

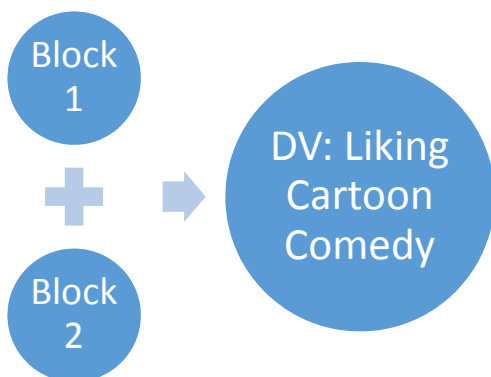
Stepwise Multiple Regression Model

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Com 631/731

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I. MODEL



2 Block Stepwise

Block 1 = Demographics:

Item: Age (G2)

Item: Political Philosophy (G4)

Dummied item: Nonwhite

Dummied item: Female

Block 2 = Senses of Humor

Scale: Disparagement (a sum of C7, C21, C30, C46)

Scale: Dark Humor (a sum of C12, C41, C50, C53)

Scale: Incongruity (a sum of C10, C32, C38, C47)

Scale: Social Currency (a sum of C64, C65, C66, C67)

DV: CARTOON (Liking of Cartoons)

Will perform a second regression with the DV: NO CARTOON (cartoons are not funny)

The Humor and Public Opinion Survey asked a series of open ended questions. We will be looking at D1 which asks “What are you favorite TV comedy programs of all time and why” as well as D2 which asks “are there any TV comedy shows that you have simply found NOT funny,” for every cartoon listed for D1 and D2, 0, 1, 2, or 3 were input to refer to how many were listed as their top three listed as favorite or not funny.

Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help												
	D1A	D1B	Relate1	Realistic1	D1C	D1D	Relate2	Realistic2	D1	CARTOON		
1			.00	.00			.00	.00		.00		
2	Everybody Hates Chris	always makes...	.00	.00	Keeping up with the ...	something crazy is always goin...	.00	.00	George Lopez	3.00	.00	just like the show
3	comedy def jam	its funny	.00	.00	mama's family	its funny	.00	.00	martin	1.00	.00	characters crack
4			.00	.00			.00	.00			.00	
5	friends	ross	.00	.00	boy meets world	cory	.00	.00	tom and jerry	1.00	1.00	its cute
6	Friends	No matter ho...	.00	.00	Sex and the City	The show is something that ha...	1.00	.00	the simpsons	.00	1.00	I have always wa
7	Family Guy	It uses real lif...	.00	1.00	South Park	Same as #1	.00	.00	Reno 911	.00	2.00	Not sure why bur
8	family guy	its hilarious	.00	.00	spongebob	its cute	.00	.00	american idol	.00	2.00	criticizam
9	married with children	hilarious	.00	.00	gilligans island	very funny	.00	.00	EVERY BODY LOVE ...	2.00	.00	grandma and gre
10			.00	.00			.00	.00			.00	
11	seinfeld	situational hu...	.00	.00	friends	goofy	.00	.00	the office	.00	.00	work place humc
12	The Office	dry humor	.00	.00	Nitro Circus	people perform crazy stunts	.00	.00	Bad Girls Club	.00	.00	those girls base
13	Chappelle Show	He's hilarious ...	.00	.00	Greek	It's easy to relate to and they d...	1.00	.00	The Office	.00	.00	It's dry and funny
14	Friends	Classic old ti...	.00	.00	The Big Bang Theory	Witty humor as well as dumb a...	.00	.00	How I Met Your Mother	.00	.00	All different varie
15	Everybody hates Chris	Because ever...	.00	.00	The Game	Because each character has it...	.00	.00	One on One	1.00	.00	Because the fat
16	family guy	it makes fun o...	.00	1.00	chealsy lately	she talks about everyone	.00	.00	bernie mac show	1.00	1.00	he makes fun of
17	Comedy Central	Alot of differen...	.00	.00	nick Cannon	Its a competition against two te...	.00	.00	n/a	.00	.00	n/a
18	Family Guy/Southpark	They are the ...	.00	.00	Strangers with Candy	It's the most insane thing I've ev...	.00	.00	It's Always Sunny in Ph...	.00	2.00	I feel like I can re
19	Sanford and Son	It is very funny!	.00	.00	All in the Family	Archie's sarcasim.	.00	.00	Married w/ Children	3.00	.00	Funny!
20	Golden Girls	Those old ladi...	.00	.00	Sanford and Son	Red Fox was very funny and ha...	.00	.00	Meet the Browns	1.00	.00	Mr. Brown is alw
21	Seinfeld	Its funny.	.00	.00	Entourage	Its funny.	.00	.00	Cheers	.00	.00	Its funny
22	n/a	n/a	.00	.00	n/a	n/a	.00	.00	n/a	.00	.00	n/a
23	Family Guy	it tells all kind...	.00	.00	American Dad	it makes fun of obvious proble...	.00	.00	Dane Cook	.00	2.00	he tells great jok
24	Wife Swap	It's trashy as ...	.00	.00	Teen Mom	It's also trashy as hell.	.00	.00	Golden Girls	2.00	.00	They are funny
25	Good Times	All the charac...	.00	.00	The Cosby Show	I could relate to the jokes	1.00	.00	Bad Girls	.00	.00	The show has al
26			.00	.00			.00	.00			.00	
27			.00	.00			.00	.00			.00	
28	Aqua Teen Hunger Force	its random,hil...	.00	.00	Its Always Sunny in ...	I can relate to the topics/people...	1.00	.00	South Park	.00	2.00	the characters
29	The Colbert Report	Because the ...	.00	.00	Southpark	I think the characters are funny...	.00	.00	Important Things with D...	.00	1.00	He plays with wc
30	Seinfeld	Clever, realisti...	.00	.00	Reno 911	absurd, extreme, outrageous h...	.00	.00	Will and Grace	.00	.00	similar reason as
31	Modern Family	because it is ...	.00	.00	Will and Grace	it has a lot of situational humor ...	1.00	.00	Weeds	2.00	.00	it is wacky and t
32	Fresh Prince of Bel Air	Because Will ...	.00	.00	Dane Cook Stand up	His expressions, body moveme...	.00	.00	Home Improvement	1.00	.00	It shows real life
33			.00	.00			.00	.00			.00	
34	The Simpsons	It's classic	.00	.00	It's always sunny in ...	it's insane	.00	.00	the office	.00	1.00	it's awkward
35	Greek	I can relate	1.00	.00	Desperate Houswives	I can relate and enjoy their humor	1.00	.00	Family Guy	.00	1.00	Jokes are funny
36	Jersey Shore	I love it!	.00	.00	Two in a half Men	Its good	.00	.00	How I Met Your Mother	.00	.00	It funny

