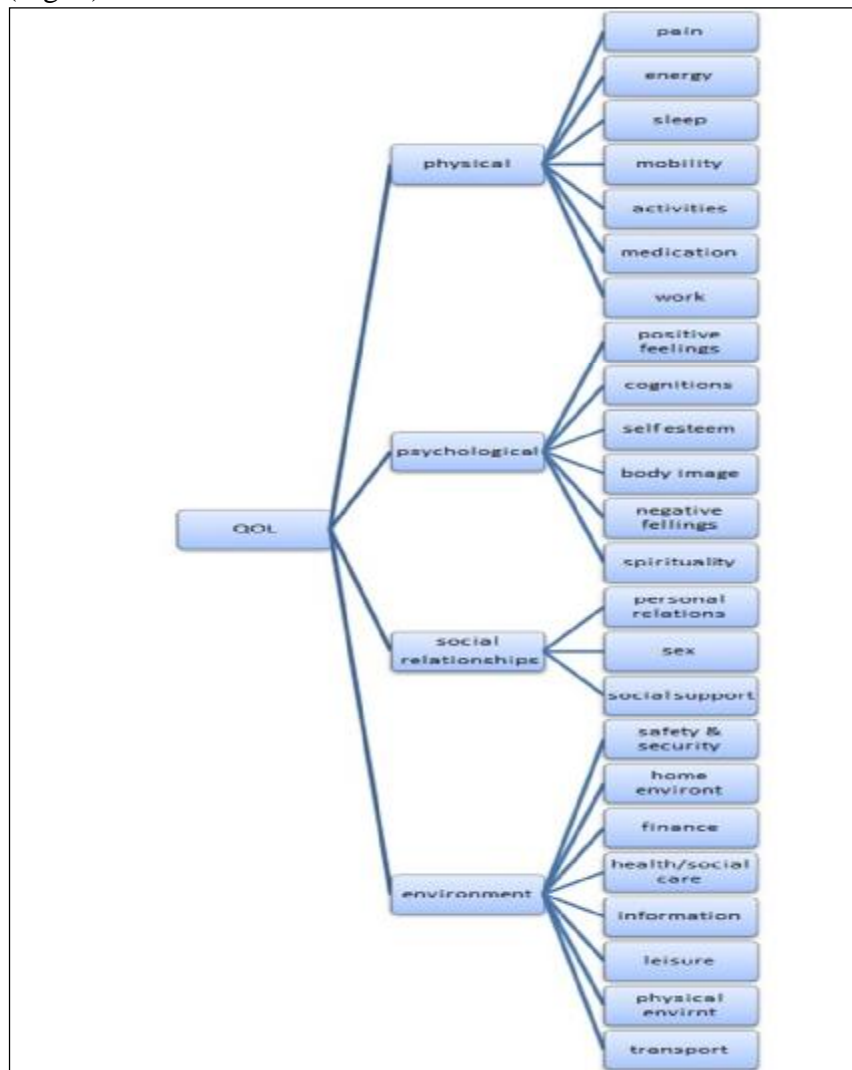


Figure 1
WHOQOL-BREF Questionnaire Chart

Cultural biases have been shown not to suffice to explain the major differences in SWB between countries (Veenhoven,

1997), but they still pose a major problem to the international comparison of QOL data (Schimmack et al., 2002). Asians, for instance, usually have intermediate mean ratings, with a much narrower distribution than Westerners (Diener, Smith & Fujita., 1995). This phenomenon has been attributed to the cultural valuation of moderation (Diener et al., 1995). Another factor possibly contributing to the distinctive distribution of SWB among Asians is less individualism and the persistent closeness of family ties. Such ways of life are characterized by increased control, and thus tend to limit the impact of perturbations on SWB and they affect balance, whether by buffering negative events or by blunting positive affects.

According to their personality, living circumstances or culture, people may vary in response to questions concerning overall life (dis)satisfactions. Schwarz and Strack (1999) have identified several sources of bias in (conventional) self-reported global assessments of SWB. These include assimilation and contrast effects, when current feelings are coloured or discoloured by the past. Similarly, the mood of the day or events of the moment may distort responses. In addition, responses about well-being may be biased by social acceptability (Schwarz and Strack, 1999).

Iranian people don't have any tendency toward answering some questions, because the questions are related to their sexual relationships.

As the main aim of the current study, we were interested in using the ability and flexibility of fuzzy systems in order to eliminate some inappropriate questions from WHOQOL-BREF questionnaire. A fuzzy system was designed to diminish the errors that cause ambiguous concepts by not answering specific questions.

Question 21 was removed from the questionnaire by using the

fuzzy system. We aimed to calculate this question from the measure of the social relation dimension of the questionnaire (DOM-3) by removing this specifically culturally biased question. (Fig 2)

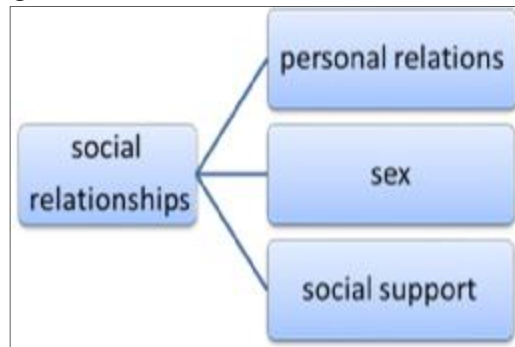


Figure 2
The Social Dimension of the WHOQOL-BREF Questionnaire Chart

Fuzzy Systems and the Features:

The conclusions of psychological studies and educational sciences are based on uncertain data at this stage and they resulted in inaccurate fuzzy concepts (Zetenyi, 1998).

Fuzzy systems are the systems based on knowledge or rules; they are very suitable tools for the modeling of uncertainties and ambiguities on the basis of the Fuzzy Sets Theory (Wang, 1997).

A fuzzy inference system is a set of fuzzy input(s), fuzzy rules and fuzzy output(s) that can receive input data accurately and give the final output in the form of accurate numbers.

Inputs of the fuzzy inference system are the concepts that psychological and educational researches use to explain the output(s) (Smithson & Verkuilen, 2006).

The Deduction Process and Inference Process of the fuzzy system have five stages:

Fuzzification, Application of Fuzzy Operators, Conclusion, Composition, and Defuzzification

1-Fuzzification

In this phase, we put accurate data into the system and determine the measure of their attachment to fuzzy sets by membership functions. In fact, we measure the satisfaction of *(the IF) part* of the rule.

2- Application of Fuzzy Operators:

Where *(the IF) part* is made of some statements, we use the fuzzy operators to compose statements and determine the conclusion of *(the IF) part* of the rule.

3-Inference:

At this point, we define *(the THEN) part* on the base of *(the IF) part*. The input of inference is a number from the prior stage and the output is a fuzzy set. This step is applied once to each rule.

4- Composition:

At this stage, we compose different outputs of rules to each other, (each of them is a fuzzy set) and it determines the overall space of the fuzzy system. This stage is used once for each output variable.

5- Defuzzification:

We estimate certainty from uncertainty at this stage. The input of the defuzzification stage is a composed fuzzy set and the output of the defuzzification stage is an exact number. A fuzzy rule consists of a set of *(IF-THEN) fuzzy* rules. It is the heart of the system, because we use other implements of the system effectively to obtain the rules.

To analyze the psychological and social phenomena is one of the most important abilities of the fuzzy system, the possibility of quantitative analysis based on fuzzy rules for data that are not exact (Smithson & Verkuilen, 2006).

In this research, we design an empirical and scientific rules based on the capabilities of the fuzzy system with the search table of (Wang & Mandel) input - output data which has three input parameters: personal relations relationships, sexual relationships, and social supports of the subjects.

We obtain these three input parameters on the basis of the measure of psychological tests (WHOQOL-BREF), and estimate the fuzzy output parameter from the view of social relationships, and then compare this conclusion with the conclusion of the normal method.

Method

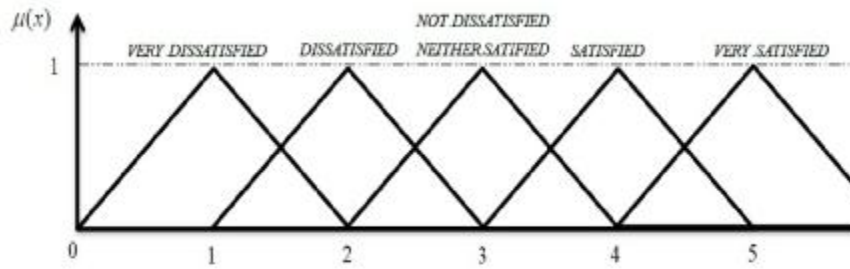
A sample of 130 voluntary participants including 30 Swedish residents, 30 Iranians living in Sweden, and 80 Iranians living in Iran were asked to fill out the WHOQOL-BREF questionnaire.

The MATLAB software was applied to design the fuzzy research system by (Wang – Mandel) input-output search table.

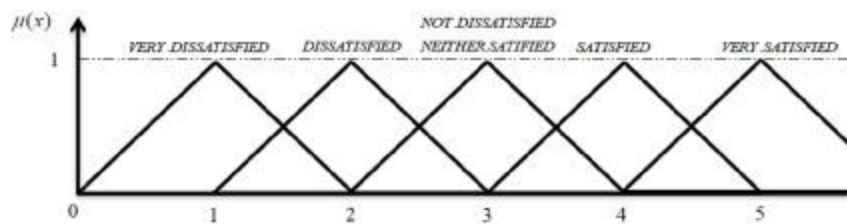
We design fuzzy systems to analyze complex psychological tests by fuzzy (linguistic) rules and nervous networks, because of the fuzzy rules are an effective and convenient approach to the pairs of input-output data. The Wang-Mandel approach is composed of fuzzy (linguistic) rules and the nervous networks in psychological tests and it makes an appropriate method from the pairs of input-output data. It has five basic steps (Wang, 1997).

We design the fuzzy membership function of variables of personal relations relationships, sexual relationships, social supports of the subjects in terms of the WHOQOL-BREF questionnaire with 90 Swedes, Iranians living in Sweden, and

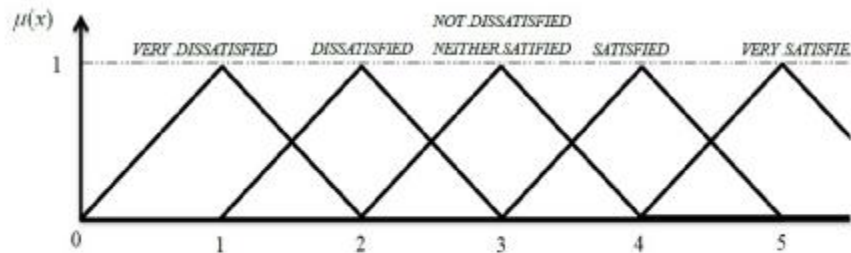
Iranians living in Iran, to establish the questionnaire by fuzzy sets in the form below (fig 3)(Klir,& Yuan, 1995).



Fuzzy Sets for Personal Relations



Fuzzy Sets for Sexuality Relations



Fuzzy Sets for Social Support

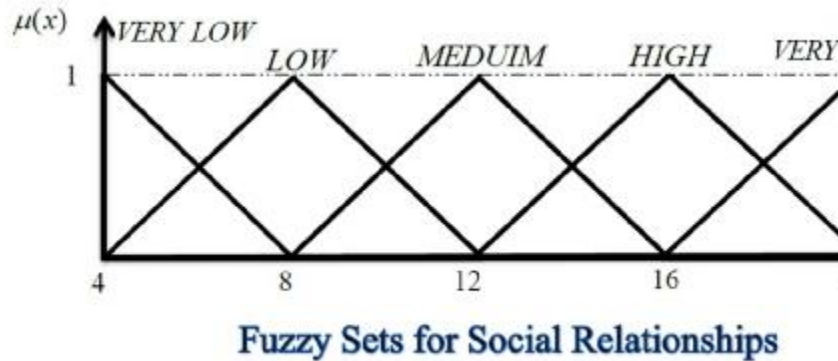


Figure 3
Membership Functions of Fuzzy Variables in the Domain of Social Relationships (Personal Relations, Sexually Relations, Social Support)

Five basic steps of the Wang-Mendel method are (Wang, 1997):

- 1- to determine the input-output membership function and to determine membership degree of each data
- 2- To attain a rule for each pair of input - output data.
- 3- To determine a weight and a degree for each rule. We obtain the degree of each rule by determine of the membership degree of components and the membership degrees of the pairs of data.
- 4- To choose the rule that has the maximum degree, we obtain the number of fuzzy rules in return for the different reasons. At this stage we might have similar introduction of (the IF) part and different conclusion of (the THEN) part, so we have a conflict. In this case, to resolve the conflict, we choose the rules that have the highest weight and degree.
- 5- To determine the measure of the output based on the pairs of input data related formulas (defuzzification formulas).

RuleBases

We use the Wang & Mendel method to design the fuzzy systems of the research. We consider 37 rules for the fuzzy system; two of them are mentioned below:

1. *If you are **very satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **very satisfied** with your social support, then your social relationship is **very high** (weight of rule is 1).*
2. *If you are **very satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **very high** (weight of rule is .66).*
3. *If you are **satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **very satisfied** with social support, then your social relationship is **very high** (weight of rule is .66).*
4. *If you are **very satisfied** with your personal relationships, and **satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is .66).*
5. *If you are **satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is .66).*
6. *If you are **very satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **neither satisfied not dissatisfied** with social support, then your social relationship is **high** (weight of rule is .66).*
7. *If you are **satisfied** with your personal relationships, and **satisfied** with your sex relationships, and **very satisfied** with social support, then your social relationship is **high** (weight of rule is .66).*

rule is .66).

8. *If you are **very satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship is **high** (weight of rule is .66).*
9. *If you are **very satisfied** with your personal relationships, and **satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship is **high** (weight of rule is 1).*
10. *If you are **satisfied** with your personal relationships, and **satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is 1).*
11. *If you are **satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship is **high** (weight of rule is 1).*
12. *If you are **very satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **dissatisfied** with social support, then your social relationship is **high** (weight of rule is 1).*
13. *If you are **neither satisfied nor dissatisfied** with your personal relationships, and **satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is 1).*
14. *If you are **neither satisfied nor dissatisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is 1).*
15. *If you are **satisfied** with your personal relationships, and **satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship*

is **high** (weight of rule is .66).

16. If you are **satisfied** with your personal relationships, and **neither satisfied nor dissatisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is .66).
17. If you are **satisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **dissatisfied** with social support, then your social relationship is **high** (weight of rule is .66).
18. If you are **very satisfied** with your personal relationships, and **neither satisfied nor dissatisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship is **high** (weight of rule is .66).
19. If you are **neither satisfied nor dissatisfied** with your personal relationships, and **very satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship is **high** (weight of rule is .66).
20. If you are **neither satisfied nor dissatisfied** with your personal relationships, and **satisfied** with your sex relationships, and **satisfied** with social support, then your social relationship is **high** (weight of rule is .66).
21. If you are **neither satisfied nor dissatisfied** with your personal relationships, and **neither satisfied nor dissatisfied** with your sex relationships, and **very satisfied** with social support, then your social relationship is **high** (weight of rule is .66).
22. If you are **issatisfied** with your personal relationships, and **satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your social relationship is **high** (weight of rule is .66).
23. If you are **neither satisfied nor dissatisfied** with your personal relationships, and **satisfied** with your sex relationships, and **neither satisfied nor dissatisfied** with social support, then your

social relationship is *medium* (weight of rule is .66).

24. If you are *satisfied* with your personal relationships, and *neither satisfied nor dissatisfied* with your sex relationships, and *neither satisfied nor dissatisfied* with social support, then your social relationship is *medium* (weight of rule is .66).
25. If you are *neither satisfied nor dissatisfied* with your personal relationships, and *neither satisfied nor dissatisfied* with your sex relationships, and *satisfied* with social support, then your social relationship is *medium* (weight of rule is .66).
26. If you are *satisfied* with your personal relationships, and *dissatisfied* with your sex relationships, and *satisfied* with social support, then your social relationship is *medium* (weight of rule is .66).
27. If you are *satisfied* with your personal relationships, and *satisfied* with your sex relationships, and *very dissatisfied* with social support, then your social relationship is *medium* (weight of rule is 1).
28. If you are *neither satisfied nor dissatisfied* with your personal relationships, and *neither satisfied nor dissatisfied* with your sex relationships, and *neither satisfied nor dissatisfied* with social support, then your social relationship is *medium* (weight of rule is 1).
29. If you are *satisfied* with your personal relationships, and *neither satisfied nor dissatisfied* with your sex relationships, and *dissatisfied* with social support, then your social relationship is *medium* (weight of rule is 1).
30. If you are *neither satisfied nor dissatisfied* with your personal relationships, and *neither satisfied nor dissatisfied* with your sex relationships, and *dissatisfied* with social support, then your social relationship is *medium* (weight of rule is .66).
31. If you are *neither satisfied nor dissatisfied* with your personal relationships, and *dissatisfied* with your sex relationships, and

- dissatisfied* with social support, then your social relationship is *low* (weight of rule is .66).
32. If you are *dissatisfied* with your personal relationships, and *dissatisfied* with your sex relationships, and *dissatisfied* with social support, then your social relationship is *low* (weight of rule is 1).
33. If you are *dissatisfied* with your personal relationships, and *very dissatisfied* with your sex relationships, and *dissatisfied* with social support, then your social relationship is *low* (weight of rule is .66).
34. If you are *very dissatisfied* with your personal relationships, and *very dissatisfied* with your sex relationships, and *very dissatisfied* with social support, then your social relationship is *very low* (weight of rule is 1).
35. If you are *very dissatisfied* with your personal relationships, and *dissatisfied* with your sex relationships, and *very dissatisfied* with social support, then your social relationship is *very low* (weight of rule is .66).
36. If you are *very dissatisfied* with your personal relationships, and *very dissatisfied* with your sex relationships, and *dissatisfied* with social support, then your social relationship is *very low* (weight of rule is .66).
37. If you are *dissatisfied* with your personal relationships, and *very dissatisfied* with your sex relationships, and *very dissatisfied* with social support, and then your social relationship is *very low* (weight of rule is .66).

