

A study was conducted to demonstrate the relationship between several variables and the amount of time spent helping a friend. A selection of this data relating to anger and self-efficacy was used to conduct item and factor analyses, with the variables in question listed in Table 1. All of the variables except Angert were measured on a scale of 1 (not at all) to 7 (very much so).

Table 1. Variables used from larger data set and descriptions.

Variable	Description
Angert	Mean rating of four anger questions
Effic1	Efficacy for encourage reassurance
Effic2	Efficacy for tasks or service
Effic3	Efficacy for appraise/clarify
Effic4	Efficacy for validate affirm
Effic5	Efficacy for loaning materials
Effic6	Efficacy for information advice
Effic7	Efficacy for express willingness to help
Effic8	Efficacy for participate in activities
Effic9	Efficacy for find someone for help
Effic10	Efficacy for express sympathy, concern, empathy
Effic11	Efficacy for reduce tension, tell jokes
Effic12	Efficacy for teach to do better
Effic13	Efficacy for empathic listening
Effic14	Efficacy for relieve of self blame
Effic15	Efficacy for open-ended questions

An item analysis was conducted, resulting in a good Cronbach's Coefficient alpha of .835. However, one goal of this analysis was to remove the worst variable. As such, Angert was removed from further analysis, Cronbach's Coefficient alpha = .850, SMC = .119. After removal, another item analysis was conducted with the remaining variables, resulting in a good Cronbach's Coefficient alpha of .850. Comparatively speaking, Effic1 was the best item in the scale as removing it would have the most drastic effect on Cronbach's Coefficient alpha, as the Cronbach's alpha if item deleted is .835. The worst item, therefore, was Effic9 as its Cronbach's alpha if item deleted is .849. The SMC for Effic15 was .235, which represents the  $R^2$  value of regressing Effic15 on the rest of the variables, Effic1 – Effic14. This means that 23.5% of the variance in Effic15 is due to the other items.

The dimensionality of the 14 items was analyzed using principle components analysis, yielding a meritorious KMO of .871. A varimax rotation was also applied to the data. Using Anti-Image Correlation, the best item for factor analysis was Effic1, with a marvelous MSA of .915. The MSA is an individual KMO which represents how well the item relates to the common factor after everything else has been partialled out. The worst item, by applying the same principles, was Effic5 with a middling MSA of .796. The eigenvalue for factor 1 was 5.133, which is converted to percent of variance that can be accounted for by  $(5.133/15) * 100\% = 34.221\%$ . A total of four items have factors above 1, however the scree plot indicates only 2 factors.

The dimensionality of the 14 items was analyzed using maximum likelihood analysis, yielding a meritorious KMO of .871. An Oblimin rotation was applied to the data, and the number of factors was

limited to two. The rotation revealed two interpretable factors, efficacy for expression and efficacy for reaching out. The total amount of variance accounted for by the two factors was 45.432%, with factor 1 accounting for 34.221% and factor 2 accounting for 11.211%. Only one item, Effic15 failed to load on either factor, Table 2.

Table 2. Pattern Matrix for Oblimin rotation.

Pattern Matrix		
	Factor	
	1	2
EFFICACY FOR EMPATHIC LISTENING	.856	
EFFICACY FOR EXPRESS SYMPATHY EMPATHY CONCERN	.747	
EFFICACY FOR VALIDATE AFFIRM	.645	
EFFICACY FOR REDUCE TENSION TELL JOKES	.580	
EFFICACY FOR ENCOURAGE REASSURE	.561	
EFFICACY FOR APPRAISE/CLARIFY	.549	
EFFICACY FOR RELIEVE OF SELF BLAME	.507	
EFFICACY FOR INFORMATION ADVICE	.450	
EFFICACY FOR EXPRESS WILLINGNESS TO HELP	.405	
EFFICACY FOR OPEN-ENDED QUESTION	.373	
EFFICACY FOR LOANING MATERIALS		.710
EFFICACY FOR TASKS OR SERVICES		.706
EFFICACY FOR FIND SOMEONE TO HELP		.520
EFFICACY FOR PARTICIPATE IN ACTIVITIES		.350
EFFICACY FOR TEACH TO DO BETTER		