Running the Stepwise Regression

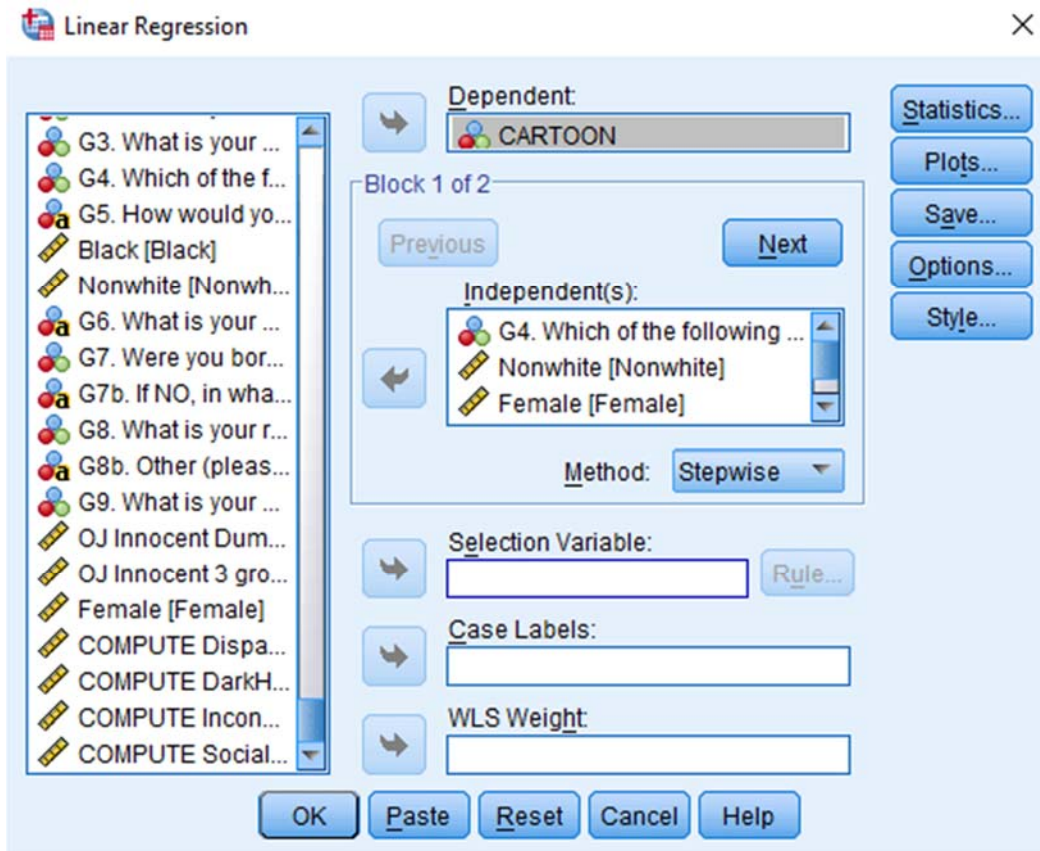
Analyze → Regression → Linear

Add your DV where it says Dependent:

Independents: Enter Block 1 info here (demographics)

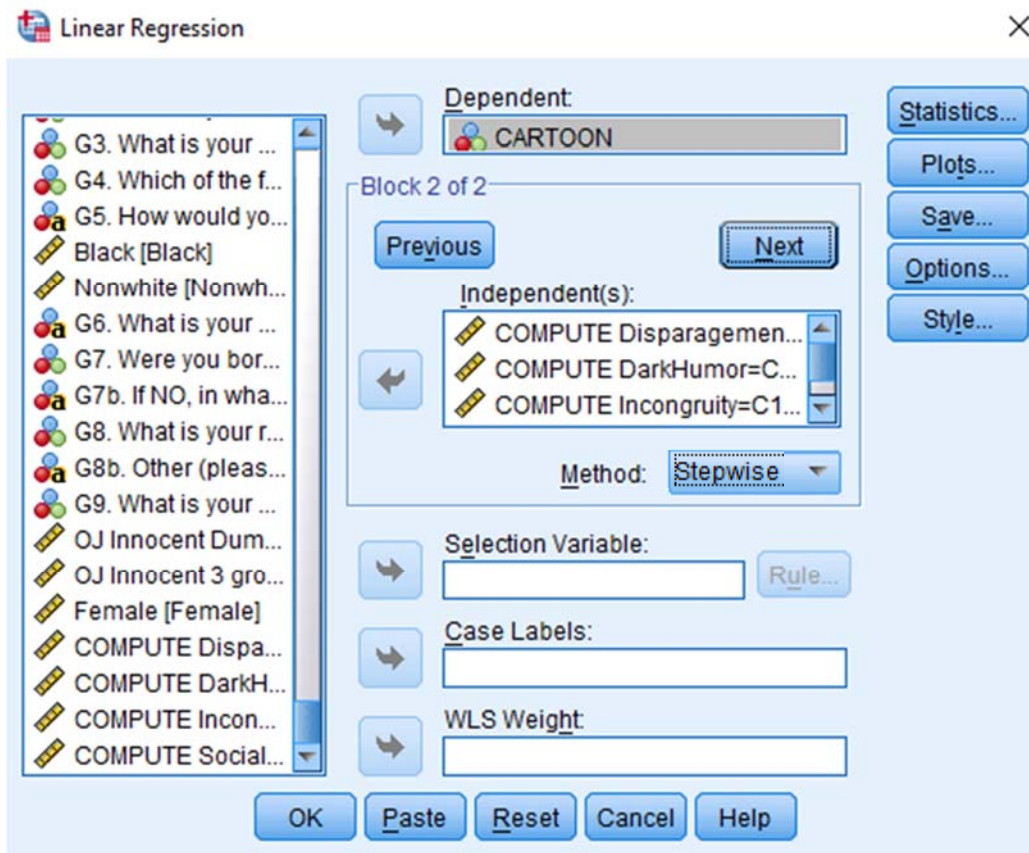
'Method': select 'Stepwise'

Hit Next



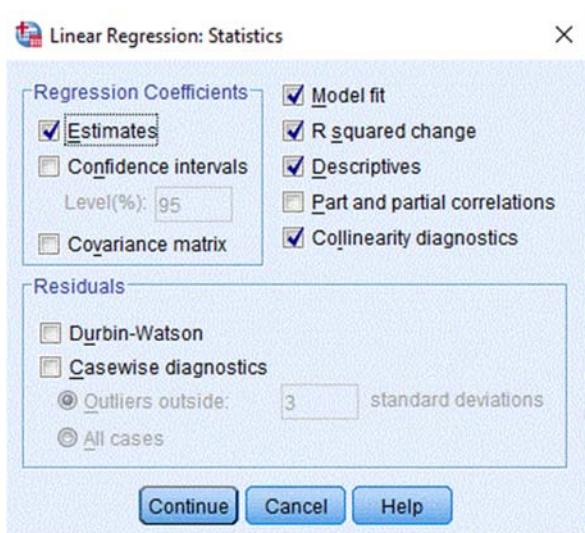
Independents: Enter Block 2 info here (senses of humor)

'Method': select 'Stepwise'



Click the Statistics button on the bottom.

Make sure that 'Estimate', 'Model fit', 'R squared change', 'Descriptives', and 'Collinearity diagnostics' are checked.

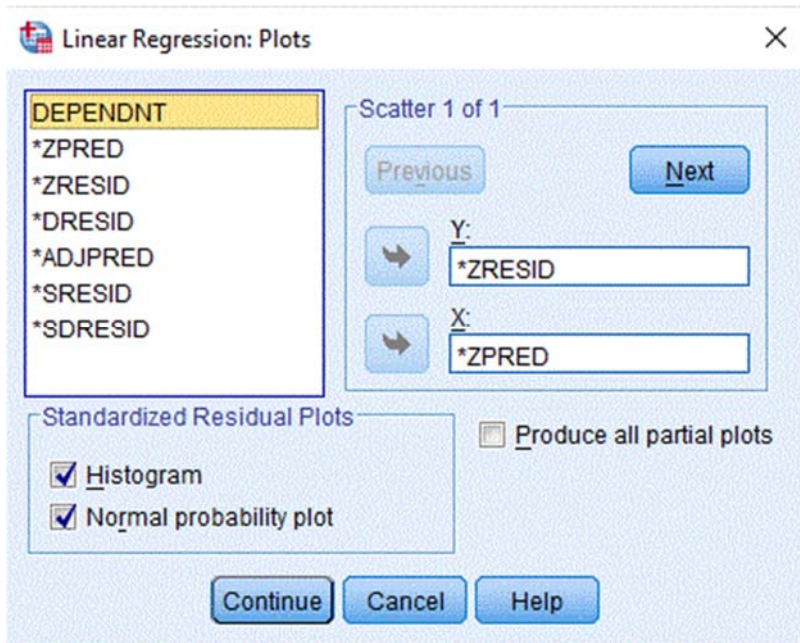


Select Plots (next to statistics)

