

# Influence of Shyness, Uncertainty Avoidance, and Risk Taking on University Students' Academic Achievement: A Path Analysis

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Received: March 19, 2015 Accepted: March 26, 2015 Online Published: June 5, 2015

doi:10.5539/ass.v11n18p326

URL: <http://dx.doi.org/10.5539/ass.v11n18p326>

## Abstract

The current study aimed to investigate whether the samples academic achievement can be predicted by the direct and indirect influences of the independent variables: shyness, uncertainty avoidance, and risk taking. The sample consisted of two groups: 77 Omani university students, and 68 non-Omani university students. The study applied Darwish's (2000) uncertainty avoidance scale, and Goss, Gilbert & Allan (1994) shame scale (ISS), while the risk taking scale was constructed by the researcher. Additionally, path analysis was used to test the study hypotheses. Results concluded that shyness (5%,  $p < .01$ ), uncertainty avoidance (5%,  $p < .01$ ), and risk taking (16%,  $p < .01$ ) were all significant negative predictors of academic achievement. As for gender and nationality, results did not indicate an influence on academic achievement ( $p > .05$ ).

**Keyword:** Shyness, uncertainty avoidance, risk taking, and academic achievement of university students

## 1. Introduction

Researchers have had a keen interest in understanding the factors leading to increased university students' academic achievement. Academic achievement is deemed to be one of the significant issues in higher education; a factor from which students' learning can be measured. Researchers have used more than one criterion to admit students into university with the expectation that students would succeed in higher education. Some criteria include cognitive and non-cognitive factors. Interestingly, some of the cognitive factors include SAT readiness test, and American College Test (ACT), while considering the fact that previous performance predicts later performance (Porter, Polikoff, Zeidner, & Smithson, 2008; Sedlacek, 2004). In addition, many related constructs such as IQ and scholastic competence have been used to infer academic success (Chen et al., 2004). In this study, academic achievement is considered to contain both the competence component of understanding and having knowledge regarding a subject area, and the performance component of being able to display this knowledge at a satisfactory level. As for the non-cognitive factors, researchers considered academic achievement in terms of personality traits (Chamorro-Premuzic, Swami, Furnham, & Maakip, 2003).

One may pause to find that some other researchers have considered both cognitive and non-cognitive factors to predict academic achievement. For instance, Shen & Comery (1997) found that both personality traits and IQ explain about 20-50% of the discrepancy in the total academic achievement. On the other hand, Blackwell (2004) found that university readiness scores only predict 16-20% of university GPA according to non-cognitive factors.

One of the factors that contribute to academic achievement is risk taking behavior, which is considered one of the factors contributing to academic success. Students do not take risk because they are afraid of committing mistakes, which leads them to achieving low scores (Dadour, 1999).

Psychology literature has dealt with risk-taking behavior from two perspectives: cognitive and non-cognitive perspectives. This approach was chiefly advocated by Guilford (1980) who believed that risk-taking is a cognitive trait, after which an action executed by the individual while carefully considering available options according to knowledge in hand. Rolison (2002) and Zaleskiewicz (2001) as well considered risk taking from a cognitive perspective and explained how information is important in correcting anti-social behaviors. From the non-cognitive perspective, the individual makes decisions based on information in hand about the situation to weigh the gains and loss before taking the risk. Moreover, risk-taking might be a number of psychological and social characteristics that end in the form of information and skill that direct and guide decisions made and

performed by the individual. Grable & Joo (2000) as well advocated this view and believed that adequate training can transform such characteristics into a skill directing decision making.

One of the factors that integrate both perspectives is uncertainty avoidance, which is considered by Hofstede (1980) as a dimension that includes cognitive, psychological, and social perspectives. Most definitions of uncertainty avoidance agree that it is a personal psychological and cognitive dimension through which a person tries to obtain information to clarify any foggy and emotional stress resulting from lack of information (Kahneman, 2003; Sorrentino, Smithson, Hodson, Roney, & Marie, 2003).

