

INCOME SUFFICIENCY, EXPENDITURES AND SUBJECTIVE POVERTY:
RESULTS FROM THE UNITED STATES AND THE NETHERLANDS

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1. Introduction

In recent years there has been a renewed interest among social science researchers and policymakers concerning the definition, measurement, and incidence of poverty. With government agencies producing statistics for quite some time concerning the incidence of poverty and the characteristics of poor individuals and households, there have also been parallel activities to improve the identification and measurement of poverty. This has been particularly true within the United States (U.S.), countries in Europe, Canada and Australia.

Since the early 1980's, research activities in the U.S. have focused primarily upon the impact on poverty statistics of using different definitions of income. Recent activities have included examinations of alternative methods for valuing selected in-kind transfer benefits and their effects upon poverty, and the effect of taxes on poverty (Census 1985, 1988). Researchers at the U.S. Bureau of the Census also conducted a study of the sensitivity

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in the poverty rates of using a different price index to update poverty thresholds than the one which is used for the official poverty measure (Census 1989). Research has also included an examination of the impact of using different normative consumption standards for measuring poverty, for example by changing the market basket and the multiplier upon which the U.S. standard is based (Ruggles 1990). In addition to studies on the official poverty measure, research has also been conducted using subjective measures (e.g., Blaylock and Smallwood 1986; Colasanto, Kapteyn and Van der Gaag 1984; Danziger et al. 1984; De Vos and Garner 1991; Dubnoff 1982; Vaughan 1991). Recently, Congressional hearings were held by the Joint Economic Committee (JEC) to ask questions about the accuracy of the U.S. official measure of poverty compared to other measures of poverty (Congress 1990) and effectiveness of the 1960's War on Poverty programs (Congress 1991). In response, and under the initial direction of the Congress, a distinguished National Academy of Sciences Panel was formed to examine issues related to poverty and family assistance.

Activities within Europe have included pilot programs to identify and combat poverty, and efforts to more fully understand what is meant by poverty. Unlike in the U.S., where official poverty is based upon an absolute standard, in Europe poverty is generally considered to be a phenomenon of relative rather than absolute deprivation. On the level of the European Community this view is strengthened by the diversity among the Member States. Therefore, the European Community has been supporting research to further the development of poverty measurement. Attention has focused on determining which resources are to be measured, what is the most appropriate unit of observation, and how is the minimum acceptable way of life to be defined (e.g., Teekens and Van Praag 1990). Unlike in the U.S., where income is used a the resource to determine who is poor, Europeans are considering the use of household expenditures as an alternative to household income as an important poverty indicator (e.g., Eurostat 1990). Researchers in Europe have also been looking at alternative definitions for determining the minimum acceptable way of life as the basis for defining poverty, including those based on the notion forwarded by the Leyden school that a measure of poverty can possibly be derived from the perception of individuals within a society (see, e.g., Van Praag, Hagenaars and Van Weeren 1982; Hagenaars 1986; Kapteyn, Kooreman and Willemse 1988; Deleeck 1989).

Activities in Canada to evaluate the extent and nature of poverty have focused mostly on data collection and analysis by Statistics Canada. For over 20 years, Statistics

Canada has been publishing a series of "Low Income Cut-Offs" (LICOs), as well as statistics on individuals and families whose incomes are below the LICOs. LICOs are based on the proportion of expenditures allocated to "necessities". These LICOs are often considered as Canada's semi-official poverty lines. More recent efforts include Statistics Canada's conducting a series of experiments into two types of subjective income questions based on the Leyden approach. One is an income evaluation question and the other is a minimum income type of question. Both questions have been asked in supplements to the Survey of Consumer Finances (Morissette and Poulin 1991; Poulin 1985, 1988, 1989a, 1989b; Wolfson and Evans 1989).

Researchers and statistical agencies in other countries have also been focusing on poverty as well as other measures of economic well-being of their populations. For example, Saunders and Bradbury (1989) have produced a study of the consensual approach to poverty measurement for Australia, while Whiteford (1985) focused on the relationship between poverty and social security.

The result of all of these activities has been the production of numerous articles and the convening of conferences to advance our knowledge and understanding of poverty, both nationally and internationally (e.g., Institute for Research on Poverty 1992; Teekens and Van Pmagg 1990, Polish Statistical Association 1992).

Poverty can be defined generally in a variety of ways: absolutely, relatively, and subjectively. An absolute definition reflects a standard below which basic needs cannot be met. Relative definitions consider one's relative position in a distribution (e.g., with respect to income or expenditures) as crucial. Subjective definitions are based upon the opinions of people about their own situation (e.g., about the income level minimally necessary to make ends meet).

Absolute and relative definitions have been used for producing poverty statistics most often. Subjective definitions are a fairly new development. Subjective definitions are based on the idea that the opinions of people concerning their own situation should ultimately be the decisive factor in defining poverty. In this paper we primarily concentrate on a subjective definition, defined in terms of income sufficiency, as introduced by Goedhart et al. (1977), where income sufficiency is defined in terms of answers to the so-called Minimum Income Question (MIQ), which asks for the monetary amounts that

people consider to be minimally necessary to make ends meet for their households. These minimum income values are used to produce income sufficiency or subjective poverty thresholds. These thresholds are calculated as the income level at which perceived minimum income equals reported actual income, given the result of estimating a logarithmic linear relationship between these two variables.

Apart from being related to their actual income, perceived minimum income may also be related to various sociodemographic characteristics of the households and, e.g., to their expenditure patterns. Hence, income sufficiency thresholds may be differentiated according to these variables. So far, the literature on subjective poverty lines in the U.S. (Colasanto, Kapteyn, and Van den Gaag 1984; Danziger et al. 1984) has concentrated on family size differences and on the factors which differentiate the official poverty lines. Early European studies also concentrated upon family size (Goedhart et al. 1977; Van Praag, Hageaars, and Van Weeren 1982), but lately the possible role of a number of other household characteristics (e.g., age, education, occupation, urbanization, income fluctuations, number of working members) has also been acknowledged (Hageaars 1986). Kapteyn, Kooreman, and Willemse (1988) stress the influence of reference groups.

Previously we have estimated the relationship between perceived minimal income and actual income differentiated by a series of sociodemographic variables (De Vos and Garner 1991). We have presented the average subjective thresholds for the U.S. and the Netherlands differentiated by family size and for one and two person households with reference persons older and younger than age 65. A comparison of mean official and subjective thresholds revealed that the official poverty thresholds were significantly lower than the thresholds based upon income sufficiency. A greater percentage of households in the U.S. (42.2 percent) compared to the Netherlands (17.1 percent), had incomes below their income sufficiency thresholds. In this paper, we continue our attempt to isolate what is minimally necessary in different sociodemographic groups by considering separate sets of subjective thresholds. Our interest here is the relationship between minimally necessary income and household expenditures. The composition of expenditures may be important for poverty analysis since it allows one to consider the satisfaction derived from different components in meeting household needs. In a study by Homan, Hageaars, and Van Praag (1986), housing and other fixed expenditures were identified as influencing the answers of respondents to the Income Evaluation Question and resulting subjective poverty thresholds.

In our previous analysis of the U.S. and Dutch data, we examined the relationship between aggregate fixed expenditures and responses to the MIQ. We found that these expenditures were significantly related to the perceived minimum incomes which were used to produce the income sufficiency thresholds. This earlier U.S.-Dutch research reflects the first attempt by researchers to examine the MIQ and subjective thresholds relative to expenditures. In this paper we will consider several components of expenditures, in order to identify whether certain expenditure categories are more related to perceived minimal income than are others.

The effect of taxation on answers to the MIQ is also examined. For the U.S., the MIQ was to be answered by respondents in terms of income before any deductions. In contrast, the Dutch respondents were to answer in terms of their after tax income. Thus, for the U.S., we include taxes as an additional explanatory variable in the minimum income estimation equation.

The paper proceeds as follows. In section two we describe the method and the data. In section three we compare U.S. and Dutch results with respect to perceived minimum income and discuss the influence of expenditures and taxes. Also included is a contrast of the percentages below the resulting income sufficiency thresholds with the official poverty rates, which can be considered absolute, and with relative poverty rates based on poverty lines drawn at one-half the median income of the respective populations. Section four presents some conclusions and some recommendations for further research.

