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Topic (iii) Attitudes, norms and values

ENGENDERING ATTITUDES

Submitted by Statistics Netherlands¹

Invited Paper

***Abstract:** Attitudes and opinions are no common subjects in official statistics, but their relevance justifies more attention. Gender policy is a policy domain where statistics on attitudes might be very effective. The paper attempts to illustrate the merits of statistics on subjective phenomena like opinions and attitudes as well as the difficulties that can occur in statistical observation of such events. This will be done by presenting the measurement and statistical analyses on the evaluation of the female share in decision making in society nowadays.*

***Keywords:** gender statistics, attitude measurement, scaling*

1. Introduction

The monitoring of gender related social processes generally concerns inequalities in the distribution of resources between women and men or unequal outcomes of equivalent efforts. In most countries, official statistics belong to the most important data sources of such monitoring tools. By drawing the demarcation line of statistics between phenomena believed to be objective measurable and events in subjective domains that are often qualified as speculative and unobservable, many chances to evaluate the state of gender affairs and the effects of gender policies would be missed.

Main purpose of this paper is to illustrate the merits of statistics on subjective phenomena like opinions and attitudes as well as the difficulties that can occur in statistical observation of such events. This will be done by presenting the measurement and statistical analyses on the evaluation of the female share in decision making in society nowadays. In the next chapter, some general theoretical notions on attitudes in social science are introduced, which will be followed in chapter 3 by some suggestions how statistical information on attitudes regarding the female share in decision making might contribute to implementation and evaluation of policy initiatives. In the following chapters the statistical process comes nearer: after some considerations on the measurement alternatives (chapter 4) and some elementary results of the illustrative data (chapter 5) the results of the analyses of the measurement tools will be presented somewhat more extensively in chapter 6. These results provide opportunities to interpret the data and to examine the relations between attitudes and other personal characteristics.

2. Attitudes

The concept of attitudes has since long been one of the most generally applied concepts by psychologists and sociologists (Allport, 1935; Ajzen, 2001). Although many theoretical approaches in social psychology have given their own specific meaning to the concept (Van der Pligt & De Vries, 1995; Eagly & Chaiken, 1993), some general notion of attitude is common to all interpretations. Generally accepted is the

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conception that attitudes have an intermediary role in the psychological process between stimuli from some object (person, situation, instance) and behavioural responses. In most approaches attitude is referring to some evaluative condition or process which explains the consistency of individual behaviour with respect to some object. Cognitive as well as affective elements (positive or negative) are generally considered as intrinsically related to attitudes. Although behavioural elements are related to attitudes, it is accepted rather broadly that they are not parts of attitudes: attitudes are the evaluative responses that explain (in some degree) the behavioural acts (Ajzen & Fishbein, 1980).

Attitudes are less concrete and less specific than *opinions*. Opinions have a more limited meaning and they are not necessarily evaluative. Contrary to attitudes opinions are usually measured by one or a few simple questions (Van der Pligt & De Vries, 1995). *Values* on the contrary have a much more general nature than attitudes. They are principles, lifelong aims or general ideas on society. Values are related and directive for attitudes and behaviour (Rokeach, 1968). One might say that often hierarchical relations exist between those three concepts: attitudes regarding gender inequality or feminism could be interpreted as related to 'equality' as a more general value as well as to opinions on specific items like preferential policies or gender pay gap. This example also illustrates that it is a matter of degree of generality which involves also that grey areas exist between the concept 'attitude' and both other concepts.

Attitudes can be considered and ordered from different perspectives. It is enlightening to look at which functions are attributed to attitudes. The distinguished functions refer to different purposes served by attitudes (Van der Pligt & De Vries), but can also be interpreted in connection with specific theoretical traditions in social science.

- ?? Cognitive function: the attitude serves as a kind of structuring scheme in thinking about and acting to the attitude object. This function is especially elaborated in theories by which the organisation of knowledge is treated as a major causal factor in the explanation of behaviour.
- ?? Instrumental function: in attitudes some relation is expressed between one's behavioural intentions and need satisfaction. This instrumental role of attitudes can be conceived in a retrospective way (as reflecting rewarding or negative experiences with the object) as well as in a prospective way (as expressing expectations on the outcomes of object-related behaviour).
- ?? Ego-defensive function: attitudes can serve to build or maintain a positive self-image (e.g. stereotyping might confirm one's own superiority).
- ?? Value-expressive function: attitudes might reflect one's values and in this way express an important part of the person's identity.
- ?? Social assimilative function: expressing specific attitudes might initiate or support interpersonal relations.

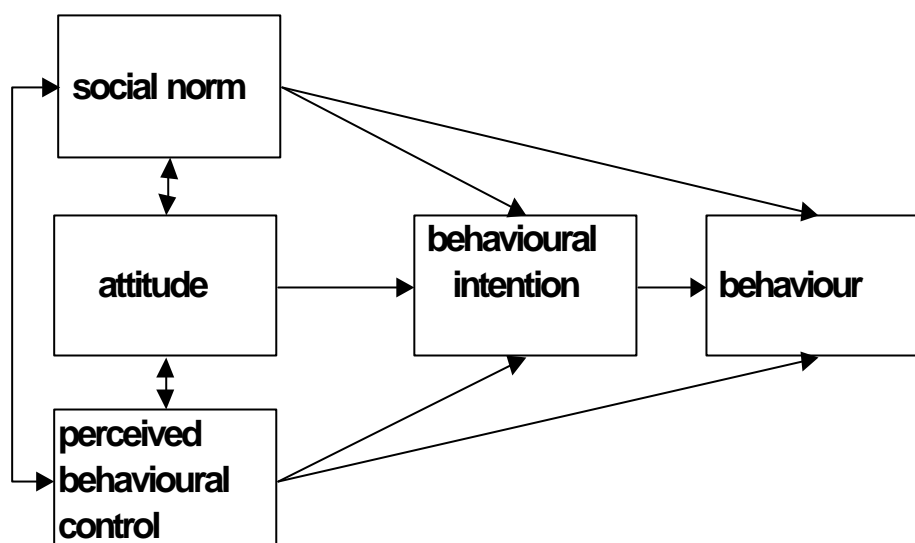
These functions or purposes of attitudes are not mutually exclusive or exhaustive. Attitudes are not uniquely associated with functions: the same attitude might have different functions at different points in time just as similar attitudes might serve dissimilar purposes for different persons. That explains in some degree also why it is so difficult to change attitudes: cognitive approaches like persuasive discussions or media campaigns might not be very effective in changing attitudes that serve to protect a negative self-image.

One of the main discussion topics in the long history of attitude theory has been the relation between attitudes and behaviour: declining interest in attitudinal approaches (e.g. in 1960's) could generally be explained by serious doubts on the explanatory and predictive value of attitudes for behaviour. One of the most generally accepted models of the relation between attitudes and behaviour was introduced by Fishbein & Ajzen (1975). They considered behaviour as rather well² predictable from (measurable) *behavioural intentions* (are you intending to do ...), which were assumed to be on their turn explainable and predictable from *attitudes* (positive and negative outcomes related to the behaviour³) and *social norms* (opinions of

² Behaviour is not always predicted, e.g. when it appears to be impossible by lack of resources or other impediments

³ In this respect the theory is related to the economic value-expectancy theory.

