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## RISK TOLERANCE, TIME HORIZON, AND ESTATE INTENTIONS: JUST HOW IMPORTANT ARE “CIRCUMSTANCES AND ASSOCIATED EMOTIONS”?

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## RISK TOLERANCE, TIME HORIZON, AND ESTATE INTENTIONS: JUST HOW IMPORTANT ARE “CIRCUMSTANCES AND ASSOCIATED EMOTIONS”?

### Abstract

This study tests the importance of socio-demographic and psychological variables for investor intentions, including risk tolerance, time horizon, and estate intentions. Overall, hope is the psychological variable most consistently related to the dependent variables of risk tolerance, time horizon, and estate intentions. Age, household income, investment experience, and work experience pale in comparison with the psychological variables of hope and openness to new experience, both of which are positively associated with the dependent variables. Pro-social attitudes are also important as a moderating variable. The most interesting findings are that women with higher levels of education have higher levels of risk tolerance, whereas men with higher levels of education have lower levels of risk tolerance, findings contrary to previous research showing education to be positively associated with risk tolerance, and males to be more risk tolerant than females. Old stereotypes regarding gender preferences need to be re-examined. Much of the existing literature is based on findings from decades past, when sex roles were more differentiated, same sex marriage was illegal, and women’s career opportunities were more constrained. As Pan and Statman (2012; 2013) suggest, circumstances such as changing family patterns can affect investor preferences and behaviors. This study also demonstrates that positive psychology emotions such as hope or confidence in the future may serve to inoculate investors from panic selling or lessen the likelihood of excessive trading. Consequently, in a crisis investors with attitudes associated with positive psychology may be less prone to wealth-destroying behavior such as “going to cash.” Conversely, investors low in such attitudes are more likely to engage in such behaviors.

### Keywords

Education; Financial advisors; Gender; Hope; Investor preference; Positive psychology; Risk tolerance; Time horizon

## **1. INTRODUCTION**

As Pan and Stadman (2012) suggest, the Great Recession of 2009 exposed several problems with the methods financial advisors commonly use to assess risk tolerance among clients. As they phrase it, “Many investors who were assessed as risk tolerant in 2007 and assigned portfolios heavy in equities dumped their equities in 2008 and 2009 and some even dumped their advisors” (2012, p. 54). One of the deficiencies they identified is that existing methods fail to take into account how risk tolerance is affected by “circumstances and associated emotions.” Subsequently, they employed an online survey to identify several psychological attributes as well as other environmental variables that contribute to risk tolerance (Pan and Stadman, 2013). This study follows up on their observations by examining the effect of several attitudinal and psychological variables, along with conventional demographic variables like gender, age, education, income, work experience, and investment experience, on several dependent variables important in assessing investor preference. Attitudinal and psychological variables included are political ideology and pro-social attitudes, and attitudes derived from the psychology literature on positive psychology—hope and openness to new experience. Investor preferences comprising the dependent variables are risk tolerance, time horizon, and estate intentions, the latter measured through a newly developed scale designed to assess the importance of leaving a legacy to family, church, or other philanthropic entities.

The main contribution of this study to investment consulting is that it empirically demonstrates the importance of positive psychology, especially hope, for risk tolerance, time horizon, and estate intentions. Another contribution is that it calls into question some previous findings on risk tolerance, especially insofar as gender stereotypes are concerned. A great deal of the current literature finds women to be more risk averse than men. However, this study finds that, among undergraduate business students, women and men do not differ significantly in risk tolerance, and among graduate students, women are significantly more risk tolerant than men. Furthermore, men in graduate business programs show lower risk tolerance than undergraduate men. For this sample, comprised of the young and striving, education may have the effect of increasing women’s risk tolerance, but of decreasing men’s risk tolerance. These findings suggest that as women advance in the workplace, their attitudes may change and they may become more risk tolerant. Men facing increased accomplishment and competition from women in the workplace may develop lower risk tolerance, perhaps indicative of less of a propensity for overconfidence often observed in previous studies (Barber and Odean, 2001). Also, the rise of the households with two relatively equal wage-earners, and the legalization of same-sex marriages, may produce different attitudes toward risk tolerance, time horizon, and estate intentions than those expressed by previous generations. As Pan and Stadman (2012) suggest, circumstances and emotions may be more important for risk tolerance and other aspects of investor preference than the existing literature suggests. Better understanding of psychological and circumstantial variables, and more consideration of the changing patterns of family life and workforce participation, may enable investment consultants to serve their clients better. For example, positive psychology emotions such as hope or confidence in the future may serve to inoculate investors from panic selling or lessen the likelihood of excessive trading. Consequently, in a crisis investors with attitudes associated with positive psychology may be less prone to wealth-destroying behavior such as “going to cash.” Since investors low in such attitudes are more likely to engage in such behaviors, investment consultants may want to provide extra attention to such clients.