Inference

The true value of the hypothesis is one of the rules of calculation, and the true value of the conclusion is one of the applied rules. These conclusions are especially for the output variable of each rule in a fuzzy subset. The rule of the *MIN*

Inference or rule of *Multiplication* Inference are often used as the Inference rule. In MIN Inference, membership function of the output is a section of height, we calculate it by the real degree of (the If) parts of the given rules (rule weight, α). In the Multiple Inference, we measure and calculate the membership function of output by the real degree of (the If) parts of rules.

Composition

There are some fuzzy subsets for each output variable; all of these variables composing together apply as a single fuzzy subset for each output variable. MAX or SUM is usually used for the Composition. In MAX Composition, we compose fuzzy subsets of outputs according to the reasonable maximum point which is made especially considering Inference rules of all fuzzy subsets.

In SUM Composition, we compose fuzzy subsets of outputs according to all of the reasonable points which are made especially considering Inference rules of all fuzzy subsets.

DeFuzzifier

Sometimes it is useful to review fuzzy subsets which are the conclusion of the composition process, but sometimes is necessary changing the fuzzy measure to the more clear measure. The defuzzification process does this stage. Two of the most common techniques for the parameters are the *Center of Gravity* and *the Maximum Method*. In the Center of Gravity method, we calculate the clarity value of the output variable by finding the measure of the variable from the center of gravity of the membership function of the fuzzy value.

In the Maximum method, we calculate the clarity value of the output variable by finding the measure of a variable which has the fuzzy subsets with the maximum value of clarity.

In this research, we use the product method for Inference, SUM method for composition, and the Center of Gravity method for DeFuzzifier.

Mathematical Calculation of Example

We design a fuzzy set in the fuzzy system, and we calculate the measure of the social relationships for this data: Q22=5 and Q20=2, so we have DOM-3=16.

$$fuzzy(y) = \begin{cases} 0.66(y - 12) / 4 & 12 \leq y \leq 16 \\ -0.66(y - 20) / 4 & 16 \leq y \leq 20 \\ 0 & otherwise \end{cases}$$

$$Area = \int f(y)dy = \frac{0.66}{4} \left[\int_{12}^{16} (y - 12)dy - \int_{16}^{20} (y - 20)dy \right] = 2.64$$

$$Moment = \int yf(y)dy = \frac{0.66}{4} \left[\int_{12}^{16} (y^2 - 12y)dy - \int_{16}^{20} (y^2 - 20y)dy \right] = 42.24$$

$$Centroid = \frac{Moment}{Area} = \frac{\int yf(y)dy}{\int f(y)dy} = \frac{42.24}{2.64} = 16$$

We obtain similar conclusions for the other inputs with different outputs of the fuzzy sets [8].

4. Discussion and conclusions:

We demonstrate the obtained conclusions from raw scores with and without the fuzzy method (normal method) in Table 1:

Table 1
Calculation Results are Social Range of 50 Subjects (Healthy and Sick) No Fuzzy Method (Conventional and the Questionnaire WHOQOL-BREF) and Using Fuzzy Techniques (Output Fuzzy System Design).

<i>N</i>	<i>Gensiat</i>	<i>Q20</i>	<i>Q21</i>	<i>Q22</i>	<i>Dom-3</i> (<i>Social Relationships</i>) <i>Without Fuzzy</i>	<i>Dom-3</i> (<i>Social Relationships</i>) <i>With Fuzzy</i>
1	2	5	5	5	20.00	18.70
2	1	5	5	4	18.67	18.60
3	1	4	5	4	17.33	16.00
4	2	5	5	3	17.33	16.00
5	1	4	4	5	17.33	13.90
6	2	5	5	3	17.33	16.00
7	1	5	4	4	17.33	16.00
8	1	4	5	4	17.33	16.00
9	2	5	3	5	17.33	16.00
10	1	4	5	4	17.33	16.00
11	2	4	5	4	17.33	16.00
12	1	4	4	5	17.33	13.90
13	1	4	5	3	16.00	16.00
14	1	5	5	2	16.00	16.00
15	2	3	4	5	16.00	16.00
16	2	4	5	3	16.00	16.00
17	1	4	4	4	16.00	16.00
18	2	4	5	3	16.00	16.00
19	2	3	5	4	16.00	16.00
20	1	4	3	4	14.67	16.00
21	2	4	4	3	14.67	16.00
22	2	4	5	2	14.67	16.00
23	1	4	4	3	14.67	16.00

24	2	5	3	3	14.67	16.00
25	1	4	4	3	14.67	16.00
26	1	4	3	4	14.67	16.00
27	2	4	4	3	14.67	16.00
28	2	3	4	4	14.67	16.00
29	2	3	3	5	14.67	16.00
30	1	2	4	5	14.67	16.00
31	2	4	4	3	14.67	16.00
32	1	4	3	4	14.67	16.00
33	2	4	4	3	14.67	16.00
34	1	4	3	4	14.67	16.00
35	2	3	3	5	14.67	16.00
36	1	4	4	3	14.67	16.00
37	2	3	4	3	13.33	12.00
38	1	4	3	3	13.33	12.00
39	2	4	3	3	13.33	12.00
40	1	4	3	3	13.33	12.00
41	2	3	3	4	13.33	12.00
42	2	4	3	3	13.33	12.00
43	2	4	4	1	12.00	12.00
44	2	3	3	3	12.00	12.00
45	1	4	3	2	12.00	12.00
46	1	4	3	2	12.00	12.00
47	1	3	3	2	10.67	12.00
48	1	3	2	2	9.33	8.00
49	2	1	1	2	5.33	5.40
50	2	2	1	1	5.33	5.40

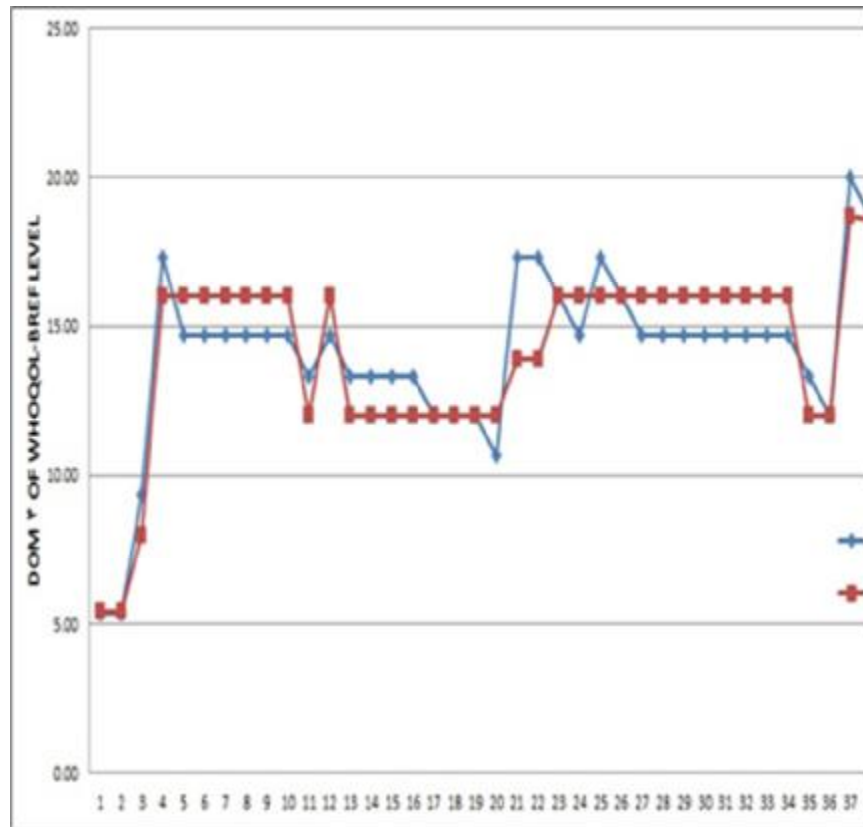


Figure 4
Graph comparing the Social Idomain without Using Fuzzy Techniques (Conventional) Using Fuzzy Technique for 50 Students

Table 6 shows the predictable mean and standard deviation of scores of the quality of life with a view to social relationships through the fuzzy method. They are based on two parameters: personal relationships, and social supports, they have noticeable reduction. We compare the means by the related samples of t-test; they are presented in Table 3.

Table 2
Comparison of the Results of a Questionnaire
WHOQOL-BREF Social Domain with and without
Using Fuzzy

Std.	Mean	N	Scores
2.80	14.64	50	Social relations domain of the WHOQOL-Brief without using the fuzzy method
2.79	14.55	50	Social relations domain of the WHOQOL-Brief with using the fuzzy method

Table 3
Ttest for Paired Samples (Dependent)

t	df	Sig. (2-tailed)
.444	49	.659

We demonstrate that we can remove question number 21 from the questionnaire, according to the rules of the Wang-Mandel method, and we design a special fuzzy system. There is no meaningful difference between the mean of the scores before fuzzification and after fuzzification statistically in which 95% isn't reliable. It is a powerful system, because it can estimate the conclusions of the test questions that are predictable even if some questions are removed.

We show the standard deviation of the scores after fuzzification is 2.79, and the standard deviation of the scores by the conventional non-fuzzy method (normal method) is 2.80, so we have a little reduction from some annoying latent variables or parameters among the subjects.

The outstanding advantage of this fuzzy method is that the

normal method collects irrelevant variables largely, and then it cannot control predictable scores accurately.

Our analysis shows that the fuzzy system can be inference reasonably [10]. We predict and conclude the social dimension in the questionnaire of the fuzzy systems by two input variables (Table 4) instead of three input variables, without using sexual scales. This is the unique feature of fuzzy logic.

We use fuzzy logic in research on human behavior because there are many uncertain data from psychological tests in real situations.

Uncertainty in related data leads to obtaining inaccurate concepts. We use fuzzy data instead of raw data, so we are able to reduce uncertainty. In this research we suggest a new dimension of the capability of fuzzy systems in educational and psychological researches. The major advantage of this modeling is that it predicts psychological parameters by measuring uncertainty and replacing it with a quantitative measure of ambiguity.

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The Rrelationship between the Big Five Personality Traits and Happiness with the Mediation Role of Religious Orientation among Students

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The main purpose of this study was to examine the relationships between the big five personality traits and happiness with religious orientation as a mediator. The participants consisted of 301 Shiraz University students (110 males and 191 females) selected by applying a multistage random sampling method. Participants completed three questionnaires: NEO-FFI or the short personality inventory of Costa and Mc Crae (1992); the Intrinsic-Extrinsic Religious Orientation Scale (IEROS, Allport & Ross, 1967); and the Oxford Happiness Inventory (OHI) (Argyle, 1989). These instruments showed appropriate reliability and validity. Multiple regression and path analysis were the major statistical analyses run in the study. Results of multiple regressions revealed that extraversion, and intrinsic religious orientations were the positive predictors of happiness, in contrast to Neuroticism which predicted happiness negatively. Also, results showed that religion orientation played the mediation role between these relationships. The findings indicated that this model is a proper model to explain the mechanism of the effects of personality traits on happiness. Based on the findings, to increase the level of happiness in neurotic people it would seem useful to intervene by increasing the intrinsic religious orientation.

Keywords: the big five personality traits, religious orientation, happiness, students

During the last century, researchers and psychologists have

mostly emphasized the disappointment and unhappiness conditions of human beings such as anxiety and depression rather than their positive strengths and potentialities. In recent years, especially since Martin Seligman was appointed as the APA president, a gradual trend has appeared in researchers' attitudes toward the positive aspects of human strengths (Furnham and Cheng, 2000, 2003; khazadeh, Moltafet, and Sadati, 2007). Positive psychology does not focus so much on what is wrong, bad, or pathological about people and their ways of being, thinking and acting. Positive psychology guiding question is what strengths do people bring to deal effectively with their lives, rather than pathology focus (Snyder, 2002)? Within the last decade, for instance, some psychologists and researchers have tried to bring some new definitions for the happiness predictor variables. In conceptualization of happiness Argyle (1989, 2001) defined happiness as having three independent components: (1) the average level of satisfaction over a specific time period; (2) the frequency and degree of positive effects; (3) the relative absence of negative effects. The review of the literature shows that a vast majority of the studies have supported the relationship between personality traits (especially extraversion and neuroticism) and happiness. For instance, bodies of the studies indicate that individuals with high score on extraversion and/or low on neuroticism tend to show more happiness (Eysenck, 1990; Argyle, 1990; Emmons & Diener, 1985; Furnham and Cheng, 2000, 2003; Francies & Robin, 2000; Francies & katz, 2002; khazadeh, Moltafet, and Sadati, 2007). Religion constructs has been found as the predictors of happiness. Some researchers such as Allport & Ross (1967), Batson (1993) and Maltby (1999) have demonstrated that individuals differ in their religious orientation and these differences are related to variations in personality,

happiness, religious experience (Altemeyer & Hunsberger, 1992). Allport (1967) has proposed two main religious orientations: intrinsic and extrinsic. Individuals with an intrinsic orientation toward religion were described as wholly committed toward their religious beliefs and that religiosity was evident in every aspect of their life. On the other hand, those with an extrinsic orientation used religion as a means to provide participation in a powerful in-group protection (Genia, 1993), consolation and social status (Allport & Ross, 1967), religious participation and an ego defense. This difference between religious orientations is said to be related to the personality traits, and this difference has an effect on happiness. For example, in a qualitative review of the relationship between religiosity and personality trait, Francis (1993, 1997) reported a negative relationship between religiosity and psychoticism. Saroglou (2002) in a meta-analysis study, using the five factors model of personality, found that general religiosity was related to extroversion, agreeableness and conscientiousness. He found that intrinsic religious orientation was related to low agreeableness, low neuroticism and low openness, while extrinsic religious orientation was related to neuroticism.

Researchers and practitioners in various fields of study (e.g., psychology, sociology and medicine) have shown interest in whether religion influences mental health (Batson, Schoenrade & Ventis, 1993; Laurencell & Abeell 2002; Mazidi & Ostovar, 2006). The literature review identified numerous studies investigating this link in various populations. While some studies confirm a positive relationship between religion and mental health, others report no or even negative relationships (Gartner, Larson, & Allen, 1991). Francis & Robbins (2000) have demonstrated a significant positive association between scores on the Oxford Happiness Inventory and scores on Francis

scale of Attitude toward Christianity. Some researchers revealed that intrinsic and extrinsic religious orientations predicted higher and lower levels of well-being and happiness, respectively (Francis & Wilcox, 2000; Dezutter, Socnes & Husebaut 2006; Maltby & Day 2000, 2003). In sum, studies are consistent in reporting a significant negative relationship between the intrinsic orientation toward religion and depressive symptoms and trait anxiety and a significant positive relationship between extrinsic orientation toward religion and depressive symptoms and trait anxiety (Dezutter, Socnes & Husebaut, 2006; Maltby & Day, 2000, 2003; Goodin, Kronfli, King, Glover, Sibille & Fillingim, 2012).

Although the previous studies have mainly confirmed the positive relationships of personality traits and religious orientation with happiness, they did not clearly mention the mechanism of these relationships. Therefore, the main goal of the present study is to explore the effects of personality dimensions on happiness with religious orientation as a mediation variable.

Based on our research purpose, three research hypotheses are generated:

1. There is a relationship between each of the personality dimensions and happiness.
2. There is a relationship between each of the Personality dimensions and religious orientation.
3. Religious orientation has a mediation role between personality dimensions and happiness.

Method

The population included all bachelor students who studied at Shiraz University in 2011-2012 years. The sample was selected

by the random multistage sampling method from the four faculties of Shiraz University (engineer faculty, education and psychology faculty, agriculture faculty and humanities faculty). The participants consisted of 301 bachelor Shiraz University students (110 males and 191 females) with age ranging between 18 and 24 years. All participants were informed in class that they would be asked to participate in a research study of personality, motivational beliefs and hope, and informed consent was obtained.