Shyness is considered one of the cognitive and non-cognitive factors. For instance, the Social Learning Theory described that observation and imitation have a role in the emergence of shyness. On the other hand, the psycho-analytic and humanistic schools believe that shyness is a result of self and others' denial, while the cognitive school contends that individuals suffering from shyness have cognitive errors occurring as part of information processing (Fitts, Seby, & Zlokovich, 2009). Bandura believes that shyness develops through individual social learning processes from the surrounding environment. On the contrary, Erickson believes that shyness is the result of a psycho-developmental crisis (Stranda, Cernab, & Downs, 2008).

As a consequence of discrepancies in psychologists' interpretations of shyness, definitions of shyness have become diverse and research endeavors have tried to clarify the meaning of shyness in more specific terms. Chen, Wang & Wang (2009); Chen & Tse (2008); Coplan, Prakash, O'Neil, & Armer (2004) and Gazelle & Ladd (2003) define it as a psycho-socio trauma resulting from psychological conflicts that overcome the individual since childhood, which disperse intellectual and creative abilities and lead to a difficulty in restraining behaviors directed to others. On the contrary, Alfano (2005); Cameron (2009); Coplan & Rubin (2010) and Gazelle (2006) believe that it is an excessive personal interest in self and social assessment.

Numerous studies have provided evidence that shyness students usually reported more negative significant affect and less positive affect (e.g., Findlay & Coplan, 2008; Findlay, Coplan, & Bowker, 2009; Twenge, 2002; Zaho, Kong, & Wang, 2013; Vahedi, 2011). There are few studies where researchers have specifically explored the links between shyness and academic achievement (Cohen et al., 2004). However, results from other studies have indirectly examined shyness and academic achievement. Negative significant correlations were found between these constructs (e.g., Chen, Wang, & Wang, 2009; Coplan, Prakash, ONel, & Armer, 2004; Gazlle & Ladd, 2003; Hollander & Bakalar, 2006; Hughes, 2008; Spere, Schmidt, Theall-Honey, & Martin-Change, 2004).

Personality theories such as that of Cattle found that risk taking as a personal trait is considered one of the most significant factors against shyness, solitude, and self regression since risk taking is a personal trait and a mental readiness characterizes the individual. In fact, risk taking a significant factor in success. University students who do not embark upon academic risk taking accompanied with certitude achieve low test grades (Dadour, 1999).

Some studies clarified the relationship between shyness and risk taking. For instance, Zalk, Kerr & Tilton-Waever (2011) found a mutual influential relationship between shyness and gender with risk taking in late adolescence. As reported, extreme shyness negatively influences their risk taking with males more than females.

The relationship between uncertainty and risk taking is clear as vagueness and uncertainty influences the individual's ability to make a decision whether to take a risk. That is, risk taking may not connote with loss but is related to uncertainty, which is vagueness and weakness of the possibility. The individual who embarks on risk taking has high bearing ability towards uncertainty and that there is a negative correlation between risk taking and uncertainty (Das & Teng, 2001; Kreiser, Marino, Dickson, & Weaver, 2010; Shapira, 2001).

Hofstede (2005, 2009) believe that uncertainty avoidance is a cultural aspect and is highly related to uneasiness, nervousness, and risk taking. Individuals with high uncertainty avoidance try to get rid of nervousness by keeping strict behavioral rules. Cultures with high uncertainty avoidance seek intellectuality in risk taking, while cultures with uncertainty tend to accept dangers more than other cultures. Hofstede & Hofstede elicited these findings after examining 74 countries with diverse cultures and found that Japan is 11<sup>th</sup> in uncertainty avoidance while the USA is 62. In a similar vacuum, Hofstede (2003, 2004) studies the cultural differences between a number of Arab countries and a number of European countries in terms of uncertainty avoidance. Hofstede found high Means among Arab countries in terms of uncertainty avoidance and strength disparity. He attributed the findings to the role of Islam in individuals' behaviors in these two dimensions. This finding was garnered by Darwish (2005) who found that Egyptian university students have higher uncertainty avoidance compared to German university students.

Since the sample of our study is university students and from different Arab environments, we bear in mind that university is a totally different environment than school. Therefore, the student may not be able to interact with

university setting or be in academic harmony with the subjects taught to him/her. Hoyos (2006); Spere & Evans (2009) stress that a number of shy university students attribute their weakness in interacting with their peers and low academic achievement to their cultural origins, which lack such interactions that influence the individual's learning interaction in the university.