Figure 1 Basic model of Ajzen's theory of planned behaviour



significant others). Some years later that theory was modified by Ajzen (1988) by adding *perceived behavioural control* (would I be capable to do ...) as an extra explanatory factor in the model. Figure 1 summarises the relations in the attitude-behaviour relation as conceived by Ajzen in his 'theory of planned behaviour'. More recent theoretical developments have led to extensions in which greater importance is given to the influence of object-related *past experiences* and to the *accessibility* of attitudes (can the attitude called readily in mind in a given context⁴) (Fazio, 1986): broadly speaking this amounts to increasing the role of affective elements in the model.

Research and theory development on attitudes have made substantial progress in the last decennia and for certain will continue to do so, especially on the attitude-behaviour problem. But not all behavioural domains are equally tackled; consumption (marketing), health-related behaviour (e.g. smoking) and voting have been since long important subjects. Although opinion research and attitude measurement on several gender issues have developed rather well, there appear to be only few instances of research on the link between attitudes and behaviour regarding gender items. As one might infer even from these introductory theoretical remarks on attitudes, it is important to study the links between attitudes on gender items and related behaviour, because such studies are necessary to really enhance the predictive value of attitude measurement with regard to gender relations.

3. Attitudes and policy objectives

Although attitude measurement is not common practice as part of official statistics, one could argue that the policy relevance of attitudinal data is large enough to justify such extensions in the working programmes of national statistical institutes. In this respect one might observe that in economic statistics some attitudinal measures are rather generally accepted: expectancies of consumers and also producers have been considered for many years now as valid economic indicators, that even have a large impact on stock markets.

Referring to the functions of attitudes, like cognitive and ego-defensive functions, it can be assumed that attitudes play some role in maintaining gender inequalities. Adequate measurement of attitudes and of course how these attitudes may have changed, are relevant from this perspective. Systematic and regular presentation of attitudinal data on some central gender issues could produce signals for gender policy initiatives, especially if longer time series of these indicators will come into being. It might be useful to invest in the development of some indicators concerning gender policy items that could be expected to stay relevant international issues, even in the long run.

⁴ Especially theories on information processing have inspired these modifications.

Apart from that, attitudinal measures on more specific national policy items could be useful to inform policy to what extent new initiatives might be accepted broadly or on the contrary that intense efforts are needed to attract support. Sometimes even the separate components of the measurement tools of attitudes can be used to monitor changing opinions on rather specific policy issues.

Concentrating the discussion on the relevance of attitudinal data concerning the decision making issue which is the matter at issue in this paper, considerations like the following might be relevant:

- ?? Information on general support for policy initiatives like preferential policies can be useful to develop implementation strategies or to support lobbies to stimulate policy changes.
- ?? Likewise, information on the attitudes (or even stereotypes and prejudices) of decision makers themselves with regard to this issue is relevant.
- ?? Assuming the relation between attitudes on female decision making and types of behaviour like acceptance of female management, information on these attitudes might make a difference for the selection of management strategies.
- ?? Only by measurement of attitudes can efforts to change attitudes on female leadership be evaluated; exactly to monitor effects of female leadership or specific leadership styles the measurement of attitudes on female decision making should be an important and obvious tool.

It goes without saying, that information should be made available not only on the population as a whole: especially information on distributional aspects can be valuable to focus on target groups in strategies of change. Banaszak & Plutzer (1993) concluded that younger age, female paid labour and higher education predicted more support of feminist positions among women as well as men just as in earlier studies in the United States. In a replication study by Bolzendahl & Myers (2001) these results were reconfirmed on more recent US data.

4. Measurement and analysis

Attitude measurement can take many forms. Common practice is to measure attitudes by surveys. Direct measurement in surveys by just one question takes place rather often, but those cases might better be qualified as measuring just one aspect of a more general attitude or as tracking an opinion on a related but specific issue. Although separate opinion items might provide valuable and useful information on specific issues, they are generally insufficient as measurement tools for rather general concepts. Measurement instruments of attitudes should have some sustainability: they have to indicate changes in public opinion without being too susceptible to accidental circumstances⁵. Another problem is the sensitivity of the results for idiosyncratic characteristics of just one item (Ajzen, in press). That is why it is highly recommended to develop measurement scales containing sets of items in order to measure attitudes in surveys.

Some types of multi-item scales were designed to measure the attitude of an object rather directly; an example is the Osgood scale by which characteristics associated with an object are measured by assigning scores on dimensions of contrasting adjectives (such as large-small, warm-cold etc.). More common is the use of scales consisting of Likert-items: respondents are requested to indicate for a number of object-related statements how strongly they do agree or disagree (using mostly five or seven answering categories). Before using scales in surveys, their validity and measurement qualities should be ascertained in an earlier testing phase. In practice, the process of assessing the scale qualities appears too often to take place as one of the stages in the analysis of the final results⁶, which is in fact too late, just as happened in this paper.

⁵ To give an example: one of the items in the measurement tool refers to the possibility of a female prime minister; when this would become reality, the meaning of the item would shift considerably which would reduce very much the value of the item as a measurement tool (especially if it is used as a separate indicator).

⁶ Especially in experimental settings other measurement methods are in use. Psycho-physical measures like bodily responses or reaction time are examples of tools that can be applied to measure the effect of presentation of attitudinal objects instantly.

The development of measurement scales should not be underestimated and can in fact be considered as a specialized job. Several characteristics of items can produce outcomes that are really measurement artefacts instead of answers that reflect personal attitudes. Some examples are response sets (e.g. respondents could be more inclined to agree with items than to disagree or some respondents have a tendency to give more extreme answers) and social desirability tendencies (respondents are inclined to give as desirable considered answers instead of their personal opinion). Some unwanted and artificial effects can be prevented by using methodological precautions in the development phase, other artefacts can be only ascertained afterwards in order to attenuate their effect in the analysis.

The presented data on attitudes regarding female decision making in this paper have been measured by the use of seven Likert-items, each having five answering categories varying from fully agreeing to fully disagreeing (see table 2)⁷. Data were collected in 2000 and 2002. Unfortunately, the five answering categories in both years differ, which reduces the comparability substantially. On the other hand, it might provide some experiences how to handle problems like these.

The construction of the attitudinal measures themselves from the scale demands some specific efforts to consider strong and weak points of the measurement instrument and eventually to perform more thorough analysis of the items. Anyway, the questions should be answered if and in which degree the items are measuring the same underlying concept or construct and if that underlying sort of thing can be considered as the intended attitude on female decision making.

One of the easiest ways to handle this validity problem is to assume that all items have measured different aspects of the attitude completely or perfectly and that the sum of the scores on the items will be an adequate indicator of an affirmative (or negative) attitude to the object, which in this instance might be defined as the current position of women in decision making. But it would be naive to accept such strong assumptions on the measurement qualities of the set of items that constitute the scale, particularly when no information is available from earlier pre-tests.

