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A new international measure of social stratification

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In this paper we present a new international measure of social stratification, the ICAMS (International Cambridge Scale). Our aim is to bring new evidence to the hypothesis that the construct that underlies measures of social stratification as different as prestige scales, socio-economic indexes, social distance and social status scales is actually unidimensional. We evaluate the new scale according to both criterion-related and construct validity. Our analysis shows that the ICAMS is a valid indicator of social stratification, being almost as valid as International Socio-Economic Index (ISEI) in what we termed the generic, the homogamy and the social mobility models, and being better than ISEI in the cultural consumption model. The second key result is that all continuous measures we consider (ICAMS, ISEI and Standard International Occupational Prestige Scale) are indicators of the same latent dimension, which is unidimensional. This latter result is compatible with more than one explanation, hence calling for further research.

Keywords: social status; socio-economic status; prestige; social distance; occupational status

1. Introduction

Almost a century separates the very first attempts to build a continuous measure of social stratification based on occupation (Counts, 1925; Coutu, 1936) from the more recent measures (Chan, 2010; Chan & Goldthorpe, 2004; De Luca, Meraviglia, & Ganzeboom, 2012).[1] In this time span, the concepts of occupational prestige, socio-economic status and social distance have come to identify three different traditions of social stratification research, each with its supporters. Whether these dimensions are truly different, or they are different specifications of the same underlying construct, is an issue that raised the attention of social stratification scholars as early as the mid-1940s (see e.g. Merton, 1949).

In this paper we present a new international measure of social stratification, the ICAMS (International Cambridge Scale). Our aim is not to increase the already substantial complexity of the field (effectively portrayed by Lambert & Bihagen, 2012), but instead to reduce it: while validating the new scale as a measure of social stratification, we will show that the construct that underlies measures as different as prestige scales, socio-economic indexes (SEIs) and social distance scales is unidimensional, thus reinforcing the conclusions arrived at previously by other authors (see e.g. De Luca et al., 2012; Featherman & Hauser, 1976; Featherman, Jones, & Hauser, 1975; Kahl & Davis, 1955; Kraus, Schild, & Hodge, 1978; Stevens & Featherman, 1981).

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Our aim is not merely empirical, though. By reviewing the relevant literature we show that, by the time the first stratification measures were produced in the 1920s, many relationships existed between the key concepts which today we consider as entirely distinct from one another. We thus intend to bring into light the main lines of development of stratification research in respect to our central question, namely whether social stratification is the single and unique dimension underlying all empirical continuous measures, or rather is a multi-dimensional structure which should be studied using the distinct concepts of social status, prestige, socio-economic status and social distance.

2. The building of social stratification measures: from status to prestige, and back to status

The earliest attempts to build an empirical measure of social stratification were based on social status.[2] Counts (1925) was the first who built a 'prestige or status scale', as Smith (1943, p. 185) describes it; in the next 20 years, 12 scholars followed Count's example.[3] The dominant empirical mode of this period was that of community studies (Coleman, 1986); the samples of both occupations and respondents were rather small;[4] interviews were often conducted without a questionnaire; direct observation of the setting of study was also common. From an empirical standpoint, the results attained by these studies 'stubbornly resist generalization, so rooted are they in local idiosyncrasy' (Hatt, 1950, p. 535); this feature prevented them from becoming a model for studies on a larger, nation-wide scale. From a theoretical standpoint, they are characterised by a high fluidity between the core concepts – a fluidity that presently sounds rather odd: an empirical stratification measure could be said to measure status or prestige (Smith, 1943); status hierarchies were seen as based upon prestige (Hollingshead, 1948; Warner, Meeker, & Eells, 1949; Wheeler, 1949); classes were thought to be prestige communities (MacIver & Page, 1949; Williams, 1951), or status groups (Gordon, 1951), while an occupational scale could serve as an index of social class (Blishen, 1958).

While noting that 'probably no area of sociological interest suffers so much from the disease of overconceptualization', Pfautz (1953, p. 392) recalls the impressive array of terms used in stratification research, listed by Merton;[5] as for how to overcome this disorganised multiplication, Merton (1949/1968) himself invites the researchers to investigate whether the various concepts refer to different dimensions of stratification, and to find out the interrelations among them.