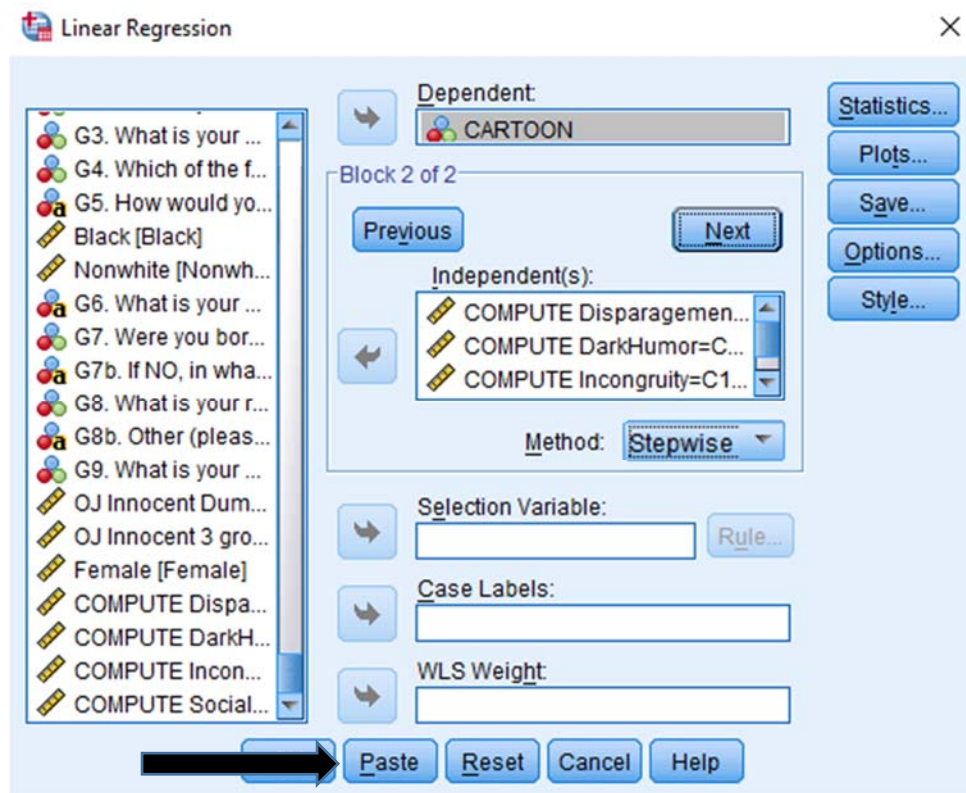
Add *ZRESID as the Y, and *ZPRED as the X

Check the 'Histogram' box under 'Standardized Residual Plots'

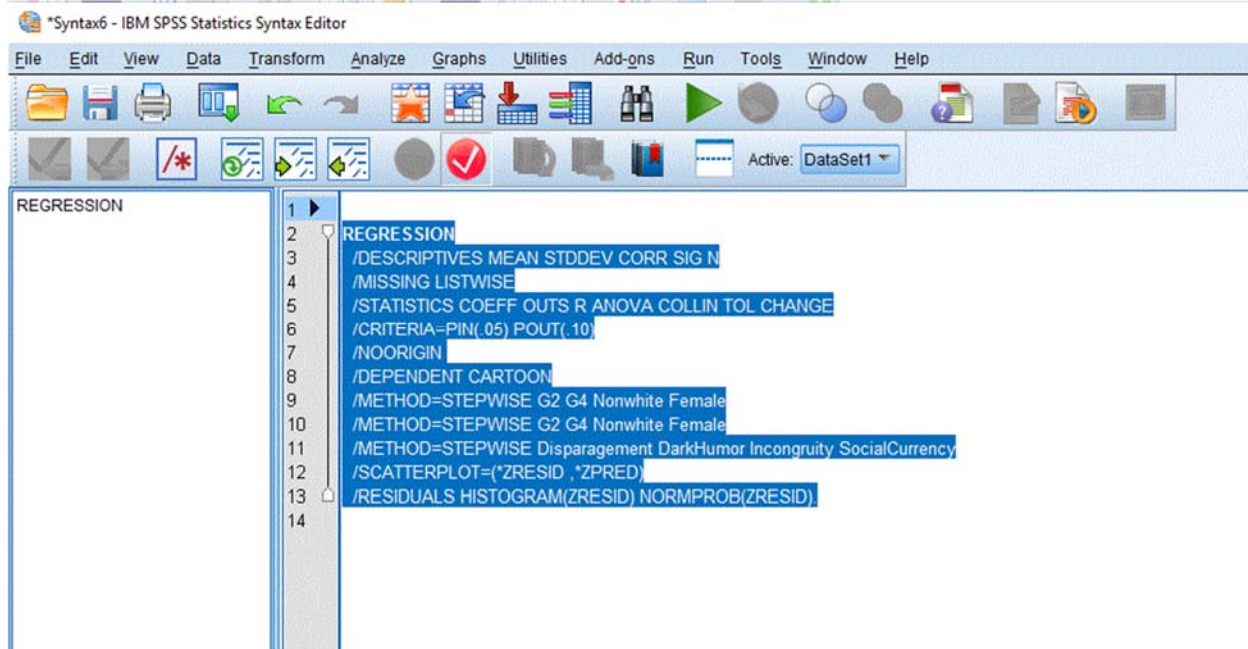
Select 'Continue'



Then hit 'Paste'



Highlight the text in your syntax and then hit Run (green triangle)



SPSS Output:

Descriptive Statistics

	Mean	Std. Deviation	N
CARTOON	.6436	.82450	188
G2. What is your age?	22.52	6.191	188
G4. Which of the following categories best describes your political philosophy?	3.42	1.146	188
Nonwhite	.2766	.44851	188
Female	.5266	.50063	188
COMPUTE Disparagement=C7 + C21 + C30 + C46	24.0479	8.85008	188
COMPUTE DarkHumor=C12 + C41 + C50 + C53	16.9149	9.17933	188
COMPUTE Incongruity=C10 + C32 + C38 + C47	26.9681	6.80665	188
COMPUTE SocialCurrency=C64 + C65 + C66 + C67	28.6649	6.82003	188

Please note that the total sample size here is 188 out of 288 people total. This could be due to the fact that we are missing 80 people's answers for political philosophy (item G4).