## **2. METHODOLOGY**

This study used a student sample of 454 graduate and upper level undergraduate business students in a major public university in the Southeastern United States. While use of a student sample is often considered a weakness, in this case it may actually be a strength given that this sample includes many subjects at the beginning of their careers or in mid-management positions, hence may be more representative of the investors of today and of the future, especially insofar as psychological and attitudinal traits are concerned. Cunningham, Anderson, and Murphy (1974) provide a classic critique of using student samples, but their argument is based on the premise that students lack real-world experience, live in protected environment, and have yet to take on family and civic responsibilities. This student sample (242 men and 212 women) differs in each of these



	1	2	3	4	5	6	7	8	9	10	11	12	13
7.HOPE	-.038	-.033	.017	-.027	-.018	-.071	1						
	.442	.504	.730	.597	.719	.151							
	412	412	409	382	411	413	413						
8.OPEN	.046	-.026	-.044	-.083	-.031	-.128**	.419**	1					
	.332	.588	.350	.092	.512	.008	.000						
	449	449	445	417	448	423	410	450					
9.IDEO	-.046	.080	.254**	-.226**	.457**	-.482**	.020	.024	1				
	.333	.089	.000	.000	.000	.000	.693	.620					
	451	451	447	421	451	424	409	446	451				
10.PRO	.190**	-.039	-.197**	.010	-.114*	.007	-.139**	-.022	-.075	1			
	.000	.433	.000	.850	.020	.880	.005	.652	.126				
	416	416	413	387	415	416	409	412	413	416			
11.RISK	.056	.014	-.039	.008	-.051	-.034	.133**	.139**	-.057	.009	1		
	.238	.773	.413	.868	.279	.480	.007	.003	.229	.852			
	452	452	448	421	451	427	412	448	449	415	453		
12.TIME	.110*	-.029	-.074	-.049	-.088	-.097*	.236**	.152**	-.063	.040	.481**	1	
	.024	.551	.131	.335	.072	.048	.000	.002	.200	.411	.000		
	419	419	416	389	418	420	412	416	416	415	419	420	
13.ESTAT	-.027	.081	.042	-.076	-.080	-.023	.196**	.117*	.062	-.060	.000	.081	1
	.583	.098	.397	.136	.104	.634	.000	.017	.205	.226	.995	.097	
	417	417	414	387	416	418	410	415	414	413	417	417	418

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The dependent variables of this study are risk tolerance, time horizon, and estate intentions. Table 1 provides the first indication that psychological and attitudinal characteristics may actually be more important determinants of these investor preferences than socio-demographic variables. Of the variables significantly associated with any of these three elements of investor preference, only two socio-demographic relationships are statistically significant. Women express preference for a longer time horizon than men, and respondents with investment experience express preference for a shorter time horizon than those without investment experience. However, all three aspects of investor preference--risk tolerance, time horizon, and estate intentions--are significantly and positively associated with both positive psychology dimensions, hope and openness. These initial findings give strong support to the idea that emotions or psychological dispositions are important determinants of investor preferences.

### 3. MULTIPLE REGRESSION AND ANOVA ANALYSIS

Multiple regression and ANOVA analysis provide additional perspective on the relationships between the independent variables and the dependent variables. The regression model was based on an explanatory factor analysis. Since we wanted to see how much value is added to the model by including attitudinal and psychological variables, we started by looking at the adequacy of the model without these variables. The impact of socio-demographic variables on the investor preferences of risk tolerance, time horizon, and estate intentions was tested first, then the analysis was repeated adding the attitudinal and psychological variables. The following multiple regression equations were developed to predict the dependent variables:

$$Y_{(\text{Risk Tolerance})} = B_1 x_1 + B_2 \text{gender} + B_3 \text{age} + B_4 \text{education} + B_5 \text{income} + B_6 \text{work} + B_7 \text{investment} + B_8 \text{hope} + B_9 \text{open} + B_{10} \text{political ideology} + B_{11} \text{pro-social attitudes} + E$$

$$Y_{(\text{Time Horizon})} = B_1 x_1 + B_2 \text{gender} + B_3 \text{age} + B_4 \text{education} + B_5 \text{income} + B_6 \text{work} + B_7 \text{investment} + B_8 \text{hope} + B_9 \text{open} + B_{10} \text{political ideology} + B_{11} \text{pro-social attitudes} + E$$

$$Y_{(\text{estate Intention})} = B_1 x_1 + B_2 \text{gender} + B_3 \text{age} + B_4 \text{education} + B_5 \text{income} + B_6 \text{work} + B_7 \text{investment} + B_8 \text{hope} + B_9 \text{open} + B_{10} \text{political ideology} + B_{11} \text{pro-social attitudes} + E$$

Using the enter method, a non-significant model emerged when only the socio-demographic variables were used ( $F=.706$ ,  $p=.6455$ , with the adjusted R square =  $-.005$ ).

#### 4. ANALYSIS WITH SOCIO-DEMOGRAPHIC VARIABLES

Results of the analysis using only socio-demographic variables are shown in Tables 2, 3, and 4. The only significant findings related to work experience and investment experience. Participants with more work experience had a shorter time horizon and scored lower on estate intentions. More investment experience was also associated with a shorter time horizon. However, risk tolerance was not significantly associated with any of the socio-demographic variables. These findings are somewhat paradoxical, as the commonly assumed patterns are not observed, and the patterns we observe run contrary to logical assumptions and suggest some interesting questions. For example, why would work experience and investment experience be negatively associated with time horizon in this particular sample, a surprising result given previous research and theory (Klos, Weber, and Weber, 2005)? Why would men not show more risk tolerance than women, as observed in many previous studies (Bajtelsmit, Bernasek, and Jianakoplios, 1999; Haslem, and Baker 1974; Powell and Ansic, 1997)? Why would ideology have no effect on investor preferences when previous studies indicated it might be important (Carney, Jost, Goslin, and Potter, 2008; Chin and Parwada, 2009; Hong and Kostovetsky, 2012; Kaustia and Torstila, 2011)?

**Table 2: Multiple Regression Analysis Predicting Risk Tolerance with Socio-demographic Variables**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	5.763	.535		10.766	.000
	GEN	.063	.153	.021	.409	.683
	AGE	-.021	.107	-.011	-.196	.845
	EDU	-.132	.186	-.038	-.710	.478
	INC	-.003	.057	-.003	-.056	.955
	WORK	-.267	.197	-.075	-1.355	.176
	INV	-.132	.164	-.045	-.803	.423

a. Dependent Variable: RISK

**Table 3: Multiple Regression Analysis Predicting Time Horizon with Socio-demographic Variables**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	5.925	.540		10.977	.000
	GEN	.142	.155	.048	.916	.360
	AGE	.081	.116	.038	.696	.487
	EDU	-.198	.190	-.056	-1.041	.299
	INC	-.025	.058	-.023	-.430	.667
	WORK	-.443	.200	-.122	-2.217	.027
	INV	-.346	.167	-.116	-2.066	.039

a. Dependent Variable: TIME

**Table 4: Multiple Regression Analysis Predicting Estate Intentions with Socio-demographic Variables**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	10.042	.828		12.132	.000
	GEN	-.321	.238	-.069	-1.348	.179
	AGE	.536	.175	.167	3.068	.002
	EDU	-.036	.292	-.007	-.122	.903
	INC	-.164	.089	-.098	-1.842	.066
	WORK	-.947	.307	-.169	-3.086	.002
	INV	-.181	.256	-.039	-.706	.480

a. Dependent Variable: EST

## 5. ANALYSIS WITH PSYCHOLOGICAL AND ATTITUDINAL VARIABLES

Psychological and attitudinal variables were added to the model to find out if this would add more explanatory power. For risk tolerance, the unstandardized regression analysis shown in Table 5 demonstrates that, even with the addition of these variables, the score on risk tolerance did not vary and no statistically significant associations are seen. Table 6 shows that for time horizon, only hope was statistically significant. For estate intentions, Table 7 indicates that three out of the nine independent variables were highly significant. Older respondents, those with less work experience, and those scoring higher on hope were more likely to place value on leaving a bequest.