As for significant differences between genders according to the study three variables, studies showed variance in shyness variable. Bishop, Spence & McDonald (2003); Coplan, De Bow, Schneider & Graham (2009); Karevold et al. (2012); Rubin, Coplan & Bowker (2009); Vahedi (2011); Grozier, (2005) and Spere & Evans (2009) proved the insignificant variation in shyness and gender. However, Coplan, Closson & Arbeau (2007); Gazelle & Ladd (2003) and Letcher, Smart, Sanson & Toumbourou (2009) found that males are more shy than females. On the contrary, studies such as that of Letcher, Smart, Sanson & Toumbourou (2009) report higher levels of shyness among female university students than male students. With regard to risk taking, studies found that males are more mature in terms of risk taking than females, meaning that females to take risk more than males (Celio, Karnik, & Steiner, 2006; Kloep, Guney, Coke, & Simsek, 2009; Mendle, Turkheimer, & Emery, 2007; Susman, Dorn, & Schiefelbein, 2003).

Results elicited from literature review and frameworks explaining the study terminology. The importance of the study are characterized in measuring the cultural differences in risk taking, shyness, and uncertainty avoidance among groups of Arab university students studying in Oman since these variables may impact their academic achievement positively or negatively.

Accordingly, the study problem can be illustrated in the following questions:

1. Is there a correlation between academic achievement of the study sample as a dependant variable and the study independent variables: risk taking, shyness, and uncertainty avoidance?
2. Can academic achievement of the study sample be predicted in light of risk taking, shyness, uncertainty avoidance, gender, and nationality?
3. Can we discover the direct and indirect impacts of risk taking, shyness, uncertainty avoidance, gender, and nationality on academic achievement among the study sample?

## **2. Study Hypothesis**

The current study tries to answer the following hypotheses:

1. There is a correlation between academic achievement of the study sample as a dependant variable and the study independent variables: risk taking, shyness, and uncertainty avoidance.
2. Academic achievement of the study sample can be predicted in light of risk taking, shyness, uncertainty avoidance, gender, and nationality.
3. There are direct and indirect impacts of risk taking, shyness, uncertainty avoidance, gender, and nationality on academic achievement among the study sample.

## **3. Methods**

### *3.1 Participants*

This paper relies on cultural comparative method to deal with risk taking, shyness, uncertainty avoidance among two sample groups: Omani and non-Omani university students.

Sample: the sample consists of two groups: the first group is Omani university students (N=77) and the second is Arab university students (N=68). Students are enrolled in Sultan Qaboos University, Gulf Private College, and Caledonian Private College; age 19-22, M=20.5 and SD=2.8. Volunteering respondents were contacted through student associations at SQU and private colleges.

### *3.2 Measures*

#### *3.2.1 Uncertainty Avoidance Scale*

Darwish's (2000) scale was applied as it is based on cultural aspects derived from Hofstede (1980). It consists of 15 items divided into two parts. The first includes 5 items in the form of questions containing ways of avoiding vagueness, nervousness, and emotional threat associated with some social situations or cases the individual might encounter. The second part consists of 10 items in the form of statements focusing on the importance of lack of information, surprise anticipation or mysterious incidents to the individual when interacting with society. Answer options are as follows: 1= never, 2= sometimes, 3= usually, 4= always. The scale has high psychometric properties since it was obtained through content validation, internal consistency, and Cronbach's alpha

coefficient. In the current study, validity was obtained by inspection of experts in psychological measurement, Cronbach's alpha on and sample of 25 students of the study sample,  $\alpha=.82$ .

### 3.2.2 Risk Taking Scale

The scale was prepared through theoretical review of works, particularly those by Skeel, Neadecker, Pilarski & Pytlak, (2007) and Korkmaz, (2002). The scale consists of 20 situations, four risk taking situations in each of these parts: professional, social, travel, educational, and economical. The situations were scrutinized and reviewed by a group of professionals to assess its validity in terms of measuring the target issues. Four situations were emitted accordingly: two economical, one educational, and one professional. Therefore, the final model of the scale consisted of 16 risk taking situations.