Several statistical techniques are available to assess the degree in which the items are measuring the same underlying constructs. All techniques are designed to estimate the variation that all items have in common and which could enable to interpret this shared part of the total variation in relation to the intended conceptual content of the items. These analytic methods differ not only in the computational procedures, but also in the assumptions regarding the statistical characteristics of the data. In the course of the description of the results, these methods (non-linear scaling methods and factor-analytic procedures) will be explained in greater detail. These statistical procedures will also provide the possibility to produce alternative scores that can be considered as 'truer' measures of some underlying attitude-construct. However, the meaning of these scores should also be inferred in a large degree from the results of the analysis itself. These resulting measures can be used in other statistical procedures by which relations between attitude scores of individuals and their characteristics can be assessed.

5. Data and general results

In 2000, the Social and Cultural Planning Office (SCP) and Statistics Netherlands (CBS) published the first edition of the Emancipation monitor⁸ in a new series on gender statistics. The second edition is planned to be published in November 2002. The publication is mainly an annotated compilation of data from existing sources. In both years supplementary data collection took place to provide opinion data on several topics. Data were collected by a survey (EMOP) among the Dutch CentERpanel⁹ in March 2000 and in May 2002. Table 1 provides some information on the samples.

⁷ In the research literature on attitude measurement items with five answering categories are commonly referred to as having five-points scales. To prevent confusion on the concept 'scale' this terminology will be avoided here.

⁸ The publication replaced some other series of publications on gender statistics that were produced separately by SCP or CBS (Keuzenkamp & Oudhof, 2000).

⁹ The CentERpanel is what is known as a telepanel, a representative sample of the Dutch population aged 15 years and above. Every week, panel members in the participating households receive and fill out a questionnaire that is sent to them via the Internet, either on their own computer or on one provided by CentERdata. The computers of the panel members are linked to the central computer at CentERdata and their answers are returned through the same channel.

Table 1 Some sample characteristics data collection EMOP-survey

	2000	2002
Sample size	2630	2569
Full response	1537	1782
Response rate	58%	69%

In both years, the survey questionnaire contained five-point Likert-items to measure opinions on female decision making, violence against women, division of household care and income acquisition. In this paper, the spotlight will be on the seven items on decision making. Some background data on personal and socio-economic characteristics are also available for all respondents. The data were weighted by sex and education in both years.

Women have too little influence on decision making, agreed more or less almost 40% in 2002, but an equal proportion disagreed on this item. Nearly fifty percent did not share the opinion that women and men have equal opportunities to reach the top. Seven out of ten agreed that it is understandable that women organisations try to enlarge the female share on top-level. The ambition to double this share in five years received support from 44%, while only 17% objected it. Women should be given priority in management training, agreed one-third, while also one third disagreed. Four out of ten respondents pleaded against preferential policies on top-level, while three out of ten disagreed with them. One third of all respondents welcomed the suggestion that a woman would be prime minister (which has never occurred thus far), twice as much as the share of opponents, but more than fifty percent did neither agree nor disagree on this idea.

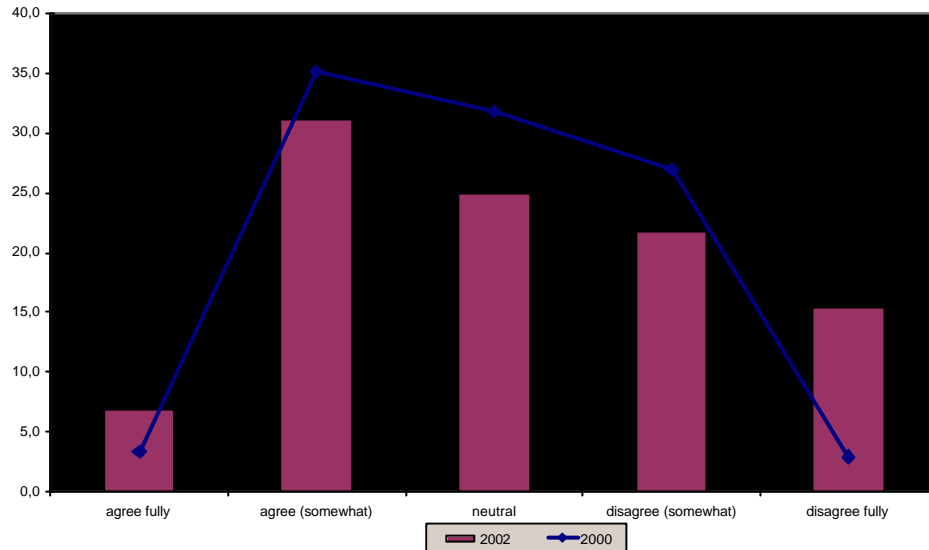
Table 2 Relative frequency distributions of attitudinal items on female decision making, 2002 (weighted)

Item	Name of item in figures	Agree fully	Agree somewhat	Neutral	Disagree somewhat	Disagree fully
Women generally have too little influence in decision-making on important issues.	<i>Low influence</i>	7	31	25	22	15
The share of women in top positions should at least double over the next 5 years	<i>Double fem. share</i>	16	28	40	10	7
Today's women have equal opportunities as men to reach a top job	<i>Equal chances</i>	10	31	12	37	10
It would be good thing if the next Dutch prime minister is a woman	<i>Female prime minister</i>	11	20	52	8	9
In order to reduce the shortfall of women in decision-making positions, companies should give priority to women in management training	<i>Priority man. training</i>	10	26	29	20	16
Even if there are only few women at the top of an organisation, preferential policies for women are undesirable	<i>No pref policy</i>	17	25	30	20	9
It is understandable that women's organisations make many efforts to increase the proportion of women in top jobs.	<i>Efforts wom.org.</i>	30	41	19	7	3

The differences between the response categories in both years prevent direct comparison of the items on decision making. Figure 2 illustrates very well the problem that is caused by the change of response categories: the wording of the categories between the middle category 'neutral' and both extremes 'fully (dis)agreeing' has changed from simply '(dis)agree' in the 2000 items into 'disagree somewhat' in the 2002 items. Adding the word 'somewhat' can be expected to lower the threshold (to declare oneself in favour or against) for those who doubt between '(dis)agreeing' or 'neutral' while it necessitates those who simply

'(dis)agree' to choose between 'somewhat' or 'fully'. Thus one would expect the answers to show some shifting away from the middle category. This is exactly what can be seen in figure 2; the other items show more or less the same type of shifting. But apart from this change, there might also have occurred some polarisation in public opinion, which would lead to the same changes in the answering patterns. The results do not provide conclusive evidence on this question.

Figure 2 Women have too little influence on decision making, total samples



Applying some assumptions regarding the neutral category, it might however still be possible to make some cautious comparisons between the results of the measurements for both years by dichotomising the scores on the items. Assuming that persons in the neutral category can be divided in two subcategories: those who are a little bit on the 'agree'-side and those who would be slightly more inclined to disagree, one might allocate both hypothetical subgroups to either the agreeing or to the disagreeing respondents. One allocation rule might be to assume that the attractive force of 'agree' is equal to that of 'disagree' which would give reason to divide the neutrals in two equal sized groups. Another variant might be that the attractive forces of 'agree' and 'disagree' are proportional to the shares of people who choose for those categories. Applying both variants to all items gave rise to the results as presented in table 3.