**Table 5: Multiple Regression Analysis Predicting Risk Tolerance with Socio-demographic Variables and Attitudinal Variables**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.646	.649		7.162	.000
	GEN	.016	.157	.005	.100	.920
	AGE	.066	.114	.032	.576	.565
	EDU	-.099	.195	-.029	-.507	.612
	INC	-.011	.059	-.010	-.179	.858
	WORK	-.192	.213	-.054	-.902	.368
	INV	-.123	.186	-.041	-.659	.510
	HOPE	.044	.025	.103	1.809	.071
	OPEN	.054	.029	.106	1.836	.067
	IDEO	-.081	.077	-.071	-1.056	.292

a. Dependent Variable: RISK

**Table 6: Multiple Regression Analysis Predicting Time Horizon with Socio-demographic Variables and Attitudinal Variables**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.484	.646		6.936	.000
	GEN	.174	.157	.058	1.114	.266
	AGE	.092	.116	.043	.793	.429
	EDU	-.135	.195	-.038	-.696	.487
	INC	-.022	.059	-.020	-.366	.714
	WORK	-.325	.212	-.090	-1.534	.126
	INV	-.360	.187	-.120	-1.933	.054
	HOPE	.079	.024	.181	3.244	.001
	OPEN	.037	.029	.072	1.280	.201
	IDEO	-.088	.077	-.076	-1.152	.250

a. Dependent Variable: TIME

**Table 7: Multiple Regression Analysis Predicting Estate Intentions with Socio-demographic Variables and Attitudinal Variables**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	7.740	.993		7.792	.000
	GEN	-.248	.241	-.053	-1.028	.305
	AGE	.552	.175	.172	3.162	.002
	EDU	-.160	.299	-.029	-.535	.593
	INC	-.123	.091	-.073	-1.355	.176
	WORK	-1.082	.325	-.194	-3.326	.001
	INV	.093	.286	.020	.327	.744
	HOPE	.105	.038	.154	2.775	.006
	OPEN	.059	.045	.074	1.312	.190
	IDEO	.209	.118	.117	1.775	.077

a. Dependent Variable: EST

Next, pro-social attitudes were added as a moderating variable. The results are shown in Tables 8, 9, and 10. For risk tolerance, the results show that adding pro-social attitudes as a moderator results in an overall significant model with  $F = 1.79$  and  $p$  value = 0.022. However, we note an interaction between education and pro-social attitudes. For time horizon, adding pro-social attitudes as a moderator variable produces a significant model with  $F = 2.028$ , and  $p$  value = .007. For estate intentions, adding pro-social attitudes as a moderator variable produces an overall significant model with  $F = 2.386$ , and  $p$  value = .001. Pro-social attitudes, not generally considered in investment consulting, are shown to be of consequence for all three dependent variables.



**Table 8: Multiple Regression Analysis Predicting Risk tolerance with Socio-demographic Variables and Attitudinal Variables with Pro-social Attitudes as a Moderator Variable**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	10.720	3.487		3.075	.002
	GEN	-1.122	.786	-.377	-1.428	.154
	AGE	.237	.396	.115	.597	.551
	EDU	-1.778	.829	-.513	-2.146	.033
	INC	.315	.257	.293	1.227	.221
	WORK	-.742	1.071	-.207	-.693	.489
	INV	-.025	.861	-.008	-.028	.977
	HOPE	.023	.114	.054	.206	.837
	OPEN	-.155	.136	-.306	-1.134	.258
	IDEO	-.358	.364	-.312	-.984	.326
	PRO	-.299	.167	-.914	-1.792	.074
	HOPR	.001	.006	.062	.197	.844
	OPPR	.010	.007	.503	1.549	.122
	IDPRO	.014	.017	.273	.818	.414
	GENPRO	.055	.038	.479	1.445	.149
	AGEPRO	-.009	.020	-.103	-.427	.670
	EDPRO	.089	.042	.552	2.098	.037
	INCPRO	-.016	.013	-.339	-1.274	.203
	WORKPRO	.023	.051	.174	.445	.657
	INVPRO	-.006	.042	-.044	-.148	.883