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Female		Stepwise (Criteria: Probability-of-F- to-enter <= .050, Probability-of-F- to-remove >= .100).
2	COMPUTE Disparagement = C7 + C21 + C30 + C46		Stepwise (Criteria: Probability-of-F- to-enter <= .050, Probability-of-F- to-remove >= .100).

a. Dependent Variable: CARTOON

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.204 ^a	.041	.036	.80939	.041	8.047	1	186	.005
2	.340 ^b	.115	.106	.77970	.074	15.436	1	185	.000

a. Predictors: (Constant), Female

b. Predictors: (Constant), Female, COMPUTE Disparagement= C7 + C21 + C30 + C46

c. Dependent Variable: CARTOON

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.271	1	5.271	8.047	.005 ^b
	Residual	121.851	186	.655		
	Total	127.122	187			
2	Regression	14.656	2	7.328	12.054	.000 ^c
	Residual	112.467	185	.608		
	Total	127.122	187			

Significant models noted here!

a. Dependent Variable: CARTOON

b. Predictors: (Constant), Female

c. Predictors: (Constant), Female, COMPUTE Disparagement= C7 + C21 + C30 + C46

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.820	.086		9.560	.000	1.000	1.000
	Female	-.335	.118	-.204	-2.837	.005		
2	(Constant)	.138	.192		.718	.474	.946	1.057
	Female	-.228	.117	-.139	-1.950	.053		
	COMPUTE Disparagement= C7 + C21 + C30 + C46	.026	.007	.279	3.929	.000		

a. Dependent Variable: CARTOON

Excluded Variables^a

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics			
					Tolerance	VIF	Minimum Tolerance	
1	G2. What is your age?	-.074 ^b	-1.029	.305	-.075	.984	1.016	.984
	G4. Which of the following categories best describes your political philosophy?	-.022 ^b	-.294	.769	-.022	.960	1.041	.960
	Nonwhite	-.087 ^b	-1.201	.231	-.088	.988	1.012	.988
	COMPUTE Disparagement=C7 + C21 + C30 + C46	.279 ^b	3.929	.000	.278	.946	1.057	.946
	COMPUTE DarkHumor=C12 + C41 + C50 + C53	.177 ^b	2.424	.016	.175	.940	1.064	.940
	COMPUTE Incongruity=C10 + C32 + C38 + C47	.084 ^b	1.175	.242	.086	.998	1.002	.998
2	G2. What is your age?	-.027 ^c	-.387	.699	-.029	.954	1.048	.917
	G4. Which of the following categories best describes your political philosophy?	-.024 ^c	-.334	.739	-.025	.960	1.041	.910
	Nonwhite	-.056 ^c	-.793	.429	-.058	.975	1.026	.933
	COMPUTE DarkHumor=C12 + C41 + C50 + C53	.059 ^c	.732	.465	.054	.735	1.361	.735
	COMPUTE Incongruity=C10 + C32 + C38 + C47	-.006 ^c	-.079	.937	-.006	.890	1.124	.843
	COMPUTE SocialCurrency=C64 + C65 + C66 + C67	.039 ^c	.520	.604	.038	.856	1.169	.821

a. Dependent Variable: CARTOON

b. Predictors in the Model: (Constant), Female

c. Predictors in the Model: (Constant), Female, COMPUTE Disparagement= C7 + C21 + C30 + C46

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Female	COMPUTE Disparagement = C7 + C21 + C30 + C46
1	1	1.726	1.000	.14	.14	
	2	.274	2.508	.86	.86	
2	1	2.535	1.000	.01	.05	.02
	2	.415	2.473	.01	.75	.06
	3	.051	7.079	.97	.20	.92

a. Dependent Variable: CARTOON



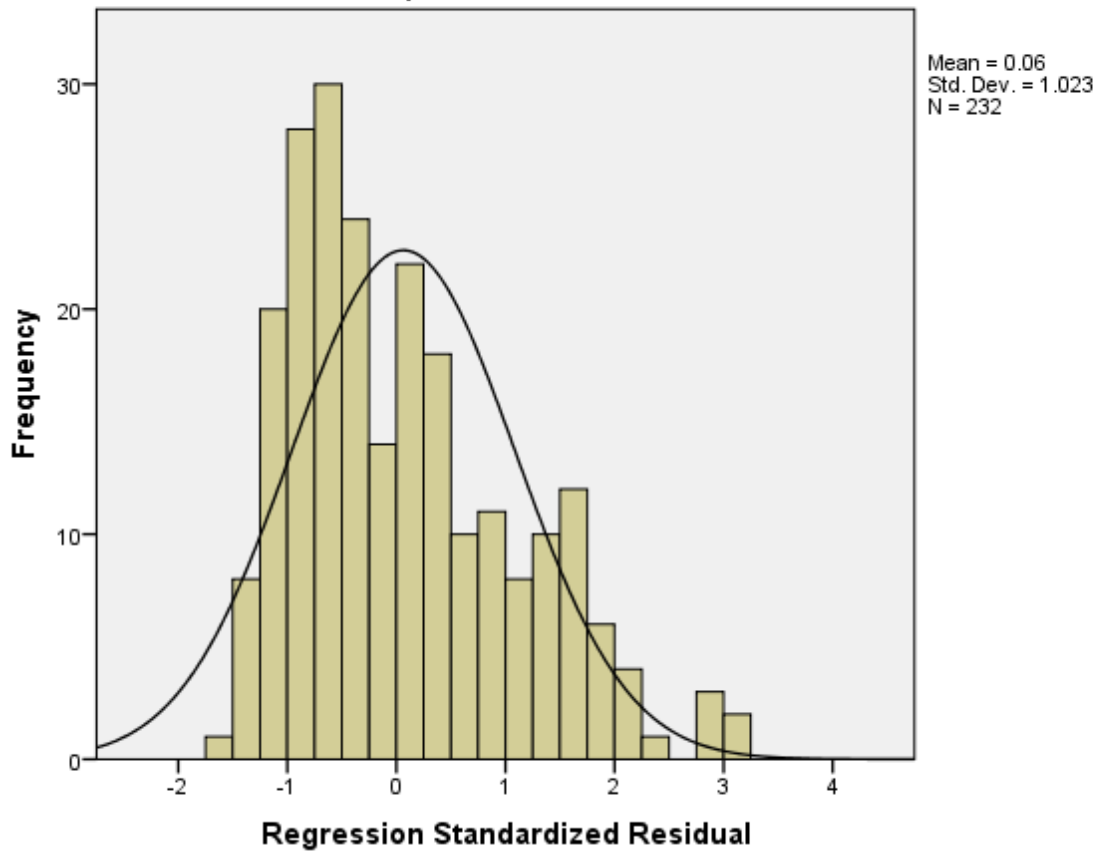
Residuals Statistics^a

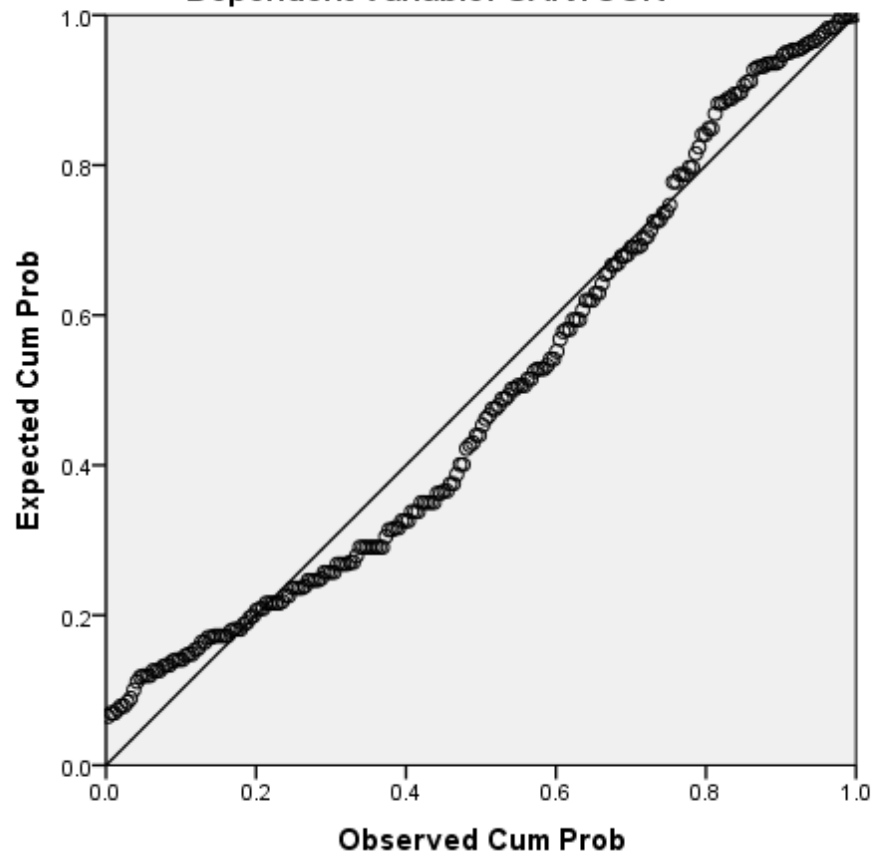
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.0643	1.1790	.6273	.28170	232
Residual	-1.17904	2.47162	.04943	.79759	232
Std. Predicted Value	-2.529	1.913	-.058	1.006	232
Std. Residual	-1.512	3.170	.063	1.023	232

