THE OCCUPATIONAL STRATIFICATION OF SURINAME: HOTDOG OR *POM*? A COMPARISON OF AN INTERNATIONAL AND A COUNTRY-SPECIFIC SEI-SCALE[1]

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Summary

In this article we examine the occupational stratification of Suriname. The central question to be answered is whether international occupational stratification indicators are also applicable in the Surinamese situation, or that unique features prevail. According to common insights, occupational hierarchies are basically similar, both worldwide and historically (the 'Treiman constant'). We examine the socio-economic status of 39 occupational groups in a national survey on social stratification and social mobility (N=3929), conducted between 2011 and 2013. We find three striking exceptions to the Treiman rule: gold-miners, street-vendors and subsistence farmers. However, only with regard to the subsistence farmers we conclude that the Surinamese scaling is a real improvement over the international scaling. But more importantly, for the other occupations we find that the measurement of their socio-economic status improves with approximately 9% by the country-specific scaling.

Keywords: occupational classification, occupational stratification, socioeconomic status, MTMM model

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THE OCCUPATIONAL STRATIFICATION OF SURINAME: A COMPARISION OF AN INTERNATIONAL AND COUNTRY-SPECIFIC SEI-SCALE

In this article we investigate the occupational stratification of Suriname, based on data from the survey on Status Attainment and Social Mobility in Suriname (Sno, 2010). From 2011-2013 the Anton de Kom University of Suriname conducted a large-scale survey, in which a total of 3929 residents of Suriname aged 21-74 were interviewed, amongst others about their first and last occupation. In addition, inquiries were made about the first and last occupation of the nearest sibling (brother or sister), respondent's partner and of the occupation of their father and mother when the respondent was approximately 12 years old.

To determine what social status these respondents can derive from their occupation and to what extent they have been upwardly or downwardly mobile relative to their parents and within their own occupational history, it is necessary to have a valid occupational hierarchy. For the vertical ranking of occupations various internationally accepted scales exist (Ganzeboom & Treiman, 2003). The question that we answer in this article is to what extent a widely used international scale can be used in the Surinamese situation, or whether the occupational stratification and the associated patterns of social mobility and social reproduction are better understood through a specific Surinamese scaling.

In particular we scale the occupations by socio-economic status using the *International Socio-Economic Index* [ISEI] *of occupational status*, developed by Ganzeboom, de Graaf & Treiman (1992), and a Surinamese SEI scaling (SRSEI], developed by ourselves. We then compare the self-developed scale with the international scale, to determine which scale is more applicable for Suriname, using a *multi-trait multi-method* (MTMM) model. This allows us to assess the validity and reliability of both the international and the Surinamese scale.

THE OCCUPATION AS A CENTRAL INDICATOR OF SOCIAL STRATIFICATION

All human societies are being characterized to a greater or lesser degree by social stratification (Lenski, 1966). The members of these societies have unequal access to symbolic and material resources, that are indicative of their 'status' or position in a social hierarchy (Lenski, 1954). We can distinguish social hierarchies based on different criteria. According to classical theories, in premodern societies, mainly material possessions were decisive and other forms of acquiring social status followed these material possessions. In these premodern societies, families are predominantly the unit of the hierarchy, because material property is in fact always family property. Ownership and other status positions are most often obtained through transfer within the family. In premodern societies status positions are strongly inherited.

In modern societies, status positions are attained, which does not rule out that family ties still play a role. In modern societies the position in the social hierarchy is no longer determined by inherited property, but by the education, occupation and income acquired during the lifecycle, together also referred to as "socio-economic status" (SES). In the sociological literature on social stratification, and in particular with regard to reproduction of and mobility between status positions, preference is given to the occupation as the backbone of the social hierarchy. According to the classic dictum of Blau & Duncan (1967:6), occupation is the "*best single indicator"* of social status: sociologists therefore concentrate on occupational status as we will do here as well. There are several reasons for this choice. Each of the socio-economic status indicators has its own theoretical relevance and each has its own advantages and disadvantages.

Education versus occupation

In modern societies one's education is the dominant determinant of social positions to be acquired later in life. Education not only determines a place on the labour market (and therefore occupation and the income from employment), but also has a strong influence on marriage chances (whom does one marry?), consumer preferences, health and social attitudes (Hyman, Wright & Reed, 1975). A common assumption about modern societies is that historically, education has become more and more decisive for this series of life outcomes, the differences between higher and lower educated would increase. This trend is often named after Young's (1958) satirical book "*The Rise of the Meritocracy*": educational differences gradually become the dominant determinant of all social outcomes. As far as family background continues to influence these outcomes, education is the central mediator: in modern societies parents transfer their status on the next generation through the education of their children.

Although education probably has become the most important determinant of life chances and life choices, the use of level of education as an indicator of the social hierarchy still has disadvantages and problems. Most importantly, education usually comes about when someone is young, so the information only relates to a relatively short period in one's life. This makes it possible to analyse mobility between generations, but education does not allow finding out whether someone has gone upward or downwards during the life course. With occupations this is possible.

The occupation can be regarded as one of the most important outcomes of the education, and it is therefore also strongly correlated with education. However, education and occupation are not the same. Someone may end up in another occupation than that for which he/she was trained. Members of society go through an occupational career that begins and develops when the educational career has already ended. This makes occupation an indicator that is not only sensitive to inter-generational mobility but can also measure intra-generational mobility.

Income versus occupation

When thinking of social inequality, many people will first think of income differences. Economists in particular are mostly interested in income and with good reasons. Unlike with regard to educational and occupational differences, it is immediately clear how income serves as a resource to acquire scarce goods and property. It is also obvious that income differences can lead to immaterial forms of social inequality such as power and political influence. Incomes fluctuate during the life course and therefore seem to be most suitable for mapping out intragenerational mobility.

From a sociological and methodological point of view we should put the importance of income as an indicator of social status into perspective. The role of income in material consumption is clear, but income has only a limited effect in other processes of social distinction. For example, income differences only have a weak influence on moral preferences, consumptive preferences, marriage patterns and also on intergenerational reproduction (Ganzeboom, 1988). The latter is also obvious, because it is simply not possible to transfer income, but only wealth (which may result from income), to others.

There are also various methodological difficulties associated with the use of income as an indicator of social status. The first difficulty is to properly determine income. Unlike occupations, income can fluctuate quickly, and income measurements often offer an (unreliable) snapshot. Secondly, it is difficult to reliably report on incomes of others and of oneself at another point in time. Survey research therefore lacks information on the income of parents or others (brother/sister), about whom reliable information on occupation can be obtained. If people were asked about the income

of their parents when the respondents were 12 years old, no valid answer can be expected. The respondent would simply not know this. It is likely that the parents themselves would not even know it either.

Occupation

When measuring the position in the social stratification, the occupation has important advantages. These advantages can be summed up as follows:

- The occupation is an important *label* in society (Laumann, 1965). We can 'place' someone easily when we have occupational information. This effect is partly due to the fact that the occupation is so strongly linked with (in fact: mediates between) education and income.
- The occupation can be determined easily and reliably for earlier times and for others, which is of great importance for studying social mobility and social reproduction, between and within generations.
- The occupation is a sensitive indicator of both social and individual changes, but at the same time a reliable indicator for the social position that someone occupies on any moment in the life course.
- The occupational hierarchy is historically and internationally stable, and can be compared validly over longer periods of time and between different social systems (Treiman, 1977).

Nevertheless, we also encounter problems, when measuring the occupation. The most important one is that not everyone always has an occupation. There may be gaps in the occupational career when someone has experienced periods of (forced or self-chosen) unemployment or non-participation. This difficulty is usually resolved by deriving the social position of the never-employed from the occupation of their partner or head of the household. In the case of the temporarily unemployed and non-participants, the previous occupation is often taken as an indicator.

A second difficulty of occupations is that one cannot immediately deduce the social hierarchy from it. Occupations can be classified from high to low, but unlike with income and education, it is not immediately clear how this should be done. Income naturally has more or less, and with regard to education, the ranking follows from sequence of educational transitions or the duration of the education. However, in the sociological literature there are multiple and diverse ideas and procedures in circulation regarding the scaling of occupations by status (Grusky & Van Rompaey, 1992). According to Ganzeboom & Treiman (2003) occupations can be scaled in three ways: by prestige, social distance and socio-economic status.