Measures

Three questionnaires were administered to collect the data:

Personality

Participants completed the authorized Dutch/Flemish version of the NEO-FFI which is a 60-item self-report scale with five subscales named as: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience (Hoekstra, Ormel & Fruyt, 1996). Each subscale contains 12 five-point Likert-type items with a proper reliability Cronbach's alpha rating from .67 to .87 for all subscales (Duriez & Soenens 2006). In this study the values of Cronbach's alpha obtained were from .76 to .88. The results of the factor analysis showed five general factors which explained 38.51 percent of the variance. The factor loadings obtained were from .42 to .73 for the items.

Intrinsic-Extrinsic Religious Orientation Scale (IEROS). The IEROS is a scale for measuring religious orientation which was originally designed as to define the construct as consisted of two dimensions, intrinsic and extrinsic. The IEROS is a 20 four-point Likert-type scale. Based on its original construction, nine

items are related to Intrinsic (INT) and 11 items represent the extrinsic (EXT) scale. The psychometric qualities of IEROS produce evidence of satisfactory reliability. Values of Cronbach's alpha were .65 to .66 for the extrinsic scale scores and .79 to .82 for the intrinsic ones (Taylor & Mac Donald, 1999; Genia, 1993). Values of Cronbach's alpha for this study were .76 for extrinsic and .84 for intrinsic scales. Validity of the instrument has also been provided (Genia, 1993; Taylor & Mac Donald, 1999). Results of the factor analysis showed two general factors, explaining 29.6 percent of the variance. Factor loadings obtained were from .36 to .69.

Oxford Happiness Inventory (OHI). The OHI is a 29 self-rating Likert-type items, to measure the level of happiness. The OHI seems to demonstrate excellent reliability (test-retest= .78 and Cronbach's alpha from .64 to .87 (Cheng & Furnham, 2003.). Correlations among all the happiness components (positive effects, life satisfaction, as well as negative effects, depression and distress) varied from .40 to .60 confirming acceptable validity for the measure (Cheng and Furnham, 2003). The reliability value obtained in this study ($\alpha=.76$) confirmed the initial reliability of the measure. The results of the factor analysis showed one general factor (eigenvalue=8.7). This factor explained 32.51 percent of the variance. The factor loadings obtained were from .40 to .72 for items.

Results

Correlations, means and standard deviations for measured research variables are presented in Table 1.

Table 1
Means, Standard Deviations, and Correlations among the
Research Variables

	mean	SD	1	2	3	4	5	6	7	8
Happiness	77.82	11.5	1							
Extravert	32.69	6.8	.33	1						
Neuroticism	27.06	6.4	-.39	.24	1					
Openness	35.26	5.6	.20	.44	-.09	1				
Conscientiousness	22.01	3.7	.09	-.1	-.33	-.04	1			
Agreeableness	36.8	5.2	.29	.56	-.33	.26	.25	1		
Intrinsic	29.2	5.5	.32	.04	-.45	.12	.24	.11	1	
Extrinsic	14.9	4.01	-.08	-.12	.17	-.01	-.19	-.17	-.28	1

Results of Pearson correlation coefficients among the research variables, as presented in Table 1, revealed that extraversion was positively related to happiness ($r = .33$, $p < .001$) and neuroticism was negatively related to it ($r = -.39$, $p < .001$). Neuroticism, as shown in Table 1, was negatively related to intrinsic religious orientation ($r = -.45$, $p < .001$) and conscientiousness and agreeableness were negatively related to extrinsic religious orientation ($r = -.19$ and $r = -.17$, $p < .01$). Finally, results showed that intrinsic religious orientation was positively related to happiness ($r = .32$, $p < .001$).

Predicting Happiness from Personality Traits and Religious Orientation

A simultaneous hierarchical regression, based on Baron and Kenny's steps (1986), was applied to test the research hypotheses. Their steps required the followings:

- 1-Enter regression of happiness on Personality dimensions
- 2-Enter regression of religious orientation on Personality dimensions
- 3-Enter regression of happiness on religious orientation and Personality dimensions
- 4-compare steps 1 and 3

Step1

Relations between the Big Five Personality Traits and Happiness

The results of multiple regressions (enter) of happiness on personality variables are presented in Table 2.

Table 2
Multiple Regression of Personality on Happiness

Predictors	<i>R</i>	<i>R</i> ²	<i>F</i>	<i>B</i>	<i>B</i>	<i>T</i>	<i>sig</i>
Neuroticism	.47	.22	16.48	-.79	-.33	-5.7	.001
Extraversion				.62	.18	2.6	.001
Openness				.32	.08	1.24	N.S
Conscientiousness				.28	.043	1.1	N.S
Agreeableness				.29	.055	.87	N.S

As the results of Table 2 show the initial regression was significant ($F=16.48$; $P<.001$; $R^2=.22$). The extraversion ($\beta=.18$, $t=2.6$, $p<.001$), and neuroticism ($\beta=. -33$, $t= -5.7$, $p<.001$) significantly predicted happiness

Step 2

A). Relations between the Big Five Personality Traits and Intrinsic Religious Orientation

The results of multiple regressions (enter) of personality traits on intrinsic religious orientation are presented in Table 3.

Table 3
Multiple Regression of Personality on Intrinsic Religious Orientation

Predictors	<i>R</i>	<i>R</i> ²	<i>F</i>	<i>B</i>	<i>B</i>	<i>T</i>	<i>sig</i>
Neuroticism	.49	.24	18.3	-.11	-.44	-7.79	.001
Extraversion				.52	.088	1.32	N.S
Openness				.71	.14	2.42	.001
Conscientiousness				.67	.11	2.01	.001
agreeableness				.34	.04	.68	N.S

As the results of Table 3 shows the initial multiple regression was significant (($F=18.3$; $P<.001$; $R^2= .24$) Results of enter regression procedure indicated that neuroticism ($\beta=-.44$, $t= -7.79$, $p<.001$), openness ($\beta=.14$, $t= 2.42$, $p<.001$.) and conscientiousness ($\beta=.11$, $t= 2.01$, $p<.001$) significantly predicted the intrinsic religious orientation as a dependent variable.

B). Relations between the Big Five Personality Traits and Extrinsic Religious Orientation

The results of the multiple regressions of the personality traits on the extrinsic religious orientation are presented in Table 4.

Table 4
Multiple Regression of Personality on Extrinsic Religious Orientation

Predictors	R	R²	F	B	B	T	sig
Neuroticism				.99	.09	1.34	.083
Extraversion	.36	.13	8.86	.42	.05	.79	N.S
Openness				.71	.08	.87	N.S
Conscientiousness				-.98	-.18	-3.7	.001
agreeableness				.35	.04	.68	N.S

As the results of Table 4 shows the initial multiple regression was significant (F=8.86; P<.001; R²=.13). Results showed that conscientiousness (β =-.18, t= -3.7, p<.001) was a negative significant predictor of the extrinsic religious orientation.

Predicting Happiness from Personality Traits and religious Orientation

Step3

Applying the third step of the multiple regression, all variables were entered together to predict happiness. The purpose of this step was to identify the role of the religious orientation as a mediator variable.

As Table 5 shows the results of regression was significant ((F=14.1; P<.001; R²=.27). The results showed that extraversion (β =.21, t=2.97, p<.001), neuroticism (β =-.24, t=-3.7, p<.001) and intrinsic religious orientation (β =.212, t=3.6, p<.001) significantly predicted happiness.

Table 5
Multiple Regressions of Personality and Religious
Orientation on Happiness

Predictors	R	R²	F	B	B	T	sig
Neuroticism	.52	.27	14.1	1.21	-.24	-3.7	.001
Extraversion				1.13	.21	2.97	.001
Openness				.69	.07	.68	N.S
Conscientiousness				.63	.088	1.1	N.S
Agreeableness				.55	.06	.71	N.S
Intrinsicreligiouso rientation				.99	.21	3.6	.001
extrinsic religious orientation				-.63	-.05	.81	N.S

Step 4

Comparing the results of steps 1 and 3 indicates that religious orientation plays a significant mediator role between personality traits and happiness. The total model, after eliminating no significant relationships, is shown in Figure1.

To evaluate the model, multiple indexes of fitness such as;GFI=.96, AGFI=.92, RFI=.95 and RMSEA=.05were used which showed desirable fitness of the model.

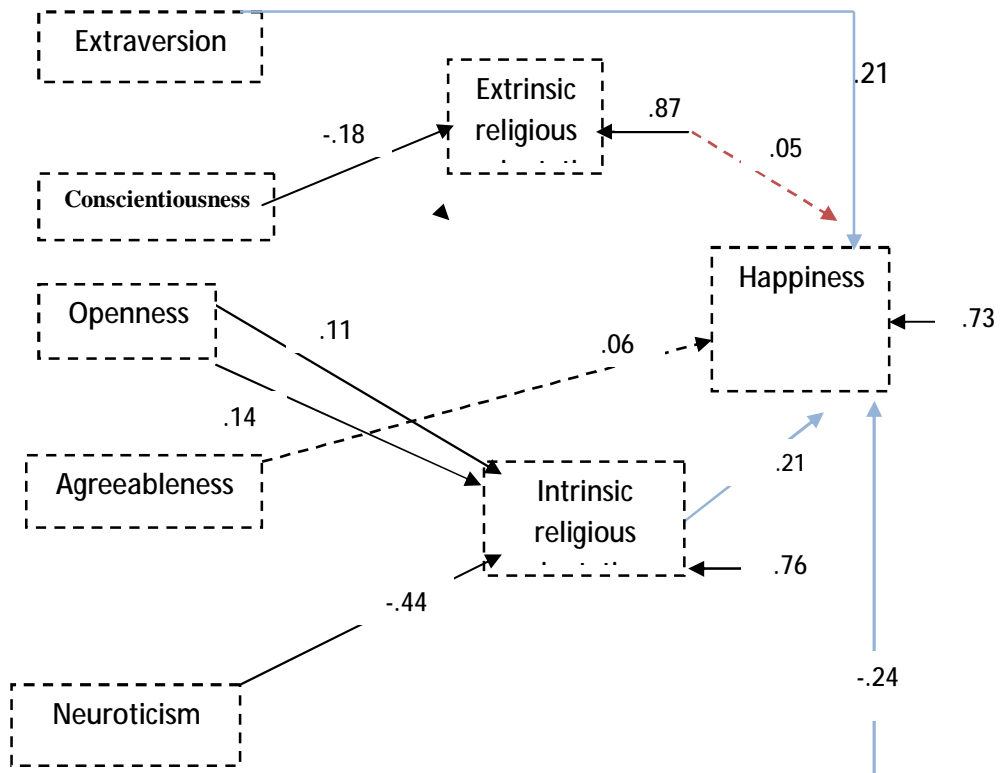


Figure 1 ▲
The Total Model

Discussion

The main goal of this study was to investigate the relationship between the five-factor model of personality and happiness with the mediator role of religious orientation. Results of this study, initially, supported the first hypothesis. Consistent with the previous studies in the field, neuroticism was negatively related to happiness and extraversion was positively related to happiness. Similar results were obtained by (Eysenck, 1990; Argile, 1990; Furnham and Cheng, 2000; Cheng, and Furnham, 2003; Francies, 2000; Mazidi & Ostovar, 2006;

khanzade, Moltafet & Sadati, 2007). The above researchers have shown that extraversion and neuroticism had direct effects on happiness. Results of this study provided support for the first hypothesis.

In order to examine the relationship between personality traits and religious orientations, two separate regressions were performed; one for intrinsic and another for extrinsic religious orientations. Results of the regression procedure revealed that conscientiousness, and openness were positively, and neuroticism was negatively related to intrinsic religious orientation. However, conscientiousness predicted extrinsic religious orientation negatively. Previous researchers such as Francies (1992), Lewis & Maltby (1995), Maltby (1999) and Gorm (2004) supported our results and showed that psychoticism and neuroticism were negatively related to intrinsic religious orientations. Therefore, the findings that conscientiousness and openness were positively related to intrinsic religious orientation are unique.

Since the main goal of this study was to explore the relationship between personality traits and happiness, with religious orientation as a mediator variable, we performed regression procedures to predict happiness using all research variables. The results of regression showed that religious orientation plays a mediation role between personality traits dimensions and happiness nicely. Previous researchers such as Francis (2000, 2002); maltby & Day (2003) and mazidi & Ostovar (2006) supported our results and showed that religious orientation was related to well-being and happiness.

Combination of the variables in this model is, by itself, the most significant characteristic of this research. Therefore, the current finding could be regarded as one of the most important contributions of this study. This model is a proper model to

explain the mechanism of the effects of personality traits on happiness. In sum, the present study adds to the growing body of literature surrounding personality and its outcomes. It demonstrates that the unique influence of the separate components of religious orientation on happiness and religious orientation depends on the personality. In order to increase the level of happiness in neurotic people it would seem useful to intervene by increasing intrinsic religious orientation. In other words, one way to help people to better "pursue happiness" may be to help them to better identify and pursue personal goals such as intrinsic religious orientation. The model applied in this study has an important implication for future research, especially research on religiosity. The finding that religion orientation plays a significant role on the relationship between personality traits (big five) and happiness, has more illuminated the nature of this relation. Also it seems that individual's happiness is, to some degree, affected by his/her religious orientation. Individuals with an intrinsic religious orientation were happier than those with an extrinsic orientation. Therefore, it is recommended that the ground for experiencing more intrinsic religious orientation should be provided for the people. Results of this study are limited to the population from which our research sample was selected. Therefore, generalizations of our findings to other groups, in Iran, or individuals in other countries are not recommended. Further, studies should check this model to verify whether it is applicable to cultural settings other than the Islamic tradition or not.

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The Correlation of Personality Characteristics and Social Factors with Identity Styles in Adolescents of Golestan, Iran

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The present study aims to examine the relationship between personality characteristics, social factors, and identity styles in adolescents. A correlational method was employed. Statistical population in this research consists of all high-school and pre-university students living in Golestan province during the year this research was being conducted. The sample included students (n=380) aged 17 and 18. In this study, the stratified random sampling method was used. Data were collected through self-administered questionnaires (identity styles, including: informational identity style, normative identity style, diffuse/avoidance style, commitment and social factors, including: family relationship, school and peer group relationship and personality characteristics, including: agreeableness, neuroticism, extraversion, conscientiousness and openness to experience. Descriptive and inferential statistics such as Mean, Standard Deviation, and Pearson correlation were used. The findings showed that there were significant correlations between personality characteristics and identity styles in adolescents. Significant correlations between social factors and identity styles in adolescents were also observed. In addition according to the results, a moderate and positive correlation was observed between informational and normative styles, informational style and

commitment, normative style and commitment, as well as commitment and neuroticism. Additionally, the results of the study supported theories like social cognitive theory, General other theory, and triat approach. The results shed new light on the processes involved in the personality characteristics and social factors of adolescents' styles of identity exploration.

Keywords: personality characteristics, social factors, and identity styles

The issue of identity has been discussed in various sub-fields of psychology, such as social, developmental, pathological and personality. This fact indicates the relevance of identity to various fields of study while also demonstrating the vastness of the topic. Identity is an organized sense of self-recognition that includes the values, beliefs and goals to which individuals are committed (Berzonsky, 1998a). Identity helps people to define themselves. A person whose self-definition contradicts with his/her social reality will exhibit lack of experience, stress and behavioral problems. Many psychologists believe that adolescents' typical behaviors are their natural attempt to define themselves and explore their identity (Lotfabadi, 2007).

Berzonsky (1998a) defines identity as an organized sense of self that includes the values, beliefs and goals to which an individual is committed. People differ in their use of social-cognitive processes to solve private issues, make decisions and form their identity, and they apply these processes in different ways (Berzonsky, 1998b). One of these ways is through the diffuse-avoidant identity style. People exhibiting this style avoid confronting personal issues and decisions. If they delay confronting these issues for a sufficiently long time, they will exhibit behavioral reactions and will be controlled by situational demands and motives (Berzonsky & Kuk, 2000). Another identity style that is called informational style entails a willingness to investigate multiple solutions to a given problem and to explore

several options before committing to anyone. The normative style represents growth by conforming to social and familial expectations and a high degree of commitment to authority and to the exercise of judgment (Berzonsky, 1993). These individual differences in approaching important life decisions are referred to as identity styles (Smits, 2009).

It is important to distinguish identity styles from other relatively stable individual differences such as personality characteristics, values and attitudes. Personal characteristics describe what people are like, while values and attitudes describe what people consider as important, and identity styles describe how people make identity-relevant decisions. In this respect, Berzonsky (1990) points out that identity styles should be considered as developmental outcomes. According to him, adolescents interact within environmental contexts; they develop a preference for a particular identity style. This preference may be further reinforced by the life events and social relationships that are elicited by this identity style. As adolescents enter adulthood, their identity style is thought to become relatively stable although stressful life events or therapeutic interventions may still affect their identity styles.