Factorial validity was obtained after conducting the experimental factor analysis for sample responses consisting of 145 male and female students. This was done after ensuring precision in statistical analysis by taking following considerations in the correlation matrix:

1. Ensuring the correlation matrix is not repetitive and derivative, and that it is not an independent matrix. That is, the absolute value of the matrix R is not equal to zero, even if it is very low. Moreover, the correlation matrix is different than unit matrix inasmuch as Bartlett's Test of Spheriety is significant at 0.05. Therefore, samples for all variables measured are evenly distributed. In addition, the sample homogeneity obtained through Kaiser-Mayer-Olkin (KMO=0.574) was acceptable in that  $KMO>0.50$ , as illustrated by the following table:

Table 1. Considerations in correlation matrix

Considerations in correlation matrix	
Correlation Matrix cutting value R	0.107
Bartlett's Test of Spheriety	242.043
Freedom values	91
Level of significance	0.000
KMO	0.574

2. Values obtained from Measure of Sampling Adequacy (MSA) test for Kaiser found in Anti-Image Correlation Matrix (AIC) are greater than 50. Therefore, they are acceptable according to Kaiser's criteria as illustrated by Table 3. To ensure the availability of criteria in the data, PAF was used as seen in Table 3.

Table 2. MSA values illustrated by Anti-Image Correlation Matrix (AIC) and primary statistics matrix for test situations

Situation	MSA values	Spread	Variable	Root	Percentage of shared variables in overall discrepancy	Cumulative percentage of explaining discrepancy
1	.613	.463	1	3.69	25.97	25.79
2	.617	.563	2	2.40	15.97	41.58
3	.530	.437	3	1.56	10.41	51.99
4	.650	.475	4	1.21	7.36	58.36
6	.512	.651	5	.92	6.48	64.84
7	.510	.362	6	.85	6.01	70.85
8	.608	.361	7	.77	5.11	75.96
9	.579	.404	8	.69	4.62	80.58
11	.562	.532	9	.60	3.99	84.57
12	.572	.379	10	.55	3.71	88.28
14	.697	.291	11	.47	3.13	91.41
15	.568	.316	12	.45	3.00	94.41
16	.681	.299	13	.39	2.81	97.22
18	.505	.297	14	.25	1.78	100.00

When comparing the initial matrix with the modified correlation matrix, it appears that the number of the remaining is bigger than 0.05. This means that the number of the derived factors is appropriate in interpreting the factors being researched. It appears from the Table 2 that the first three factors explain about 52% of the total discrepancy while the rest of the 10 factors explain about 48%. According to PAF style in Promax method, the first three factors sufficed for explaining results. The first variable is called social risk taking, travel, and alienation variable, with loading in situations 1,2,3,7,8,10 (Loading ratios .477, .479, .329, .389, .403, .488). The second factor was job risk taking with loading ratios .351, .253, .318, .683 respectively in 4, 6, 9, 12 situations.

The third factor was educational risk taking with loading ratios of .683, .318, .253, .351 in situations 5, 11, 12, 13 respectively. Test reliability for its situations and three factors through test-retest method on a sample of 30 male and female students with reliability of .72-.83.

### 3.2.3 Shyness Scale

The scale was developed from Cooks (1993) Internalized shame scale (ISS) by Goss, Gilbert and Allan (1994). It looks at global judgments of how people think others see them (e.g. I think other people see me as inadequate), it is therefore focused on external rather than internalized shame, the scale consists of 18 description of feeling or experiences, subjects respond on a 5 – point scale indicating how often they feel this way (ranging from 0 = never, to 4 = almost always), the Cronbach's alpha for this scale was .92 (Goss, Gilbert, & Allan, 1994). In this study, the Cronbach's alpha coefficient for ISS was .87.

### 3.3 Procedure

There hundred and forty – five students form a SQU and Private Colleges in Oman voluntarily participated in the test. Uncertainty avoidance, risk taking behavior, and shyness were completed in a classroom after obtaining informed consent. It took about 18 min for the students to complete all the instruments.