Prestige of occupations

By occupational prestige we mean (Hope, 1982) the evaluation given by members of a society to occupations. Occupational prestige is therefore a subjective appreciation and is measured by having assessors (who may or may not be a representative cross-section of society) have occupations ranked to social prestige. Measuring occupational prestige is a classical topic of sociological survey research. Because only a few assessors can suffice, it is fairly easy to implement. Many prestige ladders have therefore been compiled (Treiman, 1977). In the USA a prestige ladder was first constructed in 1947 by the *National Opinion Research Centre* (NORC). In the Netherlands, the first occupational prestige ladder was constructed by Van Heek & Vercruysse (1954), and a new prestige ladder was constructed by Sixma & Ultee (1982). For England we know the H-G scale (Goldthorpe & Hope, 1975) and for Germany the Wegener (1992) magnitude scale. This research on occupational prestige has shown that there are a few systematic differences in the way groups of assessors (e.g. men and women) rank occupations. The prestige of occupations is a strongly collective

representation of things. This is the reason why it is possible to obtain a stable scale with relatively few assessors as it actually really does not matter who is asked to rank.

There has been a long-standing interest in the extent to which prestige rankings of occupations in different countries and times are similar (Inkeles & Rossi, 1956). A large-scale analysis of this issue is reported by Treiman (1977), who compared about sixty occupational prestige ladders. His main conclusion was that there is a very strong similarity between the various ladders, both in terms of countries and very different times. Based on this conclusion (the 'Treiman constant') he was able to integrate the national scales into a globally valid scale, the *Standard International Occupational Prestige Scale [SIOPS]*, which has since been used extensively in international comparative research. This 'Treiman constant' was chosen by Hout & DiPrete (2006) as the least controversial finding of 50 years of stratification research. Treiman's theory does not mean that the occupational distribution itself is unchangeable. Rather, the theory should be read in such a way that the distances and order of occupations that remain existent are unchangeable. When new occupations are added, they often show overlap and are related to existing occupations, which determines their place in the occupational hierarchy.

Still the validity of Treiman's hypothesis has been questioned. An often-cited example is the occupational status of teachers (e.g. Cohen, 1967): was the teacher previously not an occupation of high prestige, while nowadays it is at best seen as a lower middle-class occupation? And what to think of the international claim: if in two societies completely different political power relations prevail, will that not have consequences for the position of occupational groups? It is precisely these types of questions that motivate the research reported here: is it true that the internationally accepted measuring instruments for occupational status really do comply in Suriname, or is there a unique Surinamese occupational hierarchy? In culinary terms: is the occupational hierarchy of Suriname as a worldwide known *hotdog*, or is it more a locally spiced *pom*?

Social distance between occupations

Social distance is about the willingness of people to interact with others. The social distance method of scaling occupations is based on Weber's ([1922] 1946) theoretical work. Weber made a distinction between three dimensions of social stratification: class (based on economic power), status groups (based on acceptance of others in social contact) and parties (based on political power). Social distance scales build on Weber's vison that status groups distinguish themselves from each other by the mutual contact their members want to have with each other. Social distance scales can be seen as behavioural operationalization of the prestige dimension of social inequality.

The first social distance scale was developed in 1925 by the American sociologist Emory Bogardus for the structure of relationships between ethnic groups (Laumann, 1965). By analysing mutual friendship and marriage patterns he was able to determine to what extent ethnic groups accept each other as equals. Laumann (1965) generalized this idea and implemented it on occupations (Bakker & Blees-Booy, 1995). Weber's theory means that people in their private lives will often deal with people from the same rank or status group. Because of this, they are distinct from other groups with which they do not wish to interact – those that are lower in the hierarchy – or from higher groups with whom they are not allowed to interact. The social distance between occupations can therefore be determined by analysing the extent to which persons with different occupations are in voluntary contact with each other and accept each other in the social interaction. This can be done, for example, on the basis of friendship relations between occupational groups, but this research usually measures the extent to which practitioners are mutually married.

Bakker (1992) calculated the social distances between occupations in the Netherlands, based on occupational marriage tables, that indicate how often practitioners of an occupation are married or cohabiting to persons with other occupations. Although social distance scales are less frequently used than prestige and socio-economic scales (see below), there is nevertheless a lively and growing research tradition. Cambridge researchers, in particular, have relied on this methodology, which they call the "*Cambridge Social Interaction Scales*" [CAMSIS] (http://www.camsis.stir.ac.uk/). To date[2], however, there is no validated international measurement of social distance between occupations.

Socio-economic status of occupations

We can also scale occupations relative to each other by looking at the socio-economic status of occupational practitioners. This method was initiated in particular by Duncan (1961), who constructed a socio-economic index [SEI} of occupational status as a weighted average of educational and income level of US occupational practitioners. Duncan developed his index to solve the problem that the occupational prestige scales available at that time covered only to a limited number of occupations. To construct a 'prestige' score for other occupations, he tried to predict this score based on the average education and the average income of practitioners (derived from census data). When comparing the constructed scores with the original prestige scores, Duncan made an important discovery: the SEI scores of occupations turned out to be a better measure of occupational status than prestige itself. This conclusion was later confirmed by Featherman, Jones & Hauser (1975).

Ganzeboom, De Graaf & Treiman (1992) have constructed an international SEI-index [ISEI] with data from a few dozen countries. These authors defined the socio-economic status of occupations as mediator between education and income: occupational status is the mechanism that translates your educational qualifications in a higher or lower income. The ISEI is constructed by Ganzeboom, de Graaf & Treiman as an optimal scaling of occupations as mediating variable in a status attainment model (see figure 1). Here, optimal scaling means that the total effect of education on income goes maximally through the scaled occupations and therefore there is a minimal direct effect from education on occupation. Unlike in Duncan (1961), prestige no longer plays a role in this construction (Figure 1).

The ISEI (as well as the SIOPS) is originally constructed in conjunction with the *International Standard Classification of Occupations 1968* (Ganzeboom, De Graaf & Treiman, 1992). The ISEI scale is updated by Ganzeboom & Treiman (1996) for the subsequent international occupational classification, the ISCO-88. Due to the frequent application of this classification in international comparative research, the ISEI has become the most common scaling of occupations in comparative sociology and has overtaken the position of SIOPS[3]. Increasingly ISCO-88 and ISEI are also used in national studies, in the clear belief that occupational hierarchies do not differ between societies (Breen & Jonsson, 2005).

PROBLEM STATEMENT

As far as we know, no published texts are available on the occupational hierarchy of Suriname. Studies are known in neighbouring countries such as Brazil (Haller, Holsinger & Saraiva, 1972), Guyana (Graham & Beckles, 1968) and Venezuela (Briceño-León, 1992). Based on the aforementioned work of Treiman (1977), we would assume that the hierarchy in developing

[2] Since the writing and publication of this article in Dutch, such a scale has been published by Meraviglia et al. (2016).
[3] For example, when looking up the citation scores of Treiman (who was involved as an author in both scales), one discovers that his papers on the ISEI have been cited more often than his book and articles on the SIOPS.

countries will not differ greatly from the occupational hierarches in the western world. Haller, Holsinger & Saraiva (1972) in particular doubt claim this on the basis of their Brazilian results – but they do not show where the differences are. For Suriname we want to investigate if there are deviations from the international scaling, how large these are and for which occupations they arise. We will answer the following questions:

- How does the occupational stratification of Suriname look like: which categories should be distinguished and which hierarchical distance exists between these categories?
- Is it true that the Surinamese occupational hierarchy does not deviate substantially from the worldwide occupational hierarchy (the 'Treiman constant')?

In the following, we examine the hierarchy of Surinamese occupations only on basis on their socio-economic status, not on the basis of prestige or social distance. The reason for this choice is that an SEI scan be constructed relatively easily on the basis of a limited research effort. The unit of analysis here is the number of distinct occupational groups. In a social distance scaling, the combination of occupational groups of two practitioners (e.g. respondent and partner) in a cross tabulation is the unit of analysis. To constructing a social distance scale, much more data must be available to achieve the same level of reliability as with an SEI scale. Prestige-scores can only be determined on the basis of a research in Suriname, specifically focused on that; this was not part of our project.

