Optimization of Data Processing and Presentation in Social Surveys: from Likert-Means to „Yes Percentage“

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The most common categories are:

“I strongly disagree”

“I disagree”

“I have no opinion”

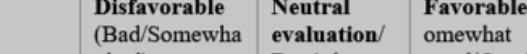
“I agree”

“I strongly agree”

Several main hypotheses were raised and tested:

1. There is a very strong correlation between Likert means and yes percentages approaching a linear dependence.
2. A large, saturated middle neutral category “I have no opinion” has a weak negative effect on the correlation between Likert means and “yes %”.

Table 1. An example of a Likert scale Items used

EVALUATE					**Very bad – very good**
Street management under critical weather conditions (freezing, strong winds)					
Management of remote roads and drive-ways under critical weather conditions					
Street, sidewalk, road repairs (road pit fixes, asphalting)					
Road and street traffic sign condition					
Street lighting during dark daytime					
Evaluation categories	**Disfavorable** (Bad/Somewhat bad)		**Neutral evaluation**/ Don’t know	**Favorable**(Somewhat good/Good)	
Evaluation encoding scores	1	2	3	4	5
Survey response scale					

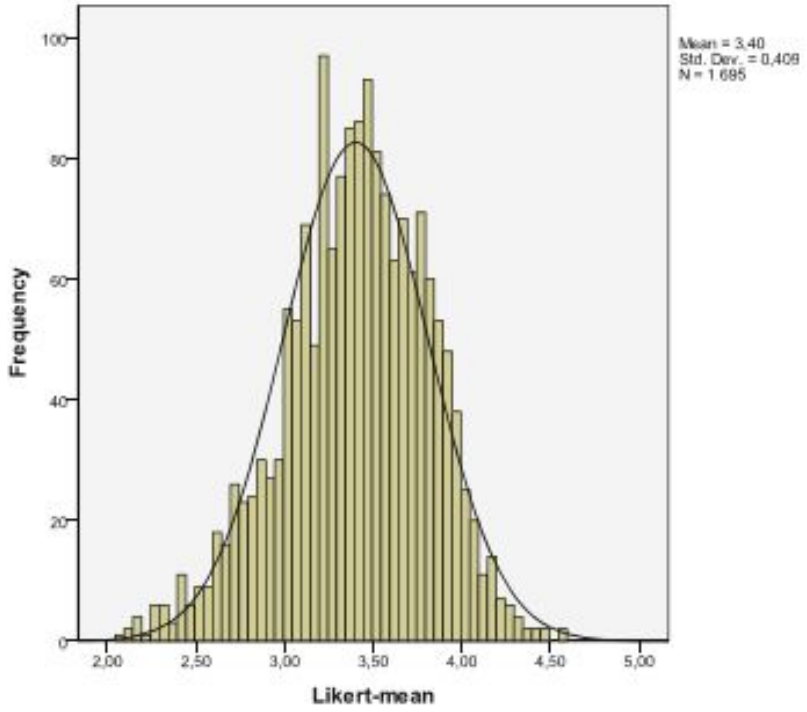


Fig. 1. Empirical distribution of Likert mean, N = 1695

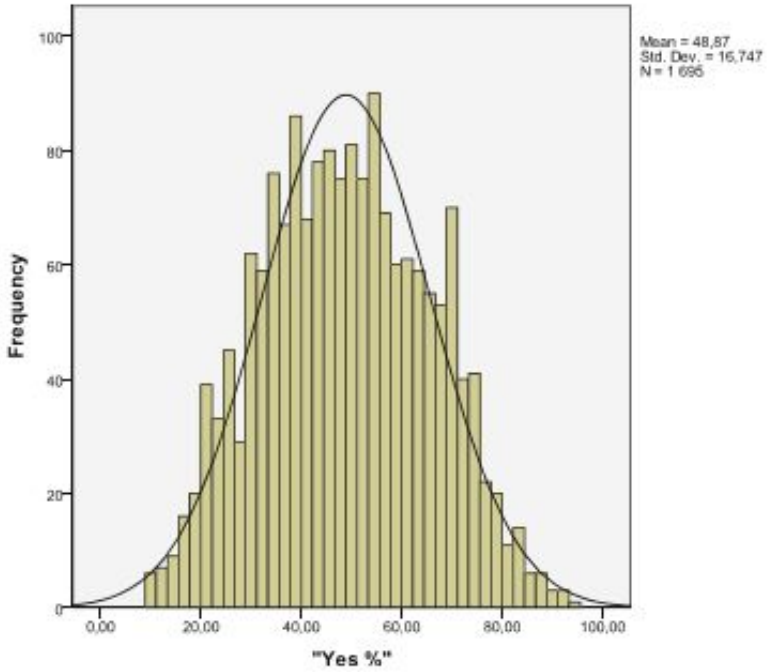


Fig. 2. Empirical distribution of agreement percentages (Yes %), N = 1695

Table 2. Normality tests of empirical distributions in different sample clusters and in the total sample; coefficients of determination R^2 (independent Variable- Means of Likert items, dependent variable - Yes %)