## 4. Results

### 4.1 Results of Testing the First Hypothesis

The first hypothesis states that there is a significant negative correlation between academic achievement grades of the study sample and their results on the risk taking test, shyness scale, and uncertainty avoidance scale. To test this hypothesis, Pearson's correlation was used to measure the correlation between basic results of the sample (N=145) on the three different variables: uncertainty avoidance, risk taking behavior, and shyness with the dependent variable which is academic achievement. The results were as follows:

Table 3. Correlation coefficients between academic achievement and the independent variables

Variable	Dimensions	Correlation coefficient	Effect size
Uncertainty avoidance behavior	resilience to vagueness, anxiety, and threatening	-.365**	Large
	lack of information and surprise expectancy	-.429**	Large
	Total	-.641**	Large
Risk taking behavior		-.444**	Large
Shyness behavior	Dimensions	-.566**	Large

R= .10 R= .30 R= .50) representing the size of effect small•moderate•large) respectively) Cohen, 1988, 83

It appears from the above table that there is a significant negative relationship (less than .01) between basic results of the sample (uncertainty avoidance in its two dimensions, risk taking behavior, and shyness) and their academic achievement results. Therefore, we accept the hypothesis that states a negative relationship between uncertainty avoidance, risk taking behavior, and shyness.

### 4.2 Results of Testing the Second Hypothesis

The second hypothesis states that academic achievement results of the study sample can be predicted from their results in risk taking behavior test, shyness scale, and uncertainty avoidance scale. To test this hypothesis, simple regression analysis and multiple regression analysis were applied to know the extent independent variables influence academic achievement. The purpose behind that was to pinpoint the factors from which we can predict academic achievement in the study sample. The results are illustrated in table:

Table 4. Simple linear regression between academic achievement and independent variables

Variables	Regression variable	Identification factor	"t" value of regression factor	"F" model
Uncertainty avoidance	-.641	-.707	9.990-	99.794
Risk taking	.444-	.708-	5.918-	35.017
Shyness	.506-	.550-	7.012-	49.162
Gender	.041	.035	.485	.235
Nationality	.136	.113	1.637	2.680

It appears from Table 4 that a one unit change in the uncertainty avoidance factor results in a change of about -.641 in academic achievement, which explains .707 of the changes occurring in achievement. Moreover, a one unit change of risk taking behavior results in -.444 change in achievement, which explains about .708 of the

changes happening in achievement. In addition, a one unit change in shyness factor (-.506) change in achievement; while explaining about .550 of the total changes in achievement. All of the results are significant (p=0.05). As for gender and nationality, their changes were subtle in terms of academic achievement and both explain about .148 in achievement, which means they both are insignificant.

Then, we explore the multiple regression model for the independent variables, from which we can predict academic achievement of the study sample as seen in Table 5.

Table 5. Multiple regressions between academic achievement and independent variables

Model	B	Std. Error	t	Sig.	R2	F
(constant)	4.725	.206	22.905	.000		
SHY	-.179	.078	-2.303	.023		
MC	-.286	.112	-2.545	.012	.457	39.509
UNC	-.492	.094	-5.237	.000		

It appears from the above table that the value of the coefficient of determination (.457) is significant with (P=.05). Therefore, the three independent variables collectively explain about .457 of the changes in academic achievement as F value for the model is 39.509, which is significant. Hence, about 45.7% of the total discrepancies in the sample’s academic achievement can be explained in light of all variables.

4.3 Results of Testing the Third Hypothesis

The third hypothesis states that there are direct and indirect influences on the sample’s academic achievement from each of the three independent variables: risk taking behavior, shyness behavior, uncertainty avoidance behavior, gender, and nationality. To test this hypothesis, a Path Analysis model was applied through the Amos program. The results indicate that the independent variables significantly predict academic achievement in the following regression formula:

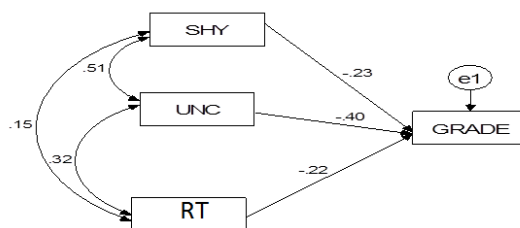


Figure 1. The relationship among shyness, uncertainty, risk taking and academic achievement

Table 6. Matching indicators of the model to data

Indicator	X2	NFI	RFI	TLI	IFI	CFI	PNFI	PCFI	RMSEA
Value	103.92	1.00	.954	.949	.956	.957	.969	.952	.048

It appears from the above table that Kay Square value is high and significant, all indicators above .95, and RMSEA indicator (close to .05) indicate a match between the data and the model.