2. Method and Data

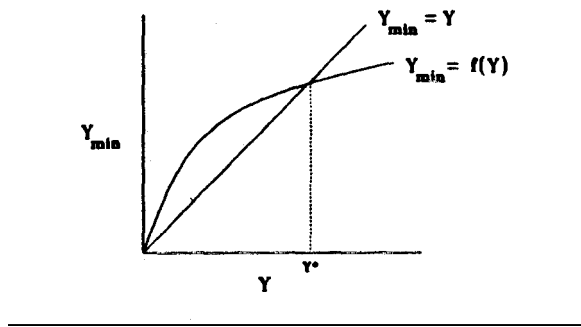
2.1 The Interaction Method

As introduced by Goedhart et al. (1977), subjective poverty lines or income sufficiency thresholds are calculated as the income level where Y_{\min} equals Y given the relationship

$$\log(Y_{\min}) = a_0 + a_1 \log(Y)$$

Here Y_{\min} represents the answer to questions like "What income do you consider to be minimally necessary. for your household to make ends meet" (the MIQ), and Y represents current household income. The idea behind the choice of the intersection of the relationship (1) with the line $Y_{\min} = Y$ is that only people whose income is close to their minimally necessary income have a realistic picture of this minimum income level. Respondents with more income tend to overestimate their minimally necessary income, while people with less income tend to underestimate it. When they would be awarded their reported minimally necessary incomes they would, after a while, find out that they actually could get by with a lower, respectively would need a higher minimum income. Figure 1 illustrates this approach.

Figure 1



As noted in section 1, the answer to the MIQ depends not only on income but also on household characteristics: families with different characteristics require different amounts of money to make ends meet. By adding family size and other household characteristics to regressions of equation (1), separate intersections for diverse household types may be calculated, resulting in associated household equivalence scales.

A basic assumption for the calculation of the income sufficiency thresholds is that every respondent adheres the same meaning to the wording used in the MIQ: the expression "minimally necessary to make ends meet" is supposed to have the same welfare connotation for all respondents. Even if one accepts the possibility of interpersonal comparisons of welfare, a careful formulation of the questions is needed. This is especially true for

international comparisons, where language differences may hamper the phrasing of terms with the same meaning. Obviously, when comparing U.S. and Dutch data we must reckon with the possibility of differences in the interpretation of the MIQ, particularly since the questions in the surveys we use were not designed for international comparisons.

2.2 Data

The U.S. data we use are from the Consumer Expenditure Survey (CEX) for 1982. The CEX is sponsored by the Bureau of Labor Statistics (BLS), U.S. Department of Labor, data are collected by the Bureau of the Census. Detailed household characteristics and income data are collected as well as data on approximately 90 to 95 percent of total family expenditures. Data are collected from a national probability sample of households designed to represent the civilian noninstitutional population and a portion of the institutional population, living in selected types of group quarters; however, in 1982 households living in rural areas outside Standard Metropolitan Statistical Areas (SMSA's) were not surveyed due to budgetary constraints. Data are collected from consumer units within households. A consumer unit is an individual, family, or group of persons who pool their incomes to make joint expenditure decisions. The consumer unit is often identified by the characteristics of its reference person. The reference person is the first member of the consumer unit mentioned by the respondent when asked to "Start with the name of the person or one of the persons who owns or rents the home." The sample, targeted at approximately 5,000 consumer units per quarter, is selected on a rotating panel basis; each quarter, one-fifth of the sample is new to the survey. For more information about the CEX, see U.S. Department of Labor (1986).

The MIQ was included in the quarterly CEX questionnaire only during the period from January 1, 1982 through January 31, 1983. The question was included in the last section of the questionnaire and was asked only during the fifth interview. The resulting sample includes 4,830 consumer units. In the CEX, the MIQ was asked after a series of detailed questions about expenditures and income. It was introduced by the statements: "In previous interviews we have asked a number of questions about how you spend your money and about your income. Now we have some questions regarding how you feel about

some of these things." Then respondents were asked to answer, for their consumer units, the MIQ as follows: "Living where you do now and meeting the expenses you consider necessary, what would be the smallest income (before any deductions) you and your family would need to make ends meet?" Following this question, respondents were asked about the time period for which this income was needed. We used this information to produce annual perceived minimum incomes. Since the question referred to "income (before any deductions)", we assume that the income reported as minimum is before taxes.

The Dutch data are from a 1983 newspaper survey. In cooperation with Bernard van Praag and Aldi Hagenars of the Center for Research in Public Economics of Leyden University, ten regional Dutch newspapers associated with the joint Press Service (GPD) included a two-page questionnaire with a set of 67 questions in their editions of Saturday, September 10, 1983. Questionnaires were returned by some 20,000 households. For this research a nationally representative subset of 13,730 households is used. The questions referred to household characteristics, income, expenditures, and a series of related subjects. For this data set, a household is defined as a group of people, living together, whose expenditures are made from common pooled resources. The main breadwinner in the household is the person who contributes the most money. For more information on the survey, we refer to De Vos and Hagenars (1986) and Van Duin and Hagenars (1981) who conclude that after reweighting the representativity of the data is comparable to that of surveys conducted in a more traditional manner.

In the Dutch questionnaire the MIQ was part of a series of questions concerning one's opinion about a possible new system of social security with a "basic income" to which every household without a source of income should be entitled. After asking whether one would be in favor or against such a system, the question we use as the MIQ is stated as follows: "The previous question was about the basic income ("needs minimum"). How high should that be for your household, according to you?" Respondents were directed to report minimum income after taxes were deducted.

Although context and wording of the U.S. and Dutch MIQ's are clearly different, we nevertheless felt confident that comparisons could be made legitimately, since both questions try to assess the income level which the respondents consider to be minimally necessary for their households. However, differences in the formulation of the questions are taken into account in the analysis and discussion of the results.

Furthermore, given the wording of the questions, one may argue that the income levels computed as the intersection of equation (1) with the relationship $Y_{\min} - Y$, corresponding to a level of living associated with "making ends meet", cannot really be seen to represent poverty. This is especially true to the extent that the answers to the MIQ reflect short run expectations and would be different when people would have experienced more income levels. In view of this, we refer to the interaction levels as "income sufficiency levels", in addition to the more frequently used "subjective poverty lines":

2.3 Explanatory Variables for Y_{\min} Added in Earlier Studies

As from the early days of the subjective minimum approach (Goedhart et al. 1977), family size differentiated subjective thresholds have been computed by adding $\log(\text{family size})$ to equation (1). Since then, other authors, especially Hagenaars (1986), have extended the number of explanatory variables to be included in equations like (1), and hence as differentiating factors for the subjective poverty lines. It can be argued that even if a variable causing a significant effect in (1) is not accepted as a differentiating factor for the poverty line (e.g., due to political objections, and/or because it is assumed that the underlying cause of the significant effect is not differences in costs but differences in taste), such a variable should still be taken into account to obtain unbiased estimates of other differentiating effects.

If, for instance sex of the reference person has a differentiating effect in addition to household size, it can be expected that the household size effect is biased if the sex of the reference person is not included as a differentiating variable, because small households are more likely to have a female reference person. If households with female reference persons would report higher minimum sufficient incomes but that effect is ignored in the regression it can be expected that the income sufficiency thresholds of small households will be overestimated relative to large households. On average, this will be correct since small households will more often have female headed reference persons, but it can be shown that the income sufficiency thresholds of small households with male reference persons will be overestimated whereas those of large households with female headed reference persons will be underestimated. Implicitly the higher thresholds for females are taken into account,

because they affect the other coefficients. If one would insist upon sex-neutral thresholds, it would probably be more correct to include sex as a differentiating variable in the regression, and to compute the thresholds using the 'average sex' in the sample. In that case the fact that, e.g., small households more often have female reference persons is fully compensated for. The same effect would only be reached when the sex of the reference person was not included in the regression if it would not be correlated with any of the other explanatory variables. Likewise, if one would want to bar reference group effects in determining the thresholds, it would be correct to include variables for reference groups in the regression, and then compute the thresholds for households with 'average' reference groups.

Thus, it appears that all variables having a differential effect on the answer to the MIQ should be included in the regression, even if they are not allowed to differentiate the income sufficiency thresholds. The decision which variables to include should therefore be made on empirical rather than theoretical grounds.

In De Vos and Garner (1991) we added a series of variables to $\log(Y)$ in equation (1). These variables pertained to household composition and employment status, sex, age, education, and corrections for neglected income components and selectivity bias, and additionally for the U.S. data: race, region, degree of urbanization, and marital status of female reference persons. Person characteristics refer to the main breadwinner or to the reference person in the Dutch and American surveys respectively. These two terms are used synonymously throughout the remainder of the paper.

In this paper we take the inclusion of these variables in equation (1) as a starting point. For an elaborate discussion of their motivation, we refer to our previously mentioned paper. Here, we will only summarize the corrections for neglected income components and selectivity bias. One variable, the log of anchor income ($\log(Y_{\text{anc}})$), is included in the regressions to correct for the fact that people tend to neglect parts of their income when answering the MIQ (see, for example Kapteyn, Kooreman, and Willemse 1988). The Y_{anc} is an estimate of the picture of the household's income that the respondent has in mind when answering the MIQ. It is a weighted sum of income components (e.g., income of the main breadwinner, income of the partner, income of the children, income of other consumer unit members (U.S. only), and family income not associated with any specific individual member such as family allowances) with weights between zero and one.