Sample	N_{sampl}	Value	K-S sig. (2 tailed)	Skewness	Kurtosis	R^2	$p < 0.000$
Sample 1 Ukmergė district	187	Likert mean	0,539	−0,383	0,254	0,940	****
		Yes %	0,819	0,140	−0,563		****
Sample 2 Radviliškis district	193	Likert mean	0,781	−0,188	−0,302	0,954	****
		Yes %	0,623	0,223	−0,58		****
Sample 3 Lazdijai district	190	Likert mean	0,077	−0,678	−0,302	0,951	****
		Yes %	0,738	−0,138	−0,693		****
Sample 4 Klaipėda reg. district	189	Likert mean	0,581	−0,313	−0,432	0,949	****
		Yes %	0,731	0,35	−0,887		****
Sample 5 Kedainiai district	189	Likert mean	0,794	−0,411	−0,061	0,950	****
		Yes %	0,600	0,069	−0,792		****
Sample 6 Druskininkai district	179	Likert mean	0,128	−0,408	0,223	0,958	****
		Yes %	0,058	−0,359	−0,554		****
Sample 7 Alytus district	181	Likert mean	0,176	−0,658	0,283	0,950	****
		Yes %	0,954	−0,142	−0,483		****
Sample 8 Jonava. district	195	Likert mean	0,983	−0,081	−0,243	0,968	****
		Yes %	0,870	0,123	−0,602		****
Sample 8 Jonava._2 district	192	Likert mean	0,945	0,046	−0,204	0,936	****
		Yes %	0,197	0,295	−0,603		****
Sample total	**1695**	Likert mean	**0,052**	**−0,327**	**0,054**	**0,948**	****
		Yes %	**0,055**	**0,057**	**−0,635**		****

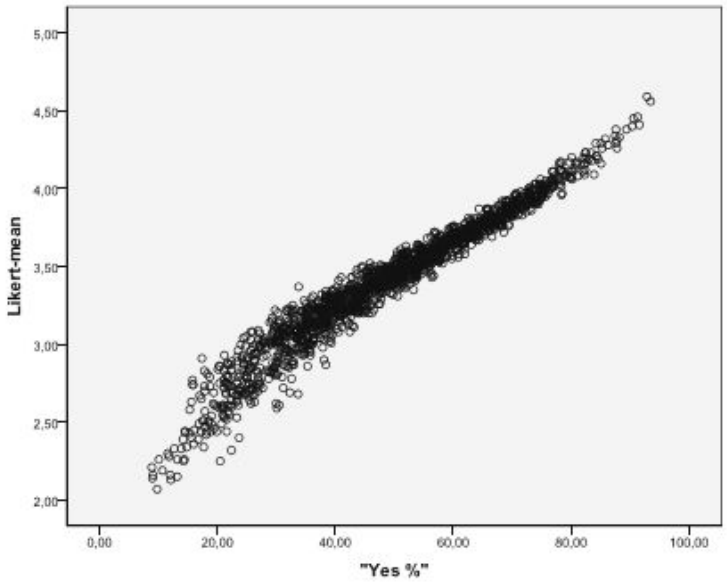


Fig. 3. Scatterplot (bivariat): independent Variable - Means of Likert items, dependent variable - Yes %), N = 1695

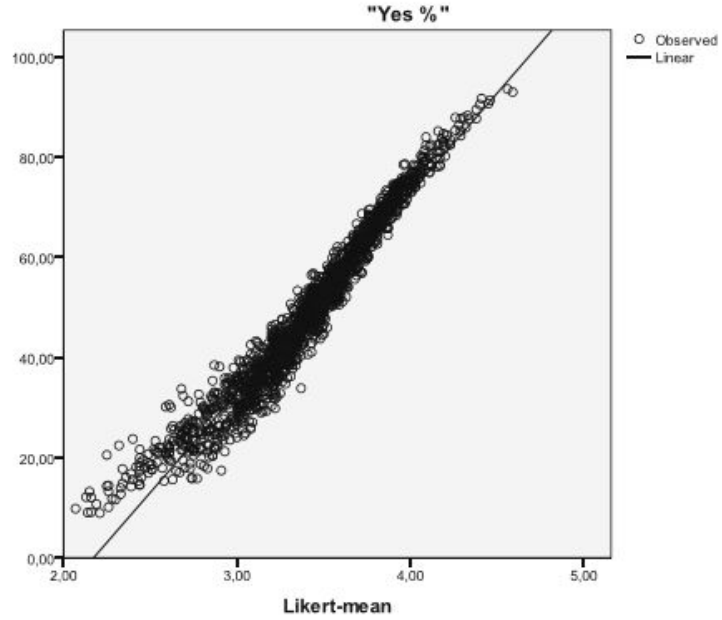


Fig. 4. Curve Estimation: Dependent Variable: "Yes %; R^2 = 0,948; F = 31133,217, df1 = 1; df2 = 1693; p = 0,000; Parameter Estimates: Constant = −86,675; b1 = 39,857.

THANK YOU FOR YOUR ATTENTION

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