Table 3 Percentages of persons agreeing with statements before and after allocating 'neutral' (two methods) (weighted)

Items	2000			2002		
	Fully agree + agree	50/50	Prop	Fully agree + agree somewhat	50/50	Prop
Women generally have too little influence in decision-making on important issues.	38	54	56	38	50**	51**
The share of women in top positions should at least double over the next 5 years	46	65	76	44	63	72**
Today's women have equal opportunities as men to reach a top job	30	41	38	41**	47**	46**
It would be good thing if the next Dutch prime minister is a woman	24	55	62	31**	57	65
In order to reduce the shortfall of women in decision-making positions, companies should give priority to women in management training	37	52	53	35	50	50
Even if there are only few women at the top of an organisation, preferential policies for women are undesirable	37	54	56	41*	56	59

It is understandable that women's organisations make many efforts to increase the proportion of women in top jobs.	71	81	90	71	80	87*
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50/50 = category 'neutral' is equally divided between 'agreeing' and 'disagreeing'
prop = category 'neutral' is proportionally divided between 'agreeing' and 'disagreeing'
**=p<0.01; *=p<0.05

Inspecting the results in table 3 the direction of the changes can not be interpreted very easily. Firstly, one should not fail to notice that the share of allocated 'neutrals' was generally rather high; for one item (on the female prime minister) even more than 50%). As a consequence, differences between allocation methods are sometimes larger than differences between both years.

The statement concerning the low influence of women in decision making was supported less in 2002¹⁰ but the percentage of people agreeing that equal opportunities to reach the top functions exist for men and women diminished hardly. The same majority in both years appeared to understand the efforts of women organisations to enlarge the female share at top-level just as in both years approximately the same percentage agreed with the objective to double the female share on top-level. The support for prioritisation of women in management training as well as the resistance against preference policies appeared both unchanged. The prospect of a female prime minister met more support in 2002, which might be influenced by the timing of the 2002 survey, namely in the period of turbulent general elections. Summarising, one might draw the conclusion that hardly any changes in opinions have occurred. One of the reasons might be the short period between both measurements, but the huge changes of voters in many European countries in the recent past illustrate that political opinions can change drastically in an even shorter period, demonstrating that the period between both surveys is an unsatisfactory explanation. One at least partial explanation might be that all opinions reflect some common underlying and more stable attitude.

6. Scales and dimensions

To assess the degree in which the seven items have common variation in common, which can be interpreted as the reflection of some underlying factor, several techniques could be applied. There is no information available in advance to justify any assumption how scores on the common underlying dimension might be reflected in the items.¹¹ In factor-analytic techniques it is assumed that items and underlying factors are linearly related, which means that the order of the categories of items is the same on the dimension and that the distances between successive categories are equal. In some non-linear techniques different distances between the categories are allowed. In other non-linear techniques the assumption on the ordering is dropped, too.

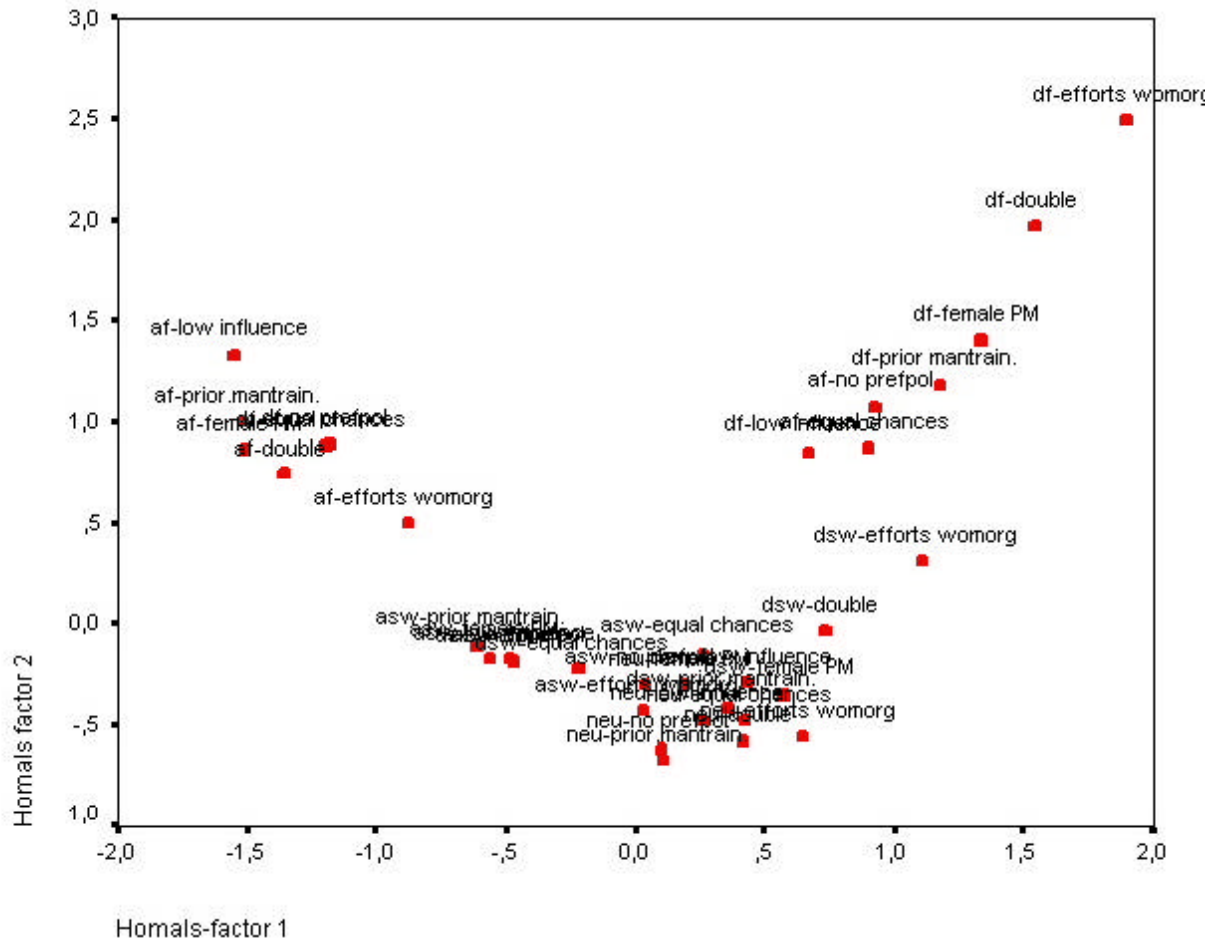
By using HOMALS (homogeneity analysis by means of alternating least squares) the common variation of the items can be explored without strong assumptions regarding the item scores. Although the categories of the items (varying from fully agree to fully disagree) look like values of ordinal variables they are treated in HOMALS like categories of multiple nominal variables, just to assess if our suspicion about their ordinal character can be verified¹². In this analysis individuals and their response patterns are considered as points in an Euclidean space: similarity of response patterns is mathematically translated into smaller distance; a response category is placed in the centroid (center of mass) of the individuals that have chosen it (Meerling, 1981). By using computational methods to describe the positions of categories and individuals in space with as few dimensions as possible, it is possible to assign them scores which provide information for the interpretation in terms of similarity of the meaning of items and their categories. HOMALS produces values on a number of dimensions in successive importance.