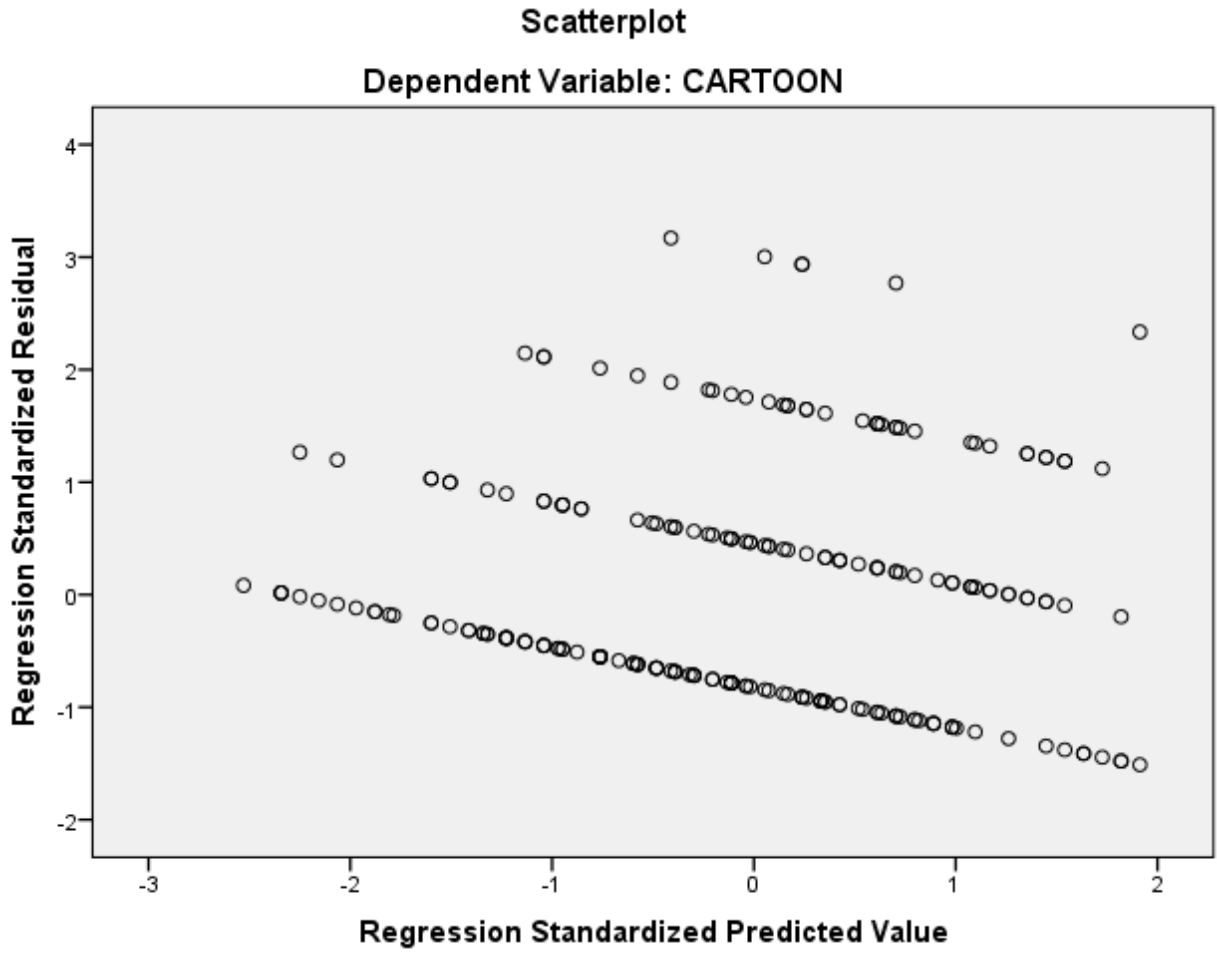
a. Dependent Variable: CARTOON

Histogram

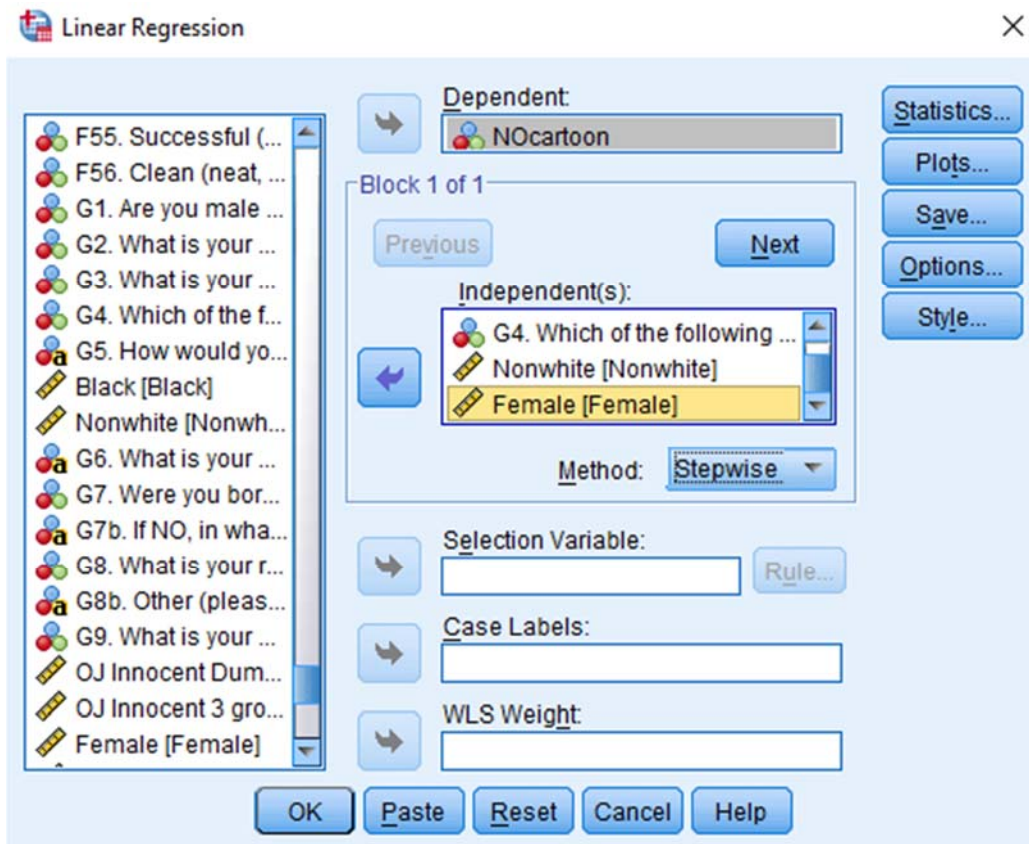
Dependent Variable: CARTOON



Normal P-P Plot of Regression Standardized Residual**Dependent Variable: CARTOON**



Second Regression Analysis: Just change Dependent Variable to: NoCartoon



The image shows the SPSS Linear Regression dialog box. The dependent variable is set to 'NOcartoon'. The independent variables are 'G4. Which of the following ...', 'Nonwhite [Nonwhite]', and 'Female [Female]'. The method is set to 'Stepwise'. The dialog box includes buttons for 'Statistics...', 'Plots...', 'Save...', 'Options...', and 'Style...'. At the bottom, there are buttons for 'OK', 'Paste', 'Reset', 'Cancel', and 'Help'.