We perform the analysis in three steps. Firstly, we report how the required information has been collected and coded. Special attention is given to the question whether and how Surinamese occupations can be adequately represented in international occupational classifications, more in particular the ISCO-88 (ILO, 1990). In this step it is about the *classification* of occupations, not yet their scaling. Secondly, we scale of the distinguished occupational classes according to procedures that were previously applied in international research. For this, we do not only use occupational data, but also attributes of their practitioners, in particular their education and income. Thirdly and finally, we analyse the quality of the constructed SRSEI scaling in comparison with the international ISEI scaling. For this we make use of a *Multi-Trait Multi-Method* (MTMM) model that enables us to accurately quantify the measurement quality of the scales. These models also offer possibilities to counter the threats of *circularity* and *overfitting* that arise when one carries out scale construction and scale validation on the same data.

DATA

To answer the research questions, we analyse data from the first large-scale nationally representative stratification and mobility survey for Suriname [SURMOB2012] which was held from 2011-2013 (but mainly in 2012) (Sno & Ganzeboom, 2012, 2014). A total of 3929 men and women, aged 21-74 years were interviewed, sampled in all 10 districts of Suriname. The response was around 78%, varying between almost 100% in Brokopondo and Saramacca, and 53% in Sipaliwini. The information was largely collected via interviewers. The questionnaire was partly derived from the *Social Inequality IV* module of the *International Social Survey Programme*. In addition to demographic and opinion data, information has been collected about the first and the current/last occupation of the respondent, the nearest sibling in age and of the partner. Information was also collected about the occupation of both parents when the respondent was 12 years old. The questions regarding the occupation were on the occupational title with main tasks and responsibilities (open-ended question), position in occupation (self-employment and supervision) and the employment contract. The information about the occupations of sibling, partner and both parents was provided by the respondent.

ANALYSIS

Step 1: Coding of Surinamese occupations in ISCO-88

The answers to the open-ended questions about occupational title and main tasks and responsibilities are classified by the ISCO-88 classification (ILO, 1990), which consists of four-digit occupational groups. The ISCO-88 classification is the third edition of the *International Standard Classification of Occupations* that has been produced by the *International Labour Office* since 1958. ISCO-88 makes it possible to (ILO, 1990: p3) to classify occupation in altogether 545 alternatives. Classification in ISCO-88 is exclusively based on the content of the occupation. In particular, ISCO-88 avoids distinctions based on *status-in-employment*: independent and wage-dependent workers, supervisors and subordinates are in principle classified in the same category. ILO advises to measure these distinctions separately, as was done in the SURMOB2012 study.

In total, the SURMOB2012 file provided more than 19.000 informative occupational descriptions (in addition there were almost 2500 descriptions of other activities such as “housewife” and “no occupation”). A coding file (Ganzeboom, 2010) was drawn up with three pieces of relevant information: occupational title and occupational description, contract form and supervisory status. The coding was subsequently largely carried out by ten Research Master students of the Anton de Kom University of Suriname. They were given access to overlapping parts of the coding file. Their assignment was to match this information as best as possible with the ISCO-88 descriptions, as documented by on the ILO website. All occupations were coded by multiple students with overlap between the occupations to be coded, in order to get an impression of the reliability of the coding and the coders. Double codings are therefore available for most of the occupations. The average correlation between coders was > 0.90, when occupations are scaled by ISEI. The correlations between the individual coders gave no reason to disqualify one or more of them. The final classification of the occupations in ISCO-88 was constructed by the two researchers, by making a choice in case of a different opinion between coders.

An overview of the results can be seen in **Table 1**, in which the distribution across the ISCO-88 major groups is displayed for all five family members involved, for the respondent, nearest sibling and partner, both concerning their first and most recent occupation. For comparison, the same distribution from the 2012 Census (ABS, 2014) has been added. The most relevant comparison of the census distribution is with the ‘current occupation’ of the respondents and siblings. The SURMOB2012 broadly follows the census distribution, with an average deviation of approximately 2% per category. We find somewhat larger deviations for the clerical employees (+4% too much in the survey) and the service occupations (-3%). The distribution of survey data also gives an insight in the dynamics of the Surinamese occupational stratification. We see large differences between respondents, partners and sibling on one hand and parents on the other hand, which indicate that the occupational structure between generations has upgraded greatly. In these dynamics, the decrease of the number of farmers is the most important one. We see also dynamics between first occupation and current occupation of the respondent, partner and sibling, in particular with regard to the higher management functions: these are practised more often as current occupation than as first occupation.

Unlike summarized in **Table 1**, our data actually consist of detailed four digit codes, which altogether define hundreds of occupational groups. Because it is difficult to analyse such a large number of small N occupational groups in scaling procedures, a number of similar occupations have subsequently been clustered. The aim was to arrive at a system of ‘micro-classes’ in which the units are formed by groups that are particularly recognizable in the Surinamese context. The formation of

such micro-classes has been particularly recommended by Weeden & Grusky (2005). As a first step, the detailed ISCO-88 codes have been reduced from four-digit to two-digit codes. ISCO-88 has 28 two-digit codes (*submajor groups*), but we have further reduced this to 22. Like Ganzeboom et al. (1992), we assume that in order to scale occupational categories reliably, it should include at least 20 practitioners among the respondents.

In three cases we then split up an ISCO-88 *submajor group* again, because the cell fillings enabled us to make a more detailed substantively relevant distinction. At category 2200 we make a distinction between 2230, nurses and midwives, and other 2200 occupations (university trained medical professionals), who are then merged with other academically trained (in particular 2100 and 2400: engineers and lawyers) occupations. Within the *submajor group* of teachers (2300) we distinguish teachers at higher level (2320), from teachers in primary and pre-primary education (2300). Finally, with regard to office staff (sub-major group 4100), a distinction was made between bookkeeping staff (4120) and other lower clerical functions (4100).

In two other cases we have further divided the ISCO *submajor group* to meet specific Surinamese circumstances. In particular, in the service sector (5100) a separate place is reserved for the security personnel (5160), which include both soldiers and police guards. Within the skilled construction workers (7100) we distinguish the subcategory of miners (7110), which in the Surinamese context mainly concerns goldminers.

== Table 2 about here ==

As a final step we crossed this condensed ISCO-88 classification with a variable that indicates the contract situations that are of specific interest in the Surinamese labour market: (a) in public (government or semi-government) service, (b) working for a private employer, (c) self-employed, with or without own personnel, (d) working outside the formal economy ('hustling')[4], to which we also added assisting family members. **Table 2** gives an overview of these variables for all practitioners involved. It appeared that there are occupations in the same ISCO group that are practised by government employees as well as by people working for private companies and independent hustlers. This concerns the following categories: managers and senior management (1200); office clerks / administrative personnel (4100); personnel of security services (5160); sales persons (5200); construction workers (7100); drivers of vehicles (8300); unskilled service and sales personnel (9100); unskilled farm workers (9200). In these cases we have decided to subdivide the occupational classes by contract form. We have made this subdistinction by adding an extra decimal code to the code of the occupational group: (.0) working in a private business, (.1) (working for the government or semi-public organization (.2) working as owner, (.3) hustler or assisting family member.

Ultimately, a system of 39 micro classes was created in this way, which in our opinion does justice to the occupational distribution as well as contract situation in Suriname. The 39 occupational classes are shown in detail in **Appendix A**, in which also examples are given of occupations that we found in the SURMOB2012 data file.

Step 2: Development of the SRSEI scaling

We have scaled the 39 occupational classes by the socio-economic status of occupations, according to the methodology with which the *International Socio-Economic Index [ISEI] of occupational status*

[4] In Suriname, the term 'hustling' (*'hossel'*) is used for all sorts of economic activity without a formal contract or ownership of capital goods. Such 'informal employment' is very common in developing economies. In Suriname, about 18% of all workers are in such informal employment.

has also been developed (Ganzeboom, De Graaf & Treiman, 1992). The ISEI was originally constructed as the optimal scaling of detailed occupations in a status attainment model connecting the successive variables education, occupation and income (see **Figure 1**). In this model the total influence of education on income is partly *indirect* (via occupation) and partly *direct*. The scaling of the occupations to ISEI is achieved by maximizing the indirect effect of education on income (through occupation) relative to the direct effect (outside occupation). The ISEI-88[5] is based on data on 70.000 men in 25 countries, some of which are comparable to Suriname, such as Brazil and the Philippines (Ganzeboom & Treiman, 1996, 2003). It is important to point out that this large data file enabled these authors to make much more detailed distinctions of occupations by socio-economic status than we can in Suriname. According to Ganzeboom & Treiman (1996) the number of the occupational groups they distinguished was almost 300.