¹⁰ Some minor change in the wording of the statement might have had some effect on the results. In 2002 the statement referred to decision making on important issues, while in 2000 the statement referred to decision making on important issues *in society*.

¹¹ In the second part of the paper, only the 2002 data will be presented. Results of analysis on the 2000 data (which were very much alike), might have been used as prior information, but that option will not be reconsidered here.

¹² Especially the character of neutral as middle value of the scale needs to be assessed.

Figure 3 Homals category quantifications attitudinal items on female decision making, 2002



The positions of the categories are presented for the first two dimensions in figure 3. Although not too easy visible, the figure shows that similar answering categories¹³ are positioned near to each other. The form of the graph reminds of a horseshoe which is typical in HOMALS-analyses when the first dimension appears to be very strong.¹⁴ The scores of the categories of the separate items on the first dimension (values along the X-axis in figure 3) have been extracted and arrayed in figure 4. The scores take away any doubt on the ordinal character of the items. Apart from some minor anomalies¹⁵, all items show that high scores on one item corresponds rather strongly with high scores on other items¹⁶. The underlying first dimension can be interpreted as a positive attitude regarding the enlargement of the female share in decision making¹⁷ (although high attitude values correspond to negative scores on this first dimension). In figure 4 the scores of the items are presented for both samples and this illustrates the stability of the scale structure in spite of the different wording of the categories.

¹³ Two items (referring to the existence of equal chances and to the undesirability of preference policy) have a reversed pattern which can be meaningfully interpreted as consistent with a positive attitude to enlarging the female share in decision making.

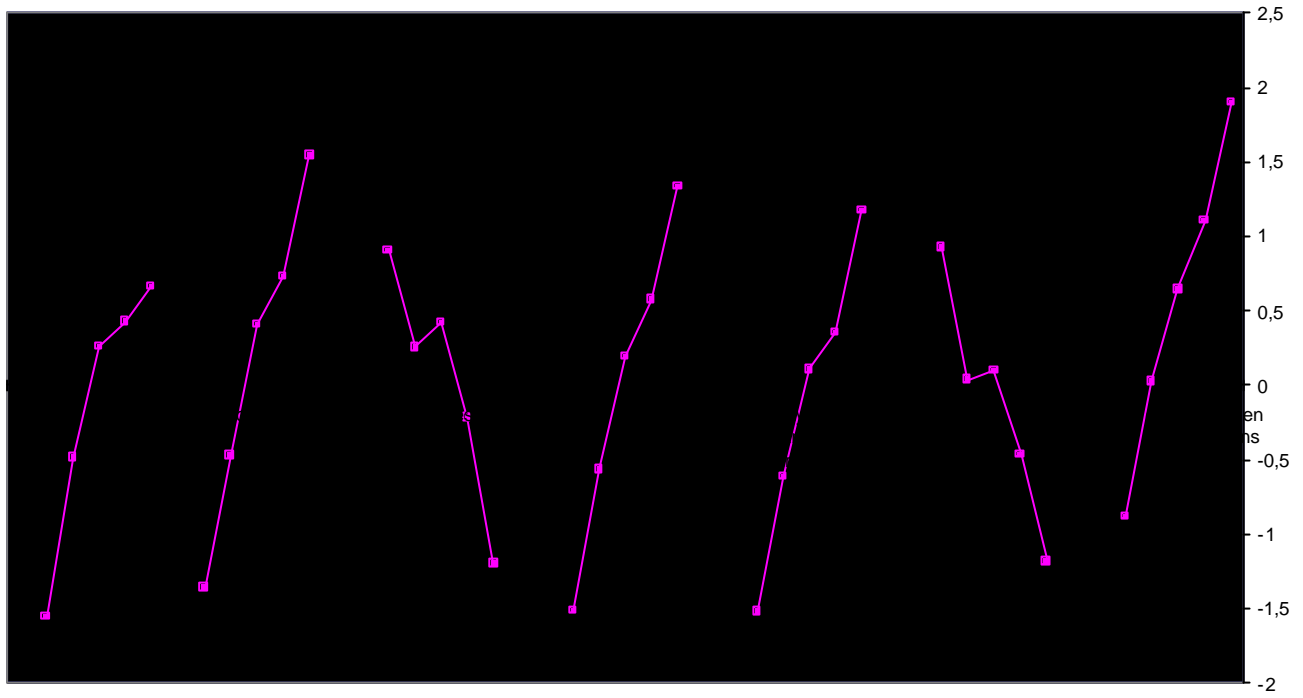
¹⁴ The second dimension in horseshoes can be interpreted as a quadratic variant of the first dimension. The Eigenvalues of the first two dimensions are indeed rather high (.447 vs. .374). The Eigenvalue is one of the evaluative measures of HOMALS and equals the mean of the discrimination measures of the items. The discrimination measures indicate the strength of the relation between items and dimensions (Michailides, 1996).

¹⁵ The clearest of the anomalies is the equal chances item. It might have been caused by the dissimilarity in the meaning of this item compared to the other ones: most items demand some degree of support (or none) to the female cause while this is the only item that demands an assessment of equal opportunities (see table 2).

¹⁶ Taking in account the reversed scores of some items.

¹⁷ The values of the discrimination measures are supporting just this interpretation because the values of the items on doubling the female share and on priority for women with respect to management training are the highest of all.

Figure 4. Homals analysis of items on decision making attitudes: first dimension, 2002