His advice influenced the work of many scholars after the 1940s, when the dominant mode of empirical research turned into survey research (Coleman, 1986). This second period – which lasts until our days – presents some distinctive features. First and most notably, occupation becomes the key indicator of social position. If this comes as a natural choice in the framework of functionalist sociology (see e.g. Parsons, 1940), practical reasons also played a role, given either the relative availability of empirical data on occupation, or the relative easiness of collecting such information in large-scale surveys.[6]

The choice of occupation as the key indicator of social position is accompanied by a conceptual shift: while the early empirical attempts to build continuous measures of social position were based on social status, from the 1940s on the attention goes to prestige. As a consequence, occupational stratification (which follows from the concept of occupational prestige) is preferred over social stratification (which is inherent in the concept of social status).

A second feature of this period is that empirical research was conducted on a much larger scale than previously (see e.g. Smith, 1943). The National Opinion Research Center (NORC) scale is the first study to be truly representative of the modern style of research (North & Hatt, 1947). Its importance also lies in the use that Duncan (1961) made of it. As is well known, Duncan built his SEI in order to overcome a major limitation of the NORC scale, namely that the occupations rated

concerned less than half of the US labour force. Duncan's SEI 'was developed and accepted in large part because, for the first time, it provided an index of the status of all U.S. occupations' (Hauser & Logan, 1992, p. 1692). On a conceptual level, in Duncan's perspective prestige is the concept underlying both the NORC scale and the SEI. However, some years later Featherman et al. (1975) and Featherman and Hauser (1976) invert the concept–indicator relationship, claiming that 'prestige scores are "error-prone" estimates of the socioeconomic attributes of occupations' (Featherman & Hauser, 1976, p. 405), and that 'whatever it is that prestige scores scale … it is substantively different from socioeconomic status' (Featherman & Hauser, 1976).

The last approach to continuous measurement of social stratification we review is that of social distance scales. It was initiated by Laumann (1965, 1966, 1973) and Laumann and Guttman (1966), who argue that the existence of classes can be inferred starting from how people cluster in everyday life. In this perspective, class is not the Weberian grouping of individuals according to their market situation, since it is conceptualised as the confluence of the economic and symbolic dimensions: a class is also a status group in the Weberian sense, capable of expressing itself (also) through *connubium* and commensality (Weber, 1922/1978, p. 306),[7] or through 'associational propensities' (Laumann & Guttman, 1966, p. 170).

This conceptualisation has been adopted by two research streams. The first one is that of the Cambridge group, who built the Cambridge Social Interaction and Stratification Scale (CAMSIS) (Prandy, 1990; Prandy and Lambert, 2003; Stewart, Prandy, & Blackburn, 1973, 1980; for a North American example see Rytina, 1992). The Cambridge group considers the social structure as emerging from the association among a given set of occupations as a stratification order in itself, which cannot be reduced to any of the existing and already explored constructs (prestige or socio-economic status) (Bottero & Prandy, 2003). This emerging social structure has a cultural as well as an economic character, thus obliterating the concept of social class as distinct from that of social status, and merging the two concepts into that of social distance (Bottero & Prandy, 2003).

Following the example of the Cambridge group, recently De Luca et al. (2012) developed a social distance measure for Italy (the CAMSIS-IT) and validated it by comparing the new scale to the International Socio-Economic Index (ISEI; Ganzeboom & Treiman, 1996), the Standard International Occupational Prestige Scale (SIOPS; Treiman, 1977) and the Italian prestige scale (SIDES05; Meraviglia, 2012a) in the framework of a status attainment model. A key finding these authors arrived at is that 'there is no indication of a part of intergenerational status transfer that is unique to one or the other measure' (De Luca et al., 2012, p. 48).

The second approach is that of Chan and Goldthorpe (2004), who follow Laumann (1966; 1973) in building a status scale for Britain. Unlike the Cambridge group, these authors claim that the distinction between class and status is still useful for understanding contemporary society. They conduct several tests for supporting their claim with empirical evidence, either using friendship data (Chan and Goldthorpe 2005, 2007a, 2007b, 2007c), or marriage data, as in the case of Chan (2010), and Chan, Birkelund, Aas and Wiborg (2011), who also extend the domain of research to some European and American countries.

3. Objectives

The logical conclusion of almost a century of empirical enquiry would be that – notwithstanding the fact that the key concepts (prestige, social status, socio-economic status and social distance) have distinct theoretical roots – they are not distinct on the empirical level. Actually the conclusion which De Luca et al. (2012) arrived at is the last of a series of results confirming that the dimension implied by all gradational measures of social position is unitary (Featherman & Hauser, 1976; Featherman et al., 1975; Griffiths & Lambert, 2012; Kahl & Davis, 1955;

Stevens & Featherman, 1981). Hence it might seem unnecessary to proceed further along the path of developing a new continuous measure of social stratification.