Linear Regression

Dependent: NOcartoon

Block 1 of 1

Previous Next

Independent(s):

- G4. Which of the following ...
- Nonwhite [Nonwhite]
- Female [Female]

Method: Stepwise

Selection Variable: Rule...

Case Labels:

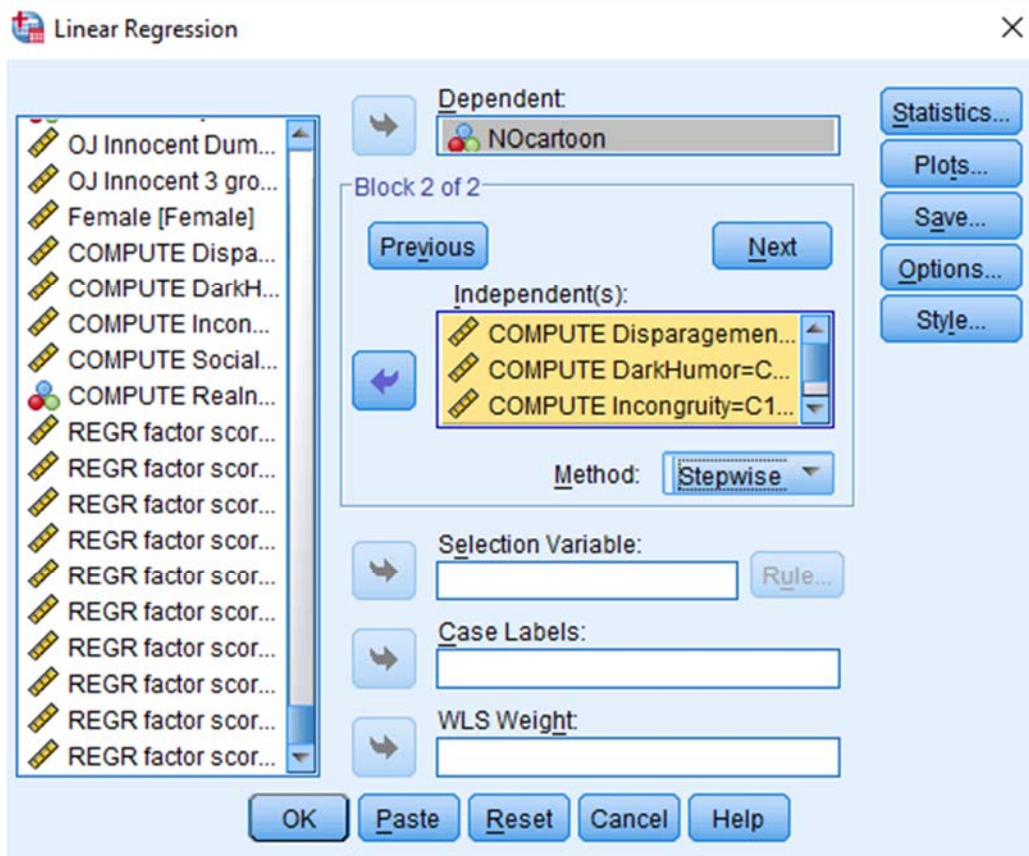
WLS Weight:

OK Paste Reset Cancel Help

Statistics... Plots... Save... Options... Style...

Variable List:

- F55. Successful (...)
- F56. Clean (neat, ...)
- G1. Are you male ...
- G2. What is your ...
- G3. What is your ...
- G4. Which of the f...
- G5. How would yo...
- Black [Black]
- Nonwhite [Nonwh...
- G6. What is your ...
- G7. Were you bor...
- G7b. If NO, in wha...
- G8. What is your r...
- G8b. Other (pleas...
- G9. What is your ...
- OJ Innocent Dum...
- OJ Innocent 3 gro...
- Female [Female]



Run Same Stats and Plots as before, then click Paste (to save syntax) or OK to run....

Descriptive Statistics

	Mean	Std. Deviation	N
NOcartoon	.5989	.84535	187
G2. What is your age?	22.52	6.206	187
G4. Which of the following categories best describes your political philosophy?	3.41	1.144	187
Nonwhite	.2727	.44656	187
Female	.5241	.50076	187
COMPUTE Disparagement=C7 + C21 + C30 + C46	23.9786	8.82260	187
COMPUTE DarkHumor=C12 + C41 + C50 + C53	16.9679	9.17506	187
COMPUTE Incongruity=C10 + C32 + C38 + C47	26.9251	6.79933	187
COMPUTE SocialCurrency=C64 + C65 + C66 + C67	28.6043	6.78737	187

Note that we lost one more participant in this model.

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Nonwhite		Stepwise (Criteria: Probability-of-F- to-enter <= .050, Probability-of-F- to-remove >= .100).
2	G2. What is your age?		Stepwise (Criteria: Probability-of-F- to-enter <= .050, Probability-of-F- to-remove >= .100).

a. Dependent Variable: NOcartoon

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.179 ^a	.032	.027	.83400	.032	6.101	1	185	.014
2	.230 ^b	.053	.043	.82715	.021	4.076	1	184	.045

a. Predictors: (Constant), Nonwhite

b. Predictors: (Constant), Nonwhite, G2. What is your age?

c. Dependent Variable: NOcartoon

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.243	1	4.243	6.101	.014 ^b
	Residual	128.676	185	.696		
	Total	132.920	186			
2	Regression	7.032	2	3.516	5.139	.007 ^c
	Residual	125.888	184	.684		
	Total	132.920	186			

a. Dependent Variable: NOcartoon

b. Predictors: (Constant), Nonwhite

c. Predictors: (Constant), Nonwhite, G2. What is your age?