from left to right: fully agree to fully disagree

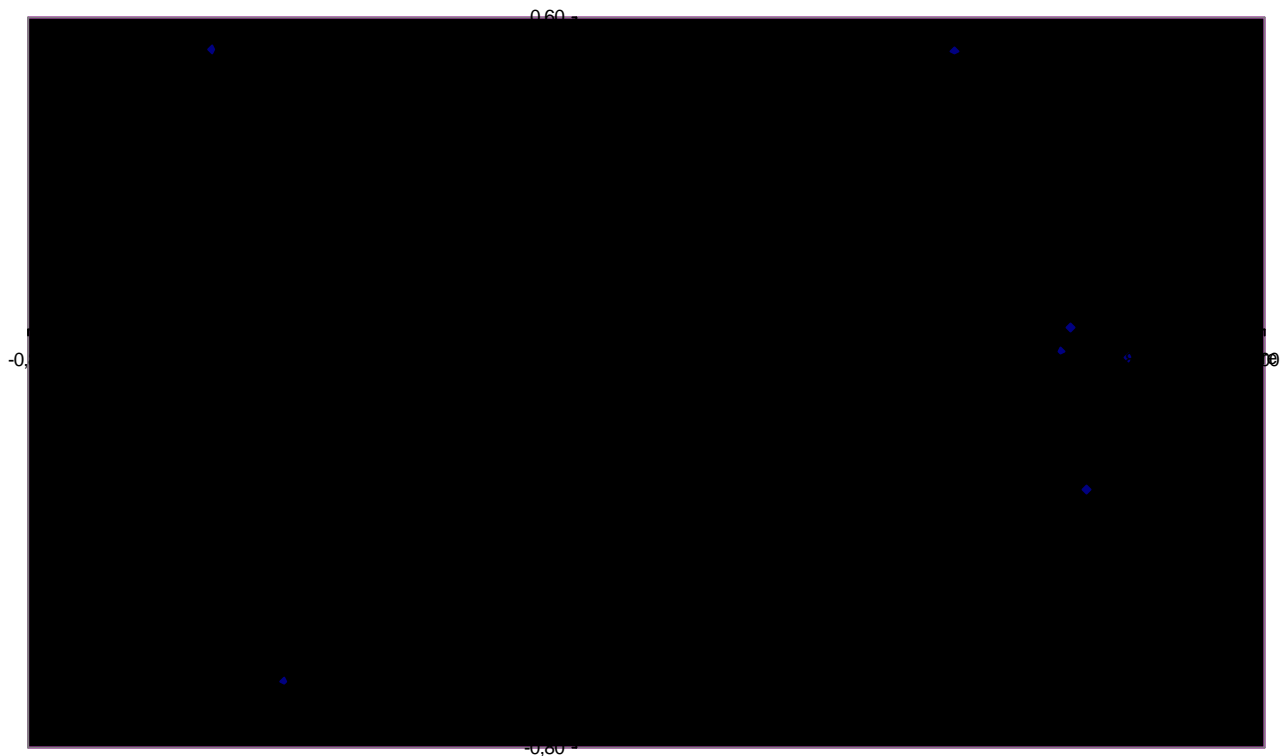
After assessing by this HOMALS analysis the trustworthiness of the items in the scale as ordinal, the use of other techniques to enable the interpretation of the item scores will be illustrated¹⁸. The items will be analysed by using a technique PCA-CAT (Principal Components Analysis for Categorical Data) which assumes ordinal character of the items, but supposes no linear relation between the items and the underlying attitude construct. The philosophy behind this technique is very similar to the one of HOMALS: it is attempted to present individuals with similar response patterns in a multidimensional space and to describe their position with a small number of dimensions as efficient as possible. Only some extra restrictions are imposed on the category scores in the computations because of their ordinality. Although inspection of the values of the separate categories is also possible, the assumptions allow to focus more on the results on the level of the items.

Table 4..Component loadings of attitudinal items on female decision making, 2002.

Items	2002/1	2002/2
Women generally have too little influence in decision-making on important issues.	0,55	0,54
The share of women in top positions should at least double over the next 5 years	0,80	-0,05
Today's women have the same opportunities as men to reach a top job	-0,43	-0,67
It would be good thing if the next Dutch prime minister is a woman	0,70	-0,04
In order to reduce the shortfall of women in decision-making positions, companies should give priority to women in management training	0,74	-0,31
Even if there are only few women at the top of an organisation, preferential policies for women are undesirable Selection of items: comparability over two years	-0,53	0,54
It is understandable that women's organisations should be trying to increase the proportion of women in top jobs.	0,72	0,01

¹⁸ Very often researchers consider the ordinal character of items with response categories like the items analysed in this paper as sufficiently plausible to use immediately techniques with stronger assumptions. But this might be risky, because of the possibility that substantive relations are reported which are in fact measurement artefacts (Blasius & Thiessen, 2000), especially in those cases where linear (factor analytic) techniques are used.

Figure 5. Component loading of attitudinal items on female decision making, 2002



The component loadings that are shown in figure 5 represent the strength of the relation between the items and the scores on the first and second dimension (see table 4). By using these loadings to interpret the first dimension (along the X-axis), it is clear that this dimension corresponds very much to the first dimension in the HOMALS-analysis: it can equally be considered as a supportive attitude with respect to enlarging the female share in decision making (although the sign is reversed: negative scores on the first dimension correspond to high attitude values). More interesting is the interpretation of the second dimension (along the Y-axis), which is however less strong and less important than the first dimension¹⁹, but which is also independent of the first dimension. The position of someone scoring high on the second dimension can be characterised as follows: this person disagrees with the statement that the influence of women on decision making is too low, and agrees that women do have equal chances to reach functions at top-level, but nevertheless this person agrees that priority should be given to women for management training and does not agree the opinion that preferential policies are undesirable. Persons with low scores on this dimension recognise the disadvantaged position of women, but yet are opponents of preferential policy measures²⁰. Thus, this attitude might be qualified particularly as manifesting the assessment of 'selective measures like preferential policy to enlarge the role of women in decision making'.

Not only the positions of categories on the two dimensions are available but also the scores of the individuals on both dimensions. These scores can be used as new variables to explore the relations between attitudes and individual characteristics which might provide some explanation of the different scores.

Finally, it would have been possible to report on the application of linear Principal component analysis on the data. In spite of the fact that the values of the items in the scale did not have the required measurement level, the interpretation of the results would have been hardly different. This is not uncommon and in this

¹⁹ Eigenvalue of the second dimension is about one third of the first dimension.

²⁰ Although some of these persons might belong to hard core opponents of female decision making anyhow, the loadings of other items on the second dimensions would not justify this characterisation for all low scorers.

respect compatible with the opinion of some experts, who do not object the use of linear factor analysis for ordinal items.²¹

7. Attitudes and characteristics of individuals

The differences between groups of individuals, distinguished according to specific characteristics like sex, age, educational level or social status can of course be described by elaborating tabulations or comparing means for subgroups. It is more attractive to use regression-like techniques in which the relation between the characteristics and the scores on the dimensions (representing attitude constructs) can be described, adjusted for the effects of other variables.

The measurement level of some independent variables (nominal level) gave reason to apply Multiple classification analysis (MCA), which is in fact a method to present results from variance analysis in an attractive way. Applying regression analysis would have demanded that these independent nominal variables at least would have been translated to dummy variables in the regression analysis, which is almost equivalent to applying MCA.

Some relevant variables in the analysis lay at hand, like sex and age. Other independent variables are interesting because of the results referred to above on the effect of education and labour market participation. It would have been interesting to use data on other characteristics of the respondents in the analysis, like occupation, political preferences or religious orientation (Banaszak & Plutzer, 1993), but these data were not available in the data set that was used for this analysis.

The results of the MCA on both dimensions are summarised in table 5. The proportion of explained variance for the first dimension is modest and for the second dimension small. It is not uncommon that only a minor part of the variance of attitudinal measures can be explained by background variables without having available more specific information on the social situation and more ideological backgrounds of persons. The beta-values provide an indication of the size of the effects of the independent variables (without any indication on the direction of the

Table 5 Summary MCA-results attitudinal dimension female decision making

	Dimension 1			Dimension 2		
	total	male	female	total	male	female
Sex	.284*			.000		
Age	.208*	.232*	.234*	.093*	.120	.197*
Paid labour	.078*	.084	.109*	.038	.094*	.010
Educational level	.072*	.043	.097	.099*	.134*	.088
Number of children	.038	.079	.057	.081*	.080	.054
R squared	.027	.052	.058	.031	.052	.054

* = $p < 0.05$

effects). The deviations from the grand mean of the total sample (controlled for the other variables in the equation) that can be assigned to each characteristic in the equation and which enable to interpret the nature of the differences, are visualised in figures 6 and 7.

²¹ But only if no serious distortion of the underlying metric scaling (in this example of the attitude construct) by the assignment of ordinal scores might be assumed (Kim & Mueller, 1978).