Our main rationale in doing so is that no international continuous measure based on either social distance or social status has been built yet. Actually two internationally valid measures of occupational stratification are available, namely the SIOPS (Treiman, 1977) and the ISEI (Ganzeboom & Treiman, 1996). The SIOPS is the first international measure of occupational stratification to be produced, with the aim of fostering comparative research on occupational hierarchies. As its author notes (Treiman, 1977, p. 160), despite the fact that many prestige scales were available at that time, they were incomparable, either because they were built on partial and incomplete data, or because they followed similar but never identical procedures for estimating the prestige scores of given occupations. Treiman built the SIOPS by averaging the prestige scores of about 60 national prestige scales, and anchored these scores to the ISCO-68 occupational titles. He also showed that the SIOPS scores were closely correlated to the original 60 prestige scale scores, thus validating its measure for cross-country comparisons.

Some years later the ISEI followed the SIOPS (Ganzeboom, De Graaf, Treiman, & De Leeuw, 1992), being however based on a different rationale. In fact, the ISEI extends to the international context the work done by Duncan (1961) on his SEI, at the same time giving SEI-like measures a new interpretation. As we saw, Duncan built the SEI in order to assign all occupations in the 1950 Census a prestige score, hence considering the SEI scores as proxy of the prestige scores, while Featherman et al. (1975) and Featherman and Hauser (1976) claimed that the latter were error-prone measures of the socio-economic dimension of occupations. In this vein, Ganzeboom and colleagues drop any reference to prestige and develop their new measure as the indicator of the process that translates educational credentials into income. In other terms, occupation can be seen as an intervening variable between education and income, transferring into the latter the knowledge, skills and abilities acquired through education. The authors use the data coming from the International Stratification and Mobility File (ISMF) (Ganzeboom & Treiman, 1989), relative to gainfully employed males from 31 surveys in 16 countries (Ganzeboom & Treiman, 1996), and validate their index against Treiman's SIOPS, showing that the two scales are similar, as expected of two measures referring to the same construct; however, they are far from identical, thus reinforcing the conclusion that 'prestige is better interpreted as a consequence of the dimensions used to construct occupational socio-economic status measures than as parallel to them' (Ganzeboom et al., 1992, p. 22).

In sum, the SIOPS and the ISEI are two (alternative) internationally valid measures of the hierarchical dimension of stratification, each referring to two different concepts, that is, prestige and socio-economic status. Comparative research has made wide use of both, with a preference for ISEI. However, no equivalent measure based on either social status or social distance has been made available yet. Such a measure is both interesting per se (e.g. as we will see, to study cultural consumption cross-nationally), and as a means to validate the hypothesis concerning the existence of a single dimension underlying all internationally valid measures of stratification. Concerning the latter goal, any test relying only on two measures (namely, SIOPS and ISEI) would not rule out the possibility for a status scale to represent a different dimension of stratification.

Besides reporting on the actual building of the new international measure, our aim is threefold. Firstly, we intend to show the properties of the ICAMS as a stratification measure; secondly, we intend to empirically test whether it is a valid measure of social stratification; thirdly, relying on the empirical test we will set out (multi-trait multi-method (MTMM) factor-analytic models), we want to assess whether the latent dimension underlying all available international measures (ICAMS, ISEI and SIOPS) is unique, hence producing fresh evidence on the dimensionality of the construct underpinning all gradational measures of social stratification.

4. Data and methods

4.1. *Building the ICAMS*

The construction of the ICAMS followed the procedures described for building a CAMSIS scale, according to which a square table of occupational titles (either coming from husbands–wives couples, or from respondents–friends couples)[8] is used for estimating the scale scores. In our case, the latter were estimated using the data on spouses' occupation provided by six cross-section surveys of the International Social Survey Programme (ISSP) from 2001 to 2007.[9]

Not all ISSP countries conducted all the six surveys; hence some countries provide more data than others. Of the total number of cases in the 40 countries considered, we selected those with a valid ISCO-88 code for both the respondent's and his/her spouse's occupation, as found in the deposited data. We used the information provided by both female and male respondents who reported on own and his/her partner's occupation; more precisely, we assigned an occupation to the husbands' group whenever the respondent was male, or he was the spouse of a female respondent, and the same was done for female respondents or partners. This procedure resulted in 109,988 couples, each spouse being assigned to an ISCO-88 occupational title.