As for the direct and indirect causal effects of the independent variables on academic achievement of the study sample, the results were as follows:

Table 7. Relative effects of Variables

Variables	Correlation with achievement		Relative effects	
			Direct	Indirect
Shyness	.506		.229	.277
Risk taking	.444		.219	.225
Uncertainty avoidance	.641		.402	.239

It appears from Figure 1 and table that there is a negative significant influence of the three independent variables on academic achievement. That is, there is a significant statistical path among the independent variables and

academic achievement. That is, the path variable square is the discrepancy in the part of the dependent variable attributed to the influence of the independent variable. From the previous table, we find that shyness, risk taking behavior, and uncertainty avoidance variables contribute in explaining 5%, 5%, and 16% of the total discrepancy in academic achievement respectively.

## 5. Discussion

The current study was designed to explore the variables' effects of shyness, risk taking behavior, and uncertainty avoidance behavior on college student's achievement in Oman. The results of the current study reveal that shyness, risk taking behavior, and uncertainty avoidance behavior have a negative significant relationship with academic achievement. Results explained about 46% of the total discrepancy in students' academic achievement. The current results are in line with previous research that focused on cognitive and non-cognitive variables; all of which indicating either a negative or positive relationship with academic achievement. It is undoubted that academic achievement is influenced by several variables, each of which affects achievement to a certain degree. In fact, it is impossible to solely consider general ability as a measure of individual differences in academic achievement. Instead, there is an urgent need to pinpoint the dynamic complex interaction among the cognitive and non-cognitive variables as they influence scholastic achievement, just as asserted by Alanazi (2002); Black Well (2004); Boyle, Duffy & Dunleavy (2003); Diseath (2003); Diseath & Martinsen (2003); Henderson (2005); Hsieh (2005) and Wood (2004).

Williams (2008) questioned the reliability of the scales that depend on chunking results and regression formulas that rely on high school subject results as a basis for distributing students to university majors while out ruling cognitive and non-cognitive variables.

One of the current study results is the negative significant correlation between shyness behavior and academic achievement, which negatively explained about 23% of the total discrepancy in student scholastic achievement. This finding is in line with (Souza, 2005; Souza, Ramaswamy, & Babu, 2008; Mastushima & Shiomi, 2001) who found a negative relationship between shyness and achievement. They proposed that shyness is constituted of three elements: cognitive, emotional, and behavioral, which represent main symptoms of shyness. In fact, one element or more may dominate with the individual and influence achievement negatively. These elements are: Mental Bias; Social Anxiety, and Undeveloped Social Skills. The current study is in line as well with (Hughes, 2008; Hoyos, 2006; Hoyos, Spere, & Evans, 2009) who indicated that shy students attribute their low achievement to their cultural origins, which do not encourage socialization and; hence, negatively impacts their university achievement.

The negative relationship between shyness and academic achievement in the current study is the assumption that over shy students feel despised, emotionally irritated, scared of others judgments, anxious, and hesitant in social situations. For instance, oral examination that requires speaking in front of class or anxiety that prevents the student from focused revision are examples of situations in which shyness negatively influences achievement. This interpretation is consistent with (Hughes, 2008; Crozier & Badawood, 2009; Grozier & Hostettler, 2003; Crystal, Parott, Okazaki, & Watanabe, 2001) who found that over shyness is a negative predictor of achievement. This result is consistent with the results of some Arab Studies (such as: Abdul Qadir & Kamel, 2005; Harthy, 2003), and differed with the study (Slamah, Sulayman, & Ibrahim, 2011), who reached to the absence of differences in statistical significance between the behavior of shyness and academic achievement.

As for risk taking behavior, path analysis show that it contributed to 22% of the total discrepancy in achievement. This result is in line with Avnery (2001); Bereby Meyer and Budescu (2003) and Robinson (2012) who all found a negative relationship between risk taking behavior and scholastic achievement. In contrary, the results of the current study were inconsistent with Williams (2012) and Miralem (2012) who did not find a relationship between the two factors. This may be explained by the fact that it is a voluntary action and that individuals may opt for one of the three types of risk taking behavior: risk avoidance, partial participation in risk taking, and full risk taking (Liewellyn, 2003).