According to the model of **Figure 1** a Surinamese SEI, the SRSEI, has also been constructed, but now for the 39 occupational classes. Like the ISEI, the SRSEI is a weighted average of the education and income of practitioners, in such a way that the direct effect of education on income (out of occupation) is minimal and the indirect effect (via occupation) is maximal. To make the Surinamese SEI, we used the highest attended[6] educational level and the personal income[7] of the respondent. Educational level is measured via 15 categories, which are arranged between (0) No education & cannot read or write and (14) completed university education. For income there are 9 categories available, between 'less than 500 SRD per month' to 'more than 25000 SRD per month'[8,9]. Only incomes greater than 0 have been taken into account: incomes of persons that claimed that they were employed, but who indicate that they generate no monetary income from it, are not taken into account. The income categories have been scaled to their category midpoints, and then logaritmized, creating an almost symmetric distribution. We have applied the scaling by SRSEI to the current/last occupation of the respondent (not on their first), because only information on the current income is available. The other occupations (father, mother, partner and sibling) are not involved in the scaling, but used for validation.

The SRSEI has been constructed according to an algorithm for optimal scaling, that was developed by De Leeuw (1992) and has been recently been applied by Schröder (2014) to find an optimal scaling for a mediating categorical variable. In this algorithm, education (input) and income (output) are first expressed in the same unit via Z-standardization. Scaling of occupational groups is found as a weighed sum:

$$zSEI_k = \boldsymbol{\alpha}*(zEDUC_k) + (1-\boldsymbol{\alpha})*(zPINC_k), \qquad [1]$$

[5] The scale has recently been provisionally updated to ISEI-08 (Ganzeboom, 2010). The new ISEI-08 is created for 200.000 men and women in more than 40 countries (data-source: ISSP 2002-2008). However, this scale has not yet been published and has not yet been finalized.

[6] If the respondent has not completed this level, the education is scaled up between the highest attended level and the level below.

[7] This concerns the personal income of the respondent with an occupational title. In theory it is possible that (a part of) this income is acquired outside the labour market, but this can not be distinguished in the data.

[8] The average income was SRD 1236 per month, which at the time of the survey corresponded with approximately € 306.

[9] A reviewer indicated that measuring income in Suriname is particularly problematic. By placing the incomes in classes and giving the respondent the opportunity to indicate the income via a showcard, we tried to make the question appear less 'threatening' and in this way limit the non-response. In total, 15% of the practitioners did not state their personal income. This number is about twice as high for the "hustlers" and "subsistence farmers". It is possible that our procedure overestimates the income of these groups, but this is not certain. An indication of the reliability is given by comparing the correlation between education and income with other countries. This correlation is 0.43 for the ISSP countries (with which SURMOB2012 data can be compared) and 0.42 for Suriname. This gives no reason to think that the income measurement in Suriname is more problematic than elsewhere.

in which zEDUC and zPINC are the average standardized education and income of occupational group k and the outcome is again standardized to zSEI. The outcome of model [1] is evaluated by the standardized regression model:

zPINC = B1*zEDUC + B2*zSEI + residu [2]

The optimal solution is found by systematically varying ***α*** in model [1] to the point where B1 in model [2] reaches the lowest value. De Leeuw (1992) argues that the weighted sum of the average education and income in [1] indeed always finds the minimum value of B1 in [2].

The algorithm finds a minimum value for B1 when ***α***=0.35 and (1-***α***)=0.65. The total effect of education on income in the data is r=0.45. With the optimalisation of SRSEI found, this is reduced to the direct effect B1=0.24; this means that almost half of the effect of education on income is indirect, when we use the optimum scaling for occupations. The weight found for Suriname differs somewhat from the results of Ganzeboom & Treiman (1996), in which ***α*** was found to be around 0.50. For the socio-economic status of occupations, a greater weight is given to income in the Surinamese circumstances than internationally.

The final unit of measurement of SRSEI is constructed by projecting the Z-scores on a 0-100 range via an anti-logistic transformation (Hauser & Warren, 1997; Schröder, 2014):

$SRSEI_k = rnd(100*exp(zSEI_k))/(1+exp(zSEI_k))$ [3]

Transformation [3] leads to a unit of measurement between 0 and 100, with an average of 50 and a standardization of 21. In ISEI-88 these corresponding values for the Surinamese occupations are 40 and 16. To make the scores as comparable as possible, we have adapted the Surinamese unit to the international:

SRSEI = (SRSEI*16/21)+2 [4]

ISEI and SRSEI now both have an average of 40 and a standard deviation of 16. In **Appendix A** both sets of scores are shown. Subsistence farmers form the minimum and receive a Surinamese score of 7 (in ISEI 18). Professionals receive a score of 68; internationally that is almost the same (69).

== Table 3 about here ==

Table 3 shows the following for the 39 occupational groups:

- ISEI-88, the international occupational scaling,
- EDUC: the average educational level of the respondents involved,
- LNPINK: the average personal income of the respondents involved, authenticated,
- SRSEI: the calculated Surinamese scaling.

All four are presented in this table in Z-standardized form, with average 0 and standard deviation 1. This means that we can compare the values in the columns with each other directly. Positive scores indicate that one is above the average of the effective sample, a negative score that one is below. In **Appendix A** the official English ISCO-88 titles are used, in **Table 3** abbreviated titles are used.

The correlation between the ISEI and SRSEI is 0.87 which indicates that there is a strong similarity between the two scales and also that on average both scales are of good quality. **Figure 2** plots both scales against each other with the 39 occupational scales being the data points and the size of the data points are proportional to the size of the occupational group concerned. Despite the high

correlation there is still a lot of variation in the graph. The comparison of the SRSEI with the ISEI shows that there are particularly large discrepancies in the scaling of three occupations. This concerns the following cases:

- 5200.3: Salespersons, hustlers (ISEI: 0.02 and SRSEI: -1.66);
- 6200: Subsistence farmers (ISEI: -1.35 and SRSEI: -2.46);
- 7110: Miners, in particular goldminers (ISEI: -0.61 and SRSEI: 1.43).

These three groups stand out because their scale scores differ more than a standard deviation between the Surinamese and international scale. The hustling salesperson (basically: street-vendors) and subsistence farmers have a lower occupational status according to the Surinamese occupational stratification than to the international scale, while the opposite applies to the miners (goldminers).

The difference between the international scaling and the Surinamese scaling is the greatest between the hustling salespersons (5200.3). The cause is easy to find: in a certain sense this is due to a wrong coding instruction. ISCO-88 has a separate category for elementary sales functions (9110), among which these hustling street-vendors would have been situated excellently, but our coders did not choose this category because they did not pay attention to the contract form[10]. In this way we identify a case in which standard application of the international classification is not consistent with the local situation.

The second major difference between the Surinamese and the international scaling is in the small group (N=26) of miners (7110), which in the SURMOB2012 data consists almost exclusively of goldminers. In comparison to their relatively low education, the income as reported by the goldminers is very high. Here too, we are dealing with a specific Surinamese situation: the goldminers are low-skilled manual workers who earn relatively well, as a compensation for the dangerous work that they do. In the international ISEI scale there is no specific value for goldminers, they are merged there with all kinds of miners, including coalminers.

A third, striking inconsistency is found for subsistence farmers (6200). They score very low, both in SRSEI and ISEI, but the Surinamese score is much lower than the international. Subsistence farmers ('self-sufficient farmers') have an extreme low education and income. Here, it could be maintained that the Surinamese score is better than the international one, because the international scaling is based on the position of *subsistence farmers* in countries where they hardly exist. Also in Suriname this group is not large among the respondents, but it is of considerable size among the parents of the respondents and among the respondents in the Interior district Sipaliwini it is even the largest group.

== Figure 2 about here ==

Step 3: Validation

In a third step we investigate the quality of the SRSEI scale that we have constructed, compared to the existing international ISEI scale, using a *multi-trait multi-method* [MTMM] model. The starting point of such a factor-analytic model is the correlations matrix between occupations, as scored by both scales. These correlations are shown in **Appendix B. The** MTMM methodology was initially developed to assess the validity and reliability of attitude data (Campbell & Fiske, 1959), but is also excellently applicable to demographic background variables.