Despite this reasonably large sample size, the husbands × wives occupational table was very sparse; hence some under-represented occupational units were grouped to neighbouring ones, whenever this was acceptable from a substantive standpoint.[10] This resulted in a 193 × 193 table of occupational titles, which was the input of the RC-II Goodman's association model (Goodman 1979; Clogg 1982; Hauser, 1984) through which the scale scores were estimated.[11]

Once a scale score for each detailed occupational title (or group of titles) in our 193 × 193 table was estimated, we assigned the same score to the occupational titles we previously grouped. In the case of occupational titles that were not present in the original ISSP data sets, we assigned them the score of a neighbouring and closely related title.[12] This has been done for the sake of completeness, in order to provide a score for each and every occupational title in the ISCO-88. Following the same logic, we also estimated a set of three more association models on a 9 × 9 table (ISCO-88 major groups), a 26 × 26 table (sub-major groups) and a 115 × 115 table (minor groups), hence making the ICAMS usable even in those research instances in which a detailed four-digit ISCO-88 code is not available. The complete list of ISCO-88 occupational titles and the associated ICAMS score are shown in Table A1 in the Appendix.[13]

4.2. *Validating the ICAMS*

Two main approaches are available for testing the validity of the new international measure, namely criterion-related validity and construct validity (Zeller & Carmines, 1980).[14] We evaluate the former by examining the correlations of the ICAMS with the available international measures of social stratification, that is, the ISEI and the SIOPS, while we test construct validity by means of a MTMM model (Saris & Gallhofer, 2014).

The validation of the ICAMS requires a different data basis from the one used for its construction;[15] for this purpose then we use rounds 1–5 of the European Social Survey (ESS), which collects occupational information on respondent and his/her spouse, father and mother. ISCO-88 codes for respondent and spouse are provided by the national teams and are part of the main data.[16] The ISCO-88 codes for fathers and mothers were recently produced by an ESS Developmental Project in the Netherlands and are publicly available from Ganzeboom (2014). Taken together, the ESS data cover over 250,000 respondents in 34 countries. We selected cases between 25 and 64 years of age (i.e. respondents in their prime working age), for which at least one occupation code was available, getting to a final sample of 163,760 observations.

The three scales (ICAMS, ISEI and SIOPS) are gender-insensitive, in that they are applied indifferently to male and female data.[17] In our validation exercise we wanted to empirically test their validity for the two genders separately; hence, we estimated our models on subsamples of female and male data.

All occupations in our analyses were given a three- or four-digit code of ISCO-88, which were translated into ICAMS, ISEI and SIOPS scores using routines made available by Harry B. G. Ganzeboom at http://www.harryganzeboom.nl/isco88/index.htm. For the estimation of the pooled cross-national structural equation models, the data were Z-standardised within countries.[18]

As for the modelling strategy, we analyse the behaviour of the ICAMS in the framework of a factor-analytic structural equation model, which contains four latent constructs (respondent's, spouse's, father's and mother's occupation). Other basic stratification variables are considered, in particular respondent's, spouse's, father's and mother's education, and the household income that respondents and spouses together produce and consume. It is important to note that in our models there are no causal relationships: the interest goes to how well the indicators connect to the latent variables, rather than to the causal structure that links the variables in the model.

The measuring of these indicators is straightforward. We use the three available continuous measures of social position, that is, ICAMS, ISEI and SIOPS, as indicators of each latent occupation, their scores being derived from the ISCO-88 code pertaining to each occupation. Education is measured by the potential duration of each (country-specific) qualification,[19] which ranges from 0 (no formal education) to 23 (PhD), while household income is routinely measured by the ESS by country-specific amounts, which we cross-nationally harmonised.[20]

The idea behind this model is that the behaviour of the various measures of social stratification (namely, ICAMS, ISEI and SIOPS) should not only be studied by looking at the correlations between them (as in criterion-related validity), but also in the context of a nomological network (Carmines & Zeller, 1979; Cronbach & Meehl, 1955), in which the occupational variables are considered in their meaningful relationship with other relevant variables (or, better, constructs) such as education and income.

If we consider our model in the perspective of MTMM models (Saris & Andrews, 1991; Saris & Gallhofer, 2014; Scherpenzeel & Saris, 1997), the three continuous measures (ICAMS, ISEI and SIOPS) are methods that measure the same trait (the occupation of the four incumbents we consider). In Figure 1 we show the basic structure of this factor-analytic model; for the sake of clarity, Figure 1 portrays only two occupations (traits) and two indicators (methods); however, its representation can be easily generalised to *n*-traits and *m*-methods.