Among all social factors, parents and family have the most crucial effect on individual identity and how it forms. In addition, school, political system and socioeconomic status of the society have a great role in identity formation (Aghamohammadian, 2003). Some researchers have shown Iranian adolescents' identity styles were on risk such as: Jomenia (2009) and Jabbari & Ghorbani (2007) showed that most people were experiencing diffuse identity style. Ghorbani (2005) showed that people mostly belong to diffuse style.

A related literature review in this area clearly shows that the

two most significant factors of personality characteristics and social factors affect identity formation among adolescents (Bartle-Haring, 1997; Campbell et al., 1984; Grotevant & Cooper, 1985; Kamptner, 1988; Kerpelman et al., 1997; Kerpelman, 1988; Markstrom-Adams, 1992; Matos et al., 1999; Schultheiss & Blustein, 1994; Sigelman, 1999; Waterman, 1992). Therefore, this study aims to examine the relationship of personality characteristics and social factors with identity styles.

Research Hypotheses

H₁: There is a significant relationship between the adolescents' personality characteristics and their identity styles.

H₂: There is a significant relationship between social factors and the adolescents' identity styles.

Method

Research Design

This study used questionnaires to collect data and correlational techniques to analyze the data. This study was conducted in schools; therefore, the researcher did not manipulate the situation and minimally interfered with the normal practices of the schools. The respondents were required to answer the questions.

Population of the Study

Statistical population in this research consisted of all high-school and pre-university students living in Golestan province during the year this research was being conducted. There were 30817 adolescents of 17 and 18 years old who studied in high schools and pre-university schools in the province of Golestan in 2010 (Educational organization of Golestan State, 2010).

Sampling Procedure and Sample Size

The sampling method utilized for this study was the stratified multistage random sampling one based on the urban and rural areas in the province. Consequently, 4 out of 12 areas (cities or towns) was determined to be 380 was proportioned according to the population of each selected area. Next, a list of students from the selected high schools and pre-university centers was provided to determine the proportion of sample students from each school. Finally, the samples were chosen randomly from the list, regarding their level of education and their field of study.

The first component of the stratification included the cities of Kordkooy, Bandargaz, Ramyan, Azadshahr, Galikesh and Aghghala with populations of 46226-117261. The second component included the cities of Minoodasht, Kalalahe, Aliabad, and Bandarturkman with populations of 117262-188296. The third component had no cities. The fourth component consisted of only one city, Gonbad with a population of 259332-401401. The Fifth component comprised one city, Gorgan. The cities that were finally selected were Bandargaz, Gorgan, Aliabad and Gonbad.

The province of Golestan comprises twelve towns. These towns were divided into five groups. No town was allotted to the third group. Therefore, four groups were formed in this study. Out of the four groups, four towns (including its rural areas) were selected randomly. In the next step, the researcher referred to the education department in each city and found out about the number of urban and rural schools in the eleventh grade and pre-university classes. In each town and its rural areas, girl and boy schools were chosen randomly. After selecting the schools on the basis of gender, grade and educational fields, the researcher referred to the selected schools and chose the samples randomly

from the teacher's list of students' names.

This study uses Cochran's second suggestion that is using a pilot study result. The total number of students in the school year (2010) was 13993. Thus, based on the Cochran's formula (1977), the minimum required sample size was calculated to be 374 and 10 respondents were added for the attrition rate consideration. Decreasing the four uncompleted questionnaires, the final sample included in the data analysis was 380 respondents.

Instruments

The research instruments used in this study was a questionnaire. A well-established method of collecting data in social science research is using questionnaires (Dillman, 2000). The questionnaire in this study was adapted from a number of well-established instruments available in the related literature.

The questionnaire consisted of four main sections developed specifically for separate domains. It included 140 questions.

The first section concerned the informants' demographic characteristics. Specifically, they were asked to provide details such as, gender and age.

The second section aimed at the identity styles. This section comprised 40 items which were adapted from a well-established questionnaire (Berzonsky, 1990). This section was divided into four parts, including informational identity style (11 items), normative identity style (9 items), diffuse/avoidance style (10 items) and commitment (10 items). The items followed a five-point Likert scale where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree.

The third section concerned the domain of social factors. The items of this section were adapted from Zaki's (2003) Questionnaire of Socialization Elements. This instrument is

known as a valid tool and has been used in two major research projects in Iran by Zaki himself. It has been tested for its validity and reliability. The 30 items of this questionnaire that were adapted in this study can be divided in the three parts of family relationship (10 items), school (10 items) and peer group relationship (10 items) factors. The items also followed a 5-point Likert scale where 5= very much, 4= much, 3=middle, 2= low and 1= very low.

In the fourth section of the questionnaire, participants were asked to express their perceptions about their personality. The 60 items in this section were adapted from Costa and McCray(1990). The items could be divided in five parts, including agreeableness (12 items), neuroticism (12 items), extraversion (12 items) conscientiousness (12 items) and openness to experience (12 items).

Identity Styles

It is important to note that questions 9, 11, 14, and 20 have reverse marks. A person with informational identity style can score on items 2, 5, 6, 16, 18, 25, 26, 30, 33, 35, and 37. As a matter of fact, the raw scores need to be changed into Z standard scores and the highest score that one has achieved in each part would be considered as one's identity style.

In the questionnaire, normative identity style was measured by items 4, 10, 19, 21, 23, 28, 32, 3⁹ and 40; while confusion identity style was measured by items 3, 8, 13, 17, 24, 27, 29, 31, 36 and 38. Finally, commitment was measured by items 1, 7, 9, 11, 12, 14, 15, 20, 22, 38 and 40. In the present research, the commitment scores that the students achieved represent their degree of commitment to their personal roles, values and beliefs.

Social factors

The third section of the questionnaire concerned the social factors. It is important to note that questions 3, 12, 14, 15, 20,22,23,25 have reverse marks. The items that covered the family relationship subscale were questions 1, 9, 13, 16, 20, 23, 24, 26, 29 and 30. Furthermore, the level of education subscale was measured by questions 2, 4, 5, 8, 12, 15, 18, 21, 22 and 25. Finally, peer group relationship subscale was covered by questions 3, 6, 7, 10, 11, 14, 17, 19, 27 and 28.

Personality characteristics

In this part of the questionnaire, agreeableness was measured by questions 4, 9, 14, 19, 24, 29, 34, 39, 44, 49, 54, and 59. Neuroticism was evaluated by questions 1, 6, 11, 16, 21, 26, 31, 36, 41, 46, 51, and 56. Questions 2, 7, 12, 17, 22, 27, 32, 37, 42, 47, 52, and 57 accounted for the next component of personality, extraversion. In addition, conscientiousness was measured by questions 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, and 60. Finally, openness was evaluated by questions 3, 8, 13, 18, 23, 28, 33, 38, 43, 48, 53, and 58.

Results

H₁: There is a significant relationship between the adolescents' personality characteristics and their identity styles.

The relationship between the perceived identity styles (as measured by the ISI6 scale) and perceived personality characteristics (as measured by the perceived NEO scale) of the participants was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were applied to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Table 1 displays the results of correlation

tests. Due to the large sample size, analysis attained high power.

Table 1
Correlation between Identity Styles and Personality Characteristics

Variables	1	2	3	4	5	6	7	8
1. Informational								
2. Normative	.46**							
3. Diffuse/avoidant	.07	.00						
4. Commitment	.45**	.48**	.09					
5. Neuroticism	-.22**	-.30**	-.09	.38**				
6. Extraversion	.30**	.39**	-.13**	.26**	-.38**			
7. Openness	.16**	.01	-.17**	.05	-.01	-.00		
8. Conscientiousness	.31**	.44**	.11*	.40**	-.45**	.46**	-.06	
9. Agreeableness	.12*	.21**	.14**	.21**	-.34**	.30**	-.06	.28**

** . Correlation is significant at the .01 level (2-tailed).

* . Correlation is significant at the .05 level (2-tailed).

There was a positive correlation between the first two variables of informational and normative styles, ($r=.46$, $n=380$, $p<.01$), which is similar to the result gained by Berzonsky (1990). Nurmi, Berzonsky, Tammi and Kinney (1997) found that, among young adults, information oriented individuals reported the highest levels of self-esteem. Beaumont and Zukanovic (2005) showed that for the early, middle and older adults, informational individuals were found to have similar reported levels of self-worth. The tendency to actively seek out new experiences causes the individual to benefit from more opportunities for personal growth (Kashdan, Rose, & Fincham, 2004). Positive correlations were found between informational style and commitment ($r=.45$, $n=380$, $p<.01$), that is similar to the results gained by Beaumont (2009), Berzonsky (2003), Seaton and Beaumont (2008). Also, there was a small and negative correlation between informational style and neuroticism ($r= -.22$, $n=380$, $p<.01$). Small and positive correlations were observed between informational style and

openness to experience ($r = .16, n = 380, p < .01$), which is in accordance with the results gained by Duriez et al. (2004), Duriez and Soenens (2006) and Dollinger (1995). These results suggest that a person who achieves high scores on openness to experience has more tendencies to seek out, process and utilize relevant information rather than to procrastinate decisions. Informational style and extraversion were found to have a medium and positive correlation ($r = .30, n = 380, p < .01$). The correlation between informational style and agreeableness was found to be small and positive ($r = .12, n = 380, p < .01$). This was in line with the result gained by Duriez et al., (2004). As for informational style and conscientiousness, a medium and positive correlation ($r = .31, n = 380, p < .01$) was observed. In addition, there was a small and positive correlation between informational style and agreeableness ($r = .12, n = 380, p < .01$). The informational style is the most adaptive of the three identity styles, it includes “active informational style, independent judgment and decision-making, exploration, flexible commitment, and high levels of self-esteem” (Berzonsky, Macek, & Nurmi, 2003, P. 114; Schwartz, 2001, P. 22). People with informational style search for, elaborate, and evaluate information related to identity before making decisions (Berzonsky, 1989) and are able to revise parts of their identity if encountered with information or interpersonal feedback that are not in harmony with their self-concept (Berzonsky, 2004a). It can be assumed that individuals with a predominantly informational style have a great ability to process, organize, and examine complex information about the self, others, and interpersonal relationship (Fonagy, Gergely, Jurist, and Target (2002). Research generally indicates that the informational style is positively related to psychological well-being (Berzonsky et al., 2003) and is negatively correlated with, for example,

debilitative anxiety and external locus of control (Berzonsky, 1989).

There was a positive correlation between normative style and commitment ($r=.48$, $n=380$, $p<.01$), which was similar to the results gained by Dollinger (1995); Seaton and Beaumont (2008); Berzonsky (2003). Also a medium and negative correlation ($r= -.30$, $n=380$, $p<.01$) was reported between normative style and neuroticism. There was a small and positive correlation between normative style and agreeableness ($r=.21$, $n=380$, $p<.01$), which is in accordance with the result the study by Dollinger (1995). Also a medium and positive correlation between normative and extraversion was observed ($r= .39$, $n=380$, $p<.01$), which was similar to the result of Dollinger (1995). In addition a medium and positive correlation ($r= .44$, $n= 380$, $p<.01$) was found between normative and conscientiousness, similar to the results of the studies by Duriez et al. (2004) and Dollinger (1995), this suggests that, when choices need to be made, conscientious people don't tend to rely on the expectations and prescriptions of others and, as a consequence, are less likely to delay their choice until the situation dictates what to do. Beaumont and Zukanovic (2005) showed that among early, middle and older adults, normative individuals were found to have the highest perceived levels of self-worth and lowest levels of reported distress.

People who dominantly use normative style in their information processing focus on “internalized conventions, standards, and expectations and are more concerned with conforming to the normative standards and prescriptions held by significant reference others” (Berzonsky, 1989, pp. 268-269). In case of identity issues, they react by meeting the expectations of referent group and significant others (Berzonsky et al., 2003).

Individuals with a normative style avoid or even defend themselves against the information and experiences that contradict with their self-concept, values, and belief system (Berzonsky, 2004a; Berzonsky et al., 2003; Schwartz, 2001).

The correlation between diffuse/avoidant and extraversion was small and negative ($r = -.13$, $n=380$, $p < .01$), and between diffuse/avoidant and agreeableness was small and positive ($r = .14$, $n=380$, $p < .01$). This is opposed to the results obtained by Duriez and Soenens (2006) and Duriez et al. (2004). It can be inferred that, agreeable people may make such decisions with more ease or they, at least, report being able to do so. The use of a diffuse/avoidant is characterized by low agreeableness and conscientiousness (Berzonsky, 1993; Berzonsky et al., 1999 and Dollinger, 1995). There was a small and positive correlation between diffuse/avoidant and conscientiousness ($r = .11$, $n=380$, $p < .01$). This contradicts with what Duriez and Soenens (2006) found. Additionally, a small and negative correlation was observed between diffuse/avoidant and openness to experiences ($r = -.17$, $n=380$, $p < .01$) which corresponds to the results of Berzonsky and Sullivan, (1992); and Duriez et al. (2004). Beaumont and Zukanovic (2005) showed that among early, middle and older adults, diffuse individuals were found to have similar levels of life distress.

An individual with a predominantly diffuse/avoidant style typically avoids behavioral reactions until they are forced by affective cues in special situations to make decisions about them. Problem solving is impulsive, ad hoc, focused on the short term and generally postponed “until situational consequences and rewards dictate a course of action” (Berzonsky, 1989). Coping deals with emotions and is primarily aimed at reducing emotional stress immediately rather than solving the problems under emotional stress or eliminating the stress factor

(Berzonsky, 2004a). Ultimately, behavior is often determined by hedonic cues and situational consequences. Moreover, people with a diffuse identity style engage in disorganized exploration and pay insufficient attention to long term consequences of their own choices (Jørgensen, 2009).

There was a medium and positive correlation between commitment and neuroticism observed ($r = .38$, $n = 380$, $p < .01$). There was a medium and positive correlation between commitment and conscientiousness ($r = .40$, $n = 380$, $p < .01$), also a small and positive correlation between commitment and agreeableness ($r = .21$, $n = 380$, $p < .01$). In addition there was a small and positive correlation between commitment and extraversion ($r = .26$, $n = 380$, $p < .01$). Commitment includes the individual's devotion to certain long term goals, values and ideals, and to a strong and stable set of beliefs. It gives the individual a feeling of purpose and continuity. Strong commitments would stabilize the individual's self-concept and identity (Jørgensen, 2009).

Between neuroticism and agreeableness there was a negative correlation ($r = -.34$, $n = 380$, $p < .01$). Between neuroticism and conscientiousness there was a negative correlation ($r = -.45$, $n = 380$, $p < .01$). In addition, between neuroticism and extraversion there was a medium and negative correlation ($r = -.38$, $n = 380$, $p < .01$). This was opposed to the results obtained by Duriez et al., (2004). There was a medium and positive correlation between extraversion and conscientiousness observed ($r = .46$, $n = 380$, $p < .01$). In addition a medium and positive correlation between extraversion and agreeableness was observed ($r = .30$, $n = 380$, $p < .01$). Finally, there was a small and positive correlation between conscientiousness and agreeableness ($r = .28$, $n = 380$, $p < .01$).

In summary, there were correlations among almost all

variables. It means that personality characteristics can improve adolescents' identity styles in Golestan. Since human's personality is formed during childhood, parents can take it as an opportunity to lead them into forming a more suitable personality. A proper personality makes the path for forming better identity styles in adolescents. Having a proper personality prevents adolescents from getting involved in abnormal and deviant behaviors in the future. These results were in accordance with the findings of some other studies. Dollinger et al. (1996) showed a meaningful relationship between identity formation and personality characteristics, and these were later confirmed by authors such as: (Adams et al., 1989; Asendorpf & van Aken, 2003; Berzonsky, 1990; Berzonsky, 1992; Berzonsky, 1993; Berzonsky & Kuk, 2005; Berzonsky & Sullivan, 1992; Bianchi, Láštíková, & Šramová, 2007; Clancy & Dollinger, 1993; Costa & McCrae, 1985; Dollinger et al., 1996; Dollinger, 1995; Duriez & Soenens, 2006; Duriez et al., 2004; Macek et al., 1999; McCrae & Costa, 1997; Moghanloo & Vafaie, 2008; Roberts et al., 2001; Soenens, Duriez, & Goossens, 2005; Sramova & Fichnova, 2008). Accordingly, it can be concluded that there is a close relationship between personality characteristics and adolescents' identity styles in Golestan, so personality characteristics can predict identity styles.

H₂: There is significant relationship between social factors and the adolescents' identity styles.

The relationship between the perceived identity styles (as measured by the ISI6 scale) and the perceived social factors (as measured by the perceived SFS scale) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were applied to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Correlations are

displayed in Table 2 due to the large sample size, analysis attained high power.