[10] It is not just an error of the coders or the coder instruction. Also in ISCO-88 itself, the difference between 5230 (market vendors) and 911 (street vendors) is difficult to make, while they are in very different places in the classification.

Figure 3 provides an insight into the elementary structure of an MTMM model, in this case for two occupations that each are measured as a latent variable with two indicators. The idea of the model is that these four indicators are correlated via two paths. Firstly, the two occupations are linked via a latent correlation **c**, which in this case stands for the true association between the two occupations. This correlation is observed by us in the data attenuated by the measurement effects **a** and **b**, which are the two methods to scale occupations, in this case ISEI and SRSEI. The coefficients **a** and **b** are known in the MTMM literature as *trait effects* and deviate from 1.0 due to random measurement errors (unreliability) in each of the indicators. In addition, the observed correlations between the two measurements of occupation are also influenced by residual correlations **d** and **e,** which indicate whether two similar measurements of occupation are higher/lower correlated than can be expected on the basis of **c** and the measurement coefficients **a** and **b**. The coefficients **d** and **e** are known in the MTMM literature as *method effects,* as they indicate how the two occupations are correlated according to a common measurement method.

The associated path analytical decompositions are:

r12 = a*b
r34 = a*b
r14 = a*c*b
r23 = b*c*a
r13 = a*c*a + d
r24 = b*c*b + e,

where r12 is the correlation between the first two occupational indicators, r13 between the first and the third occupational indicator, etc. For the solution of such a system of equations, we can use *Structural Equation Modelling* [SEM], such as LISREL (Jöreskog & Sörbom, 2006). Although this system with six equations and five unknowns appears to be overdetermined and solvable, it is in fact (locally) undetermined and unsolvable. We know this because the model does not converge in LISREL. However, we can make it solvable by adding more variables. This can be more occupations, but also other variables that are correlated with occupation, so-called auxiliary variables. In our validation model we do both. Our SEM calculations relate to four or five occupations (of father, mother, sibling and partner, in addition to that of the respondent). We also added both the income and education of the respondent (the ingredients of the SRSEI scaling) as auxiliary variables.

== Figure 3 about here ==

It will be clear that our MTMM methodology with these auxiliary variables suffers from circularity. If we use education and income of the respondent to determine his occupational status (SRSEI), how can we also use these variables for an independent validity test? This circularity is solved in two different ways:

- **Model A**: we examine the measurement quality of the scales on basis of the occupations that were NOT involved in its construction. In this model we only use the occupation of father, mother, sibling and partner and not that of the respondent.
- **Model B**: here we correct the circularity by estimating additional residual correlations, between income and education of the respondent and his/her SRSEI.

We apply both models.

Another problem with our method is that it is sensitive to overfitting. Random fluctuations in the data affect the constructed scale, but would also be part of the validation. We can avoid this problem through cross-validation. For this, we divide the data in two random halves and calculate optimum scale scores in both parts. Subsequently in the validation step, the scale values of the first half are entered in the second half and vice versa. In this way the natural random fluctuations that

occur when calculating the scale values are removed from the validation and the overfitting is neutralized.

== Table 4 about here ==

Table 4 first shows the parameter estimated with model A. The four occupations involved are those of father, mother, partner and sibling. Not listed are the method effects. These occur primarily between fathers and mothers occupation, but are limited in size (approximately 0.05-0.06). In **model B** this exercise is repeated, but now with all five occupations simultaneously, with extra residual correlations being used to repair the circularity.

In all models, the measurement coefficient of SRSEI is stronger than that of ISEI and this difference is statistically significant. However, in model A1 the difference is modest (0.929 / 0.883 = 1.05) and it becomes even smaller when we look at the cross-validation (0.914 / 0.881 = 1.04). These coefficients mean that all correlations with occupation will be 4% -5% stronger if we use a Surinamese instead of an international scaling. In model B these numbers are slightly higher, but the gain remains modest. The differences become stronger when we omit the goldminers in models A.2 and B.2. The gain of the Surinamese scaling above the international then rises to almost 10% (0.963 / 0.883 = 1.09 and 0.950 / 0.882 = 1.08 based on cross validation). The interpretation of this result is ambivalent. On the one hand, it becomes clear that the high socio-economic status of goldminers is only disruptive when it comes to determining the relationship between their occupation and that of their parents, siblings and partners[11]. In that sense we come across a case of bias here. Although there are few goldminers among our respondents, the influence of their scale score on the outcomes is considerable. If we leave them out, then the Surinamese scaling fits considerably better with the Surinamese society, is the somewhat paradoxical conclusion.

If we repeat this exercise for the two other 'outliers', the result is very different. Omitting the hustling street-vendors and the subsistence farmers (model A3 and A4, and B3 and B4) hardly changes the Surinamese measurement coefficients, but increases the international. This means that the international scaling is incorrect for these two groups and the Surinamese is better.

CONCLUSION AND DISCUSSION

Based on the foregoing analysis, the following conclusions can be formulated:

First, it appears that Surinamese occupations can be properly classified in ISCO-88. In this international occupational classification, however, the labour market contract is not taken into consideration and that does not do justice to the informal employment ('hustling') that is common in Suriname. Also working for (semi-)government or private business, or as an owner or as a wage earner, is not incorporated in ISC0-88. However, it has proved possible to construct an appealing system of 39 micro-classes from the combination of ISCO-88 occupations and the contract situation. We believe that we have sufficiently represented the important distinctions in the Surinamese occupational stratification.

Secondly, it turned out that the Surinamese socio-economic hierarchy of occupations (SRSEI), as expected, closely resembles the global hierarchy (ISEI), but with interesting exceptions. The goldminers are the most striking exception: despite their average low educational level, they are relatively high on the socio-economic occupational ladder, due to their very favourable income

[11] A plausible interpretation of this finding is that there is hardly any intergenerational reproduction here. Unlike other occupations with a high socio-economic status, there are no gold-miners whose father was also a gold-miner, or had another occupation with a high social status. This plausible interpretation was provided to us by one of the reviewers.

position. However, further analysis with the validation model showed that this exceptional socio-economic scaling has little sociological significance: the estimation of intergenerational and marital relationships between occupation practitioners is only distorted by the exceptional position of the goldminers in the Surinamese scaling; the international scaling does this better. This does not apply to the other two major outliers: street vendors and subsistence farmers. The low socio-economic status of these two groups in Suriname is correctly estimated by the SRSEI, and not by the ISEI. The position of the street vendors can, however, also be regarded as a classification error, caused by a lack of clarity in ISCO-88. The exceptional Surinamese score for the subsistence farmers may also have a meaning outside Suriname: this occupation is very rare in the data used for ISEI.

Third, we conclude that if the Surinamese occupations are scaled with the SRSEI, the measurement quality improves up to 9%. Therefore, apart from the three outliers discussed above, the SRSEI appears to be a significant improvement for the scaling of Surinamese occupations. Correlations between occupations and between occupations and other variables are generally underestimated with the indicated percentage if one uses the international scaling for this. This improvement could also arise if a local scaling was used in other countries.

Regarding the Treiman constant, our analysis has shown that significantly more can be achieved with a local scale than with an international scale. It is a matter of taste whether one regards improvement in measurement quality by 5% to 9% as a substantial improvement, and even more whether one considers the conclusion of Treiman (1977) that the occupational hierarchy is constant internationally, has being refuted. We ourselves believe that the three major exceptions to the strong correlation between international and country-specific scaling should be seen as defects in occupation coding rather than as substantive exceptions to the Treiman constant. The street vendors did not actually end up in the ISCO-88 code in our coding procedures. The rich goldminers are worldwide only a small part of the ISCO category "Miners". Only for Subsistence Farmers the error may really be in their international scaling: in the data used to construct ISEI by Ganzeboom & Treiman (1996), this category is hardly present, and it is also a relatively small group in Suriname. Viewed in this context, the striking exceptions in our analysis may be of less significance than the smaller differences for the other occupational classes, the status of which is estimated just a little better by the country-specific scaling than by the international scaling.

An alternative explanation for the overall improvement of measurement quality via the Surinamese scaling is that it is based on data from men and women, while the international ISEI scaling is based solely on men's occupations. It remains to be seen how much of the improvement persists when a definitive new ISEI scaling based on men and women becomes available.