In our operationalization, the income of the train breadwinner receives a weight of one, while most other income components obtain a lower weight. However, contrary to the Netherlands, the income of the partner of the reference person in the U.S. obtains a weight of one in the anchor income. When it is supposed that the respondents underestimate their minimally necessary income and their actual income by the same percentage, it can be shown that $\log(Y_{anc})$ enters in equation (1) with coefficient one, while α , should be estimated by adding one to the coefficient of $\log(Y)$ (see Homan 1988).

To correct for possible bias in the estimates of the coefficients due to selective nonresponse, a correction factor is included based on a Probit equation explaining response. Inclusion of this correction factor (the inverse Mills' ratio) causes the estimates of the standard errors of the OLS estimates to be incorrect (see, e.g., Heckman 1979; Greene 1981). Nevertheless, we have chosen to present these estimates and to refrain from attempts to come up with the correct values. For details and discussion of the results of the Probit equation we again refer to De Vos and Garner (1991).

2.4 Expenditure Variables Added to Equation (1)

In answering the question concerning which income they would minimally need for their households, it is conceivable that respondents consider the expenditures they have and expect to have in the future. Many kinds of expenditures can be adapted at any moment to different circumstances (for example to a lower income), but some expenditures do not allow such adaptation at will. This may be because these expenditures are fixed due to long term contracts and can only be changed at heavy costs. An example is formed by housing expenditures, which in many cases may only be changed by moving into another house. Hence, it could be expected that in answering the MIQ respondents with high fixed expenditures would report relatively high minimum incomes. In our previous paper we reported results which confirmed this expectation. The effect is not necessarily limited to expenditures which can be considered as fixed, however. Respondents might also want to maintain high expenditures in categories which one initially would consider more easily adaptable, and would report higher minimum incomes than would households with lower expenditures in these categories. Hence, in order to examine the relationship between

perceived minimum income and expenditures, in this paper we do not only consider fixed expenditures such as housing, but extend the analysis to several expenditure categories. One way to do so would be to include the logarithms of several expenditure variables (or, e.g., the expenditure shares) as additional explanatory variables in equation (1). However, this would introduce considerable multicollinearity since expenditures can be expected to depend heavily upon income, and also to be significantly related to sociodemographic variables included in equation (1). Hence, in order to avoid multicollinearity and to obtain the net effects of expenditures, we have chosen to estimate expenditure share equations with $\log(Y)$ and the sociodemographic variables included in equation (1) as explanatory variables, and to use the resulting residuals as additional explanatory variables in equation (1). These residuals can be interpreted as indicative of relatively high or low expenditures, all other things being equal. For both the U.S. and the Netherlands, we include residuals from the share regressions of food (including alcoholic beverages), clothing and services, housing, utilities, education, insurance, leisure, and transportation. For the U.S. alone, the residual of the share for taxes and Social Security and Railroad Retirement payments is in addition included

The Dutch expenditures were obtained by asking estimates of the amounts spent on global categories of goods and services (e.g., insurances). Expenditures for the U.S. were obtained by asking detailed questions about expenditures (e.g., homeowner's insurance, tenant's insurance, commercial health insurance, life insurance). To make expenditures as comparable as possible for the two data sets, we grouped the detailed U.S. expenditure data. A listing of these detailed expenditure variables and their groupings is available from the authors upon request. For the U.S. analysis, quarterly expenditure data were used to produce annualized expenditure values. For consumer units participating in less than four quarterly interviews (7 percent of the sample participated in only one interview, 8 percent in two, and 10 percent in three), expenditures were averaged over the quarters in which the consumer unit did participate and the resulting expenditure values were annualized. This procedure was necessary to have a study sample which, when weighted, would be the most representative for the U.S. population. Yet, we are aware that for certain consumer units these "annualized" expenditures are an over- or underestimate of their actual expenditures. Likewise, the Dutch expenditure data, annualized from estimates of the expenditures for different time periods, may also have a fairly broad error margin. For reference, results of

the expenditure share regressions for both countries are included in the appendix in Tables A1 and A2. Means and standard deviations of the variables included in equation (1) are presented in Table 1.

2.5 The Relative Poverty Threshold

As announced in the introduction, in this paper we compare the subjective income sufficiency thresholds (with and without taking account of expenditures) with the official poverty line, which may be regarded as more or less absolute, and with a relative poverty line for each country. This relative poverty line is defined as one-half the median income per equivalent adult. The equivalence scale used for the calculation of this poverty line assigns 1.0 to the first adult, 0.7 to each additional adult, and 0.5 to each child in the household; this scale has been recommended by the Organization for Economic Co-operation and Development (see OECD 1982 and O'Higgins and Jenkins 1989). Income per equivalent adult is computed by dividing total household income by the equivalence scale. Then we construct a distribution of income per equivalent adult in which every household is weighted by its number of equivalent adults. In this distribution the median is located. The relative poverty line for a particular household is then computed by multiplying one-half of this median equivalent income by the equivalence scale relevant for the household

3. Results

3.1 Regressions

In this section we present regression results of estimating equation (1) with the explanatory variables discussed in the previous section (Table 3). For comparison, we have also added the regression results without the expenditures (Table 2). For an elaborate discussion of the latter results we refer to De Vos and Garner (1991). In general, we concluded there that the coefficient of $\log(Y)$ in the regression of $\log(Y_{\min})$ is somewhat smaller and that the coefficients of most other differentiating factors are somewhat larger

Table 1. Means and Standard Deviations of Variables Included in Regressions of Log (Y_{it})

Variables	U.S.		Netherlands	
	Mean	Standard Deviation	Mean	Standard Deviation
Log (Y_{it})	9.603	0.739	10.127	0.374
Log (Y)	9.742	0.843	10.492	0.368
Log (Y_{it})	9.709	0.845	10.367	0.353
Single, working	0.199	0.399	0.070	0.255
Single, not working	0.086	0.281	0.031	0.172
1 parent, working	0.043	0.203	.	.
1 parent, not working	0.015	0.121	0.030	0.170
2 persons, 2 earners	0.120	0.325	0.169	0.375
2 persons, 0 earner	0.064	0.245	0.069	0.254
>2 persons, >2 earners	0.116	0.321	.	.
>2 persons, 2 earners	0.180	0.385	0.189	0.392
>2 persons, 1 earner	0.102	0.303	0.346	0.476
>2 persons, 0 earner	0.010	0.101	0.047	0.211
Single, > = 65*	0.078	0.269	0.006	0.078
2 persons, > = 65*	0.080	0.271	0.033	0.179
2 others	0.168	0.374	0.325	0.469
3 others	0.083	0.276	0.094	0.292
4 or more others	0.064	0.245	0.019	0.137
Oldest < 6	0.073	0.261	0.105	0.307
Oldest 6 < 12	0.090	0.286	0.201	0.401
Oldest > = 18	0.236	0.425	0.143	0.350
Low education	0.113	0.317	0.239	0.427
High education	0.460	0.498	0.313	0.464
Age	44.696	17.728	40.436	12.344
Age ²	2311.897	1765.204	1787.450	1127.470
Northeast	0.199	0.399	.	.
Midwest	0.268	0.443	.	.
West	0.250	0.433	.	.
South	0.283	0.451	.	.
City	0.404	0.491	.	.
Suburb	0.439	0.496	.	.
Rural	0.156	0.363	.	.
Black	0.099	0.298	.	.
Disabled	0.039	0.195	0.059	0.235
Female, married	0.055	0.228	.	.
Female, widowed	0.092	0.289	.	.
Female, divorced/separated	0.090	0.286	.	.
Female, never married	0.094	0.292	.	.
Female	0.331	0.471	0.084	0.278
Correction	0.442	0.112	0.382	0.100
Food share, residual	0.000	0.174	0.000	0.079
Clothing share, residual	0.000	0.095	0.000	0.027
Housing share, residual	0.000	0.215	0.000	0.096
Utilities share, residual	0.000	0.119	0.000	0.035
Education share, residual	0.000	0.215	0.000	0.033
Insurance share, residual	0.000	0.046	0.000	0.039
Leisure share, residual	0.000	0.105	0.000	0.049
Transportation share, residual	0.000	0.154	0.000	0.065
Taxes share, residual	0.000	0.692	.	.