Assuming that each occupation has a 'true' score which reflects its positioning along the stratification *continuum*, the coefficients of our interest (namely, the factor loadings *a* and *b* in Figure 1) measure the degree to which each indicator reflects the 'true' position of an occupation (OCC1 in Figure 1) along the *continuum* of stratification. Given the specification of the model, the coefficients *a* and *b* also indicate the amount of information that the different measures share.

The coefficients *d* and *e* denote error terms, and represent the systematic variance that the indicators (i.e. the three scales) share across constructs (i.e. occupations). Our expectation is that these coefficients are irrelevant, since they can be interpreted either as systematic measurement error or bias, or – more problematically – as a sign of systematic deviation from the hypothesis of the three scales being indicators of the same underlying construct.[21] We estimated all coefficients with structural equation modelling, for which we employed LISREL 8.8.

Three different models belonging to the family we described were estimated. In what we called the *generic* model, all four occupations are used, that is, we have four latent constructs

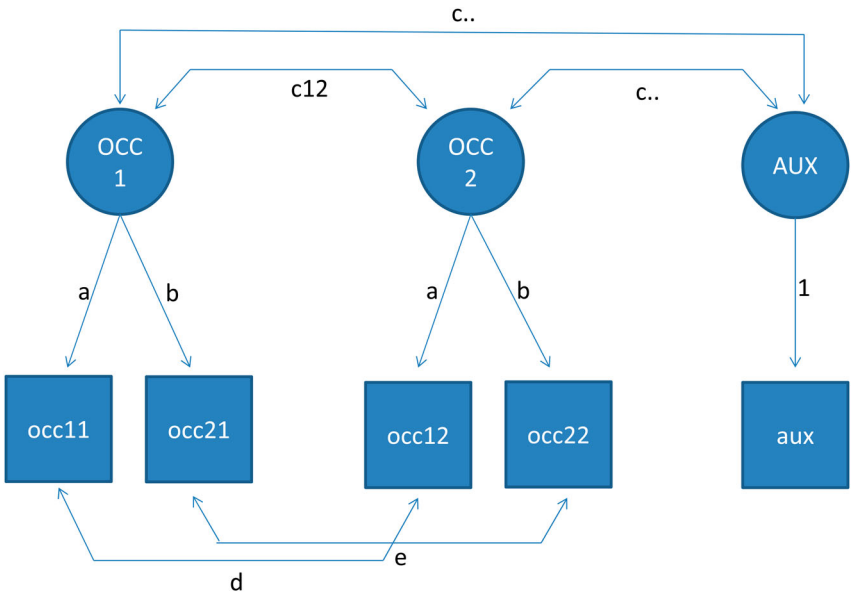

Figure 1. The MTMM validation model.
Note: OCC1, OCC2, Latent constructs; Occ11 … occ22, observed indicators; AUX, aux, auxiliary variables.

referring to the occupations of the respondent's and his/her spouse's, father's and mother's; in the *homogamy* model, only the occupations of the respondent and his/her spouse are used, while in the *social mobility* model we concentrate on the relationship between both parents' occupation and respondent's occupation. This strategy is intended to evaluate construct validity on different grounds, in order to test the stability of our results.

As for fit measures, given the size of our sample (over 160,000 observations), our design is heavily overpowered, hence the usual model evaluation measures through significance testing make no sense. Nonetheless all our models fit the observed data with a Root Mean Square Error of Approximation (RMSEA) below 0.05, which means that the models reproduce fairly well the structure of our data.

Still in the attempt to test the validity of the new scale on many different grounds, we conduct a second validation exercise in the domain of social stratification and culture consumption. We follow Chan and Goldthorpe (2007a), who argued that social status is particularly relevant for the determination of status goods, such as the participation in high culture.

For this second exercise we used the 2007 ISSP module, thus breaching the rule that data used for the building of a scale should preferably not be used for its validation. However, ISSP 2007 provides a unique opportunity to test the Chan-Goldthorpe hypothesis in a large-scale, cross-national framework, since the ISSP 2007 year module was collected in 33 countries worldwide, ranging from Australia to the UK, Chile and Turkey.