a. Dependent Variable: RISK

**Table 9: Multiple Regression Analysis Predicting Time Horizon with Socio-demographic Variables and Attitudinal Variables, with Pro-social Attitudes as a Moderator Variable**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.099	3.534		2.858	.005
	GEN	-.284	.795	-.094	-.357	.722
	AGE	-.118	.423	-.055	-.279	.781
	EDU	-.981	.845	-.277	-1.161	.246
	INC	-.080	.261	-.073	-.307	.759
	WORK	-.355	1.082	-.097	-.328	.743
	INV	-.855	.889	-.283	-.962	.337
	HOPE	-.094	.115	-.215	-.817	.415
	OPEN	-.024	.138	-.046	-.172	.864
	IDEO	-.267	.370	-.230	-.721	.471
	PRO	-.281	.169	-.841	-1.663	.097
	HOPR	.009	.006	.478	1.539	.125
	OPPR	.003	.007	.127	.395	.693
	IDPRO	.009	.018	.174	.518	.605
	GENPRO	.022	.038	.185	.562	.574
	AGEPRO	.011	.021	.124	.496	.620
	EDPRO	.046	.043	.282	1.072	.285
	INCPRO	.003	.013	.059	.221	.825
	WORKPRO	.001	.052	.007	.018	.986
	INVPRO	.024	.044	.169	.560	.576

a. Dependent Variable: TIME

**Table 10: Multiple Regression Analysis Predicting Estate Intentions with Socio-demographic Variables and Attitudinal Variables, with Pro-social Attitudes as a Moderator Variable**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	10.369	5.370		1.931	.054
	GEN	-1.608	1.210	-.345	-1.329	.185
	AGE	1.273	.610	.397	2.087	.038
	EDU	.307	1.276	.057	.241	.810
	INC	-.593	.395	-.353	-1.501	.134
	WORK	-1.416	1.649	-.253	-.858	.391
	INV	-1.274	1.327	-.275	-.960	.338
	HOPE	.415	.175	.614	2.367	.018
	OPEN	-.248	.210	-.314	-1.182	.238
	IDEO	-.287	.560	-.161	-.513	.608
	PRO	-.123	.257	-.242	-.480	.632
	HOPR	-.016	.009	-.570	-1.850	.065
	OPPR	.016	.010	.488	1.524	.128
	IDPRO	.024	.027	.289	.875	.382
	GENPRO	.068	.058	.380	1.164	.245
	AGEPRO	-.040	.031	-.307	-1.288	.199
	EDPRO	-.023	.065	-.093	-.357	.721
	INCPRO	.024	.020	.323	1.235	.218
	WORKPRO	.019	.079	.092	.239	.811
	INVPRO	.067	.065	.301	1.022	.307

a. Dependent Variable: EST

## 6. DISAGGREGATION BY GENDER

Taking into account the atypical male-female scores on risk tolerance, we decided to disaggregate the data by gender and run bivariate Pearson correlation analysis. Table 11 shows the importance of psychological variables as compared to socio-demographic variables. Men with higher hope were more risk tolerant, had a longer time horizon, and placed higher value on leaving a bequest. Men with more openness were more risk tolerant, invested with a longer time horizon, and placed higher value on leaving a bequest.

**Table 11: Correlation Matrix for Males**

	AGE	EDU	INC	WORK	INV	HOPE	OPEN	IDEO	PRO	RISK	TIME	EST
AGE	1											
	242											
EDU	.148*	1										
	.022											
	241	241										
INC	.066	-.156*	1									
	.328	.019										
	225	224	225									
WORK	.177**	.200**	-.047	1								
	.006	.002	.481									
	241	240	225	241								
INV	.137*	-.043	.307**	-.153*	1							
	.039	.522	.000	.020								
	229	228	213	228	229							
HOPE	-.026	-.014	-.098	-.078	-.050	1						
	.702	.837	.161	.248	.459							