Figure 6. Results MCA -first dimension attitudinal items on female decision making, 2002

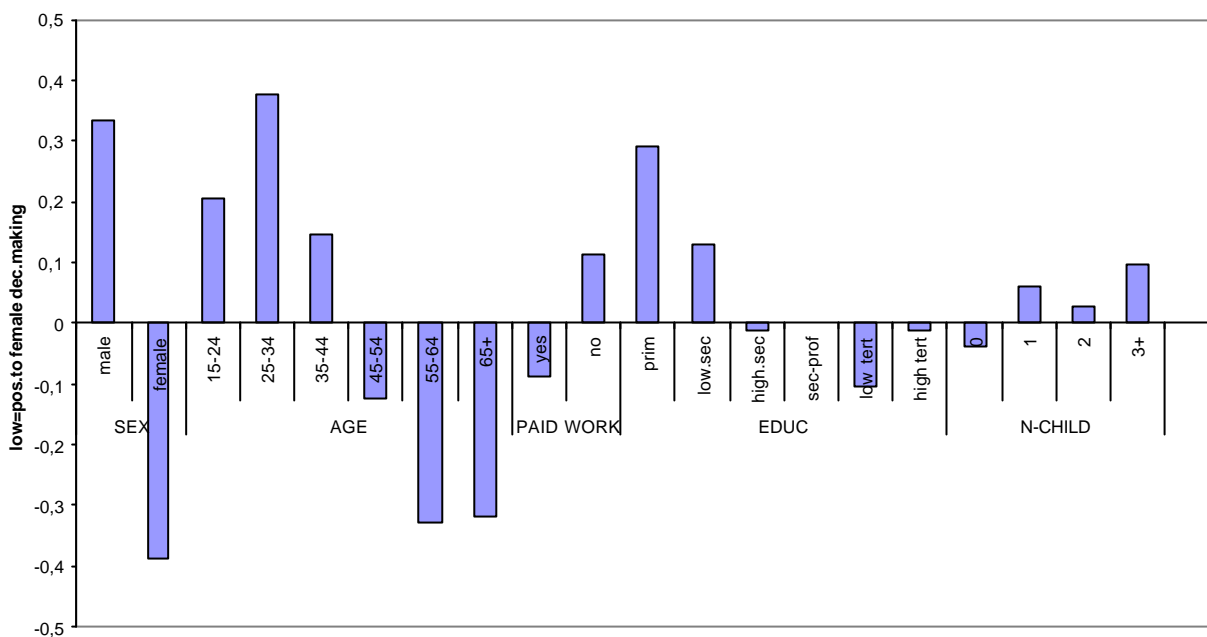
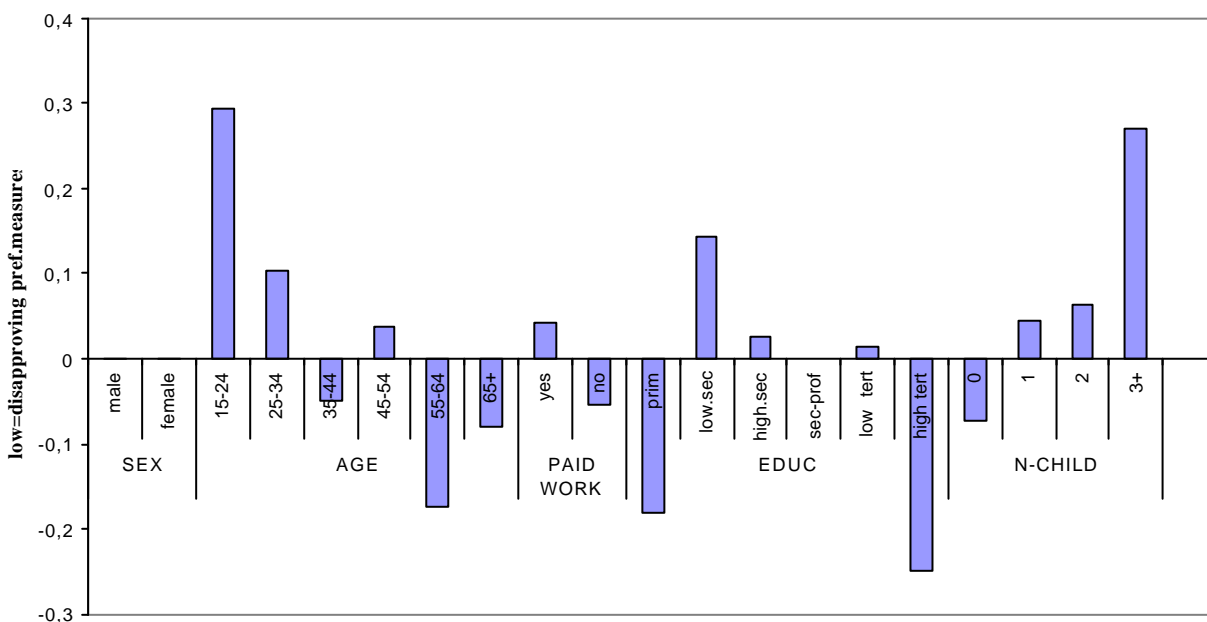


Figure 7 Results MCA-second dimension attitudinal items female decision making, 2002



The effects of sex and age on the positive attitudes with respect to enlarging the role of women in decision making (dimension 1) are significant. The fact that women have this attitude more than average will hardly be surprising, but the larger support by the elderly (in contrast with the young ones) is somewhat unexpected. The effects of participation on the labour market and education confirmed the prediction derived from the reported relation between paid work and feminist attitudes (Banaszak & Plutzer, 1993; Bolzendahl & Myers, 2001): persons without paid work and those with low education take a less positive stand on female participation in decision making.

Significant differences on the less important second dimension can be found especially between education levels, age groups and number of children. For these background variables the patterns appear somewhat

inconsistent and not very easy to interpret. Younger people and people with children appear rather supportive to preferential policies contrary to higher educated persons. One might speculate that higher educated believe that the best (educated?) should win, while younger people and those who have many children consider adjustment measures to enhance the chances (for themselves?) to reach top positions. The opposition of elderly and lower educated might in this line of reasoning be explained from the perceived lack of career opportunities for themselves.