After selection on the dependent variable (i.e. culture consumption), prime working age (25–64 years) and the presence of a valid occupation code for respondent or spouse, we obtain a sample of 34,114 observations. Like in the ESS, occupations are coded with ISCO-88. We use both the occupation of respondent and his/her spouse, on the substantial argument that both are associated with culture consumption (which is very much a household activity). On an empirical standpoint, including spouse's occupation allows us to create a MTMM design, as we already did in our previous validation exercise.

Table 1. The indicators of the cultural participation index.

	How often do you …	λ	α
V7	Go to the movies	0.705	0.519
V9	Read books	0.616	0.554
V10	Attend cultural events such as concerts, live theatre and exhibitions	0.695	0.513
V14	Listen to music	0.396	0.626
V18	Spend time on the internet/PC	0.665	0.532
	Overall		0.605

Note: Items standardised within countries using percentile scores. Original answers range between (1) Daily and (5) Never. λ: component loading. α: Cronbach's reliability coefficient (if items deleted).

The ISSP 2007 module contains five indicators of cultural consumption (Table 1), which we summarised in an index. Book reading, going to the movies, attending cultural events and listening to music are obvious and frequently used indicators of culture consumption. To these we added the item on the internet/PC use, as another mode of information processing; it scales consistently with the previous four items and strengthens the reliability of the resulting index. The factor loadings and reliabilities (if item deleted) showed in Table 1 confirm the goodness of this choice. The overall reliability (0.605) is not very high; however, this is not problematic, since it refers to the dependent variable – cultural consumption – in our MTMM model: in fact, random measurement error becomes part of the residual term of the equation and does not affect the relative size of the structural coefficients. Besides the occupation of the spouses, the variables in this model are the cultural participation index, logged household income and respondent's education.[22]

5. Results

The first step in the validation of the ICAMS concerns criterion validity, which we investigated by means of the correlations between the new measure and the existing ones, plus two additional criterion variables (respondent's education and his/her household income). For this task we use the ESS data.

As Table 2 (panel a) shows, ICAMS shows a closer correlation to ISEI than to SIOPS ($r = .90$ and $r = .86$, respectively). Nonetheless both scales appear to be very closely related to ICAMS, with only two clearly identifiable outliers, namely group 1221 (production and operations department managers in agriculture, hunting, forestry and fishing) and group 1227 (production and operations department managers in business services). In both cases, ICAMS assigns to these groups a lower score than either ISEI or SIOPS, meaning that their status is lower when measured on a social status scale[23] than when evaluated on either a prestige or a socio-economic scale.

The new scale also correlates very well with two additional criterion variables, namely respondent's education and household income; actually the correlation coefficient between ICAMS and years of education is the highest ($r = .60$) among the three measures of stratification (for ISEI $r = .58$; for SIOPS, $r = .56$).

An interesting finding is that ICAMS shows higher correlations with the criterion variables in the non-manual range than in the manual one. As we see in Table 2 (panels b and c), the correlation between ICAMS and ISEI for non-manual occupations is 0.76, while it is 0.63 for manual ones; likewise, the correlation between ICAMS and SIOPS drops from 0.77 for non-manual jobs to 0.43 for manual ones. The reason behind this finding can be found in the different standing of some occupational groups. Among the non-manual ones, nursing and midwifery associate

Table 2. Pearson's correlation coefficients between respondent's ICAMS and the criterion variables (ESS rounds 1–5).

	ICAMS	ISEI	SIOPS	Years of education	(Log)Income
(a) All occupations					
ICAMS	1.00				
ISEI	0.90	1.00			
SIOPS	0.86	0.88	1.00		
Years of education	0.60	0.58	0.56	1.00	
(Log)Income	0.32	0.33	0.32	0.31	1.00
(b) Non-manual occupations (ISCO-88 Major Groups 1–4)					
ICAMS	1.00				
ISEI	0.76	1.00			
SIOPS	0.77	0.82	1.00		
Years of education	0.47	0.44	0.45	1.00	
(Log)Income	0.16	0.20	0.20	0.22	1.00
(c) Manual occupations (ISCO-88 Major Groups 5–9)					
ICAMS	1.00				
ISEI	0.63	1.00			
SIOPS	0.43	0.51	1.00		
Years of education	0.24	0.20	0.13	1.00	
(Log)Income	0.12	0.14	0.12	0.16	1.00

professionals and teaching associate professionals (respectively, groups 3200 and 3300 in the ISCO-88) enjoy a higher standing on the ICAMS than on the SIOPS or the ISEI. As a proof that these occupations are (at least partly) responsible for the poor correlation of the criterion variable with the ICAMS, we computed these correlations without groups 3200 and 3300; as we see in Table 3, the correlation coefficients get higher when computed leaving these two groups out.