	221	220	205	220	221	221						
OPEN	-.015	-.057	-.156*	-.109	-.074	.516**	1					
	.820	.378	.020	.095	.269	.000						
	239	238	222	238	226	220	239					
IDEO	.005	.269**	-.220**	.386**	-.453**	-.031	-.036	1				
	.943	.000	.001	.000	.000	.643	.581					
	240	239	225	240	227	219	237	240				
PRO	-.100	-.216**	.016	-.133*	-.043	-.095	-.039	-.083	1			
	.137	.001	.819	.048	.520	.158	.567	.221				
	223	222	207	222	223	220	221	221	223			
RISK	-.005	-.144*	.018	-.003	.046	.211**	.183**	-.091	-.036	1		
	.935	.025	.794	.962	.489	.002	.005	.161	.593			
	241	240	225	240	229	221	238	239	223	241		
TIME	-.079	-.170*	-.061	-.090	-.105	.278**	.188**	-.040	.046	.450**	1	
	.239	.011	.380	.180	.118	.000	.005	.550	.500	.000		
	223	222	207	222	223	220	221	221	222	223	223	
EST	.082	.043	-.145*	-.066	-.035	.160*	.137*	.043	-.091	.047	.106	1
	.222	.521	.038	.327	.607	.018	.042	.520	.177	.489	.114	
	223	222	207	222	223	220	222	221	222	223	222	223

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 12 shows that women with higher hope, like men, had a longer time horizon and placed high value on leaving a bequest, but they differed from men with higher hope in not showing more risk tolerance. Unlike men, women who were more educated were more risk tolerant. Openness was not associated with any investor intentions for women, an interesting contrast with men, for whom openness was significantly related to all three investor intentions.

**Table 12: Correlation Matrix for Female Investors**

	AGE	EDU	INC	WORK	INV	HOPE	OPEN	IDEO	PRO	RISK	TIME	EST
AGE	1											
	212											
EDU	.166*	1										
	.016											
	209	209										
INC	.206**	-.062	1									
	.004	.388										
	197	195	197									
WORK	.244**	.200**	-.117	1								
	.000	.004	.100									
	212	209	197	212								
INV	.209**	-.093	.294**	-.302**	1							
	.003	.193	.000	.000								
	198	196	184	198	198							
HOPE	-.049	.051	.063	.037	-.095	1						
	.497	.490	.406	.607	.190							
	191	189	177	191	191	191						
OPEN	-.035	-.015	.016	.050	-.179*	.304**	1					
	.619	.827	.825	.469	.012	.000						
	210	207	195	210	196	189	210					
IDEO	.171*	.224**	-.249**	.528**	-.533**	.081	.095	1				
	.013	.001	.000	.000	.000	.265	.170					
	211	208	196	211	197	190	209	211				
PRO	.085	-.107	.053	-.053	.109	-.190**	-.019	-.036	1			
	.241	.140	.477	.465	.131	.009	.798	.622				
	193	191	180	193	193	189	191	192	193			
RISK	.046	.150*	.007	-.094	-.122	.007	.070	-.004	.067	1		
	.506	.031	.926	.173	.087	.928	.312	.952	.353			
	211	208	196	211	197	190	209	210	192	211		

TIME	.048	.086	-.014	-.066	-.061	.182*	.100	-.074	-.013	.513**	1	
	.507	.235	.854	.360	.394	.012	.165	.305	.859	.000		
	196	194	182	196	196	191	194	195	193	195	196	
EST	.076	.033	.007	-.101	-.016	.248**	.099	.082	-.003	-.059	.062	1
	.290	.651	.926	.160	.826	.001	.171	.258	.967	.417	.390	
	194	192	180	194	194	189	192	193	191	193	194	194

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

## 7. THE IMPACT OF “CIRCUMSTANCES AND EMOTIONS” ON INVESTOR PREFERENCES

This study adds political ideology, positive psychology attitudes, and pro-social attitudes as new dimensions to the study of investor preferences with regard to risk tolerance, time horizon, and estate intentions. Although positive psychology has been studied widely in other disciplines (Seligman, and Csikszentlihalyi, 2000), these attitudes have not often been considered in studying investor preferences. This study suggests that socio-demographic characteristics are not as important in determining investor preferences as psychological and attitudinal qualities, especially hope, an attitude or psychological attribute which theorists have thought would be particularly important (Towle, 2012). Ideology had little impact on investor preferences, but adding pro-social attitudes as a moderating variable increased the reliability of the model. Men and women were similar in their attitudes towards time horizon and estate intentions. Most striking was the observation that education increases risk tolerance for women, but decreases risk tolerance for men, since previous research has found education to be positively correlated with risk tolerance and men to be more risk tolerant than women. Additional research involving comparisons of the differences between men and women may indicate the convergence of other attitudes. As sex role differentiation lessens, the educational and work experience of men and women becomes more similar, consequently, their attitudes and preferences might become more similar as well. The findings of this study suggest that women with higher education may acquire more skills in assessing risk and accordingly they accept more risk when they make investment decisions. Paradoxically, men with higher education may acquire more skills in assessing risk tolerance and these may lessen their inclination to accept a high level of risk (Barber and Odean, 2001).

