Het meten van werkoriëntaties. Een vergelijking van verschillende technieken voor het meten van houdingen.
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SUMMARY of "Measurement of orientations to work. A comparison of some techniques of attitude scale construction".

The major concern of this study is with some methodological issues of the social sciences. It also has to do with the sociology of labour. This aspect, however, is of minor importance. The goals are, in the first place, to give a description of the main actions which have to be carried out by a researcher when applying some techniques of attitude scale construction; of his decisions for these actions and of the "good reasons" for these decisions. In the second place, to make a comparison of the constructed scales with respect to the reliability, content (face) validity, efficiency, utility and relations with some theoretical important variables.

The data, which are analyzed, have been gathered in 1971 by Dr. J.C. Lulofs, labour sociologist at Groningen State University, and others. Following the studies in the United Kingdom of Goldthorpe and others, which were published between 1966 and 1970, and of Ingham (1967 and 1970), Lulofs et al. wanted to investigate, in the first place, whether Dutch industrial workers and white collar employees are characterised by an instrumental, a solidaristic, a bureaucratic or a professional orientation to work. Secondly, they wanted to investigate whether these orientations are determined by factors within the work situation, outside the work situation (for instance geographical and social mobility) or by both types of factors together. Lulofs et al. interviewed 396 highly skilled, semiskilled and unskilled workers and 210 white collar employees, all male, between 17 and 65 years old, sampled at 13 different firms and administrative organisations in the Northern and the Western parts of the Netherlands. For the measurement of the orientations of their interviewees, the questionnaire contained 44 five point attitude items, a paired comparison of five aspects of work, and an instruction to pick two of eight reasons for working. The questionnaire also contained questions about the work situation and the life situation of the interviewees, so that it would be possible to get insight in the determinants of the orientations (given that the orientations could be found at all).

Given the data of Lulofs et al., our study is primarily aimed at making a classification of the subjects into four categories, according to the four orientations to work, using ten different techniques of attitude scale construction. Secondly, at making a description and comparison of these techniques and scales on the aspects mentioned above.

In chapter V an analysis is made of the paired comparison of five aspects of work. With the help of a computer program, especially written for this analysis by A.C. Rutjes, 76 % of the subjects are classified into five groups according to their systematic preference of one aspect (24 % could not be classified). As we wished to arrive at Lulofs's four groups, these data are not used in the remainder of the book.

In chapter VI to XII the scores on the 44 five point attitude items are analysed. In chapter VI a description is given of a principal components analysis (i.e. with unities on the diagonal of the product moment correlation matrix), followed by a varimax rotation with Kaisers normalisation of the factors with eigenvalue greater than or equal to one. Factors I, II, III and VI can be interpreted in accordance with the four orientations. Total scores are computed via an unweighted sum of scores on the items with a loading higher than or equal to .42. After a standardisation of the scores on the four scales, all subjects can be classified into four categories (an instrumental, a solidaristic, a bureaucratic and a professional orientation to work) on the
basis of their highest score.

The analysis in chapter VII is the same as in chapter VI, except for the computing of scores on the four scales, which in this chapter is performed by computing the exact factorscores. 99% of the subjects can be classified into the four categories.

In chapter VIII, the 44 items are divided into four groups, according to the orientation they supposedly measure. Each group of items is analysed by means of a principal components analysis, without rotation. Items are selected for scales measuring the four orientations (this time with .40 as a criterion for a high loading on the first principal component). Total scores on every scale are computed and standardised, and all the subjects can be classified into the four categories.

In chapter IX an attempt is made to do a Q-factor analysis of the scores of the subjects on the 44 items and on a selection of 20 items with reasonably high intercorrelations. The attempt failed.

In chapter X the 44 items are divided into the same four groups as in chapter VIII. Within these groups, items are selected and scales are formed by computing item total correlations and Cronbach's alpha. Total scores are computed via an unweighted sum and all the respondents can be classified into the four categories, after a standardisation of the total scores.

In chapter XI, use is made of the model for cumulative scaling analysis, originally developed by Guttman in particular, improved by Mokken. Improved among other things in this sense that, while Guttman's model is deterministic, Mokken's model is stochastic. The scores on the 44 items, divided into the same four groups as in chapters VIII and X, are analysed with the computer program of Mokken and Hol (Mokken, 1971). Only three scales could be constructed; a scale for the professional orientation would only have been obtained by violating the rules of the model. Therefore, the subjects could not be classified into the four categories.

In chapter XII, an attempt is made to multidimensional scaling (via the computer program MINISSA) and to cluster analysis (via the computer program HICLUS). Both the scores of the subjects on all 44 items and the scores on the selection of 20 items, which also was used in chapter IX, were analysed. With respect to the scores on the selected 20 items also a comparison is made between the product moment correlation coefficients and Goodman and Kruskal's gamma coefficients. The analysis of the 44 items with MINISSA is not successful. With HICLUS three scales can be constructed. This time it is not possible to construct a bureaucratic scale. Therefore, the subjects could not be classified into the four categories.

In chapter XIII, the pick k of n data are analysed, with Coombs' parallelogram analysis and with MINISSA. Both failed. So only the analyses, described in the chapters VI, VII, VIII, and X, gave the opportunity to classify the subjects into the four categories, according to their instrumental, solidaristic, bureaucratic or professional orientation to work. It must be mentioned that out of the scales for the four orientations only the instrumentalistic scales have a sufficient reliability and validity. The solidaristic scales are less satisfying, the bureaucratic scales are even worse, especially with respect to their validity. The professional scales have a very low reliability, their validity is difficult to determine.

In chapter XIV the classifications of the subjects into the four categories out of the chapters VI to VIII and X are cross-tabulated with three variables: the type of firm or organisation, the meaning of 'making progress during one's course of life' and the contacts with colleagues outside the work situation. Using one classification or another did not give rise to different conclusions.
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In chapter XV a cross-tabulation is made of those subjects who belonged to
the same orientation according to the four classifications out of the chapters
VI, VII, VIII and X together with some other theoretically relevant variables:
the marital status, the number of children, the number of financially dependent
children, and the geographical mobility. These cross-tabulations do not
support the hypothesis of Goldthorpe e.a. about the relation between an in-
strumental orientation to work and the position in the lifecycle, nor the
hypothesis of Goldthorpe e.a. and Ingham about the relation between an instru-
mental orientation and geographical mobility. These analyses were carried out
with only 49 % of the subjects. Therefore the analyses were repeated with all
the respondents, following the classification out of chapter VIII. The results
were the same.

In chapter XVI a summary is given of the main decisions which have to be
taken in the application of the ten techniques for attitude scale construct-
An attempt is made to compare the different techniques on the aspects of
reliability, validity, efficiency, utility, and analysis of relationship with
other variables. Reasons are sought for the failure of some techniques with
respect to not being able to detect the four orientations to work. The main
conclusion is that the application of one or the other of the four 'success-
ful' techniques leads to about the same results.