*Age of reference person (U.S.) or main breadwinner (NL)

Table 2. Results of Regression (1) with Correction for the Effect of Selective Non-Response and Neglected Income Components

Variable	U.S. (1982) (n=3520)		Netherlands (1983) (n=10389)	
	Coefficient	Standard Error	Coefficient	Standard Error
Intercept	4.9954 *	0.1592	4.1258 *	0.1271
Log (Y)	-0.5701 *	0.0150	-0.4476 *	0.0119
Log (Y _{inc})	1.0000	0.0000	1.0000	0.0000
Single, working	-0.1422 *	0.0487	-0.0903 *	0.0185
Single, not working	-0.1716 *	0.0706	-0.0487	0.0252
1 parent, working	0.0171	0.0659		
1 parent, not working	-0.0006	0.0910	0.0354	0.0247
2 persons, 2 earners	-0.0086	0.0481	0.0493 *	0.0186
2 persons, 0 earner	-0.0051	0.0548	0.0293	0.0231
>2 persons, >2 earners	0.1341 *	0.0571		
>2 persons, 2 earners	0.0920	0.0521	0.0508 *	0.0212
>2 persons, 1 earner	0.0744	0.0554	0.0411 *	0.0182
>2 persons, 0 earner	-0.1570	0.0998	0.0961 *	0.0244
Single, > = 65 ^a	-0.0434	0.0678	0.0570	0.0467
2 persons, > = 65 ^a	0.0424	0.0571	-0.0358	0.0271
2 others	0.0593	0.0323	0.0490 *	0.0100
3 others	0.1117 *	0.0397	0.0950 *	0.0138
4 or more others	0.0611	0.0449	0.1596 *	0.0248
Oldest <6	0.0025	0.0433	-0.0028	0.0140
Oldest 6 < 12	-0.0295	0.0388	-0.0107	0.0105
Oldest > = 18	-0.0057	0.0294	0.0024	0.0117
Low education	-0.0906 *	0.0323	-0.0087	0.0082
High education	0.1106 *	0.0201	0.0115	0.0081
Age/10	0.2209 *	0.0405	0.1274 *	0.0249
Age ² /1000	-0.2157 *	0.0425	-0.1090 *	0.0300
Northeast	0.0445	0.0305		
Midwest	-0.0514 *	0.0243		
West	-0.0136	0.0257		
City	0.0327	0.0197		
Rural	-0.0104	0.0264		
Black	0.0075	0.0314		
Disabled	-0.0828	0.0492	0.0150	0.0148
Female, married	0.0557	0.0395		
Female, widowed	0.0237	0.0406		
Female, divorced/separated	-0.0357	0.0388		
Female, never married	-0.0831 *	0.0360		
Female			0.0306 *	0.0123
Correction	-0.1943	0.1583	-0.1338	0.0777
Adjusted R ²	0.488		0.344	

^aAge of reference person (U.S.) or main breadwinner (NL)

*Significantly different from 0 (p=0.05)

Table 3. Results of Regression (1) with Residuals of Expenditure Shares Added to the Explanatory Variables

Variable	U.S. (1962)		Netherlands (1983)	
	Coefficient	Standard Error	Coefficient	Standard Error
Intercept	4.9940 *	0.1528	4.1473	0.1250
Log (Y)	-0.5700 *	0.0144	-0.4474 *	0.0117
Log (Y _{adj})	1.0000	0.0000	1.0000	0.0000
Single, working	-0.1422 *	0.0467	-0.0911 *	0.0181
Single, not working	-0.1718 *	0.0678	-0.0451	0.0248
1 parent, working	-0.0171	0.0632		
1 parent, not working	-0.0007	0.0873	0.0372	0.0243
2 persons, 2 earners	-0.0083	0.0461	0.0555 *	0.0183
2 persons, 0 earner	-0.0054	0.0526	0.0347	0.0228
>2 persons, >2 earners	0.1343 *	0.0548		
>2 persons, 2 earners	0.0923	0.0500	0.0591 *	0.0209
>2 persons, 1 earner	0.0745	0.0532	0.0432 *	0.0178
>2 persons, 0 earner	-0.1573	0.0958	0.1038 *	0.0240
Single, > = 65 ^a	-0.0435	0.0651	0.0578	0.0460
2 persons, > = 65 ^a	0.0424	0.0548	-0.0343	0.0267
2 others	0.0593	0.0310	0.0508 *	0.0098
3 others	0.1117 *	0.0381	0.0986 *	0.0136
4 others	0.0611	0.0431	0.1660 *	0.0244
Oldest < 6	0.0025	0.0416	-0.0028	0.0138
Oldest 6 < 12	-0.0295	0.0373	-0.0108	0.0103
Oldest > = 18	-0.0057	0.0282	0.0023	0.0115
Low education	-0.0907 *	0.0310	-0.0071	0.0080
High education	0.1107 *	0.0193	0.0143	0.0080
Age/10	0.2205 *	0.0389	0.1210 *	0.0245
Age ² /1000	-0.2154 *	0.0408	-0.0993 *	0.0296
Northeast	0.0440	0.0293		
Midwest	-0.0513 *	0.0233		
West	-0.0134	0.0247		
City	0.0327	0.0189		
Rural	-0.0104	0.4254		
Black	0.0075	0.0301		
Disabled	-0.0828	0.0472	0.0154	0.0145
Female, married	0.0557	0.0379		
Female, widowed	0.0237	0.0389		
Female, divorced/separated	-0.0357	0.0372		
Female, never married	-0.0831 *	0.0346		
Female			0.0308 *	0.0121
Food share, residual	0.1858 *	0.0589	0.1641 *	0.0374
Clothing share, residual	0.1252	0.1019	0.1351	0.1088
Housing share, residual	0.3007 *	0.0454	0.4942 *	0.0307
Utilities share, residual	0.2818 *	0.0901	0.5967 *	0.0837
Education share, residual	0.1545 *	0.0421	0.0523	0.0887
Insurance share, residual	-0.2021	0.2026	0.1900 *	0.0750
Leisure share, residual	0.3446 *	0.0899	-0.1394 *	0.0616
Transportation share, residual	0.2586 *	0.0617	0.0692	0.0454
Taxes share, residual	0.0283 *	0.0122		
Correction	-0.1890	0.1524	-0.1938 *	0.0770
Adjusted R ²	0.529		0.366	

^aAge of reference person (U.S.) or main breadwinner (NL)

*Significantly different from 0 (p=0.05)

in the U.S. than in the Netherlands. This holds both for factors objectively leading to differences in minimal needs, like household composition, and for social characteristics like education. Nevertheless the regression results are quite comparable. Most importantly, there appeared to be no clear indications of basic differences in views concerning minimum necessary income, despite differences in the official policy with respect to poverty and government transfer programs in the two countries.

As could be expected, adding the expenditure residuals (Table 3) to the regression hardly alters the coefficients of the other explanatory variables. Only the correction factor for nonresponse, which was not included in the explanatory variables of the expenditure regressions, now obtains a significant coefficient in the Dutch regression. As to the coefficients of the residuals, we see that they are significantly positive in a majority of the cases. Relatively high expenditure shares are associated with relatively high reported minimally necessary incomes; this is true under the condition that all else is equal, i.e., compared to others with the same characteristics. For both countries positive significant coefficients are found for food, housing, and utilities. In addition, insurance is positively related to minimally necessary income in the Netherlands, while leisure is negatively related. For consumers in the U.S., high shares of education and transportation expenditures are positively related to perceived minimum income. In contrast to the results for the Netherlands, expenditures for leisure are also positively related to subjective minimum income. Thus, in the U.S. we find much smaller differences between the coefficients of the respective residuals, as compared to the Netherlands where we find clear differences between the high coefficients for fixed expenditures, like housing and utilities, and the negative coefficient for leisure.

Hence, it would appear that in answering the MIQ, respondents in the Netherlands more clearly distinguished between (fixed) expenditures which they would want to continue and luxury expenditures which could be reduced. This may not be the case in the U.S. where relatively high expenditures have the same effect on reported minimum income in almost all expenditure categories. This difference between the two countries is expected to be related to what respondents consider necessary, as alluded to previously, and to their interpretation of the MIQ. For example, in the U.S. transportation accounts for a greater share of expenditures than in the Netherlands. The fact that the U.S. transportation coefficient is significant and larger than the one for the Netherlands is

to the fact that there are fewer available substitutes for private transportation in many parts of the U.S. An implication is that respondents in the U.S. would consider transportation expenditures to be more fixed than in the Netherlands.

An alternative explanation is that respondents in the two countries interpreted the MIQ somewhat differently. It may be that the question was understood in the U.S. as asking for the minimum income needed to "continue your present living pattern." This interpretation is not unlikely given that respondents just previously had been asked to provide detailed expenditure and income information. It is clear that this makes the interpretation of the resulting thresholds as poverty lines rather doubtful. In contrast, for the Netherlands, the MIQ was included in a survey focused on social policy issues, one of which was the possible introduction of a new system of social security with a "basic income" to which households without income would be entitled. Thus, it is likely that Dutch respondents were more predisposed to provide a necessities based minimum income for their households. If this is the case, interpreting the resulting thresholds as poverty lines is more appropriate in the Netherlands than it is in the U.S.