Table2
Correlation between Identity Styles and Social Factors

Variables	1	2	3	4	5	6
1.Informational						
2.Normative	.46**					
3.Diffuse/avoidant	.07	.00				
4.Commitment	.45**	.48**	.09			
5.Family relationship	.25**	.48**	.07	.28**		
6. Level of education	.35**	.38**	.07	.37**	.35**	
7. Peer Group relationship	.34**	.50	.02	.53**	.17**	.18**

** . Correlation is significant at the.01 level (2-tailed).

As shown in Table 2, a significant, large and positive correlation ($r = .53$, $n = 380$, $p < .01$) was found between commitment and peer group relationship. Additionally, significantly moderate and positive correlations were observed between informational and normative styles ($r = .46$, $n = 380$, $p < .01$), informational style and commitment ($r = .45$, $n = 380$, $p < .01$), informational style and level of education ($r = .35$, $n = 380$, $p < .01$), informational role and peer group relationship ($r = .34$, $n = 380$, $p < .01$), normative style and commitment ($r = .48$, $n = 380$, $p < .01$), normative style and family relationship ($r = .48$, $n = 380$, $p < .01$), normative style and level of education ($r = .38$, $n = 380$, $p < .01$), as well as family relationship and level of education ($r = .35$, $n = 380$, $p < .01$). Finally, significant but small and positive correlations were reported between informational style and

family relationship ($r = .25$, $n=380$, $p < .01$), commitment and family relationship ($r = .28$, $n=380$, $p < .01$), commitment and level of education ($r = .37$, $n=380$, $p < .01$), family relationship and peer group relationship ($r = .17$, $n=380$, $p < .01$), as well as level of education and peer group relationship ($r = .18$, $n=380$, $p < .01$).

Almost all variables are correlated with each other. Family has the most important role in the formation of identity. The second most affective role is that of level of education, including schools and teachers and the third is peer group relationship.

Similar with results gained by Adams and Jones (1983), Allen (1976), La Voie (1976), Marcia (1983) and Matteson (1974) parenting style which involve feelings of warmth, closeness, security, support, acceptance, and praise would help the process of identity formation during adolescence. Some parental styles seem to be more helpful for identity development than others (Smits, 2009). Parent can have considerable influence on identity development (Berzonsky, 1990; Goossens and Phinney, 1996). Conversely, adolescents who have experienced rejection from family or those with indifferent, inactive and rejecting parents perform poorly on identity assessments (Jordan, 1970, 1971; Matteson, 1974). This latter group of adolescents also experience lack of confidence in parental supports (Marcia, 1983).

In addition, families who provide for individuality and autonomy, and who apply little parental control, also help the process of identity formation in their adolescents (Adams and Jones, 1983; Grotevant, 1983; Grotevant and Cooper, 1985; Marcia, 1983). Adolescents, who are allowed by their parents to practice individuality and autonomy within the family, would have more opportunity to explore identity alternatives, so that they can achieve identity consolidation (Marcia, 1983; Matteson, 1974; Orlofsky et al., 1973). Individuals need to

explore and try different social roles, beliefs, and other choices available to them, so that they can decide upon and integrate these identity options into their own identity. Adolescents find out their interests, skills and abilities and their unique personal characteristics by exploring and experimenting with identity options (Kamptner, 1988).

Adolescents who experience both feelings of connectedness and individuality may have more opportunities for exploring identity alternatives. Adolescents who have experienced the feeling of connectedness would benefit from security and self-esteem that is needed in order to be able to take risks and explore identity alternatives (Grotevant, 1983; Marcia, 1983). Marcia (1983) states that adolescents would have difficulty in achieving a real identity if they lack support, security, and encouragement for meaningful exploration and experimentation. A similar point is made by Smith and Smith (1976), who propose that feeling of connectedness in early years of life, would facilitate the separation-individuation process during adolescence, which, according to Josselson (1980), is a basis for the development of autonomy in adolescents. As discussed above, autonomy or individuality is an important, if not necessary, component of the identity formation process. An adolescent who experience individuality in the family relationships, is able to develop a unique self (Grotevant, 1983). When parents consider their adolescents' need for autonomy, they would give the adolescents more freedom to explore identity alternatives by allowing them to be exposed to different models and options (Hartup, 1979). Conversely, families who do not consider their adolescents' need for autonomy may hinder their ability to explore identity options.

Diffuse/ avoidant is the result of negative parenting styles, achievement is associated with positive parenting styles, and

foreclosure results from both positive parenting styles and a family climate of enmeshment that hinders the separation individuation process (Smits, 2009).

As conclusion, there were significant, large and positive correlations between almost all variables. It means that social factors can be improving adolescents' identity styles in Golestan. Family relationship, level of education and peer group relationship has great influence on identity styles. Families apply such effect by proper parenting styles, giving correct and logical answers to their children's questions and establishing a good parent-child relationship. Schools do this through having a suitable educational environment, good educational content and professional teachers and peer groups apply this effect by interacting with good friends. Therefore, the more these social factors are coordinated in terms of their ideas, values and behavioral patterns, the more desirable identity would be formed in adolescents. The result of this hypothesis was in consistence with the finding of several previous studies such as: Aghamohammadian and Shekhrohani (2003) showed social factors have the most crucial effect on individual identity and how it forms and these were later confirmed by authors (Adams et al., 2006; Allison & Furstenberg, 1989; Bartle-Haring, 1997; Bartle, Anderson, & Sabatelli, 1989; Berzonsky, 2003; Berzonsky, 2004b; Campbell et al., 1984; Doran, 2003; Grotevant, 1987; Grotevant & Cooper, 1985; Grotevant & Cooper, 1986; Hajikhayat, 2003; Kamptner, 1988; Kerpelman et al., 1997; Kerpelman, 1988; Kroger, 1997; Lotfabadi, 2007; Marcia, 1980; Markstrom- Adams, 1992; Markstrom-Adams, 1992; Matos et al., 1999; Neli-e-Ahmmadabadi, 2003; Schultheiss & Blustein, 1994; Sigelman, 1999; Smits et al., 2008; Soenens et al., 2011; Sramova, 2006; Waterman, 1992).

Discussion

This study, being the first of its kind to field-test this subject, aimed at the relationship between personality characteristics, social factors, and identity styles in adolescents. This study also made some contributions to theoretical and conceptual understandings of identity styles, personality characteristics and social factors among adolescents.

The utility of the concept of personality characteristics and social factors variables in looking at identity development in adolescence has been reasonably well established. Findings of this study provide support for the existing conceptualizations about identity styles, personality characteristics and social factors.

Simultaneous with writing the article, other studies were exploring the construct of personality; other studies had conceptualized identity styles and personality characteristics by focusing on one particular area for instance: identity styles and their relationship with mental health, social health (Jomenia 2009), relationship mental health, socioeconomic status and identity (Ghorbani, Mohammadiyara, & Kochaki, 2005), relationship between social health, economical-social and identity styles (Jabbari & Ghorbani, 2007), Identity style, parental authority, and identity commitment (Berzonsky, 2004b), examine the extent to which three dimensions of perceived parenting style, parental identification and interaction between parenting and identification accounted for variation in the identity processing styles (Soenens et al., 2011), parental attachment and identity in Portuguese late adolescents (Matos et al., 1999). Parent-adolescent relation, identity and emotional adjustment in adolescence (Meeus et al., 1999), identity-processing style, psychosocial resources, and adolescents' perceptions of parent-adolescent relations (Berzonsky, Branje,

& Meeus, 2007), identity development in late adolescence: Causal modeling of social and familial influences (Kamptner, 1988). Identity formation and parent-child value congruence in adolescence (Knafo& Schwartz, 2004). Perceived parenting dimensions and identity styles: Exploring the socialization of adolescents processing of identity-relevant information (Smits et al., 2008). Identity styles in adolescence: Measurement and associations with perceived parenting, personal well-being, and interpersonal functioning (Smits, 2009). Identity as a moderator of intervention-related change: Identity style and adolescents' responses to relationships education (Kerpelman et al., 2008). Familial correlates of identity formation in late adolescence: A study of the predictive utility of connectedness and individuality in family relations (Campbell et al., 1984). Psychosocial resources in first-year university students: The role of identity processes and social relationships (Adams et al., 2006), patterns of interaction in family relationships and the development of identity exploration in adolescence (Grotevant& Cooper, 1985). Gender and identity: The intersection of structure, content, and context (Kroger, 1997).

No previous study was found to collectively focus on personality characteristics, social factors and identity styles. Findings of this study provided support for the existing conceptualizations of personality characteristics, social factors and identity styles.

Implications of the Study (Theory and Practice)

This study has identified several significant contributing factors such as personality characteristics, social factors that relate to the development of identity styles of adolescents. Hopefully, the results of the present study would enrich the body

of literature on social psychology, psychology and sociology theories. Since identity style is the key factor in social psychology, psychology and sociology, thus, highlighting this concept could contribute to the literature. The research has important implications for future study on identity styles, both at theoretical and practical levels. The finding showed there is a significant relationship between the adolescents' personality characteristics and their identity styles, the results showed that most variables correlated with each other. The relationship between personality characteristics and identity styles as mentioned in further research was confirmed. Identity styles can be predicted using the relationships found in this study.

In addition, there is a significant relationship between social factors and the adolescents' identity styles. The results showed that there were correlations among most variables of this study.

Social factors including family relationship, level of education and peer group relationship greatly affected the identity styles; as it has always been the fact and many scholars agree upon, family relationship has an enormous role on identity style. Family relationship, the fundamental social unit of society, can be expected to exert influential impacts on the development of social behaviors such as adolescents' identity styles (Rouholamini, 2002). Family, friends, teachers and all of the people who interact with adolescents can affect the formation of their identity (Aghamohammadian & Shekhrohani, 2003; Doran, 2003; Hajikhayat, 2003; Neli-e-Ahmmadabadi, 2003). Parents and teachers should encourage adolescents to look for information and use it only after evaluating it. The foundation of a person's personality is formed in his/her family. Therefore, family is the first factor to train children and form their personality and identity. Lack of coordination between social institutions especially family, school, and university can cause

diffusion in the adolescent and lead to Anomic condition, as Durkheim points out. Adolescents with a diffuse identity should be able to improve their self-esteem and self-efficacy by participating in social groups. They should be able to develop assertiveness to manage peer pressure and to make right choices in finding friends. They should be helped to develop life skills and increase their abilities. Parents should be helped in their roles to support their children with diffuse identity and be informed on this situation. Parents also should be taught about adolescent's development.

One of the most important problems students face in their process of identity formation is to receive proper information and analyze them correctly in order to solve their problems. Individuals can use social cognitive processes for resolving their identity and experience a better process of identity formation. Therefore, adolescents should be encouraged to search for information and to evaluate the information before using them. Learning life skills helps adolescents to better solve identity formation problems.

The findings of this investigation can assist government in the design and implementation of identity development in adolescents. It is expected that the findings of this study could be utilized by the government system for their future follow-up studies and reassessment of identity styles for identity development.

Recommendations for Future Research

Findings of this study could be used as guidelines to develop measuring scales for identity styles in other areas of concern. As an example, regarding the great impact of mass media on identity formation, further research can focus on the effect of mass media on different dimensions (e.g., national and religious)

of identity. Also, the experience of studying at university and its effects on identity formation is worth investigation. Moreover, further studies can examine whether proper sociocultural environment (e.g., mass media, internet, educational textbooks) can play any role in improving adolescents' identity.

Future research is also needed to explore identity styles using other approaches and theories. This research focused on high school graduates and pre-university students aged 17 and 18 years old. Future research can be conducted on different educational grades and ages and on other samples. Future research can compare the role of mothers and fathers separately in adolescents' identity formation. Finally, it remains for future research to determine the factors that moderate identity styles in different` cultural contexts.

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Religious Well-Being, Existential Well-Being, Positive Religious Coping and Family Protective Factors (Family Adaptation): A Causal Model

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The present study tested a conceptual model of the relationships among religious well-being, existential well-being, positive religious coping, and family protective factors. A sample of three hundred and eighty nine voluntary and unpaid Muslim participants (230 females, 159 males), aged between 21 and 47 years old (31.18 ± 4.28 years), were selected through multi-stage cluster sampling in Isfahan, Iran. All participants were asked to complete the Spiritual Well-Being Scale (SWBS; Paloutzian & Ellison, 1982), the Brief Religious Coping Scale (RCOPE; Pargament, Smith, Koenig, & Perez, 1998), and the Inventory of Family Protective Factors (IFPF; Gardner, Huber, Steiner, Vasquez & Savage, 2008). Using structural equation modeling, the results supported the mediating effects for existential well-being and positive religious coping among religious well-being and family protective factors. The analytic model explained 40% of the distribution of family protective factors. These findings suggest that the positive impact of religious well-being is correlated with family protective factors.

Keywords: religious well-being, existential well-being, positive religious coping, family protective factors

Based on previous research findings (Beavers & Hampson, 1990; Otto, 1962; Stinnett, et al., 1982; Stinnett, 1979), strong families are able to cope, adjust, change and deal with problems and crises in a positive way. These features are similar to the term called 'Family Resiliency'. McCubbin and colleagues (McCubbin & McCubbin, 1991; McCubbin,

McCubbin, Thompson, & Thompson, 1995; McCubbin & Patterson, 1981) initially developed and researched what has become known as The Resiliency Model of Family Stress, Adjustment, and Adaptation, which has directed the attention of helping professionals toward critical elements of family functioning from a resilience perspective. The Family Adaptation Model (Drummond, Kysela, McDonald, & Query, 2002; McDonald, Kysela, Drummond, Martin, & Wiles, 1997) directly emanates from this work; however, unlike the McCubbin and colleagues' model, there is only one simple iterative process of family adaptation rather than two processes that represent protective processes and vulnerability processes separately (Gardner, Huber, Steiner, Vazquez, & Savage, 2008). Given the potential complexity of family assessment and intervention, this singular, ongoing process eliminates the tendency to dichotomize family strengths and deficits and promotes a systemic orientation that highlights reciprocity as well as parsimony and practical utility (Drummond, Kysela, McDonald, & Query, 2002).

The Family Adaptation Model asserts that the mediating dynamic between protective and vulnerability family processes is represented within its five dimensions: demands, appraisals, supports, coping, and adaptation (Gardner et al., 2008). Demands represent stressors families encounter; their vulnerability family processes. Appraisals, social supports, and coping strategies represent the protective family processes that interact with demands or stressors to predict family adaptation (Drummond et al., 2000; McDonald et al., 1997). The Inventory of Family Protective Factors (IFPF) was developed as a brief measure to assess the degree of demands or stressors and protective family factors (i.e., family resilience) perceived to be present in an individual's family milieu, thus predicting the

adaptation process (Gardner et al., 2008). The descriptor “protective” in this context implies family members who experience higher levels of protective factors (and lower levels of stressors) in their family milieu and are less affected. Thus, they are more likely to move toward adaptation when interacting with demands or stressors they encounter (i.e., protected), thereby predicting greater likelihood of “good adaptation” (Masten & Reed, 2005). Supports for the factors that are included in the IFPF are present in separate bodies of literature that represent each of them.

The presence of fewer stressors in a family’s current milieu (as compared with recent and/or distant past circumstances) is in a sense “protective”. Families experiencing fewer stressors rather than more stressors or demand factors will have members who are less likely to develop psychological problems (Al-Ansari & Matar, 1993; Holahan & Moos, 1991; Tiet, Bird, Davies, Hoven, Cohen, & Jensen 1998) and more likely to exist at an optimal level of functioning and adaptation (Luthar, 1991; Otto, Fava, Penava, Bless, Muller, & Rosenbaum, 1997). Adaptive appraisal is an asset of families in increasing the likelihood of adaptively addressing problems in life, due to the fact that such appraisals serve as markers of optimal well-being; the overall balance of people’s positive and negative appraisals has been shown to predict their judgments of subjective well-being (Diener, Sandvik, & Pavot, 1991; Frederickson, 2001). Researchers (Armerikaner, Monks, Wolfe, & Thomas, 1994; Holahan & Moos, 1991; Werner, 1993) have addressed the role of social support in mental health and how it relates directly to psychological health. Availability of social support has been linked to emotional well-being and the ability to compensate for negative life conditions (Chase-Lansdale, Wakschalag, & Brooks-Gunn, 1995). Compensating experiences have been

referred to as rewarding experiences that provide a sense of meaning and control over one's life (Papalia, Olds, & Feldman, 2001). Compensating experiences represent a manner of problem solving which is a cognitive enterprise with a behavioral component: "actions that help" (Lazarus & Folkman, 1984, p. 141). Clarifying issues and redefining a situation is a critical component of family coping (McCubbin, Sussman, & Patterson, 1983). Masten (2001) posited the influence of family mastery resources as compensatory. Conger and Conger (2002) likewise asserted a family's sense of mastery to be a compensating psychological resource and a way to reduce emotional distress.

As discussed by Stinnett (1979) and Schumm (1985), spiritual/religious aspects of lifestyle are important elements in strong families. Research finding suggests that the positive impact of religious and spiritual variables is often correlated with positive outcomes in individuals and families (Varner, 2009). Stinnett and DeFrain (1985) noted that strong families have spiritual lifestyle and these families said that they had an awareness of God or a higher power that gave them a sense of purpose and gave their family support and strength and reported that this awareness helped them to be more forgiving, more patient with each other, and to be more positive and supportive. Wheeler (2008) reported a positive effect of religious/spiritual aspects of one's life on family strength through enhancing person's feeling of worth.