The opposite is true in the case of some (relatively infrequent) occupations of ISCO-88 group 6100 (charcoal burners, fishery workers, hunters and trappers), which score higher on the ISEI, a bit lower on the SIOPS and still lower on the ICAMS (with an average score of respectively 27.67, 22.47 and 18.64). In this case too we conducted a test by leaving out the occupational group we believe responsible for the low correlation between ICAMS and the criterion variables;

Table 3. Pearson's correlation coefficients between respondent's ICAMS and the criterion variables without some ISCO-88 occupational groups (ESS rounds 1–5).

	ICAMS	ISEI	SIOPS	Years of education	(Log)Income
(a) Non-manual occupations without groups 3200 and 3400					
ICAMS	1.00				
ISEI	0.79	1.00			
SIOPS	0.81	0.84	1.00		
Years of education	0.50	0.48	0.48	1.00	
(Log)Income	0.17	0.19	0.18	0.22	1.00
(b) Manual occupations without occupational units 6142, 6152, 6253, 6154					
ICAMS	1.00				
ISEI	0.63	1.00			
SIOPS	0.47	0.50	1.00		
Years of education	0.28	0.20	0.13	1.00	
(Log)Income	0.13	0.10	0.09	0.14	1.00

panel b of Table 3 shows that some improvement is achieved by excluding four occupational units of ISCO-88 major group 6 (skilled agricultural and fishery workers).

Moving a step forward in the validation of our scale, we now turn to consider the results of the first MTMM design. Table 4 shows the estimated measurement coefficients for the two genders separately and together as for the generic model, the homogamy model and the social mobility model.[24] The correlations between the latent variables with one another and the five auxiliary variables from the general model are also shown – just to convey the fact that these are strong validation criteria (see the Appendix, Table A2).

The results of all three models are highly consistent, showing that ICAMS is almost as valid a measure of the hierarchical dimension of stratification as ISEI. In the case of male data, ISEI is the most valid measure (factor loading of 0.96), followed by ICAMS (0.94) and SIOPS (0.92). In women's case, ISEI also scores better (0.96), while ICAMS and SIOPS are equally valid (factor loadings of, respectively, 0.94, 0.96 and 0.93/0.94).

These coefficients are very high and show that the three measures share a significant amount of information. Nevertheless, they also suggest that any correlation involving occupation would be attenuated by 4% (ISEI), 6% (ICAMS) or 6–8% (SIOPS in women's and men's case, respectively), should one prefer one indicator over another.[25]

Due to the large sample size and the constraints built into the model, the residual correlation for the method effects (coefficients *d* and *e* in Figure 1) are statistically significant, but – as expected – substantively negligible: both in the case of ICAMS and ISEI, they are always below 0.007, and for SIOPS they are 0.013–0.015. These small numbers denote the systematic variance which is not reproduced by the model, hence indicating the unique variance component

Table 4. Parameters of the MTMM factor-analytic validation model on occupations (standardised coefficients, *t*-values and residual correlations) (ESS rounds 1–5, men and women).

	Men $N = 75{,}939$		Women $N = 87{,}748$	
	Measurement loading	Residual correlation	Measurement loading	Residual correlation
Generic model				
ICAMS	0.937	0.007	0.937	0.005
	(579.1)	(33.7)	(629.4)	(31.1)
ISEI	0.959	0.006	0.965	0.007
	(607.5)	(37.0)	(653.1)	(41.6)
SIOPS	0.913	0.015	0.929	0.013
	(549.8)	(63.4)	(603.2)	(61.7)
Homogamy model				
ICAMS	0.946	0.006	0.940	0.008
	(432.8)	(13.2)	(470.8)	(21.0)
ISEI	0.961	0.007	0.964	0.006
	(451.0)	(17.3)	(480.9)	(16.9)
SIOPS	0.917	0.012	0.940	0.013
	(406.7)	(21.8)	(452.9)	(27.5)
Social mobility model				
ICAMS	0.945	0.008	0.928	0.006
	(535.5)	(35.0)	(571.5)	(28.5)
ISEI	0.960	0.006	0.961	0.010
	(567.6)	(31.2)	(589.5)	(47.1)
SIOPS	0.901	0.019	0.935	0.015
	(504.4)	(63.5)	(552.9)	(55.2)

Note: Auxiliary variables in the model: respondent's, spouse's, father's and mother's education, household income. All models fit the data with an RMSEA < 0.034 or lower.