As for uncertainty avoidance, path analysis revealed that it contributed to about 44% of the total discrepancy in achievement, which is consistent with Hagedorn and Purnamasai (2012) that found uncertainty avoidance behavior negatively influences students' math achievement. The current study is as well in line with Brown (2000) who concluded that uncertainty avoidance behavior negatively influenced teacher-student interaction and student-student interaction, leading to low academic achievement.

Research has shown that even when there are no main effect (Gender and the Country) the correlations between achievement and other measures (Uncertainty avoidance, Shyness, and Risk –Taking behavior) are moderated by gender and the country.

As for the insignificant statistical results shown by path analysis concerning nationality and achievement, the result might be attributed to the fact that nationality poorly contributed to uncertainty avoidance behavior. The current sample comes from a Muslim Arab background that is characterized by a collective social culture, while western cultures support the individualistic culture as evidenced by a number of studies, such as those of Basabe, et al (2002); Darwish & Huber (2003) and Darwish (2005). As for the weak contribution of the student nationality to the correlation between shyness and achievement, the reason may be that cultural backgrounds of the respondents were similar, just as the relationship between parents and ethnic background. The current study results were consistent with Hoyos (2006) who found that US university students were different in terms of the relationship between shyness and achievement due to their diverse ethnic backgrounds and birth place of parents. As for students' nationality weak relationship with risk taking and achievement shown by path analysis, the reason may be related to social ethics of the Arab society that generally support risk taking.

Risk –Taking behavior may be influenced by culture because of the relationship to factors such as social value, social history and social ideology, which are likely to influence how people respond to risk. Indeed, cross-culture differences have been found with regard to risk decision – making (Du, Li, & Du, 2014; Smith, Steinberg, & Chein, 2014). However, there have been few cross –cultural studies of risk –taking preference. But the authors found that Chinese people were more risk -taking than Americans only in investment domain (Hsee & weber, 1999).

As for the weak contribution of gender in the relationship among the three main factors in this study as revealed by regression analysis, the study results agreed with the results of Vahedi (2011); Grozier (2005) and Spere & Evans (2009) in relation to shyness factor. Moreover, results showed a weak contribution of risk taking behavior and gender with an agreement with results of Dasuqi (2000) in the Arab culture and Steward et al. (1999) in the western culture. This indicates that some families, particularly Arab families, do not encourage their children to take risk, especially in educational situations, which in turn negatively influences their achievement. As for the contribution of uncertainty avoidance behavior, the researcher did not find past studies exploring the weak contribution of gender as a meditational variable between achievement and uncertainty avoidance. The reason might be that researchers explored gender with risk taking as a latent variable in the relationship between achievement and risk taking. Therefore, its contribution is similar to that of risk taking towards achievement, which is in line with Thomas and Muller (1998) and Das and Teng (2001) who postulate that a risk taking individual has high endurance towards uncertainty avoidance.

Although this study breaks new ground in several ways, it is certainly not without limitations, which leave enough space for future research and expand the findings. The first limitation is that any causal relationships among the variable should be draw with caution due to the correlation cross-sectional nature of the study. Future longitudinal or experimental studies will facilitate more causal evaluations. The second limitation is that the study was collected only via self- report scale. Thus, an important goal of future research lies in investigating the variables by multiple methods (e.g. experience-sampling, physiological markers, etc.) may reduce the “subjectivity” limitation of the findings. The third limitation is that the study group was composed of high numbers of participants in Arabic culture, which limits the generalizability of the findings. The fourth limitation is that I did not control for several personal dimensions that may influence the relationship between achievement and risk taking behavior, shyness behavior, and uncertainty avoidance behavior, such as academic motivation, approaches to learning. In addition, the significant path from achievement through risk taking behavior, shyness behavior, and uncertainty avoidance behavior shed light on the underlying mechanisms of the vicious cycle that leads achievement individuals to suffer from Shyness, risk taking behavior and uncertainty avoidance behavior. Under such circumstances, it is likely that conducting awareness programs and guidelines announced by the Centers for guidance and direction in the deans of student affairs, the benefit of students who are in a state of shyness and uncertainty and take the risk, in order to alleviate it, so that they can cope with different life.

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