Spirituality has been studied for several decades, and the definition has been debated among researchers. A recent comprehensive measure of one's spirituality is spiritual well-being. An operational definition of spiritual well-being was first proposed by Moberg and Brusck (1978). According to them, spiritual well-being consists of two dimensions which seem to

be a comprehensive conceptualization of spirituality. The first dimension is associated with one's relationship with a higher power within a particular system of religious beliefs (religious well-being), and the second dimension is one's sense of meaning and purpose in life (existential well-being) (Varner, 2009). Within this definition, meaning and purpose in life are not dependent on a specific religious framework (Varner, 2009). In order to measure spiritual well-being, Paloutzian and Ellison (1982) developed the Spiritual Well-Being Scale (SWBS). The scale itself consists of two scales, the Religious Well-Being (RWB) scale and the Existential Well-Being (EWB) scale. The results of 350 studies have shown that people with spiritual well-being have healthier lifestyle, are more hopeful, enjoy more mental stability, and are more satisfied with their life (Shahidi & Hamdie, 2002). Ghaffari (2013) reported that spiritual well-being has a positive and significant effect on family protective factors in young married couples.

On the other hand, in research studies that manipulated participants' sense of personal control, greater belief in a God who has control over events was reported by those whose sense of personal control was undermined (Kay, Gaucher, McGregor, & Nash, 2010), suggesting that religion serves a compensatory control function. In addition to providing individuals with meaning in life and comfort through a relationship with a higher power, spiritual and religious beliefs often provide a framework for coping with difficult circumstances. In times of stress, a person's religious orientation dictates the beliefs and practices that are translated into coping skills (Varner, 2009).

Various methods of religious coping have been divided into positive religious coping and negative religious coping. Positive religious coping is a reflection of a secure relationship with God and a belief that life has meaning; whereas, negative religious

coping indicates a less secure relationship with God, an ominous view of the world and a religious struggle for meaning in life (Pargament, Smith, Koenig, & Perez, 1998). For example, factor analysis suggested that strategies for positive religious coping include redefining the stressful situation as an opportunity for spiritual growth and that negative religious coping may be demonstrated through redefining the situation as the work of the Devil or as punishment from God (Pargament, Koenig, & Perez, 2000). Positive religious coping has been found to be significantly tied to increased levels of stress-related growth and positive religious outcomes. Conversely, negative religious coping is related to depression (Pargament et al., 1998). Therefore, positive religious coping can be a valuable resource in times of stress (Varner, 2009).

In times of stress, a person's religious orientation dictates the beliefs and practices that are translated into coping skills, and therefore, positive religious coping include redefining the stressful situation as an opportunity for spiritual growth which can be a valuable resource in times of stress (Varner, 2009).

Baumeister (1991) noted that many religions provide the possibility of believing that God may have higher purposes that humans cannot understand. In such cases, one may remain convinced that events that seem highly aversive may, in fact, be serving desirable ends, even if one is unable to guess what these ends might be. Thus, religious explanations permit religious individuals to trust that every event, regardless of its overt appearance and painfulness, is part of God's plan (Park, 2010).

Folkman (2008) states that research supports the distinction of meaning-based coping from other forms of coping and suggested that religious and spiritual coping are important aspects of meaning-based coping. In Calicchia and Graham's (2006) study, spiritual well-being was positively correlated with

health and had a negative relationship with stress variables. Furthermore, they noted that participants who reported higher levels of spiritual well-being, reported less stress from one's spouse/partner and extended family. They also reported that according to their results, spiritual well-being was positively correlated with receiving social support from extended family, friends and positive events. Given the findings, Calicchia and Graham (2006) concluded that spiritual well-being is an effective buffer of stress and an effective provider of social support. Weber and Cummings (2003) reported a positive effect of spirituality and social support on family resilience. Previous research studies confirmed that spiritual well-being has been positively associated with positive outcome, higher quality of coping and more adaptive appraisal in the midst of various difficult life circumstances through providing a clear sense of meaning and direction in life (Calicchia & Graham, 2006; Davis, Kerr, & Kurpius, 2003; Kanya, 2000, Varner, 2009; Weber & Cummings, 2003). Thus, in this research, religious well-being and existential well-being were assumed as predictors of family protective factors. Moberg and Brusck (1987) noted that existential well-being is not dependent on a specific religious framework, but it is expected that, in a religious person religious beliefs and religious well-being would be main sources for one's sense of meaning and purpose in life (existential well-being). In other words, the present study hypothesized that existential well-being would mediate the relationship between religious well-being and family protective factors. It is also expected that religious well-being and existential well-being would make a context of positive religious coping and increase individual/family resilience. As religion can strongly influence beliefs about control (Young & Morris, 2004) and can be seen as a meaning-making framework in coping with

stress (Park, 2010), this research hypothesized that positive religious coping would mediate the relationships between (a) religious well-being and (b) existential well-being with the dependent variable of family protective factors (Figure 1).

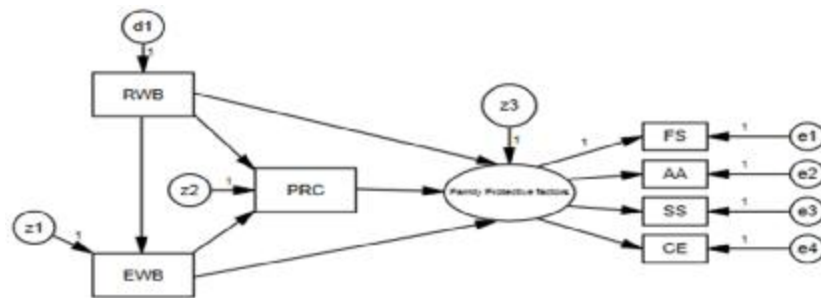


Figure 1
Conceptual Model of the Relationships among Religious Well-Being, Existential Well-Being, Positive Religious Coping, and Family Protective Factors

Note: RWB= Religious Well-Being, EWB= Existential Well-Being, PRC= Positive Religious Coping, FS = Fewer Stressors, AA= Appraisal Adaptation, SS =Social Support, CE= Compensating Experiences

Method

Statistical Population, Sample, and Procedure

The research population consisted of all the married Muslim people of the Isfahan, Iran in the year of 2012 with preschool-aged children and in the first decade of marriage with at least eight grades of education level. On the basis of recommendations about the minimum number of required participants for each observed variable in the structural model (Hooman, 2005), four hundred and five volunteers (235 females, 170 males) were selected through multi-stage cluster sampling from the seven zones of the whole fourteen municipal geographic zones of Isfahan. In the first stage, seven geographic zones, and in the second stage, one main street from each

zone was selected, randomly. Only the participants who completed the instruments were included in the analysis. Also, in a bid to meet the multivariate normality, outlying values were omitted. The final number of participants, therefore, reached three hundred and eighty nine participants (230 females, 159 males), aged between 21 and 47 years old (31.18 ± 4.28 years). The rules of privacy of the subjects' answers were confirmed in the questionnaire instruction. All participants were volunteers, anonymous and unpaid. Before the administration of the instruments, the participants received a brief introduction about the nature of the research, ethical requirements for confidentiality and voluntary participation. In order not to be influenced by their spouse, the participants were asked to fill out the scales alone.

Instruments

Spiritual Well-Being Scale (SWB). Paloutzian and Ellison (1982) developed a 20-item Spiritual Well-Being scale to serve as a global psychological measure of one's perception of spiritual well-being. The scale itself consists of two scales, the Religious Well-Being (RWB) scale (10 items), and the Existential Well-Being (EWB) scale (10 items). The psychometric properties of the SWBS were confirmed in various researches (Varner, 2009). The concurrent validity of Translated version of the SWBS was obtained by correlating the score of this scale with the Daily Spiritual Experience Scale (Underwood, 2006) which resulted in a satisfactory positive correlation coefficient ($r=.63, p<.01$). Ghaffari, Fatehizadeh, Ahmadi, Ghasemi, & Baghban (2013) examined the psychometric properties of the Persian translation of the SWBS with an Iranian population and showed that it had reasonable construct validity and internal consistency (Cronbach's α ;

SWBS= .87; RWBS=.84; EWBS =.84). The internal consistency coefficients (Cronbach's α) of the subscales, namely religious well-being and existential well-being, in this study were found to be .82, and .81 respectively.

Brief RCOPE (Pargament *et al.*, 1998). A 14-item Brief RCOPE was used to assess positive and negative religious coping: seven items measure positive religious coping which are associated with a loving and supportive view of God, and other seven items measure negative religious coping associated with a punishing and rejecting view of God (Varner, 2009). The Brief RCOPE items are rated on a four-point Likert scale from 0 (not at all) to 3 (a great deal). The psychometric properties of the BRCOPE were confirmed in various researches (Varner, 2009). In this study, the concurrent validity of the Persian translation of the BRCOPE was obtained by correlating the score of this measure with the Daily Spiritual Experience Scale (Underwood, 2006) (BRCOPE: $r=.38$; PRC: $r=.55$, $p<.01$; NRC=.07, $p>.05$). Using the data collected in this study, the reliability coefficients (Cronbach's α ; BRCOPE=.88; PRC=.87; NRC=.83), and results from confirmatory factor analysis (CMIN/DF=2.63; GFI=.89; AGFI=.85; CFI=.90; RMSEA=.06) were satisfactory. The positive subscale score was used in this study.

Inventory of Family Protective Factors (IFPF). A 16-item IFPF was developed as a brief measure to assess the degree of demands or stressors and protective family factors (i.e., family resilience) perceived to be present in an individual's family milieu with satisfactory psychometric properties [Cronbach alpha reliability coefficient ranged .77 to .81 for all sub-scales] (Gardner *et al.*, 2008). Ghaffari *et al.*, (2013) examined the psychometric properties of the Persian translation of the IFPF with an Iranian population and showed that it had reasonable construct validity and internal consistency (Cronbach's $\alpha=.91$).

The internal consistency coefficients (Cronbach's α) of the IFPF and its subscales, namely fewer stressors, adaptive appraisal, social support and compensating experiences, in this study were found to be .60, .81, .88, and .89 respectively.

Results

The hypothesized relationships between variables were tested using structural equation modeling (SEM) in AMOS 20.00. The Hoelter's Index confirmed the adequacy of the sample size (Hoelter's Index=283, $p=.01$, Ghasemi, 2010). The variables did not exhibit problematic univariate skew (i.e., absolute values of the skewness index were <3.00., Kline, 2011), nor did the variables exhibit problematic univariate Kurtosis (i.e., absolute values of the kurtosis index were <10.00., Kline, 2011). The critical ratio of .95 for Mardia's Coefficient (1.09) proved the multivariate normality (Ghasemi, 2010). The model therefore tested using Maximum Likelihood (ML) estimation in AMOS.20. Table 1 contains descriptive statistics and the bivariate correlations for the variables used in the analysis.

As shown in table 1, there were significant internal correlations among all variables of the model. The correlation coefficient between existential well-being and family protective factors ($r= .53$) was higher than the correlation coefficients between religious well-being and family protective factors ($r=.40$) and between positive religious coping and family protective factors ($r= .37$).

Table 1
Descriptive Statistics and the Correlation Matrix of the
Model Variables

Variables	1	2	3	4	5	6	7	8
Religious well-being	1							
Existential well-being	.66**	1						
Positive religious coping	.62**	.55**	1					
Fewer stressors	.28**	.38**	.25**	1				
Adaptive appraisal.	.38**	.53**	.36**	.57**	1			
Social support	.22**	.32**	.21**	.48**	.50**	1		
Compensating experiences	.43**	.51**	.40**	.53**	.77**	.53**	1	
Family protective factors	.40**	.53**	.37**	.77**	.86**	.78**	.86**	1
<i>M</i>	48.62	43.36	20.05	14.77	15.55	16.30	15.55	62.18
<i>SD</i>	8.16	8.65	4.50	3.15	3.37	3.73	3.60	11.35

Note: *N* = 389, ** *p* < .001

The fit indices of the conceptual model were investigated through estimating the relative chi-square statistic (χ^2/DF), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), Normed Fit Index (NFI), and the Root Mean Square Error of Approximation (RMSEA). A model is regarded as acceptable if the NFI exceeds .90, the GFI exceeds 0.90, the CFI exceeds .93 (Byrn, 1994), and the RMSEA is less than .08 (Browne & Cudeck, 1993) and ideally less than .05 (Steiger, 1990). Alternatively, the upper confidence interval of the RMSEA should not exceed .08 (Hu and Bentler, 1995). Also, the relative

chi-square should be less than 2 or 3 (Ulman, 2001). Table 3 shows the fit indices of the conceptual model.

Table 3
Goodness of Fit Summaries for the Conceptual Model

χ^2	DF	CMIN/DF	P	GFI	AGFI	CFI	NFI	RMSEA
15.78	12	1.31	.20	.99	.97	.99	.97	.04

As shown in table 3, the SEM analyses on the conceptual model of the structural relationships among the model variables resulted in satisfactory indices (RMSEA<.05, GFI>.90, AGFI>.90, CFI>.90, and TLI> .90). That is, the results showed the well-fitness of the conceptualized model for the structural relationships among religious well-being, existential well-being, positive religious coping and family protective factors. Figure 2 shows the standardized direct effect coefficients (standardized regression weights) for the relationships among model variables ($p<.001$).

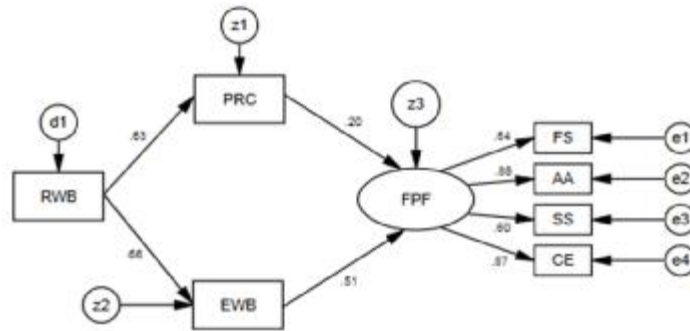


Figure 2
Standardized Coefficients for the Mediating Model of Relationship between Religious Well-Being, Existential Well-Being, Positive Religious Coping, and Family Protective Factors

Note: RWB = Religious Well-Being, EWB = Existential Well-Being, PRC = Positive Religious Coping, FPF = Family Protective Factors

All the standardized direct effect coefficients (Figure 2) were positive and satisfactory ($p < .001$) but the direct effects of religious well-being on family protective factors ($\beta = .05, p = .91$), and existential well-being on positive religious coping ($\beta = .07, p = .18$) were not statistically significant. Therefore, the mediating role for positive religious coping between existential well-being and family protective factors was not supported. The results revealed a significant standardized indirect effect ($\beta = .46, p = .001$) between religious well-being and family protective factors, with existential well-being and positive religious coping as mediators. Figure 2 shows that on the family protective factors, the direct effect of existential well-being ($\beta = .51, p < .001$), is much stronger than the direct effect of positive religious coping ($\beta = .20, p < .001$).

The results showed that, religious well-being predicts 43% of the variance of the existential well-being, and 40% of the variance of the positive religious coping, and the conceptual model explained 40% of the distribution of the family protective factors (40% of fewer stressors; 78% of adaptive appraisal; 34% of social support; 76% of compensating experiences) through indirect effect of religious well-being, and direct effects of existential well-being and positive religious coping.

Discussion

The study tested a model of the relationships between religious well-being, existential well-being, positive religious coping and family protective factors in a Muslim sample. The results showed positive significant direct effects of existential well-being and positive religious coping on family protective factors, and positive significant indirect effect of religious well-being on family protective factors through existential well-being and positive religious coping. The proposed model shows that

religious well-being leads to development of a high level of existential well-being and positive religious coping. Also existential well-being and positive religious coping lead to increase family protective factors. On the other words, religious well-being leads to development of family protective factors through the development of existential well-being and positive religious coping. Results therefore mostly supported the hypotheses of existential well-being and positive religious coping as mediators of religious well-being and family protective factors. According to the findings, on the family protective factors, the direct effect of existential well-being is stronger than the direct effect of positive religious coping.

Results also showed that, the direct effects of religious well-being on family protective factors, and existential well-being on positive religious coping were not statistically significant. Therefore, the mediating role for positive religious coping between existential well-being and family protective factors was not supported. The findings are mostly consistent with theoretical perspective of spiritual well-being and religious coping, and provide explanations for the positive role of spiritual/religious aspects of lifestyle in family adaptation. Since religion plays an important role in hope for the future (Nadi & Sajjadian, 2012), meaning-making (Park, 2010), sense of control (Kay et al., 2010; Young & Morris, 2004), increasing social support (Calicchia & Graham, 2006), and coping with stress (Pargament et al., 1998; Varner, 2009), religious well-being can help perceiving meaning and purpose in life (existential well-being). As well, someone with religious well-being enjoys the relationship with God, takes refuge in HIM and knows God care him (Paloutzian and Ellison, 1982), therefore less likely uses negative religious coping and more likely redefines problems as God's wisdom or plan (not punishment). On the other hand,

previous studies have shown that spiritual/religious aspects of lifestyle are important elements in strong families and in such families there are more patience, mutual and social support, forgiveness, justice, and resilience (Ghaffari, 2013; Stinnett & DeFrain, 1985; Varner, 2009; Wheeler, 2008). Thus, according to the proposed model, it can be concluded that the positive impact of religious well-being is correlated with family protective factors or in fact, family adaptation. Based on the findings, the mediating role for positive religious coping between existential well-being and family protective factors was not supported. Therefore, it seems existential well-being has not significant direct effect on positive religious coping.