The residuals of the tax share estimation also obtain a significant positive coefficient in the U.S., but it is clearly lower than that of the expenditure residuals. This is probably caused by the fact that the tax share residuals are relatively large in absolute terms, among others, as a result of the very small part of the variance in the tax shares equation explained.

3.2 Threshold: and Percentages

We are aware of the fact that the legitimacy of some of the variables included in the regressions as differentiating factors for a poverty line may be subject to discussion (although they are rightly included in the regression). We also have noted that the interpretation of the resulting thresholds as poverty lines may be doubtful. Nevertheless, we present some results pertaining to the income sufficiency thresholds associated with the above regressions in this section. We will not try to give a complete picture of the thresholds lines for all possible combinations of differentiating factors, but limit ourselves to the means of the thresholds computed for the individual households on the basis of their characteristics. We only present the averages differentiated according to family size.

However, it should be noted that all differentiating factors have been taken into account.

As we mentioned in section 2, the subjective income sufficiency thresholds are computed as the intersections of the estimated relationship

$$\log(Y_{\min}) = a_0 + a_1 \log(Y) + a_2 z_2 + \dots + a_n z_n \quad (2)$$

with the line $Y_{\min} = Y$, given the values of the differentiating factors z_2, \dots, z_n . Hence,

$$\text{pov}(z_2, \dots, z_n) = \exp((a_0 + a_2 z_2 + \dots + a_n z_n) / (1 - a_1)) \quad (3)$$

Table 4 provides the means of the resulting thresholds with and without the expenditures included in the regressions, according to family size. For comparison, we have also added the means of the actual income levels in our surveys, the official poverty lines in the U.S., the official social minimums relevant for the Netherlands, and the relative poverty thresholds based on one-half the median of equivalent income as discussed in section 2.

It can be concluded that the levels of the subjective income sufficiency thresholds in the U.S. are considerably above the official poverty lines. For most household size groups, the mean subjective poverty line is more than twice the official poverty threshold. In the Netherlands the subjective poverty lines are also about the official minimum, but in general the difference is clearly smaller and amounts to about 20 percent. Compared to the mean income levels, the differences in the subjective poverty lines are much smaller; in both countries the mean poverty lines lie in the range of 60 to 75 percent of the mean incomes in most family size groups. Taking account of the expenditures raises the average income sufficiency thresholds. This is probably caused by the convex shape of the antilog function; the logarithm of the poverty lines may be expected to remain constant on average by adding factors with zero means.

Table 4. Weighted Means of Income, Official Poverty Thresholds, Sufficient Income Thresholds, and Relative Poverty Thresholds by Family Size

U.S. 1982 (US\$/year)

Family Size	Actual Before Tax Income	Official Poverty Threshold	Sufficient Income Threshold	Sufficient Income: Expenditure Based	Relative Poverty Threshold
1 person, < 65 ^a	\$14,062	\$ 5,019	\$ 12,144	\$ 13,810	\$ 4,815
1 person, > = 65 ^a	8,016	4,626	9,668	9,701	4,815
2 persons, < 65 ^a	26,921	6,482	16,753	16,873	8,068
2 persons, > = 65 ^a	17,102	5,837	15,641	15,679	8,178
3 persons	27,755	7,686	19,694	23,951	10,842
4 persons	30,815	9,860	22,374	23,707	13,436
5 persons	30,762	11,700	24,226	24,499	16,097
6 or more persons	27,784	15,273	22,119	23,802	22,234
Total	23,013	7,529	17,296	18,657	9,752

Netherlands 1983 (Dfl/year)

Family Size	Actual After Tax Income	Official Social Minimum	Sufficient Income Threshold	Sufficient Income: Expenditure Based	Relative Poverty Threshold
1 person, < 65 ^a	Dfl 22,922	Dfl 12,890	Dfl 17,173	Dfl 18,172	Dfl 7,779
1 person, > = 65 ^a	21,048	13,173	22,498	24,521	7,779
2 persons, < 65 ^a	37,952	18,788	22,025	23,273	13,194
2 persons, > = 65 ^a	32,631	18,822	21,707	23,959	13,226
3 persons	33,487	19,731	23,753	25,106	17,533
4 persons	38,516	21,616	25,984	27,312	21,443
5 persons	41,528	23,554	29,177	30,833	25,765
6 or more persons	46,580	26,292	34,419	36,683	31,328
Total	34,930	19,229	23,536	24,955	16,358

^aAge of reference person/main breadwinner

Table 5 presents the average equivalence scales resulting from the figure of Table 4, and compares them to earlier studies using the subjective threshold computed answers to a MIQ. For the US, this includes Danziger et al. (1984), who use the 1979 Income Survey Development Program (ISDP) panel data, and Colasanto, Kapteyn, and Van der Gaag (1984), who employ data from the 1981 Wisconsin Basic Needs Study (BNS). For the Netherlands we include results of Kapteyn, Kooreman, and Willemsse (1988), whose data are from the 1982 Labour Mobility Survey (LMS), and Berghman et al. (1988), who used data from the 1985 Central Bureau of Statistics Social-Economic Panel (CBS).

Table 5. Average Equivalence Scales Implied by this Study Compared to Earlier Studies

U.S.						
	Official Poverty Threshold (1982 CEX)	Relative Threshold (1982 CEX)	Sufficient Income Threshold (1982 CEX)	Sufficient Income: Expenditure Based (1982 CEX)	Colasanto et al. (1981 BNS)	Danziger et al. (1979 ISDP)
1 person, < 65 ^a	0.78	0.60	0.72	0.82	{ 0.74	0.80 ^b
1 person, > = 65 ^a	0.71	0.60	0.58	0.57	{	0.52 ^b
2 persons, < 65 ^a	1.00	1.00	1.00	1.00	{ 1.00	1.00
2 persons, > = 65 ^a	0.90	1.01	0.93	0.93	{	0.64
3 persons	1.19	1.34	1.17	1.42	1.19	1.12
4 persons	1.52	1.67	1.33	1.41	1.35	1.23
5 persons	1.81	2.00	1.44	1.45	1.49	1.32
6 or more persons	2.36	2.76	1.32	1.41	1.62 ^c	1.40 ^c

Netherlands						
	Official Social Minimum (1983 GPD)	Relative Threshold (1983 GPD)	Sufficient Income Threshold (1983 GPD)	Sufficient Income: Expenditure Based (1983 GPD)	Kapteyn et al. ^d (1982 LMS)	Berghman et al. (1985 CBS)
1 person, < 65 ^a	0.68	0.59	0.78	0.78	0.76	0.78
1 person, > = 65 ^a	0.70	0.59	1.02	1.05	.	0.72
2 persons, < 65 ^a	1.00	1.00	1.00	1.00	1.00	1.00
2 persons, > = 65 ^a	1.00	1.00	0.98	1.03	.	0.95
3 persons	1.05	1.33	1.08	1.08	1.14	1.06
4 persons	1.15	1.63	1.18	1.17	1.27	1.12
5 persons	1.25	1.95	1.33	1.32	1.34	1.14
6 or more persons	1.36	2.37	1.56	1.58	1.43 ^c	.

^aAge of reference person (U.S.) or main breadwinner (NL)

^bFor single males

^cFor households of 6 persons

^dFor households with children: pertains to children of specific ages

It can be seen that in the U.S. the official poverty lines increase much faster with household size than in the Netherlands. Disregarding the anomalous fault for households with six or more persons in the U.S., we see that the differences in the average equivalence scales implied by the subjective thresholds are, in general, much smaller. The relative poverty lines show the highest increase with family size in both countries. It may be that this equivalence scale, originally devised by the OECD as noted earlier, is more appropriate for countries where expenditures with relatively low scale economies, like food, compose a larger part of the total budget.

Compared to earlier studies with subjective thresholds, we see that the U.S. results from this study are fairly close to the Wisconsin results of Colasanto, Kapteyn, and Van der Gaag (1984), but are clearly steeper than those of Danziger et al. (1988). Compared to the Dutch results of Kapteyn, Kooreman, and Willemse (1988), who also correct for nonresponse and neglected income components, our subjective thresholds rise less fast for households up to four members, but faster for larger households. Berghman et al. (1988), who do not correct for possible biases, find clearly flatter equivalence scales. Finally, the average equivalence scales of the expenditure based subjective thresholds in the Netherlands are fairly close to the original values, while they show a rather implausible course in the U.S. Further research is required to shed light on the details of this result.