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.691	.072		9.665	.000		
	Nonwhite	-.338	.137	-.179	-2.470	.014	1.000	1.000
2	(Constant)	1.129	.228		4.945	.000		
	Nonwhite	-.282	.139	-.149	-2.031	.044	.959	1.043
	G2. What is your age?	-.020	.010	-.148	-2.019	.045	.959	1.043

a. Dependent Variable: NOcartoon

Excluded Variables^a


Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics			
					Tolerance	VIF	Minimum Tolerance	
1	G2. What is your age?	-.148 ^b	-2.019	.045	-.147	.959	1.043	.959
	G4. Which of the following categories best describes your political philosophy?	.083 ^b	1.123	.263	.083	.960	1.042	.960
	Female	.087 ^b	1.193	.235	.088	.989	1.011	.989
	COMPUTE Disparagement=C7 + C21 + C30 + C46	-.051 ^b	-.689	.492	-.051	.977	1.024	.977
	COMPUTE DarkHumor=C12 + C41 + C50 + C53	-.111 ^b	-1.510	.133	-.111	.957	1.045	.957
	COMPUTE Incongruity=C10 + C32 + C38 + C47	.034 ^b	.466	.642	.034	.999	1.001	.999
	COMPUTE SocialCurrency=C64 + C65 + C66 + C67	.049 ^b	.678	.498	.050	1.000	1.000	1.000
2	G4. Which of the following categories best describes your political philosophy?	.077 ^c	1.054	.293	.078	.959	1.043	.919
	Female	.066 ^c	.909	.365	.067	.967	1.034	.938
	COMPUTE Disparagement= C7 + C21 + C30 + C46	-.068 ^c	-.925	.356	-.068	.965	1.037	.943
	COMPUTE DarkHumor=C12 + C41 + C50 + C53	-.126 ^c	-1.716	.088	-.126	.949	1.053	.926
	COMPUTE Incongruity=C10 + C32 + C38 + C47	.023 ^c	.324	.747	.024	.993	1.007	.954
	COMPUTE SocialCurrency=C64 + C65 + C66 + C67	.042 ^c	.587	.558	.043	.997	1.003	.957

a. Dependent Variable: NOcartoon

b. Predictors in the Model: (Constant), Nonwhite

c. Predictors in the Model: (Constant), Nonwhite, G2. What is your age?

Collinearity Diagnostics^a



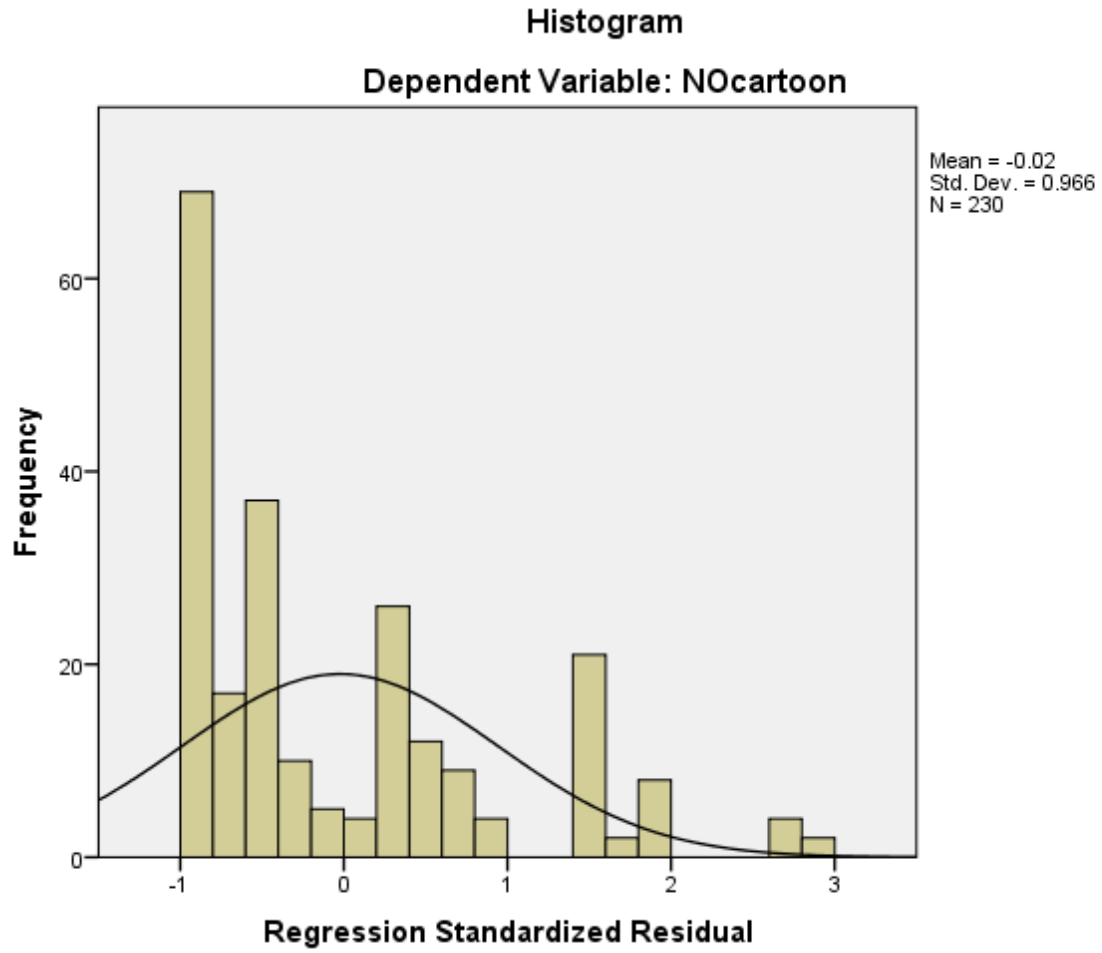
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Nonwhite	G2. What is your age?
1	1	1.522	1.000	.24	.24	
	2	.478	1.785	.76	.76	
2	1	2.380	1.000	.01	.07	.01
	2	.585	2.018	.02	.92	.01
	3	.035	8.223	.97	.02	.98

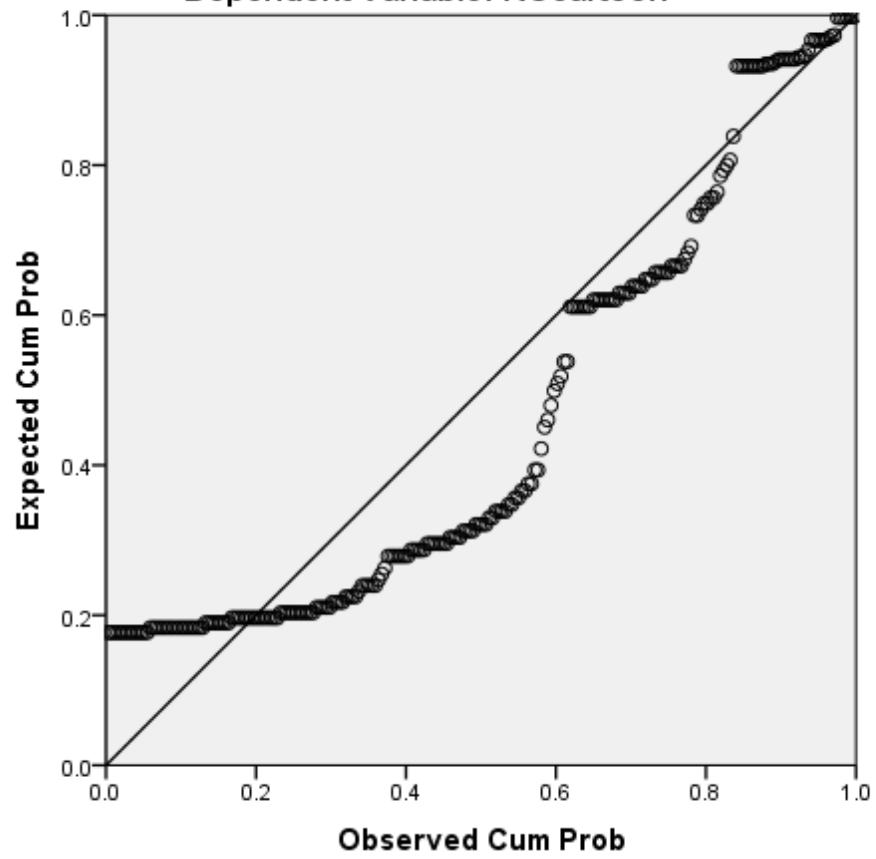
a. Dependent Variable: NOcartoon

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.0792	.7669	.5893	.19050	230
Residual	-.76687	2.37415	-.01972	.79914	230
Std. Predicted Value	-3.488	.864	-.050	.980	230
Std. Residual	-.927	2.870	-.024	.966	230

a. Dependent Variable: NOcartoon



Normal P-P Plot of Regression Standardized Residual**Dependent Variable: NOcartoon**