The cross-sectional nature of this investigation and also the statistical population are limitations of the present study. Some researchers have recently framed religiousness as culture (e.g., Cohen, 2009). This perspective opens many doors to research examining meaning systems as cultural elements. Park (2010) noted that, the need to examine global and situational meaning and the roles of religion in diverse populations across the world is obvious. Of course, more research is needed with different measures (e. g. different measures based on different conceptualizing of spirituality and religiosity) and with different population (e.g. people in stressful conditions, different socio-economic levels, religions, cultures and sub-cultures) to provide a comprehensive theoretical explanation for the interrelationships among spiritual/religious variables and family adaptation.

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An Investigation on the Relationship between Proactive Personality, Conscientiousness and Perceived Supervisor Support with Job Satisfaction and Job Performance Mediated by Dynamic Behaviors

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The present study aimed at investigating the impact of proactive personality, conscientiousness, and perceived supervisor support on job satisfaction and performance mediated by proactive behavior. The statistical population of this survey consisted of the official staff and contractual personnel of Bid Boland gas refinery from whom 260 people were selected using hierarchical random sampling method. The data collection tools were Proactive Personality Scale (Batman and Crant, 1993), NEO Personality Inventory (Conscientiousness dimension), Perceived Supervisor Support Scale (Kottke & Sharafiniski, 1998), Proactive Behavior Questionnaire (Ashford and Black, 1996), Job Satisfaction Questionnaire (Brayfield & Rothe, 1951) and Job Performance Questionnaire (Paterson, 1992). The assessment of the proposed pattern was conducted through path analysis. The results supported the suitability of the relationship between the patterns and the collected data. Significant and better relationship could be achieved by eliminating two insignificant paths and coordinating their errors. The results revealed that proactive behavior mediated the effect of proactive personality and perceived supervisor support

on job satisfaction and performance.

Keywords: proactive personality, conscientiousness, perceived supervisor support, job satisfaction, performance, proactive behavior

Although human beings have made numerous achievements over the centuries, they have not progressed in behavior issues, specifically in practiced behavior areas. There are many adults who behave like children and they do not know the strategies or proper tracts for creating various human relationships. Since human resources and the types of their relations are nowadays regarded as the most important factors as well as capital in every organization and society, those who are able to acquire the essential skills in communicating with themselves and the society, will certainly gain power and success. It is interesting why people do not make use of these skills although they have mastery over their thoughts, their feelings, and enough facilities. Yet they prefer to have a monotonous condition and react passively to the environment, while others involve themselves actively in the environment and decide consciously to change their conditions in a way that they obtain significant career achievements. Such people share common features and have potentials to make change in environmental conditions (Crant, 2000).

Traditionally, career psychology focuses on the job features of personnel (Hackman and Oldhem, 1976), their commitment towards the organizations' goals (Lock, Shaw, Saari & Latham, 1981), as well as the social structures and cultures of the working place to which new personnel need to adapt. On the contrary, research about proactive behavior focuses on how the personnel change their job features and their positions (Frese, Garst & Fay, 2007).

To be proactive includes innovative attempts by the staff to

create changes in the working place, or in themselves in order to create a different future. Proactive and innovative behaviors have been turned into critical factors in determining an organization's success. Proactive behavior rather than management methods may be an effective concept, and, consequently, increase organizational benefits. Companies should focus on identification and correction of system trends and conditions which reduce and weaken the creativity of the personnel (Batman and Crant, 1993). Proactive behavior of the personnel has a direct relationship with organizational efficiencies, such as job performance, success, satisfaction, control sense, and role uncertainty (Crant, 2000).

Proactivity means the individuals' ability to create their environment stemming from an interactional perspective (Bandura, 1997, Schneider, 1983). The interaction approach states that behavior can be controlled both internally and externally and situations exert effects on performance and the interaction of individuals; they can also be influenced by the individuals (Schneider, 1983). In other words, there is a formal mutual relationship between individuals, environment, and behavior (Bandura, 1997). According to Bus and Finn (1987) the proactive approach is a beneficial feature since it is regarded as a part of behavior which influences the environment. Crant (2000) defines proactive behavior as a pioneering role for improving the current situation or the creation of a new future. Hence, people can change their present situation directly and consciously, for example, through choosing proper occupation.

Individual differences (personality, demographics, knowledge, and skill) as well as situational differences (career design, leadership, and atmosphere related structures) are identified as being independent yet interactional proactive behavior predictors. From this point of view, proactive behavior

can influence individuals' performances, such as job performance, well-being, and identity. In addition, proactive behavior has intertwined with consequences at team (team efficacy) and organizational levels (organizational performance) (Crant, 1995).

The results from the research conducted by Gong, Cheung, Wang & Huang (2012) showed that (1) proactive and active personnel are more involved in information transfer (2) proactive and active personnel establish a sincere relationship and communicate information through it (3) reliable relationships can bring creativity (4) information exchange increases creativity by nurturing reliable relationships.

The necessity to have creativity, career models needing long-term self-management, and decentralized growth of organizational structures can increase the need for applying creative and self-initiated methods (Campbell, 2000, Frese and Fay, 2001, Ibarra, 2003, Parker, 2000). These types of proactive behaviors can lead to positive organizational and individual effects. Proactive behavior is proper for the present occupational situations. With more decentralization and faster changes, it is progressively crucial that personnel undertake their career and working place responsibilities. Because of its extensive effect, proactive behavior has the potential to be used as a type of influential concept instead of temporary management methods. Likewise, because of many changes in the needs raised in organizations and uncertainty in working places, the proactive and self-leading behaviors have progressively received significance (Aragone-Correa, 1998). The proactive approach may add to organizational efficiency and performance.

Fuller & Marler (2009) concluded that proactive personalities tend to experience more achievements in greater tasks in comparison with passive personalities. In addition, the proactive

personality has predictive validity in terms of job satisfaction and can predict the level of job performance very well. Generally, the findings have shown that individuals who have proactive personalities can probably progress more within organizations, since they can obtain their superiors' attention and support. The proactive personality has a positive relation with undertaking responsibilities and expressing ideas.

Crant, Parker & Collins (2009) concluded that proactive individuals generally have positive performance based on their supervisors' assessments specifically when the personnel are highly motivated. In addition, the personnel involved in the creation of communicational networks and individual initiatives, were positively evaluated by their supervisors (Thompson, 2005). Similarly, in a series of studies, Morrison (1993) found a positive relation between proactive information searching and individuals' performances. Particularly, in a sample group of inexperienced accountants, higher levels of feedback searching predicted the level of their mastery over their jobs in the following three months (Morrison, 1993). Proactive personnel can manage the supervisory relationship better; accordingly, performance is evaluated at a higher level. For instance, in a study about new-comers, Ashford and Black (1996) found that creating proactive relationships with the supervisor had a strong impact on performance evaluated six months later.

Zou, Zheng & Zhu (2011) investigated the relationship between proactive personalities, job performance and the mediating effects of proactive behaviors. They found that proactive personality, through proactive behaviors, has a positive relationship with job performance. Another potentially related personal dimension is conscientiousness which reflects reliability, conformity, and perseverance (McCrea & Costa, 2004). Conscientiousness mirrors several areas including the

tendency to progress (perseverance and resistance), reliability, honesty (responsible and meticulous), and discipline (orderly and scheduled). Unlike the five big dimensions of personality, conscientiousness has a strong and permanent relationship with proactive behavior such as active job searching (Kanfer & Ackerman, 2004), proactive performance, active information search (Tidwell & Sias, 2005), and career programming behaviors (Carless & Bernath, 2007). According to the results of Ahmed's research (2011), conscientious individuals will probably show more proactive behaviors, because these individuals are fundamentally inclined to take responsibility and achieve subsequent success.

Perceiving the support of colleagues or organization (Ashford, Rothbard, Piderit & Dutton, 1998) is positively related to proactive behaviors. Reactions and behaviors of organization personnel towards their members can be motivating for individuals' behaviors, and this reaction is a noteworthy reflection of the interaction between individuals and organizations. Based on this feeling (organizational support), individuals can have an active role in organizations and feel satisfied. Receiving the support of organizations, the personnel will feel obliged to react appropriately so that their actions benefit the objectives of their organization (Eisenberger, Cumming, Armeli, & Lynch, 1997). Blue (1981) showed that the supervisors and coworkers support have direct and positive effects on employees job satisfaction.

One of the most comprehensive models for events and consequences of proactive behaviors was introduced by Crant (2000). In this model, Crant discusses the variables of events and outcomes of proactive behavior. The events are divided into two general categories of individual differences and environmental factors. Individual differences include: proactive

personality, personal creativity, self-efficacy, accountability, job interest, goal orientation, being interested in feedback, and the need for success. The situational factors include organizational culture, organizational norms, situational hints, management support, and public or personal environment. The outcomes include job performance, career success, attitudes about controlling emotions in jobs and role clarity.

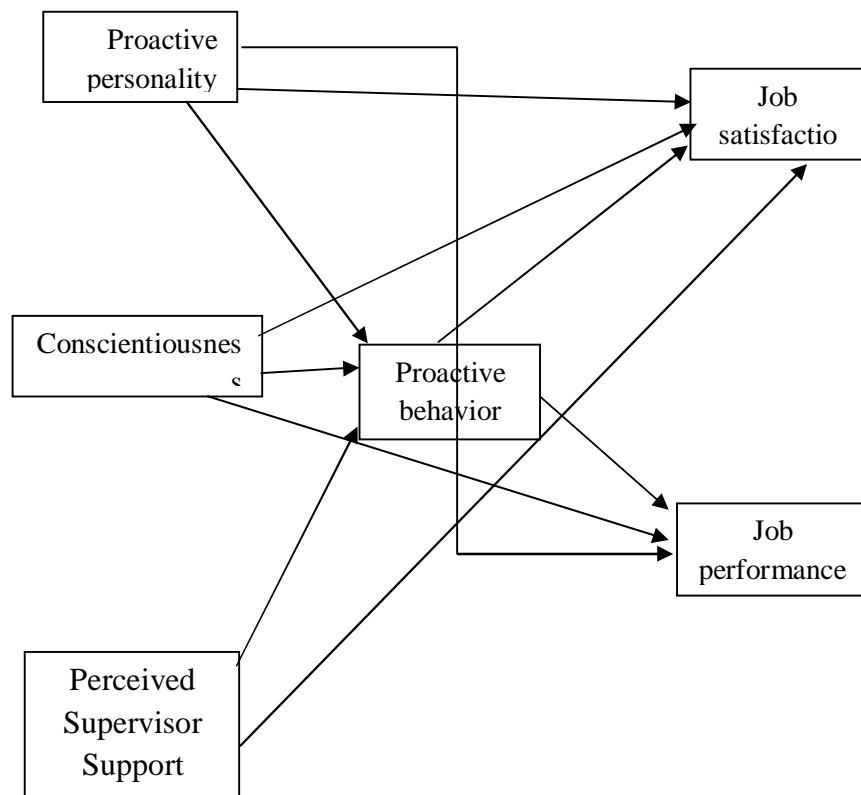


Figure 1
The Proposed Pattern of the Present Study

The present study aimed at designing and testing a model of

events and outcomes of proactive behavior in Bid Boland Refinery Company. In the suggested pattern of this survey, proactive personality, conscientiousness, and perceived supervisor support were the predictive variables, whereas job satisfaction and job performance constituted the resultant variables and proactive behavior was considered as the mediator variable. Figure 1 illustrates the proposed pattern of the present study.

Method and Instrument

The population of the research included all the official and contractual personnel of Bid Boland Gas Refinery Company in 2013. The total number of participants was 795 people, 560 of whom were official personnel and 235 were contractual personnel. Based on Krejcie and Morgan's table, 260 subjects were selected using hierarchical sampling methods. Taking the samples' level of education into consideration, the highest frequencies belonged to the following degrees: Diploma and below (122 participants, 55.5 %), B.A. (53 participants, 24.1%), Associates Degree (36 participants, 16.4%), Masters and higher (5 participants, 2.3%). Also four participants (1.8%) did not determine their level of education. Regarding age range, the highest to the lowest frequency and percentage respectively belonged to the age range over 50 years (74 participants, %33.6), 30 - 40 years (70 participants, 31.85), 40 - 50 years (35 participants, 15.95), 20 - 25 years (28 participants, 12.7%), and under 25 years (9 participants, 4.1%). Also four participant of this study did not determine their age (1.8%).

Proactive Personality Scale

This scale has been developed by Batman and Crant (1993) which includes 17 items. To achieve the total score of proactive personality, the score of each item is added. The answers are

shown on the seven items of the Likert Scale which are in the range of one (strongly agree) to seven (strongly disagree), for instance: 'I am good at identifying the chances.' Batman and Crant (1993) presented the results of 3 assessments of psychometric characteristics of the scale. One-dimensionality of the scale was confirmed through factor analysis and reliability approximation was conducted using three samples (changing range was between .87 and .89). This questionnaire was translated into Farsi by Zareieshamsabadi, Noori, Molavi (2010) for the first time. The questionnaire was implemented in a study on 50 employees of a medical university to assess reliability. The results were significant and by deleting one of the items which did not have internal consistency, the rate of Cronbach's Alpha increased from .79 to .83. In the present study, the reliability coefficient of the questionnaire was determined through two methods of Cronbach's Alpha and Split-half methods (which were .84 and .80, respectively). To determine the validity of the questionnaire, Confirmatory Factor Analysis was used which showed an acceptable amount.

NEO Personality Inventory

In this survey, the NEO-FFI test was used, which includes 60 questions and evaluates five dimensions of the personality. The conscientiousness feature was chosen from the five related features listed in the literature review of the study and examined. Each dimension of this questionnaire has 12 questions. The answers were based on a five - range spectrum from strongly agree (4) to strongly disagree (0). For the first time in Iran, the questionnaire was validated by Kiamehr (2002). The reliability of this questionnaire for the conscientiousness dimension as reported by McCrea and Costa (2004) is 0.79 with test-retest method (cited in Beshlideh, 2007). In a survey conducted by

Beshlideh (2007) the reliability was determined using Cronbach's Alpha and Split-half methods and was reported to be .82 and .81 for healthy workers and .82 and .80 for injured workers respectively. The correlation index of this test and NEO test with 240 items for the conscientiousness dimension was .86, reported by McCrea and Costa (2004, cited in Beshlideh, 2007). In the present survey, the reliability coefficients of the questionnaire, based on Cronbach's Alpha and Split-half were .60 and .76, respectively. The validity of the NEO questionnaire (conscientiousness dimension) was also determined through correlating that question with a general researcher-made question. It was found to be $r = .70$.

Perceived Supervisor Support Scale

The perceived supervisor support scale was evaluated by Kottke & Sharafiniski (1988), excerpted from the Survey of Perceived Organizational Support (SPOS) measurement tool which belongs to Eisenberger, Huntington, Hutchison & Sowa (1986). Kottke & Sharafiniski have developed the questionnaire based on six items of SPOS and by substituting supervisor with organization. It is based on a 7 - score Likert Scale, starting from strongly agrees to strongly disagree. Item number 6 is scored reversely. The participants will complete this scale by measuring their level of perception regarding the leader's support in the organization. Kottke & Sharafiniski (1988) concluded that this scale has reliability equal to .98. For the first time, this questionnaire was translated and validated by HaghShenas (2011). This researcher measured the concurrent or factorial validity of the Perceived Supervisor Support Inventory through measuring its correlation level with the criterion question and found a validity of .55 ($p < .001$) which was acceptable. They have also reported the reliability of this

questionnaire based on Cronbach's Alpha method ($\alpha=.70$). In the present study, the reliability index based on Cronbach's Alpha and Split-half methods were .84 and .83, respectively. In the present study, the validity of the perceived superior support scale was calculated ($r=.75$) through correlating it with a researcher-made general question.

Proactive Behavior Questionnaire

This questionnaire was developed by Ashford and Black (1996). This scale has 24 questions and 7 dimensions as follows: (1) searching information (2) searching feedback (3) negotiation for role change (attempting to correct duties and other expectations) (4) positive framework (attempts to have an optimistic view) (5) socializing (participation in social events) (6) creating relationship with the manager (7) creating a communicational network. The answers of this scale were arranged from 1 (very low) to five (very high). The reliability of this scale was reported by Ashford and Black (1996) to be 0.91. The present study is the first research using this instrument in Iran. Here Cronbach's Alpha and Confirmatory Factor Analysis were used to determine reliability and validity, respectively. In the present study, the reliability scores of the questionnaire based on Cronbach's Alpha and Split-half methods were 0.91 and 0.85, respectively. Confirmatory factor analysis was also used to measure the validity of proactive behavior revealing an acceptable level of validity.