The percentages of households or consumer units below the subjective thresholds, the official poverty lines, and the relative poverty lines are presented in Table 6. Again, we limit ourselves to the general picture, which shows that according to all measures the percentages are clearly higher in the U.S. than in the Netherlands. This is indicative of the fact that the lower tail of the income distribution in the U.S. is clearly thicker than in the Netherlands, among others as a consequence of the elaborate system of income transfers in the latter country. It should be added, however, that the presented percentages of poor according to the official minimum in the Netherlands are an underestimation of the real percentages, and that revisions in the system after 1983 have forced more households to the social minimum.

Given the differences between the subjective thresholds and the official poverty lines, it is self-evident that the percentages of households below the subjective thresholds are much larger than the percentages below the official poverty line, especially in the U.S. The percentages in the different family size groups show that in both countries single persons above 65 are especially at risk of being in poverty when the sufficient income approach is assumed. Given the respective poverty lines, the percentage in this group for the Netherlands should not be taken too seriously, being based on rather few observations. However, the poverty among elderly one person households in the U.S. seems a serious problem indeed. Apart from this group, poverty percentages are also above the average for younger singles and for elderly couples. According to the official and the relative thresholds, poverty is also widespread among large households. In the Netherlands subjective income

insufficiency is highest with the singles and large households; singles are also overrepresented among the officially poor, while large households are most often poor according to the relative poverty threshold. Taking account of the expenditures in the answers to the MIQ increases the extent of income insufficiency in the Netherlands, but causes a decrease in the U.S. Further analysis of the distribution of the expenditure residuals would be necessary to find out the cause of this difference.

Table 6. Percentages of Population with Incomes Below the Official Poverty Thresholds, Sufficient Income Thresholds, and Relative Poverty Thresholds by Family Size: U.S. (1982) and the Netherlands (1983)

U.S.					
	Percentage Distribution (n=3520)	Below Official Poverty Threshold	Below Sufficient Income Threshold	Below Sufficient Income Threshold: Expenditure Based	Below Relative Poverty Threshold
1 person, < 65 ^a	20.7	19.5	47.6	45.9	17.1
1 person, > =65 ^a	7.8	27.7	78.7	79.0	31.6
2 persons, < 65 ^a	19.3	8.0	28.6	25.6	9.8
2 persons, > =65 ^a	8.0	8.3	52.7	50.4	19.8
3 persons	16.4	10.0	36.9	33.1	16.8
4 persons	14.7	8.7	32.3	27.9	13.2
5 persons	7.5	11.1	41.1	36.2	22.9
6 or more persons	5.6	32.1	45.0	40.7	43.1
Total	100.0	14.0	42.2	39.3	18.3

Netherlands					
	Percentage Distribution (n=10389)	Below Official Social Minimum	Below Sufficient Income Threshold	Below Sufficient Income Threshold: Expenditure Based	Below Relative Poverty Threshold
1 person, < 65 ^a	9.4	10.3	26.1	30.3	0.4
1 person, > =65 ^a	0.6	0.6	57.5	65.5	0.0
2 persons, < 65 ^a	26.5	5.2	13.4	16.3	0.2
2 persons, > =65 ^a	3.3	6.4	15.8	25.5	0.2
3 persons	17.7	5.0	17.0	22.7	1.1
4 persons	31.6	2.2	10.2	13.7	1.8
5 persons	9.0	1.8	12.1	17.2	4.6
6 or more persons	1.9	3.3	25.3	27.6	12.6
Total	100.0	4.5	17.1	21.7	1.3

^aAge of reference person (U.S.) or main breadwinner (NL)

4. Discussion and Conclusion

In this paper we have performed regressions of $\log(Y_{\min})$ on $\log(Y)$ and a series of differentiating factors, and we have compared the resulting thresholds and percentages of households below these thresholds to official and relative poverty in the U.S. and the Netherlands. We find that on average, the income sufficiency thresholds are considerably above the official poverty lines, but more so in the U.S. than in the Netherlands. The percentages below the thresholds are also considerably higher in the U.S. than in the Netherlands, whether we look at the official poverty definition, the computed subjective thresholds (with or without accounting for expenditures), or to a relative poverty line.

Perhaps the most important contributions of this paper are: (1) to have distinguished specific expenditures that appear to be correlated with the minimum incomes that individuals think they need to make ends meet; and (2) to have introduced more questions concerning the respondents' interpretations of the MIQ and concerning the uses of the resulting thresholds. Although it seems reasonable that individuals would consider the expenditures they need to make when answering the MIQ, only one previous study (De Vos and Garner 1991) explicitly included expenditures (fixed) in an analysis of this question. For the current study, we examined the relationship between responses to the minimum income question and expenditures for various categories of goods and services. For both countries, housing and utilities expenditures were clearly considered to be necessary in making ends meet. Food expenditures were also related to minimum income, although not as strongly as the two categories just noted. In contrast, clothing expenditures were not related to minimum income by respondents in either country, is the coefficient for food smaller than for the first two categories, because within the category of food there are expenditures which families can more easily do without? Does the result for clothing give us any indication of a "presumed" durability of items in this category or of clothing purchase patterns? Do we consider the clothing goods and services that we think of as necessities only a small share of the total clothing budget?

Statistics Canada (1988) recently surveyed respondents in a supplement to the Survey of Consumer Finances, in an attempt to more directly address the issue of meeting the basic spending needs of the family. Respondents were asked the following question: "In your opinion how much would you have to spend each year in order to provide the basic

necessities for your family? By basic necessities I mean barely adequate food, shelter, clothing and other essential items required for daily living." Unlike in our study, basic necessities were more or less defined. Further research needs to be conducted to gain a greater understanding of what respondents actually consider to be necessary when meeting their needs, versus what survey questionnaire designers and policymakers consider to be necessary.

We initially began our research feeling fairly confident that we could interpret the MIQ comparably for the U.S. and the Netherlands, and that the income sufficiency thresholds could be interpreted as perhaps some type of poverty line. However, now, after obtaining these results, we are less sure. The significant negative coefficient for leisure expenditures in the Netherlands versus the positive coefficient in the U.S. has led us to question whether respondents in the two countries were both thinking about "basic" needs. As noted previously, it is likely that the U.S. respondents were thinking about their current expenditure patterns, since they had just been asked detailed questions about expenditures. Thus, the assumption underlying the computation of the income sufficiency threshold as a poverty line, that everyone adheres the same welfare connotation to a "minimally necessary income", may not be valid across the two surveys and between and within populations. When in reality higher educated people or people with higher expenditures tend to relate a different lifestyle to their minimally necessary income than do lower educated people or people with lower expenditures (all other things, like income, being equal), the question arises whether we still have a legitimate poverty definition. As long as they reflect real cost differences, differences in the poverty lines do not seem unreasonable. When they appear to be related to different welfare levels, we have a problem.

Moreover, the results of this research support the proposition that context and question wording do matter, as cognitive psychology would suggest. Over approximately the last 20 years, MIQs have been asked in one survey or another and in different countries, most often with different wording and in different contexts. Questions are asked about "you and your family", "a family like yours", and hypothetical families. Needs have only been defined in one survey (Statistics Canada 1988). Needs have most often been described in terms of "necessary" to make ends meet. Does this mean the same as when "absolutely" precedes the phrase? Does it mean the same as "barely adequate"? Minimum income has been presented as "smallest income", "very smallest income", and "basic income". Can we

assume that all of these terms mean the same to respondents? Deductions and taxes are most frequently not to be considered when answering the MIQ. To which deductions and what taxes are we referring? Many MIQs allow respondents to select the time period for which their minimum income refers. For those questions which do rest, a year is the preferred reference period. For spending-oriented questions, perhaps a shorter time period than a year would provide respondents with a more reasonable time frame for remembering (this option is available in the Statistics Canada (1988) spend question). And last, questions often ask respondents to estimate a minimum income keeping in mind "living where you live now." One type of question states "in this community" (O'Hare et al. 1990). Would the first phrase mean that respondents are not to make changes in their housing arrangements and other activities? Would the second phrase allow respondents to move, but only within their current communities? A question referring to "adequate shelter" is likely to elicit a very different response than either of the other two phrases. When we ask individuals and families to answer the MIQ with respect to their current living arrangements, perhaps the measures are better indicators of the overall economic well-being of households within a society than they are of poverty.