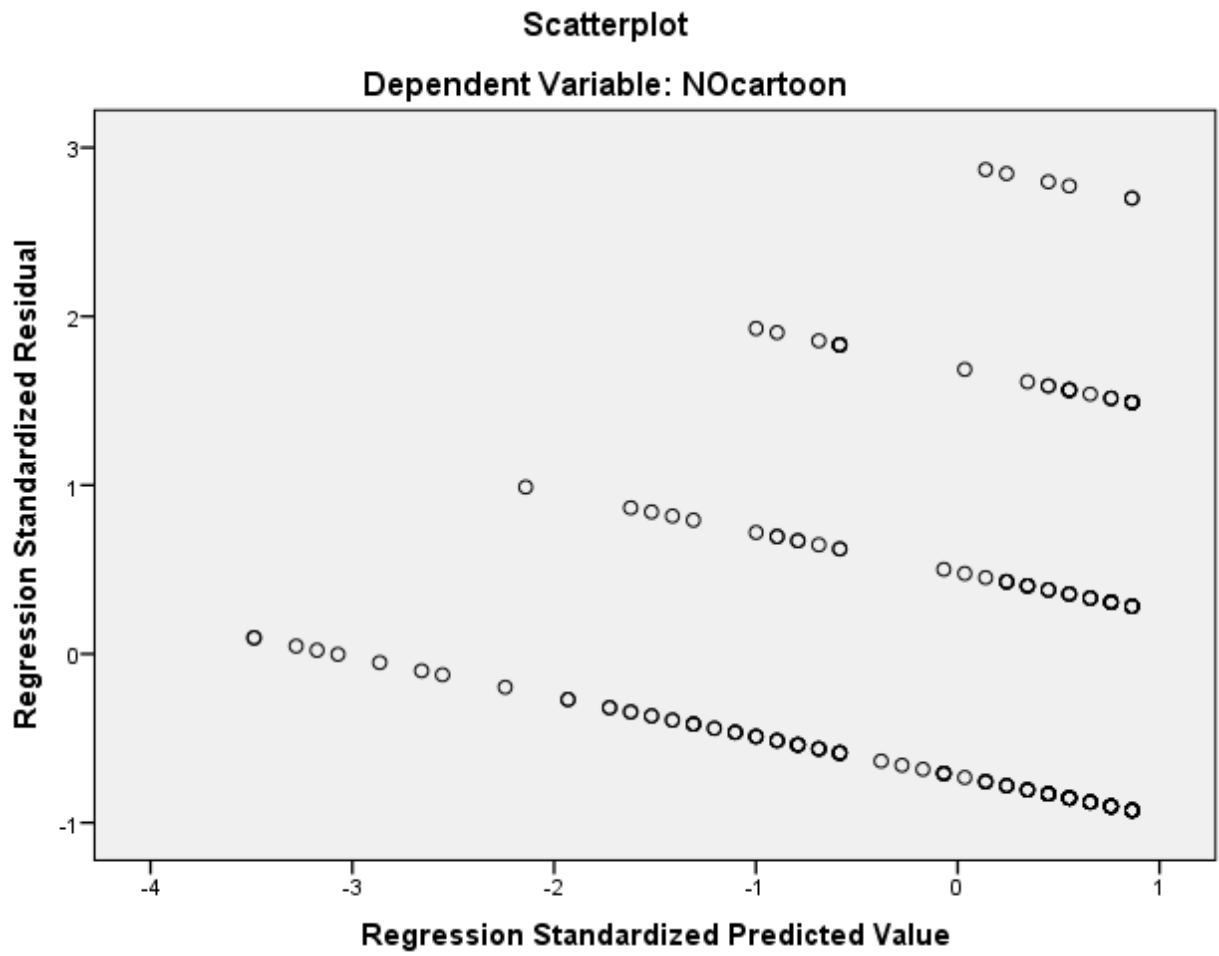


Table 1
Summary of Stepwise Regression Model Predicting Liking of Cartoons

Step #	Predictor Variable	<i>r</i>	Final Beta	<i>R</i> ² Change
1	Female	-.204**	-.139 ^a	.041**
2	Disparagement	.312***	.279***	.074***

Total Equation: $R^2 = .115$ Adjusted $R^2 = .106$
 $F(2, 185) = 12.054, p < .001$

Note: $p < .10^a, p < .05^*, p < .01^{**}, p < .001^{***}$

Table 2
Summary of Stepwise Regression Model Predicting Cartoons are Not Funny

Step #	Predictor Variable	<i>r</i>	Final Beta	<i>R</i> ² Change
1	Nonwhite	-.179**	-.149*	.032*
2	Age	-.178**	-.148*	.021*

Total Equation: $R^2 = .053$, Adjusted $R^2 = .043$
 $F(2, 184) = 5.139, p < .01$

Note: $p < .10^a, p < .05^*, p < .01^{**}, p < .001^{***}$

Research Question One asked what proportion of the variance in liking of cartoons was accounted for by a regression model including demographics such as age, sex, race, and political philosophy as well as Neuendorf's senses of humor scales as predictors. The linear combination of female and disparagement accounted for approximately 11% of the variance in participants' liking of cartoons, $R^2 = .115$, adjusted $R^2 = .106$, $F(2, 185) = 12.05$, $p < .001$.

Both female and disparagement humor explained a statistically significant amount of unique variance in liking of cartoons, $R^2 = .04$, $F(1, 186) = 8.05$, $p < .01$ for female, and $R^2 = .07$, $F(1, 185) = 15.44$, $p < .001$ for disparagement (when controlling for female), respectively. Female explained 4% of the variance in cartoon liking, and disparagement humor explained 7% of the variance in cartoon liking beyond that accounted for by female. Holding disparagement constant, for every one standard unit increase in female, the predicted cartoon liking score decreased by .14 standard units, $\beta = -.14$, $p < .05$. Holding female constant, for every one standard unit increase in disparagement humor, the predicted cartoon liking score increased by .28 standard units, $\beta = .279$, $p < .001$. Interpreting these results, I have found that participants in this survey who listed liking cartoons as one of their favorite TV comedies can be predicted by being male and by liking disparagement humor.

Research Question Two asked what proportion of the variance in not finding cartoons as funny was accounted for by a regression model including demographics such as age, sex, race, and political philosophy as well as Neuendorf's senses of humor scales as predictors. The linear combination of nonwhite and age accounted for approximately 4% of the variance in participants' not finding cartoons funny, $R^2 = .05$, adjusted $R^2 = .04$, $F(2, 184) = 5.14$, $p < .01$.

Both nonwhite and age explained a statistically significant amount of unique variance in finding cartoons not funny, $R^2 = .03$, $F(1, 185) = 6.10$, $p < .05$ for nonwhite, and $R^2 = .02$, $F(1, 184) = 4.08$, $p < .05$, for age when controlling for nonwhite. Nonwhite explained 3% of the variance in not finding cartoons funny, and age explained 2% of the variance in not finding cartoons funny beyond that accounted for by nonwhite. Holding age constant, for every one standard unit increase in nonwhite, the predicted not finding cartoons funny score decreased by .15 standard units, $\beta = -.149$, $p < .05$. Holding nonwhite constant, for every one standard unit increase in age, the predicted not finding cartoons funny score decreased by .15 standard units, $\beta = -.148$, $p < .05$. Interpreting these results, finding cartoons as not funny can be predicted by being white and younger in age.