Because of the possibility that significant interactions between sex and other variables might offer supplementary information, the analyses of both dimensions have been repeated separately for women and men. It is noticeable that a larger part of the variance of both the female and the male measurement scores is explained by the same variables, compared to the analysis of the data on the total population. This

Figure 8. Results MCA-first dimension attitudinal items on female decision making, men and women 2002

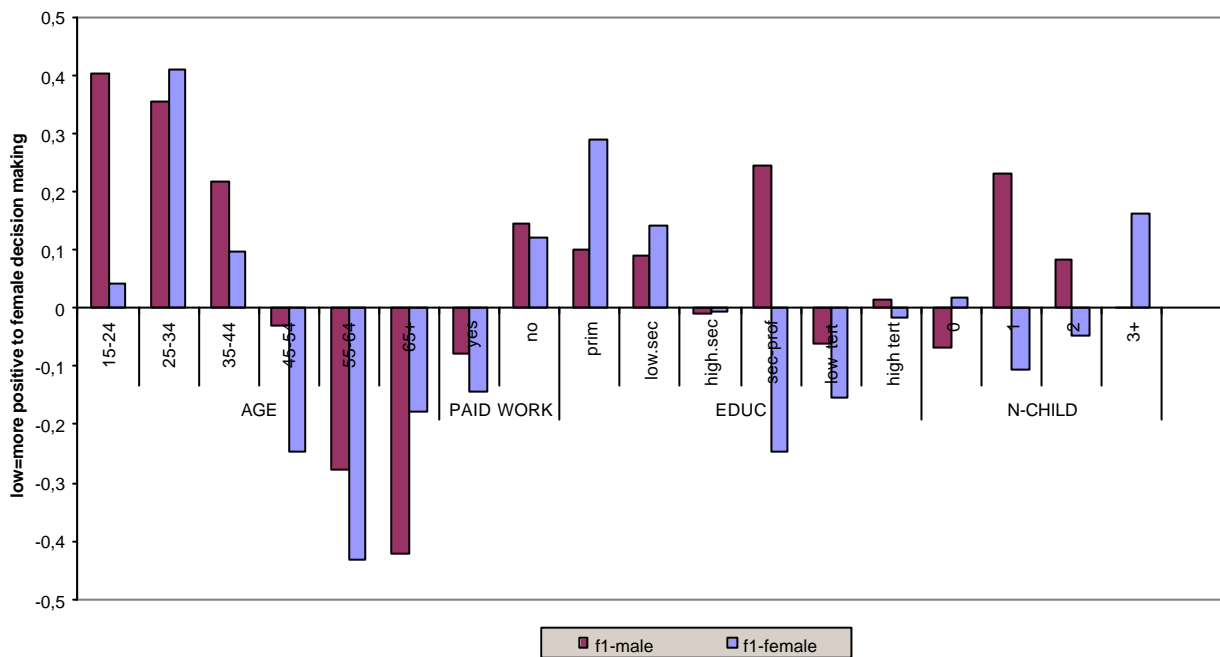
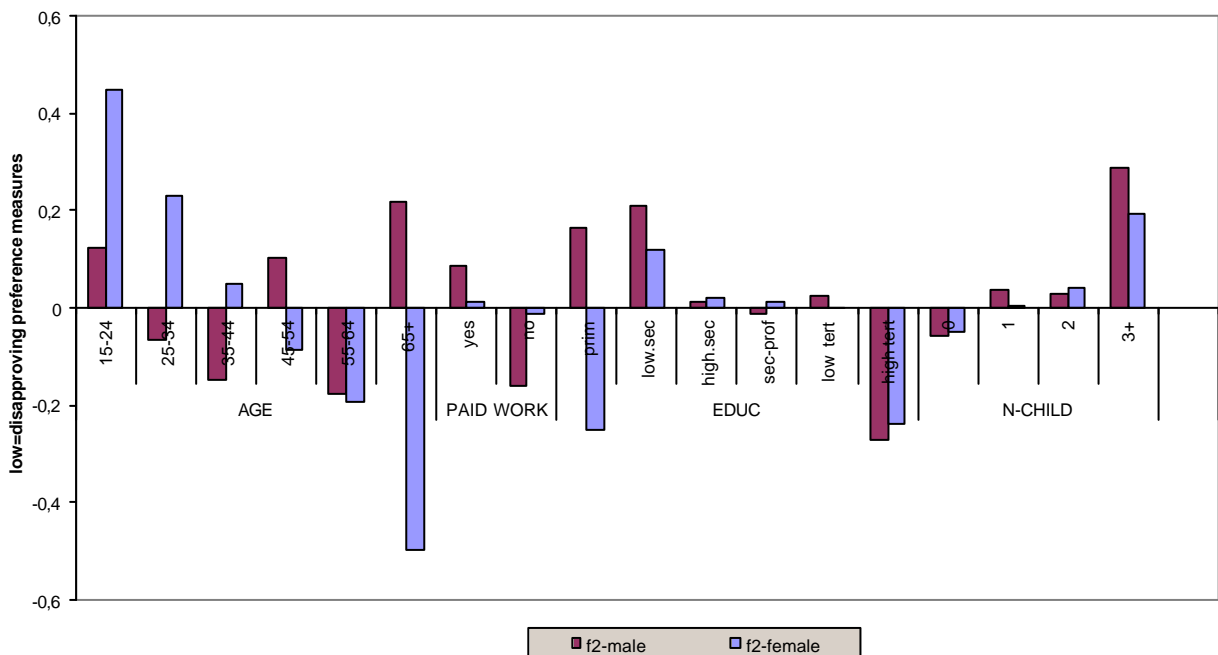


Figure 9. Results MCA-second dimension attitudinal items on female decision making, men and women 2002



becomes understandable by inspecting the differential effects of the variables for men and women in figures 8 and 9. Age is an important variable in the explanation of the scores on the first dimension for both sexes, but the women show much larger differences between age groups on the second dimension than men. Having a job is related to significant differences on the first dimension among women, while these differences are smaller among men. Different attitudes regarding preferential policy are related to paid work and education among men, but rather strongly related to age among women: the supporters of preferential policies can be found especially among younger women.

8. Conclusions

Attitudes and opinions are no common subjects in official statistics, but their relevance for policy development, implementation and evaluation in many domains would justify more investment in this direction. Gender policy is a policy domain (or better a set of policy domains) where statistics on attitudes might be very effective. Attitudes like stereotypes and traditional beliefs presumably play an important role in attempts to change gender relations (or to withstand changes). But investments in specific knowledge on attitude measurement will be necessary then, because the complexity of theory and measurement as well as the amount of literature on both demand specialised experts.

In this paper data that were collected on opinions concerning the female share in decision making in society have been used as an illustration how to measure attitudes and how to use the measurement results in some statistical analyses to assess how these attitudes are distributed among the population.

The Dutch population aged 15 years and above have rather positive opinions on enlargement of the female share in decision making but for many this view does not imply that women have less opportunities to reach top functions neither that preferential policies to give priority to women should be chosen.

Analyses of the items showed that two underlying attitudinal dimensions could be distinguished in the opinions on this subject. The strong, clear and stable first dimension indicated the (un)desirability of larger female participation in decision making, which received more agreement by women and elderly than respectively by men and younger persons and in a lesser degree also by persons having a job and higher educated people. The second, weaker dimension referred to (dis)approval of policies like preferential measures to give more priority to women: especially elderly and higher educated persons would disapprove preferential policy, while younger persons (especially women) and persons with children have a more approving attitude. This might be interpreted as being in line with their own interests.

Following these illustrative analyses it might be possible to perform similar procedures on data regarding other topics (like violence against women or the division of household chores and income acquisition) would be possible. Combinations of attitudinal measures might be used to describe profiles of specific categories for policy aims. The scores on several different attitudinal measures can also be used in an analysis to research the mutual relations of the respective attitudes for a better understanding how gender policy support or opposition develops. Finally, these analyses might result in measurement instruments that could be applied in research on the relation between attitudes and actual behaviour, for example on questions like the predictability of behaviour in regard to female leadership. But however necessary such research may be, carrying out this type of research projects will certainly lie outside the task area of statistical offices.

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