Homelessness, poverty, and deprivation appear to be growing in our societies, particularly among certain groups, such as single parent families. Among many other issues, two important questions pertain to number of persons involved and the accent of their problems. To answer these questions it is necessary to assess what individuals and families must have to live. Conducting surveys with questions on perceived income sufficiency and spending requirements could be one of the means to do so. However, as the results of this paper clearly show, these questions need to be further explored and compared with alternative methodologies. Thus far, Statistic Canada appears to be one of the most active actors engaged in testing different MIQs in the field. In contrast, we suggest that a thorough examination of minimum income and related questions in a cognitive laboratory would probably be even most worthwhile. After this work, field testing would ensue. When we understand better the meanings of our questions, we will be in better positions to provide data and conduct analyses, using such subjective measures, which focus on economic wellbeing, in general, and poverty, specifically.

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Table A1. Results of Expenditure Share Regressions for the U.S.

Variable	Expenditure Category								
	Food	Clothing	Housing	Utilities	Education	Insurance	Leisure Transportation	Taxes, Social Security & Railroad Retirement	
	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error
Intercept	2.0823 *	0.6995 *	1.3855 *	0.8830 *	0.6307 *	0.1979 *	0.5761 *	1.1693 *	0.0306
	0.0516	0.0281	0.0636	0.0353	0.0636	0.0137	0.0311	0.0455	0.2046
Log(Y)	-0.2142 *	-0.0629 *	-0.1460 *	-0.1031 *	-0.0568 *	-0.0240 *	-0.0566 *	-0.1174 *	0.0005
	0.0050	0.0027	0.0062	0.0034	0.0062	0.0013	0.0030	0.0044	0.0199
Single, working	-0.0594 *	-0.0202 *	-0.0148	-0.0733 *	0.0017	-0.0157 *	-0.0248 *	-0.0337 *	0.1077
	0.0164	0.0089	0.0202	0.0112	0.0202	0.0043	0.0099	0.0144	0.0649
Single, not working	-0.0697 *	-0.0395 *	0.0292	-0.0730 *	-0.0040	-0.0157 *	-0.0247	-0.0592 *	0.0003
	0.0236	0.0129	0.0291	0.0162	0.0292	0.0063	0.0143	0.0209	0.0938
1 parent, working	0.0259	-0.0019	0.0068	-0.0147	-0.0012	-0.0036	-0.0315 *	0.0032	0.0295
	0.0221	0.0121	0.0273	0.0151	0.0273	0.0059	0.0134	0.0195	0.0878
1 parent, not working	0.1931 *	0.0044	0.0310	0.0572 *	-0.0263	-0.0037	-0.0436 *	-0.0299	-0.0409
	0.0305	0.0166	0.0376	0.0209	0.0377	0.0081	0.0184	0.0269	0.1211
2 persons, 2 earners	0.0053	-0.0001	0.0391 *	-0.0102	0.0006	-0.0032	-0.0220 *	0.0161	0.0214
	0.0159	0.0087	0.0196	0.0109	0.0196	0.0042	0.0096	0.0140	0.0632
2 persons, 0 earner	-0.0194	-0.0202 *	-0.0252	-0.0180	-0.0139	0.0090	-0.0039	-0.0379 *	-0.0641
	0.0183	0.0100	0.0225	0.0125	0.0226	0.0049	0.0110	0.0161	0.0725
> 2 persons, > 2 earners	0.0269	0.0359 *	0.0642 *	0.0130	0.0412	0.0026	-0.0110	0.0454 *	-0.0227
	0.0191	0.0104	0.0235	0.0130	0.0235	0.0051	0.0115	0.0168	0.0757
> 2 persons, 2 earners	0.0346 *	0.0201 *	0.0809 *	0.0258 *	0.0097	0.0088	-0.0180	0.0368 *	0.0024
	0.0172	0.0094	0.0212	0.0118	0.0213	0.0046	0.0104	0.0152	0.0684
> 2 persons, 1 earner	0.0400 *	0.0153	0.0652 *	0.0188	-0.0013	0.0043	-0.0255 *	0.0256	-0.0100
	0.0186	0.0101	0.0229	0.0127	0.0230	0.0049	0.0112	0.0164	0.0739
> 2 persons, 0 earners	-0.0286	-0.0281	-0.0195	-0.0072	-0.0261	-0.0006	-0.0481 *	-0.0879 *	-0.0964
	0.0334	0.0182	0.0412	0.0229	0.0413	0.0089	0.0202	0.0295	0.1326
Single, > = 65 ^a	-0.0420	-0.0262 *	-0.0575 *	0.0216	-0.0369	0.0121 *	-0.0217	-0.0474 *	-0.0263
	0.0228	0.0124	0.0280	0.0156	0.0281	0.0060	0.0137	0.0201	0.0903

Table A1. Continued

Variable	Expenditure Category								Taxes, Social Security & Railroad Retirement
	Food	Clothing	Housing	Utilities	Education	Insurance	Leisure Transportation		
	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error
Couple, > = 65 ^a	-0.0072	-0.0018	-0.0140	0.0268 *	-0.0054	0.0071	-0.0080	0.0029	-0.0105
	0.0192	0.0104	0.0236	0.0131	0.0237	0.0051	0.0116	0.0169	0.0760
2 others	0.0249 *	0.0023	-0.0214	0.0030	0.0089	-0.0001	-0.0020	0.0036	-0.0015
	0.0108	0.0059	0.0134	0.0074	0.0134	0.0029	0.0065	0.0096	0.0430
3 others	0.0313 *	-0.0001	-0.0214	0.0057	-0.0060	-0.0023	-0.0047	0.0044	-0.0035
	0.0133	0.0073	0.0164	0.0091	0.0165	0.0035	0.0080	0.0118	0.0529
4 or more others	0.0748 *	0.0015	-0.0183	0.0105	-0.0114	-0.0016	-0.0096	-0.0135	-0.0021
	0.0151	0.0082	0.0186	0.0103	0.0186	0.0040	0.0091	0.0133	0.0599
Oldest < 6	-0.0556 *	-0.0431 *	-0.0008	-0.0329 *	-0.0401 *	-0.0025	-0.0289 *	-0.0440 *	-0.0156
	0.0146	0.0079	0.0180	0.0100	0.0180	0.0039	0.0088	0.0128	0.0578
Oldest 6 < 12	-0.0399 *	-0.0260 *	-0.0098	-0.0208 *	-0.0199	-0.0035	-0.0079	-0.0229 *	-0.0108
	0.0130	0.0071	0.0161	0.0089	0.0161	0.0035	0.0079	0.0115	0.0518
Oldest > = 18	0.0024	-0.0166 *	-0.0283 *	-0.0158 *	0.0082	-0.0022	-0.0046	0.0054	0.0200
	0.0099	0.0054	0.0122	0.0068	0.0122	0.0026	0.0060	0.0087	0.0392
Low education	0.0034	-0.0172 *	-0.0062	0.0016	-0.016	-0.0106 *	-0.0263 *	-0.0195 *	-0.0278
	0.0108	0.0059	0.0133	0.0074	0.0133	0.0029	0.0065	0.0095	0.0428
High education	0.0369 *	0.0227 *	0.0303 *	0.0265 *	0.0373 *	0.0044 *	0.0323 *	0.0150 *	0.0180
	0.0067	0.0036	0.0082	0.0046	0.0083	0.0018	0.0040	0.0059	0.0266
Age	0.0102 *	-0.0005	0.0088 *	0.0097 *	-0.0025	0.0029 *	0.0031 *	0.0073 *	0.0066
	0.0013	0.0007	0.0016	0.0009	0.0016	0.0003	0.0008	0.0011	0.0051
Age ²	-0.0001 *	-0.0000	-0.0001 *	-0.0001 *	0.0000	-0.0000 *	-0.0000 *	-0.0001 *	-0.0001
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
Northeast	-0.0065	-0.0026	-0.0362 *	0.0167 *	-0.0065	-0.0112 *	0.0058	-0.0280 *	-0.0562
	0.0089	0.0048	0.0109	0.0061	0.0109	0.0024	0.0053	0.0078	0.0351
Midwest	-0.0159 *	-0.0062	-0.0253 *	0.0066	0.0104	-0.0057 *	0.0094	-0.0220 *	-0.0447
	0.0081	0.0044	0.0100	0.0055	0.0100	0.0021	0.0049	0.0071	0.0321