Following this line of reasoning, financial advisors might benefit from giving more consideration to the psychology that underlies investing behavior for both genders. Women in traditional, male-dominant households, may be more risk averse than their counterparts in less traditional families. This risk aversion will quite likely be expressed in the tendency to “go to cash” when a dramatic market drop occurs (Ben-David and Hirshleifer, 2012), or when international crisis (Chen and Siems, 2004) increases market volatility. However, this study suggests that more educated women and those in more egalitarian domestic arrangements might be less susceptible to this tendency. Men have traditionally had a tendency to engage in excessive trading, but this study suggests that the typical behavior of men may change as today’s younger men become more active investors. More risk averse men would logically show less of a tendency to “go to cash” or to follow fads in investing. The effect of new modes of communication, especially social media, is another variable likely to have an effect on the investing behaviors of new generations. Existing research has demonstrated that continuous information is less likely to attract attention than discrete information (Gurum and Warachka, 2014), so the omnipresence of investing information may itself inhibit the extent to which investors react to new information about particular companies or about the market itself. This study suggests that financial advisors should be somewhat skeptical of relying on research done in decades past. More research is needed to establish emerging trends among investors growing up in times when communication and influence networks are so dense and immediate, when gender roles are more diffuse, and when personal and economic priorities may be very dissimilar from past generations. Another area for further research might examine the role of the financial advisor. The prestige and influence of the financial advisor might be diminished as clients become more exposed to competing sources of information, e.g., blogs and newsletters available online (Sicherman, Leowenstein, Seppi, and Utkus, 2015).

To summarize, effective investment consulting requires consideration of the client as a whole person, a person characterized not just by demographic and societal characteristics, but also one who embodies a complex set of psychological, attitudinal, and emotional qualities. Greater awareness of and sensitivity to these dimensions could be helpful. Particularly useful would be a critical examination of old stereotypes regarding gender preferences. Much of the existing literature is based on findings from decades past, when sex roles were more differentiated, same sex marriage was illegal, and women's career opportunities were more constrained. As Pan and Statman (2012; 2013) remind us, circumstances and emotions can have a great impact on investor preferences. The impact of circumstances and emotions may even be magnified as communications media evolve, becoming more dense and immediate, and as social networks become ever more encompassing. The relationship between the financial advisor and the client may become far more complicated and nuanced, especially along psychological dimensions, than research based on past generations has shown. This study demonstrates that positive psychology emotions such as hope or confidence in the future may serve to inoculate investors from panic selling or lessen the likelihood of excessive trading. Consequently, in a crisis investors with attitudes associated with positive psychology may be less prone to wealth-destroying behavior such as "going to cash." Since investors low in such attitudes are more likely to engage in such behaviors, financial advisors will benefit from awareness of these tendencies.

## **APPENDIX A**

Openness to new experience is a combination of item from an optimism scale originally developed by Scheier and Carver (1992) then modified by Shifren and Hooker (1995) to reflect the state-like nature of optimism, and a resiliency scale from Block and Kremen (1996). In pretesting, factor analysis revealed overlapping dimensions in these scales, so relevant items were identified for the scale called "openness" or "openness to new experiences." Examples of the items used include "In uncertain times, I usually expect the best," and "I enjoy dealing with new and unusual situations."

## **APPENDIX B**

We did not find a scale suitable for measuring estate intentions. Therefore, for this exploratory study, respondents were asked to express how much they valued leaving a bequest to different entities including family, church or other religious institution, or other nonprofit or philanthropic endeavors. A sample of the questions included in the scale is "Leaving an inheritance to charitable or philanthropic organizations is an important goal." The three questions were rated on a five-point Likert-type scale, choices ranging from 1 "strongly disagree" to 5 "strongly agree." Reliability of the scale was 0.7, indicating good reliability according to Nunnally and Bernstein (1994). Items of the scale are available by request from the authors.

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