The question of whether the Surinamese occupational stratification should rather be regarded as a *hotdog* or *pom* has a nuanced answer. The most striking ingredients of the Surinamese occupational stratification are midway between country-specific peculiarities and country-specific coding problems. Country-specific is rather the sharpening of the measurement that occurs across all occupational groups together. Ironically, there is reason to expect that such an improvement would also occur in other countries, it is probably not a Surinamese specialty.

A contribution of the analyses presented here is not only the Surinamese SEI scale, but also the methodology to compare different measurements of occupational status. As has also been shown in the comparison of open and closed occupational questions (De Vries & Ganzeboom, 2008) and of qualification and duration measurements of education level (Schröder & Ganzeboom, 2014), the old MTMM methodology can be brought to fruition in a new SEM jacket transposed from research on attitudes to research on social background variables. Measurements of background variables are not free of random and systematic measurement errors. An MTMM model is the instrument *par*

excellence for quantifying them. The MTMM model provides us with a direct estimate of the measurement quality of various scales. It does this on the basis of a sociological structure, the association between occupations of members of the same family, that is, patterns of intergenerational reproduction and homogamy that form the stable fabric of a stratified society.

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Figure 1: The SEI scaling model

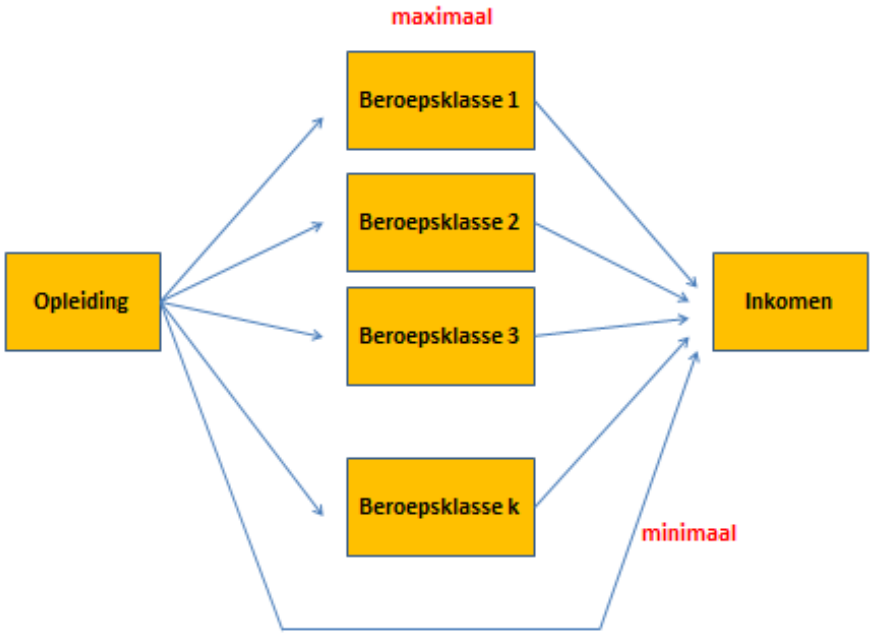
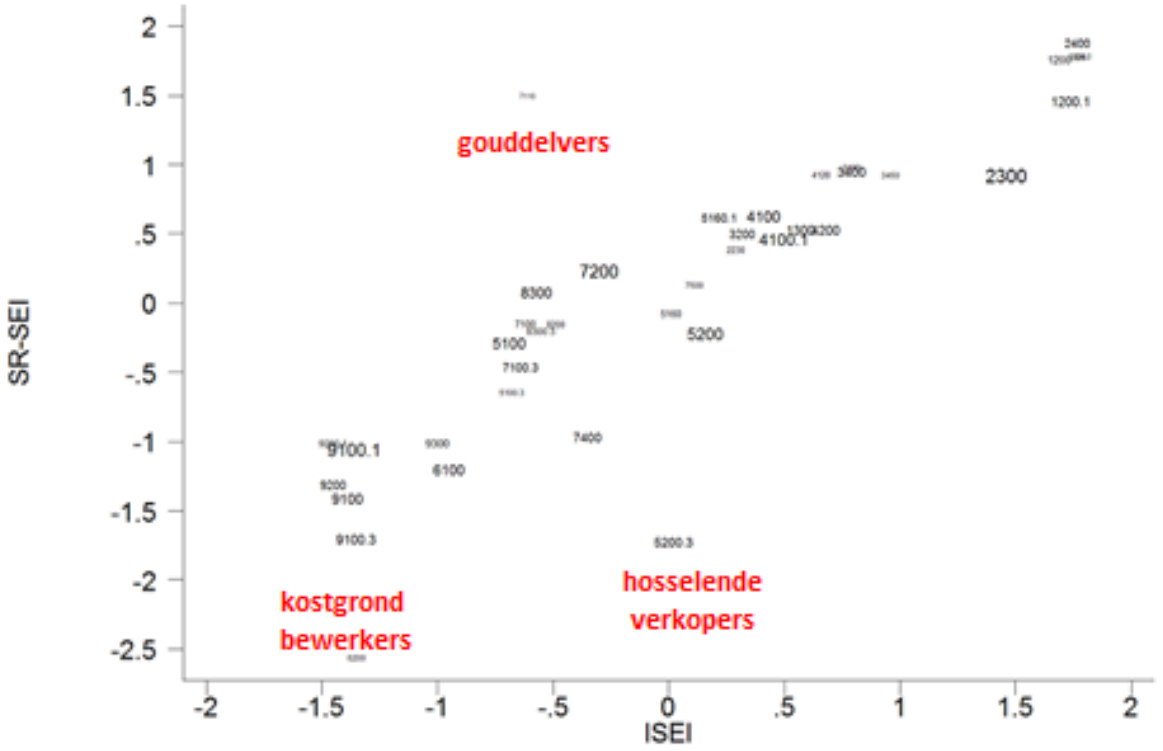


Figure 2: SRSEI versus ISEI, 39 occupational groups



Size of the symbols is proportional to the size of the group among respondents (current occupation). Correlation is 0.87, without the three indicated exceptions 0.89.

Figure 3: The elementary MTMM validationmodel

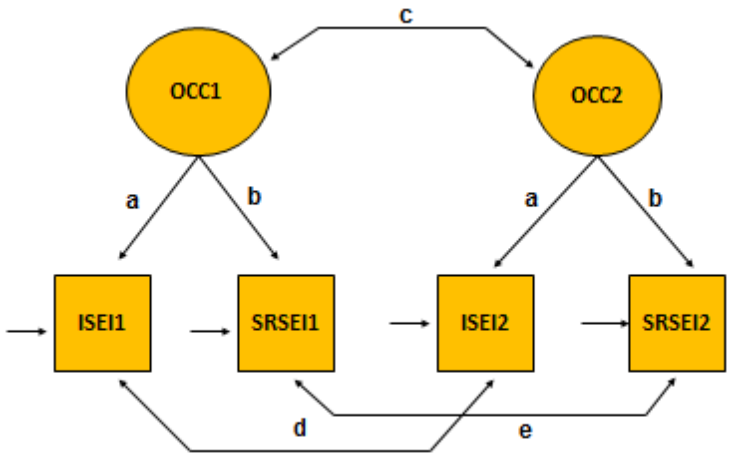


Table 1: Occupations (ISCO-88 *major groups*) of family members, percentages. Total N=3929.