Job Satisfaction Questionnaire

In order to measure job satisfaction, Brayfield & Rothe's Broad Scale of Job Satisfaction (1951) was used which consists of 5 items. It is based on a 5 - score scale of the Likert ranging from "strongly agree" to "strongly disagree" answers.

According to Brayfield & Rothe, the reliability and validity of the questionnaire were reported to be at an acceptable level. Judge, Erez, Bono & Thoresen (2003) reported the reliability of this questionnaire using Cronbach's Alpha method conducted on four samples and determined to be 0.81, 0.85, 0.83 and 0.81. In the present study, the reliability of this questionnaire using Cronbach's Alpha and Split-half methods were both 0.55. In this research the validity of the Job Satisfaction Inventory was $r = 0.68$ obtained through correlating the questionnaire with a general researcher-made question.

Job Performance Questionnaire

To measure job performance in the present study, Paterson's (1992) Job Performance Assessment Questionnaire was used. This tool had two forms: one for evaluating clerks and the other one for evaluating managers. Each part contained 10 items. In the present study, the form of the clerks' evaluation was utilized. This questionnaire was first translated into Persian by Arshadi and Shokrkon (1990). The answers were based on a 5 - part scale from 1 (being very low) to 5 (very high). Sayyahi and Shokrkon (1996) reported a reliability of .85 for this scale using both Cronbach's Alpha and Split-half methods. In their study, Arshadi and Shokrkon (2006) found a reliability coefficient of .74 using the Split-half method, and in order to confirm validity, they used a one-item criterion which had a validity of .64. To measure the validity of the personnel rating questionnaire report using the Correlation Matrix, Sayyahi and Shokrkon (1996) reported a significant relation between organizational values rating report and competency score assessed by the organization at the significant level of .001 and between this scale and self-report performance at the significant level of .05. In this study, the reliability scores of this scale were .88 and .82, respectively

based on Cronbach's Alpha and Split-half methods. In the present study, the validity of the questionnaire was calculated by correlating it with a researcher -made general question which was $r = .77$.

Data Analysis

In this study, descriptive statistics were used in order to show some characteristics of the participants and conduct initial analyses such as mean, standard deviation, and correlation. As for more complex analysis, inferential statistics were used. Thus, to evaluate the suggested pattern and investigate relations between the variables, the Path Analysis method was used. All of the analyses were conducted using AMOS software (ver. 20) and SPSS software (ver. 16).

To evaluate pattern fitness, several indices were used. In order to determine the suggested pattern fitness, a combination of these tools was used: Chi Square (X^2), $\frac{x^2}{df}$, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Tucker-Lewis (TLI), Normed Fit Index (NFI), and finally Root Mean Square Error of Approximation (RMSEA).

Results

Descriptive results-- i.e. the mean, standard deviation and correlation matrix of these variables--are shown in Table 1.

Table 1
Descriptive Findings and Correlation Indices

Variables	Mean	Standard Deviation	Proactive Personality	Conscientiousness	Perceived Supervisor Support	Proactive Behavior	Job Satisfaction
Proactive Personality	80.08	15.08					
Conscientiousness	42.21	4.90	.49**				
Perceived Supervisor Support	29.18	8.04	.14*	.01			
Proactive Behavior	65.28	15.82	.70**	.35**	.22**		
Job Satisfaction	15.37	3.94	.39**	.26**	.32**	.40**	
Job Performance	37.51	6.55	.61**	.42**	.17**	.64**	.32**

*P<.05 ** P<.01

The data on Table 1 shows that the relationships are significant at .01 and .05. The statistical correlations related to two-variable relations between existing variables in the study can present the overall attitude of the researchers.

For the simultaneous testing of hypothesized relationships in the present study, the Path Analysis method was used.

Table 2
Fitness Indices for the Proposed and Final Pattern

Fitness Indices Pattern	X^2	df	$\frac{x^2}{df}$	GFI	AGFI	IFI	TLI	CFI	NFI	RMSEA
suggested Pattern	68.64	5	13.73	.91	.65	.85	.54	.84	.84	.24
Final Pattern	10.99	6	1.83	.98	.94	.98	.97	.98	.97	.06

As it is shown in Table 2, the suggested patterns in fitness indices have an acceptable level. Through elimination of insignificant paths, final patterns could be observed. Better fitness can be observed in the final pattern, i.e. the pattern in which two insignificant paths (the effect of proactive behavior on conscientiousness and the effect of proactive personality on job satisfaction) are deleted. As it can be inferred from the above-mentioned table, the final pattern had an acceptable level of fitness which was achieved by connecting proactive personality variable errors to conscientiousness.

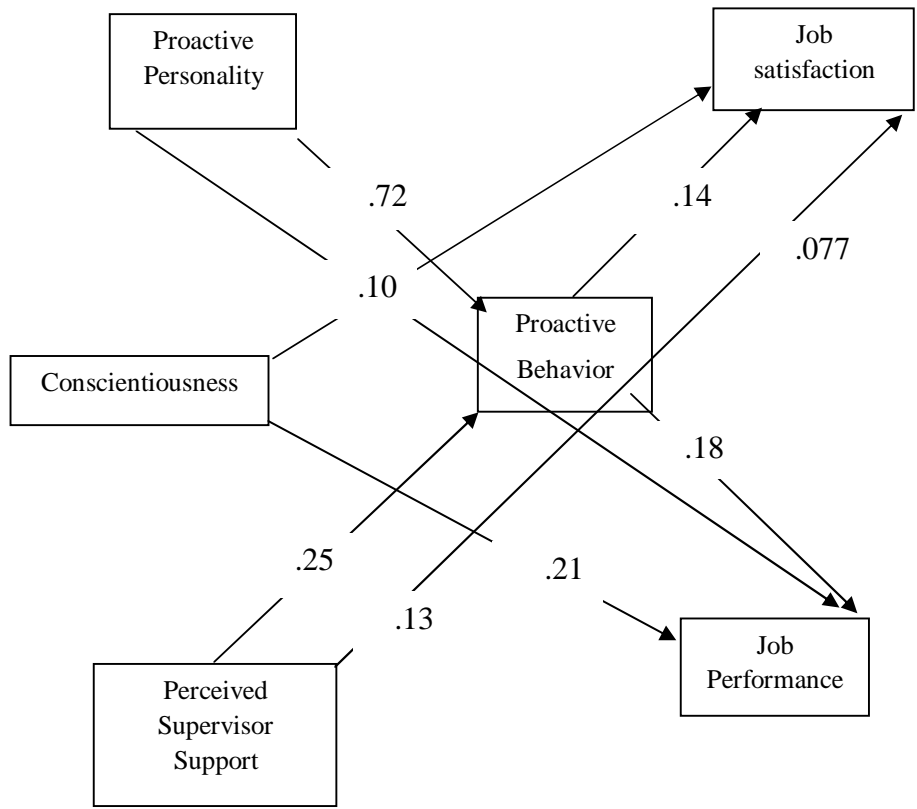


Figure 2
The Final Pattern of the Present Study

Findings Related to Indirect Ways in the Final Pattern

The bootstrap method was used to investigate the indirect effects of variables, and the results are shown in Table 3.

Table 3
Indirect Effects

Paths	Indirect Effect	Highest Level	Lowest Level	Significant Level
1 proactive personality to job satisfaction through proactive behavior	.199	.278	.124	.001
2 proactive personality to job performance through proactive behavior	.297	.379	.219	.001
3 perceived supervisor support to job satisfaction through proactive behavior	.037	.070	.015	0.006
4 perceived supervisor support to job performance through proactive behavior	.055	.098	.021	.008

Based on the figures shown in table 3, the indirect effect of proactive personality on job satisfaction through proactive behavior and indirect effect of proactive personality on job performance through proactive behavior are significant. The path of perceived supervisor support to job satisfaction through proactive behavior was significant at.006 and the path of perceived supervisor support to job performance through proactive behavior was significant at.008.

Discussion and Conclusion

The aim of the present study was to examine the impact of

proactive personality, conscientiousness, and perceived supervisor support on job satisfaction and performance mediated by proactive behavior. The results showed that the standard coefficient of proactive personality relating to proactive behavior was positive and significant (standard coefficient=.72, $p = .000$). This finding accorded with the results obtained by Parker, Williams & Turner (2006), Morrison (1993) and those of Thompson's (2005). A proactive personality is the most relevant factor which predicts proactive behaviors. The researchers have shown that the personnel who have a proactive personality tend to have a proactive role, such as an active quest for feedback, attempts to control their social environment, and trials to have personal control in their work place (Morrison, 1993, Thompson, 2005). A proactive personality helps the personnel to go beyond their formal tasks, create interpersonal relationships, develop more in their working places, and be creative. These personnel are optimistic people, flexible to change and can create useful environmental changes along with their personal achievements (Batman and Crant, 1993).

The results also show that the standard coefficient of the proactive personality regarding job performance is positive and significant (standard coefficient =.10, $p = .002$). This finding was in line with the results of the research by Chan (2006), Ford (2011), Fuller and Marler (2009), and Crant (1995). Based on Batman and Crant (1993), individuals who have a proactive personality experience less pressure due to situational problems and have more tendencies to change their atmosphere. They recognize the opportunities easily, display initiatives, and show mutational growth toward goals. When they encounter problems, they show more sense of responsibility and can influence their environment. Thus, the personnel will have a better performance in doing their jobs. Successful performance

depends on stability and motivation rather than learning and applying knowledge (Heimreich, Sawin and Carsrud, 1986).

The results of the study show that the standard coefficient of the path from a proactive personality to job satisfaction is insignificant. This finding is in accordance with those of Seibert, Crant and Kraimer's (1999). The dispositional view states that job satisfaction is, to some extent, determined by one or more stable features of the individuals. Job satisfaction is not stable at different times and situations (Starve, et al., 1986). The findings of Herzberg (1976) indicated that motivating factors result in job satisfaction and could replace optimistic views with neutral ones. Having eliminated such factors, dissatisfaction will appear. It might be claimed that the lack of relationship between proactive personality and job satisfaction was due to the lack of inspiring factors in the work environment.

The results of the study showed that the standard coefficient of the path from the conscientiousness variable to proactive behavior was insignificant. This result is contrary to the results obtained by Tidwell and Sias (2005) and Carless and Bernath (2007). The findings of this research are in accordance with the findings attained by Wanberg and Kammeyer-Mueller (2000) in which conscientiousness and information searching (types of proactive behaviors) were investigated. The finding regarding personnel with a higher sense of conscientiousness does not show whether proactive behavior is due to the following factors: they simultaneously have high self-esteem as well as self-confidence and perceive achievement in the situation in which they are; therefore, they do not show such behavior as that of conscientious personnel.

The results of this study showed that the standard coefficient of conscientiousness regarding job satisfaction was significant and meaningful (standard coefficient=.14, $p = .007$). The results

of the study are in accordance with the results of the research conducted by Judge, Erez, Bono and Thoresen (2003), and it can be concluded that features like perseverance, reliability and honesty could be effective in improving the inter-personal relationships and result in perceiving discipline importance and, subsequently, job satisfaction.

The results of this survey indicated that the standard coefficient of the path from conscientiousness to job performance was positive and significant (standard coefficient=.21, $p = .006$). This finding is in accordance with the results found by Salgado (1997), Tokar and Subich (1997), Borman, White, Pulkos and Oppler (1991). To elaborate this hypothesis, it could be stated that the sense conscientiousness refers to self-control, active programming process, organization and fulfillment of duties (Bick and Mount, 1993). The more responsible personnel are, the more disciplined and reliable they will be, and when they are asked to do a certain task, they will be more determined to fulfill it. Thus, they can maintain their performance level even when the organization is in an unstable situation (Barrick & Mount, 1991).

The results of the survey revealed that the standard coefficient of the path from perceived supervisor support to proactive behavior was positive (standard coefficient = 0.25, $p = 0.007$). This finding is in line with the results of the studies conducted by Rank, Carsten, Unger and Spector (2007).

Different types of organizational patterns which help individuals to be self-managed and self-guided will guide the supervisors in such situations and result in more proactive behaviors (Parker, Williams & Turner, 2006). Frese et al. (1999) mentioned that supervisor support can be effective in the situations which prohibit creativity and innovation. They concluded that organizational and superior support affects the

creativity and innovation processes.

The results of the survey showed that that standard coefficient of perceived supervisor support had a positive and significant relation on job satisfaction (standard coefficient=.13, $p = .000$). These findings are in consistent with results founded by Eisenberger, Huntington, Hutchison and Sowa (1986).

Supervisor support will induce to employees that organization is concern about the welfare and development of the employees, which will lead to higher satisfaction. Also supervisor support can develop and improve the relationship.

Supervisor support will lead to the welfare of personnel and improvement of their attitude towards their careers. Perceived supervisor support is similar to positive emotional experiences in the working place. In other words, behavioral and psychological responses due to Perceived Supervisor Support will lead to positive emotions in working places and, as a result, positive attitudes towards the job will improve and also job satisfaction will increase accordingly (Eisenberger and et al, 1986).

The result of the study indicated that the standard coefficient of proactive behavior was significant and positive with job satisfaction (standard coefficient =.07, $p = .000$). This result is in agreement with the results found by Ashford, Sluss and Saks's (2007) work. It can be justified that the personnel who have proactive behavior in their working place most of the time experience and observe positive reactions of supervisors and other personnel toward themselves. As proactive behavior is based on creation and innovation methods in the working place, using creativity and innovation at the organizational level will lead to organizational efficiency (Ashford and et. al, 2007).

Also, with the help of a proactive approach, individuals can achieve more mastery and proficiency over their jobs and will

have more job satisfaction. As an example, having high levels of personal creativity and innovation could predict job satisfaction rise and job development within two years (Seibert, Crant & Kraimer, 1999).

Also, the results of the present research showed that the standard coefficient of the path from proactive behavior to job performance was positive and significant (standard coefficient =.18, $p = .000$). This result is in agreement with the results found by Morrison (1993), Grant, Parker and Collins (2009), Zou, Zheng and Zhu (2011) which stated that proactive behavior will result in better job performance of personnel. Proactive behavior can increase job performance of the personnel because proactive individuals create a better and stronger relationship with their colleagues and supervisors, get more information and receive feedback on their performance so they can alleviate their weak points: active information search on performance through inspection and supervision is an example. Doing so, individuals improve their organizational performance (Ashford and et al, 2003).

The result showed that there was a positive indirect relationship between proactive behaviors and job satisfaction variables with mediating effects of proactive behavior. This finding is in agreement with the findings by Seibert, Crant and Kraimer (1999). It can be explained that the reactions of colleagues and supervisors are pretty effective, since these kinds of behaviors lead to some innovations in the working place, which, in turn, will result in the satisfaction of personnel. Such innovations are welcomed by the organization.

The results showed that there was an indirect positive relationship between proactive personality and job performance variable with mediating effects of proactive behavior. This study accords with the results found by Ashford, Sluss and Saks

(2007) and Chan (2006). Zheng and Zhu (2011) studied the relationship of proactive personality and job performance with the mediating effect of proactive behavior and concluded that there was a positive relation between proactive personality and job performance with a mediating effect of proactive behavior. Proactive personality is a type of characteristic which can manage to free itself from environmental constraints and create effective changes. Proactive individuals can identify situations and opportunities, and are able to affect them. They are creative in their working places and keep working until they create meaningful and effective changes. These kinds of changes will lead to higher job performances (Fuller, Marler & Hester, 2006).

The results of the survey showed that there was an indirect positive relationship between perceived supervisor support and job satisfaction variables, and the mediating effect of proactive behavior. This result is in accordance with the result observed by Frese, Teng and Wijnen (1999) which demonstrates that supervisor support affects proactive behaviors, such as personal creativity. The supervisors can reduce barriers that employees encounter and support innovations and creativity; they motivate the personnel highly to display more proactive behaviors which will result in job performance.

The result of the study showed that there was an indirect positive relationship between perceived supervisor support and job performance variables with the mediating effect of proactive behavior. This result is in accordance with the results obtained by Frese and Fay (2001), which states that organizational support may motivate proactive behaviors. If organizations show their confidence, which could be manifested by managers, in their employees, their personnel will be motivated to be more perseverant. This will, in turn, lead to higher job performance. However, organizational support will diminish proactive

behavior if the personnel are not permitted to proceed in their own ways.

This survey, like any other survey, has some limitations. For example, self-report questionnaires were utilized in the present research, which possess related limitations. Besides, the participants of the study were the personnel of only one refinery; this fact poses some limitations on the generalization of the study to other populations and personnel. In addition, the data of this survey which was tested by the structural equation pattern should be applied carefully in causal relations.

The results of this study are important for the organizations in terms of the mediating effect of proactive behavior. This study can create a framework for organizations to improve their understanding of the complex process of proactive behavior. Thus, they can recognize organizational methods and interventions which will facilitate proactive behaviors and they can achieve positive organizational results, subsequently. The interaction view states that individuals and environment have a mutual interaction; if the environment affects individuals, they can affect the environment as well. Managers and supervisors of departments can confirm and extend this belief in their personnel that they themselves are the main factor regarding their job outcomes.

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