Table A1. Continued

Variable	Expenditure Category								
	Food	Clothing	Housing	Utilities	Education	Insurance	Leisure	Transportation	Taxes, Social Security & Railroad Retirement
	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error
West	-0.0053 0.0083	-0.0093 * 0.0045	0.0340 * 0.0102	-0.0149 * 0.0057	-0.0105 0.0103	-0.0092 * 0.0022	0.0234 * 0.0050	-0.0098 0.0073	-0.0425 0.0330
City	0.0166 * 0.0066	-0.0004 0.0036	0.0138 0.0082	-0.0020 0.0045	0.0157 0.0082	-0.0001 0.0018	0.0034 0.0040	-0.0100 0.0059	0.0148 0.0263
Rural	-0.0027 0.0089	-0.0025 0.0048	0.0043 0.0109	0.0168 * 0.0061	0.0006 0.0109	0.0082 * 0.0024	0.0018 0.0053	0.0175 * 0.0078	0.0159 0.0352
Black	-0.0628 * 0.0105	-0.0075 0.0057	-0.0468 * 0.0130	-0.0102 0.0072	-0.0234 0.0130	-0.0027 0.0028	-0.0348 * 0.0064	-0.0256 * 0.0093	-0.0421 0.0418
Disabled	-0.0215 0.0165	-0.0141 0.0090	-0.0156 0.0204	-0.0135 0.0113	-0.0121 0.0204	-0.0081 0.0044	-0.0303 * 0.0106	-0.0303 * 0.0215	-0.0561 0.0655
Female, married	0.0263 * 0.0133	0.0067 0.0072	0.0042 0.0163	0.0262 * 0.0091	0.0082 0.0164	0.0082 * 0.0035	0.0106 0.0080	0.0215 0.0117	0.0003 0.0526
Female, widowed	-0.0581 * 0.0136	0.0001 0.0074	0.0335 * 0.0168	0.0478 * 0.0093	-0.0227 0.0168	0.0007 0.0036	-0.0101 0.0082	-0.0248 * 0.0120	-0.0721 0.0541
Female, divorced/separated	-0.0537 * 0.0130	0.0018 0.0071	0.0341 * 0.0161	0.0005 0.0089	-0.0367 * 0.0161	-0.0049 0.0035	-0.0264 * 0.0079	-0.0419 * 0.0115	-0.0691 0.0517
Female, never married	-0.0824 * 0.0121	0.0213 * 0.0066	-0.0181 0.0149	-0.0087 0.0083	-0.0142 0.0149	-0.0049 0.0032	-0.0298 * 0.0073	-0.0350 * 0.0107	-0.0776 0.0480
Adjusted R ²	0.411	0.194	0.196	0.300	0.039	0.190	0.133	0.191	0.002

*Age of reference person

*Statistically different from 0 (p=0.05)

Table A2. Results of Expenditure Share Regressions for the Netherlands

Variable	Expenditure Category							
	Food	Clothing	Housing	Utilities	Education	Insurance	Leisure	Transportation
	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error
Intercept	1.8187 *	0.1706 *	0.1823 *	0.6065 *	0.0978 *	-0.0067	0.1557 *	0.1235 *
	0.0338	0.0118	0.0395	0.0145	0.0136	0.0161	0.0201	0.0269
Log (Y)	-0.1622 *	-0.0125 *	0.0014	-0.0584 *	-0.0050 *	-0.0001	-0.0107 *	-0.0072 *
	0.0033	0.0011	0.0038	0.0014	0.0013	0.0015	0.0019	0.0026
Single, working	-0.0853 *	-0.0088 *	0.0153 *	-0.0224 *	-0.0062 *	-0.0153	-0.0031	-0.0046
	0.0050	0.0017	0.0059	0.0021	0.0020	0.0024	0.0030	0.0040
Single, not working	-0.0741 *	-0.0141 *	0.0392 *	-0.0186 *	0.0020	-0.0113 *	-0.0141 *	-0.0282 *
	0.0067	0.0024	0.0079	0.0029	0.0027	0.0032	0.0040	0.0054
1 parent, not working	0.0237 *	0.0092 *	-0.0042	0.0160 *	0.0084 *	-0.0051	-0.0214 *	-0.0318 *
	0.0067	0.0023	0.0078	0.0029	0.0027	0.0032	0.0040	0.0053
2 persons, 2 earners	-0.0118 *	-0.0044 *	-0.0303 *	-0.0013	-0.0053 *	-0.0134 *	-0.0057 *	-0.0083 *
	0.0045	0.0016	0.0053	0.0019	0.0018	0.0022	0.0027	0.0036
2 persons, 0 earner	0.0140 *	-0.0041	0.0064	0.0039	-0.0033	-0.0009	-0.0051	-0.0094 *
	0.0060	0.0021	0.0070	0.0026	0.0024	0.0029	0.0036	0.0048
> 2 persons, 2 earners	0.0369 *	0.0070 *	-0.0266 *	0.0027	0.0075 *	-0.0065 *	-0.0047	-0.0153 *
	0.0049	0.0017	0.0058	0.0021	0.0020	0.0024	0.0030	0.0040
> 2 persons, 1 earner	0.0368 *	0.0100 *	-0.0182 *	0.0069 *	0.0065 *	0.0063 *	-0.0083 *	-0.0134 *
	0.0049	0.0017	0.0057	0.0021	0.0020	0.0023	0.0029	0.0039
> 2 persons, 0 earners	0.0410 *	0.0057 *	-0.0008	0.0141 *	0.0100 *	0.0012	-0.0152 *	-0.0181 *
	0.0060	0.0021	0.0071	0.0026	0.0024	0.0029	0.0036	0.0048
Single, > = 65 ^a	0.0152	0.0041	-0.0064	0.0092	-0.0136 *	0.0118	0.0237 *	0.0010
	0.0127	0.0045	0.0149	0.0055	0.0051	0.0061	0.0076	0.0101
Couple, > = 65 ^a	0.0056	0.0011	-0.0000	0.0025	-0.0038	0.0233 *	0.0129 *	-0.0025
	0.0074	0.0026	0.0086	0.0032	0.0030	0.0035	0.0044	0.0059
2 others	0.0152 *	0.0061 *	-0.0060	-0.0001	0.0030 *	0.0031 *	-0.0051 *	-0.0038
	0.0026	0.0009	0.0031	0.0011	0.0011	0.0013	0.0016	0.0021
3 others	0.0317 *	0.0090 *	-0.0088 *	0.0041 *	0.0087 *	0.0013	-0.0114 *	-0.0096 *
	0.0035	0.0012	0.0042	0.0015	0.0014	0.0017	0.0021	0.0028

Table A2. *Continued*

Variable	Expenditure Category							
	Food	Clothing	Housing	Utilities	Education	Insurance	Leisure	Transportation
	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error	Coefficient Standard Error
4 or more others	0.0449 *	0.0110 *	-0.0045	0.0092 *	0.0060 °	0.0020	-0.0212 *	-0.0183 *
Oldest < 6	0.0063	0.0022	0.0075	0.0027	0.0026	0.0030	0.0038	0.0051
	-0.0286 *	-0.0115 *	0.0308 *	0.0110 *	-0.0165 *	0.0032	-0.0202 *	0.0046
	0.0038	0.0013	0.0045	0.0016	0.0015	0.0018	0.0023	0.0030
Oldest 6 < 12	-0.0176 *	-0.0088 *	0.0127 *	0.0058 *	-0.0157 *	0.0027 *	-0.0091 *	-0.0016
	0.0028	0.0010	0.0033	0.0012	0.0011	0.0014	0.0017	0.0023
Oldest >= 18	0.0027	-0.0043 *	-0.0118 *	-0.0030 *	0.0279 *	-0.0073 *	-0.0021	0.0073 *
	0.0032	0.0011	0.0037	0.0014	0.0013	0.0015	0.0019	0.0025
Low education	0.0089 *	-0.0006	-0.0162 *	-0.0004	-0.0055 *	-0.0134 *	-0.0075 *	-0.0081 *
	0.0021	0.0008	0.0025	0.0009	0.0009	0.0010	0.0013	0.0017
High education	-0.0061 *	-0.0005	0.0081 *	0.0026 *	0.0069 *	0.0077 *	0.0035 *	0.0077 *
	0.0020	0.0007	0.0023	0.0008	0.0008	0.0009	0.0012	0.0016
Age	0.0054 *	0.0005 *	0.0026 *	0.0040 *	-0.0014 *	0.0023 *	0.0028 *	0.0029 *
	0.0006	0.0002	0.0007	0.0003	0.0003	0.0003	0.0004	0.0005
Age ²	-0.0001 *	-0.0000 *	-0.0001 *	-0.0000 *	0.0000 *	-0.0000 *	-0.0000 *	-0.0000 *
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Disabled	-0.0087 *	-0.0005	-0.0028	0.0003	-0.0006	-0.0053 *	-0.0092 *	0.0036
	0.0040	0.0014	0.0047	0.0017	0.0016	0.0019	0.0024	0.0032
Female	-0.0133 *	0.0042 *	0.0044	0.0007	0.0048 *	0.0028	0.0024	-0.0119 *
	0.0033	0.0012	0.0039	0.0014	0.0013	0.0016	0.0020	0.0027
Adjusted R ²	0.373	0.081	0.134	0.301	0.158	0.145	0.046	0.025

°Age of main breadwinner

*Statistically different from 0 (p=0.05)