

YES 1.2 Linear Regression Analysis

Qu Jin

Dependent Variables

- Two candidate dependent variables
 - Entrepreneurial Intent (continuous; 4 items; $\alpha = .89$)
 - 1) Start my own business
 - 2) Develop my own business
 - 3) Start a new organization
 - 4) Change the way a business or organization runs
 - Career Goals (categorical) (Select most important career goal)
 - 1) Be a musician, actor, dancer or other creative artist
 - 2) Be involved in politics
 - 3) Start a non-profit organization
 - 4) Start my own business
 - 5) Work for a non-profit organization
 - 6) Work within a for-profit organization/business
 - 7) Civil Service (e.g., education, government employee, etc.)
 - 8) Other

Independent Variables

- From John Geldhof's Paper* (8 variables)
 - Goal Selection
 - Novel (3 items; $\alpha = .78$)
 - Challenge (3 items; $\alpha = .88$)
 - Goal Optimization
 - Self-Starter (3 items; $\alpha = .80$)
 - Persistence (3 items; $\alpha = .70$)
 - Goal Compensation (6 items; $\alpha = .91$)
 - Loss-Based Selection (4 items; $\alpha = .71$)
 - Innovation Orientation (4 items; $\alpha = .79$): The 4 items were selected from the original IO scale using exploratory factor analysis (EFA)
 - Entrepreneurial Parent
 - 1 = at least one parent was entrepreneur
 - 0 = none was entrepreneur

Independent Variables

- Other variables
 - E-Activities (7 items)
 - Demographics
 - Gender (0=male, 1= female)
 - URM (0=not URM, 1=URM)
 - Discipline (0=Engineering, 1=Business)
 - Major within Discipline (1=more entrepreneurial majors)
 - Educational background of mother
 - 1=Did not finish high school
 - 2=Graduated from high school
 - 3=2-year degree
 - 4=Some college
 - 5=4-year degree
 - 6=graduate degree

Independent Variables

- Created Variables (2 variables) Based on EFA
 - Social Orientation (5 items; $\alpha = 0.8$)
 - 1) A career that is worthwhile to society (w1car13)
 - 2) A career that gives you an opportunity to be directly helpful to others (w1car12)
 - 3) Helping to make the world a better place to live in (w1PYD8)
 - 4) Be involved in helping other people (w1hope11)
 - 5) Involved in solving community problems (w1Self5)
 - Creativity Orientation (4 items; $\alpha = 0.83$)
 - 1) Creative or imaginative (w1Self6)
 - 2) A career where you can have the chance to be creative (w1car7)
 - 3) Generate creative ideas (w1InOv2)
 - 4) Are innovative (w1InOv6)

Correlation

	Entrepreneurial Intent	Innovation Orientation (4 items)
Entrepreneurial Intent	1	.442***
Select-Novel	.398***	.487***
Select-Challenge	.322***	.423***
Optimization-Self Starter	.311***	.403***
Optimization-Persistence	.115***	.320***
Compensation	.260***	.380***
Loss Based Selection	.205***	.246***
Innovation Orientation (4 items)	.442***	1
Entrepreneurship Activities	.365***	.416***
Social Orientation	.234***	.285***
Creativity Orientation	.391***	.491***

***. Correlation is significant at the 0.001 level (2-tailed).

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

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

Linear Regression

- $y = \beta_0 x_0 + \beta_1 x_1 + \dots + \beta_p x_p + \varepsilon$
 - y is the dependent variable (continuous)
 - x s are the independent variables
 - β s are the weights
 - p is the number of independent variables
 - ε is the error (iid Normal)
- Fitted using least squares/maximum likelihood

Linear Regression

	Unstandardized Coefficients		Standardized Coefficients		t	p
	B	Std. Error	Beta			
(Constant)	0.11	0.30			0.35	.729
Sex (0=M, 1=F)	-0.31	0.06	-0.14		-5.19	.000***
URM	0.13	0.08	0.05		1.75	.080
Discipline of Study (0=E,1=B)	0.61	0.07	0.28		9.00	.000***
Eship advantage majors	0.21	0.06	0.10		3.60	.000***
Mother Education	-0.06	0.02	-0.09		-3.19	.001**
Entrepreneurial Parent (1=Y, 0=N)	0.21	0.06	0.10		3.58	.000***
Research school (1=Y, 0=N)	0.22	0.07	0.09		3.10	.002**
Select-Novel	0.15	0.06	0.10		2.48	.013
Select-Challenge	0.10	0.06	0.06		1.73	.084
Optimization-Self Starter	0.12	0.05	0.08		2.40	.017*
Optimization-Persistence	-0.21	0.06	-0.12		-3.46	.001**
Compensation	0.04	0.06	0.02		0.63	.529
Loss Based Selection	0.09	0.04	0.06		2.04	.042*
Innovation Orientation (4 items)	0.25	0.05	0.19		5.43	.000***
Entrepreneurship Activities	0.16	0.05	0.10		3.33	.001**
Social Orientation	0.07	0.04	0.05		1.63	.103
Creativity Orientation	0.16	0.05	0.12		3.46	.001**

* p < .05 ** p < .01 *** p < .001

Linear Regression

	Engineering					Business				
	Unstandardized		Standardized			Unstandardized		Standardized		
	B	Std. Error	Beta	t	p	B	Std. Error	Beta	t	p
(Constant)	.36	.47		.78	.437	.33	.40		.81	.418
Sex (0=M, 1=F)	-.37	.09	-.17	-4.31	.000***	-.28	.08	-.14	-3.39	.001**
URM	.07	.10	.03	.67	.505	.19	.11	.07	1.76	.079
Eship advantage majors	.18	.08	.08	2.16	.031*	.22	.08	.11	2.76	.006**
Mother Education	-.03	.03	-.04	-.98	.326	-.09	.03	-.13	-3.22	.001**
Entrepreneurial Parent (1=Y, 0=N)	.23	.09	.11	2.68	.008**	.17	.08	.08	2.13	.034
Research school (1=Y, 0=N)	-.17	.16	-.04	-1.06	.291	.33	.08	.16	4.19	.000***
Select-Novel	-.01	.09	-.01	-.11	.911	.27	.08	.20	3.45	.001**
Select-Challenge	.11	.08	.07	1.29	.197	.13	.08	.09	1.65	.099
Optimization-Self Starter	.08	.07	.06	1.15	.249	.16	.07	.11	2.21	.028*
Optimization-Persistence	-.30	.09	-.17	-3.45	.001**	-.11	.08	-.06	-1.26	.207
Compensation	.05	.09	.03	.59	.555	-.02	.08	-.01	-.24	.812
Loss Based Selection	.14	.07	.09	2.13	.034*	.05	.06	.03	.86	.393
Innovation Orientation (4 items)	.31	.07	.23	4.67	.000***	.18	.07	.14	2.75	.006**
Entrepreneurship Activities	.30	.07	.19	4.22	.000***	.03	.06	.02	.54	.592
Social Orientation	.13	.06	.09	1.98	.048*	.05	.06	.03	.79	.432
Creativity Orientation	.19	.07	.13	2.70	.007**	.14	.06	.11	2.22	.027*

* p < .05 ** p < .01 *** p < .001