					SURMOB2012				SR2012
	RESP		SIBLING		FATHER	MOTHER	PARTNER		
ISCO-88	First	Current	First	Current	Resp 12		First	Current	
Managers	3.4%	8.8%	4.8%	7.0%	7.5%	3.9%	6.1%	8.5%	6.11%
Professionals	9.6%	10.7%	10.9%	11.8%	3.5%	9.5%	8.1%	8.7%	8.87%
Technicians	8.0%	7.6%	8.2%	8.3%	5.5%	2.8%	9.2%	7.8%	8.12%
Clerks	14.2%	13.5%	12.8%	11.2%	4.9%	8.1%	11.5%	11.2%	9.20%
Sales & Service	19.1%	17.0%	16.7%	17.1%	9.2%	15.4%	14.1%	14.2%	20.28%
Skilled farm	4.7%	4.3%	5.0%	5.3%	22.6%	20.5%	6.8%	6.3%	6.06%
Skilled manual	15.7%	14.1%	19.3%	17.1%	20.5%	5.0%	19.1%	19.3%	13.89%
Semi-skilled manual	5.6%	5.9%	7.4%	8.2%	11.1%	.3%	10.3%	11.9%	7.81%
Elementary	19.7%	18.0%	14.9%	13.9%	15.2%	34.6%	14.9%	12.1%	19.66%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total N	2948	2929	2066	2136	3015	1794	1996	2192	

SR2012: Census 2012 (ABS, 2014: p.69)

Table 2: Contract form of occupational practice (%)

	Respondent		Sibling		Father	Mother	Partner	
	First	Current	First	Current	Resp 12 years		First	Current
Government	26.3%	33.3%	28.5%	31.5%	29.0%	31.5%	27.5%	30.2%
Semi-government	5.0%	6.0%	6.8%	6.0%	5.8%	3.4%	5.5%	6.0%
Private business	45.8%	34.8%	38.7%	34.4%	25.0%	17.5%	41.2%	36.2%
Owner	2.0%	5.2%	3.4%	5.4%	8.2%	4.3%	3.8%	6.0%
Assisting family member	3.0%	1.7%	2.4%	1.9%	2.7%	3.8%	2.8%	2.2%
Hustling	17.4%	18.0%	18.6%	20.0%	26.6%	34.3%	18.6%	18.6%
Other	.6%	.9%	1.5%	.8%	2.7%	5.1%	.7%	.9%
N (=100%)	2971	2975	2206	2302	3081	1826	2068	2252

Table 3: ISEI-88 and SR-SEI for 39 occupational groups

ISCO-88	Short title	ISEI	EDUC	LNPINK	SRSEI
1200	Managers and senior executives - private	1.69	1.39	1.83	1.67
1200.1	Managers and senior executives - government	1.74	1.20	1.49	1.39
1200.2	Large business owners	1.78	1.17	1.98	1.70
1300	Small business owners	0.57	0.46	0.51	.49
2230	Nurses	0.29	0.54	0.28	.37
2300	Primary education teachers	1.46	1.01	0.80	.87
2320	Teachers secondary education	1.77	2.55	1.23	1.69
2400	Professionals	1.77	2.15	1.60	1.79
3100	Associate Technical professionals	0.79	1.01	0.88	.92
3200	Associate medical professionals	0.32	0.93	0.21	.47
3400	Other associate professionals	0.79	1.21	0.73	.90
3450	Police and military officers	0.96	0.32	1.18	.88
4100	Administrative staff – private	0.41	0.95	0.40	.59
4100.1	Administrative staff – government	0.50	0.63	0.44	.51
4120	Clerical staff bookkeeping	0.66	1.60	0.48	.88
4200	Client informations staff	0.68	0.82	0.33	.50
5100	Personal care – private and government	-0.69	-0.10	-0.39	-.29
5100.3	Personal care – hustling	-0.68	-0.31	-0.79	-.62
5160	Security personnel – private	0.01	-0.24	0.01	-.08
5160.1	Security personnel – government	0.22	0.13	0.83	.59
5200	Street & market vendors – private	0.16	-0.21	-0.23	-.22
5200.3	Stree & market vendors - hustlers	0.02	-1.23	-1.89	-1.66
6100	Farmers	-0.95	-1.12	-1.17	-1.15
6200	Subsistence farmers	-1.35	-2.08	-2.66	-2.46
7100	Construction workers – private	-0.62	-0.59	0.08	-.15
7100.3	Construction workers - hustling	-0.64	-0.97	-0.17	-.45
7110	Miners [Goldminers]	-0.61	-0.84	2.65	1.43
7200	Mechanics	-0.30	0.00	0.33	.21
7400	Artisans other materials	-0.35	-0.67	-1.08	-.94
7500	Manual supervisors	0.11	-0.24	0.30	.11
8200	Machine operators	-0.49	-0.51	0.04	-.15
8300	Drivers of vehicles – private	-0.57	-0.58	0.42	.07
8300.3	Drivers of vehicles – hustling	-0.55	-0.81	0.13	-.20
9100	Cleaners and the like - government	-1.39	-0.91	-1.60	-1.36
9100.1	Cleaners and the like - private	-1.36	-1.15	-0.95	-1.02
9100.3	Cleaners and the like - hustling	-1.35	-1.41	-1.75	-1.63
9200	Farm worker – private and hustling	-1.45	-1.41	-1.18	-1.26
9200.1	Farm worker – government	-1.45	-1.49	-0.70	-.97
9300	Unskilled labourers	-1.00	-1.13	-0.90	-.98

Table 4: Measurement coefficients of international scaling and Surinamese scaling of occupations by socio-economic status

	Optimal scaling	**Cross-validation scaling**
	ISEI / SRSEI	ISEI / SRSEI
Model A, without respondent	0.883 / 0.929	0.881 / 0.914
A2 goldminers out	0.883 / 0.963	0.882 / 0.950
A3 hustling street-vendors out	0.905 / 0.970	0.903 / 0.956
A4 subsistence farmers out	0.926 / 0.964	0.925 / 0.949
Model B, with respondent	0.889 / 0.939	0.888 / 0.923
B2 goldminers out	0.886 / 0.972	0.887 / 0.956
B3 hustling street-vendors out	0.912 / 0.974	0.913 / 0.956
B4 subsistence farmers out	0.933 / 0.968	0.934 / 0.949

Not included: methods effects between father's and mother's occupation and (in models B) between education / income respondent and SRSEI. The differences in measurement coefficients of ISEI en SRSEI are statistically significant in all models.

Appendix A: OVERVIEW OF 39 OCCUPATIONAL CLASSES IN SURINAME, ORDERED BY ISCO

ISCO	ISCO-88 titel	N of cases	ISEI	SRSEI
1200.0	**Corporate managers, BUSINESS:** *E.g. managing director, manager casino, director-manager, manager Suralco, department manager, supervisor, head of department, financial director, personnel manager, sales manager, manager of transport, ICT manager, head of security*	57	68.0	66.9
1200.1 **1100**	**Corporate managers; Legislators and senior officers, GOVERNMENT:** *E.g. chairman, head of village, district secretary, diplomat, basja, manager fire department, supervisor / manager government, supervisor EBS, officer NL, head of department / underhead government, personnel manager, schoolprincipal*	92	68.8	63.7
1200.2	**Corporate managers, OWNER:** *E.g. Owner-director large company (>10 staff)*	24	69.4	67.2
1300	**General managers:** *E.g. owner-director/ entrepreneur medium company (2-10 personnel), owner-director / entrepreneur small company (0-1 personnel), shopkeeper, butcher, baker, florist, clothing store, owner restaurant, bar-restaurant-owner, boatowner, garage owner, owner hairsalon, owner driving school*	84	49.5	49.7
2230	**Nursing and midwifery professionals**	35	44.8	47.3
2300 **3300**	**Teaching professionals; Teaching associate professionals** *E.g. lecturers, teachers lower and secondary education;* *E.g. kindergarten teacher, assistant school teacher, driving instructor, course leader computertrainings*	182	64.2	56.4
2320	**Secondary education teaching professionals**	31	69.4	67.1
2400 **2100** **2200**	**Other professionals; Physical, mathematical and engineering science professionals; Life science and health professionals:** *E.g. geologist, surveyor, Suralco consultant, ict consultant, ict-er, mining engineer;* *E.g. forest engineer, medical doctor, medical specialist, dentist, pharmacist, nurse, midwife* *E.g. accountant, lawyer, social scientist, economist, interpreter, research assistant, legal professional, policy officer, social worker, journalist, spiritual leader.*	67	69.3	68.1
3100	**Physical, and engineering science associate professionals:** *E.g. assistant pumping station administrator, civil-technical employee, chemical analist, architectural draftsman, radio operator*	35	53.1	57.2
3200	**Life science and health associate professionals:** *E.g. analyst, laboratory technician, assistent nurse, nurse student*	69	45.3	49.2
3400	**Other associate professionals:** *E.g. insurer, insurance agent, assistent broker, accountant, bookkeeper, customs officer*	88	53.0	56.8
3450	**Police inspectors and detectives** *E.g. environmental police, police-officer, military senior officer*	31	55.8	56.4
4100.0	**Office clerks, BUSINESS:** *E.g. administrative work, office assistant*	128	46.8	51.5
4100.1	**Office clerks, GOVERNMENT:** *E.g. administrative work, office bureau officer*	144	48.2	49.9
4120	**Numerical clerks:**	36	51.0	56.4

	E.g. administration financia department, assistant accountant			
4200	**Customer services clerks:** *E.g. front desk cerk, cashier, bankclerk, cambio clerk*	87	51.2	49.9
5100.0	**Personal and protective services workers, BUSINESS:** *E.g. bus comductor, guide, housekeeping, cook, caregiver for the elderly, caregiver, hairdresser, barber*	117	28.7	34.4
5100.3	**Personal and protective services workers, HUSTLING:** *E.g. cook (on order), cook in foodstand*	31	28.7	28.1
5160.0	**Protective services workers, BUSINESS:** *E.g. bank security, security guar,*	53	40.2	38.6
5160.1	**Protective services workers, GOVERNMENT** *Bv. firefighter, police officer, jailer, security service, bodyguard, school guard*	74	43.7	51.4
5200.0	**Models, salespersons and demonstrators, BUSINESS:** *E.g. salesperson*	142	42.7	35.7
5200.3	**Models, salespersons and demonstrators, HUSTLING** *E.g. food salesperson*	81	40.4	13.4
6100	**Market-oriented, skilled Agricultural and fishery workers:** *E.g. farmer, horticulture, planter, rice farmer, paddy sower, farm breeder, cow breeder, logger, forester, fisherman, hunter*	102	24.3	19.6
6200	**Subsistence Agricultural and fishery workers:** *E.g. subsistence farmer, farmer on own farm*	28	17.7	7.4
7100.0	**Extraction and building trades workers, BUSINESS:** *E.g. house builder, construction worker, bricklayer, carpenter, handyman, tiler, pipe fitter, plumber, painter, sprayer, pest controller*	51	29.7	37.1
7100.3	**Extraction and building trades workers, HUSTLING:** *E.g. huizenbouwer, construction worker, bricklayer, carpenter, handyman, tiler, pipe fitter, plumber, painter, sprayer, pest controller*	68	29.4	31.4
7110	**Minders, shotfirers, stone cutters and carvers:** *E.g. goldminer, drilling*	26	30.0	64.2
7200	**Metal, machinery and related trades workers:** *E.g. welder, benchworker, bridge builder, construction worker, electrician, (car)mechanic, maintenance man, cooling technician, installer*	162	35.1	44.3
7300 7400	**Precision, handicraft, printing and related trades workers; other craft and related trades workers:** *E.g. souvenirmaker, goldsmith, papayamatmaker, printer, fish monger, (chicken)butcher, baker, furniture maker, tailor, fashionist, shoemaker*	76	34.2	22.8
7500	**Skilled workers not further specified** *E.g. foreman*	30	41.9	42.3
8100 8200	**Stationary-plant and related operators; machine operators and assemblers***: E.g. Potroomworker, fieldworker sState oil company, sawmill operator***,** *pump-operator, generator-operator, machine-operator, factory worker, metal worker, assembly*	34	31.9	37.1
8300.0	**Drivers and mobile-plant operators, BUSINESS:** *E.g. bus-driver, taxi-driver, truckdriver, tractor-operator, co-driver, bulldozer-operator, crane-driver, sailor, boatman, motorist*	100	30.6	41.4
8300.3	**Drivers and mobile-plant operators, HUSTLING:** *E.g. bus-driver, taxi-driver, truckdriver, tractor-operator, co-driver, bulldozer-operator, crane-driver, sailor, boatman, motorist*	40	30.9	36.1
9100.0	**Sales and services, elementary occupations, BUSINESS:** *E.g. cleaner, pot washer, rack filler, maid, servant, interior assistant, kitchen asssitant, presser, laundry personnel, concierge, porter, garbage disposal, roadside maintenance, scavenger?*	106	17.1	16.8
9100.1	**Sales and services, elementary occupations, GOVERNMENT:** *E.g. cleaner, pot washer, rack filler, maid, servant, interior assistant, kitchen*	151	17.6	21.5

	assitant, presser, laundry personnel, concierge, porter, garbage disposal, roadside maintenance, scavenger?			
9100.3	**Sales and services, elementary occupations, HUSTLING:** *E.g. "hustler", cleaner, pot washer, rack filler, maid, servant, interior assistant, kitchen assitant, presser, wassery personnel, concierge, porter, garbage disposal, roadside maintenance, scavenger*	92	17.8	13.7
9200.0	**Agricultural, fishery and related labourers, BUSINESS:** *E.g. farm worker, field worker, balata bleeder, banana washer, mower, cane worker cow milker, padi sower, gardener*	67	16.0	18.1
9200.1	**Agricultural, fishery and related labourers, GOVERNMENT:** *E.g. E.g. farm worker, field worker, balata bleeder, banana washer, mower, cane worker cow milker, padi sower, gardener*	44	16.0	22.2
9300	**Labourers in mining, Construction, manufacturing and transport:** *E.g. warehouse worker, contractor, packer, handy man, carrying man, road builder, henchman, itinerant worker.*	63	23.6	22.2

ISCO: two-digit ISCO-88 occupational groups, expanded with digit for contract situation (see text); ISCO-88 title: Formal description ISCO-88 major group, with examples of associated occupations in the SURMOB2012 database; N of Cases: number of occupational practitioners in the SURMOB2012 database; ISEI: scaling by international SEI, averaged over associated occupation; SRSEI: scaling by Surinamese SEI.

Appendix B: *C*orrelations between SRSEI and ISEI measurements of five occupations and two auxiliary variables (with *pairwise* N)

	Reduc	lpink	E3_isei	E3_srsei	E8_isei	E8_srsei	E9Va_isei	E9Va_srsei	E9Ma_isei	E9Ma_srsei	G3_isei	G3_srsei
Correlations												
EDUC	1.000	.426	.560	.567	.343	.373	.344	.345	.423	.444	.366	.377
LNPINK	.426	1.000	.428	.484	.243	.280	.224	.227	.273	.290	.309	.305
E3_isei	.560	.428	1.000	.916	.320	.342	.260	.239	.304	.316	.280	.273
E3_srsei	.567	.484	.916	1.000	.320	.353	.271	.260	.310	.338	.284	.272
E8_isei	.343	.243	.320	.320	1.000	.903	.238	.211	.249	.254	.245	.251
E8_srsei	.373	.280	.342	.353	.903	1.000	.258	.248	.276	.286	.267	.289
E9Va_isei	.344	.224	.260	.271	.238	.258	1.000	.895	.455	.484	.213	.225
E9Va_srsei	.345	.227	.239	.260	.211	.248	.895	1.000	.395	.461	.210	.224
E9Ma_isei	.423	.273	.304	.310	.249	.276	.455	.395	1.000	.927	.242	.221
E9Ma_srsei	.444	.290	.316	.338	.254	.286	.484	.461	.927	1.000	.276	.265
G3_isei	.366	.309	.280	.284	.245	.267	.213	.210	.242	.276	1.000	.904
G3_srsei	.377	.305	.273	.272	.251	.289	.225	.224	.221	.265	.904	1.000
Pairwise N												
EDUC	3918	2906	2918	2783	2130	2007	3006	2841	1785	1572	2187	2084
LNPINK	2906	2915	2587	2479	1719	1625	2259	2137	1386	1226	1596	1524
E3_isei	2918	2587	2928	2793	1775	1683	2312	2194	1375	1218	1635	1565
E3_srsei	2783	2479	2793	2793	1694	1630	2218	2115	1310	1180	1559	1504
E8_isei	2130	1719	1775	1694	2136	2013	1756	1667	1012	898	1319	1257
E8_srsei	2007	1625	1683	1630	2013	2013	1667	1591	956	858	1262	1215
E9Va_isei	3006	2259	2312	2218	1756	1667	3015	2849	1469	1290	1774	1697
E9Va_srsei	2841	2137	2194	2115	1667	1591	2849	2849	1366	1260	1690	1621
E9Ma_isei	1785	1386	1375	1310	1012	956	1469	1366	1793	1579	1003	947
E9Ma_srsei	1572	1226	1218	1180	898	858	1290	1260	1579	1579	883	848
G3_isei	2187	1596	1635	1559	1319	1262	1774	1690	1003	883	2192	2087
G3_srsei	2084	1524	1565	1504	1257	1215	1697	1621	947	848	2087	2087

E3: Current/last occupation respondent. E8: Current/last occupation sibling. E9: occupaton father, occupation mother. G3: Current/last occupation partner. EDUC: education respondent. LNPINK: personal income respondent.