Table 5. Parameters of the MTMM factor-analytic validation model on cultural consumption (standardised coefficients, *t*-values and residual correlations) (ISSP 2007, men and women).

	Men $N = 15{,}368$		Women $N = 18{,}741$	
	Measurement loading	Residual correlation	Measurement loading	Residual correlation
ICAMS	0.999	0.005	0.990	0.000
	(172.8)	(5.6)	(184.7)	(0.1)
ISEI	0.969	0.009	0.941	0.018
	(186.6)	(10.6)	(216.9)	(22.7)
SIOPS	0.907	0.120	0.921	0.016
	(168.9)	(13.8)	(158.8)	(17.7)

Note: Auxiliary variables in the model: cultural participation index, respondent's education, household income. All models fit the data with RMSEA < 0.056 or better.

which would point at the existence of other latent dimensions, apart from that identified by the model. Given their very small (though significant) value, this hypothesis is ruled out.

The second exercise in our validation strategy compares the three scales in the framework of a cultural consumption model. Table 5 shows the results of the MTMM model in which the scales are indicators of the underlying occupational status, as illustrated in Figure 1. Our results show that ICAMS is the most valid measure, when the explanation of cultural consumption behaviour is concerned: the factor loadings for ICAMS are 0.99, in case we consider the two genders either separately or together, while ISEI and SIOPS perform better, respectively, on male and female data. This points at the superiority of the new measure over the existing ones. As in previous models, residual correlations between each measure across occupations (which may mean that the three measures do not refer to the same latent construct) are negligible in size, especially in the case of ICAMS.

In sum, from a substantive standpoint we can say that, in relation to culture consumption, the effect of occupation is best captured by a social status measure like the ICAMS, which confirms the hypothesis formulated by Chan and Goldthorpe (2007a).

6. Conclusion and discussion

The building of continuous measures of social stratification is an exercise which started back in the 1920s. Since then, as we recalled, many measures have been built, leaving the stratification scholar with the puzzle of what exactly they measure (Lambert & Bihagen, 2012), and whether they refer to the same underlying construct (Merton, 1949).

In this paper we intended to address the second issue. Our first step was the building of an international continuous measure of social stratification, the ICAMS, based on the work of Laumann and Guttman (1966) and on that of the Cambridge group (Bottero & Prandy, 2003; Prandy, 1990). Such a measure, we believe, fills a gap in stratification research, which developed over the years an international measure of prestige (SIOPS; Treiman, 1977) and an international measure of socio-economic status (ISEI; Ganzeboom & Treiman, 1996), while leaving the conceptual domain of social distance and social status without internationally valid measures.

Our second step consisted in the validation of the new measure. This step had multiple objectives. Firstly, we intended to show the properties of the ICAMS as a stratification measure; secondly, we wanted to empirically test whether it is a valid measure of social stratification; thirdly, relying on the empirical test we set out (MTMM factor-analytic models), we wanted to assess

whether the latent dimension underlying all available continuous measures (ICAMS, ISEI and SIOPS) was unique.

The answers to these three questions are easily summarised. Firstly, we find that the ICAMS correlates very well with the criterion variables (Table 2, panel a), following the behaviour of the other two already-established international measures, namely ISEI and SIOPS. Secondly, as Tables 4 and 5 show, the ICAMS is a valid indicator of social stratification, being almost as valid as ISEI in what we termed the generic, the homogamy and the social mobility models, and being better than ISEI in the cultural consumption model. Lastly, as these same validation models suggest, there is no indication of multiple dimensions underlying the three measures or, otherwise said and despite the different conceptual underpinnings upon which the various scales rest, the latent construct implied by all of them is unidimensional.

We regard the latter result as particularly noteworthy. On one side, it confirms previous evidence attained by stratification scholars (see Section 2); on the other side, though, it leaves open the first of the two puzzle we mentioned earlier, namely that of what exactly all continuous measures measure.

Actually, the outcome concerning the uniqueness of the latent construct underlying all continuous measures of social position could have at least three meanings. First, on a conceptual level, it could point at the fact that the boundaries between the four conceptual areas, as we described them (prestige, social status, socio-economic status and social distance), are indeed rather blurry, just as they were at the beginning of the empirical endeavours to produce a continuous measure of social position (see Section 2). Second, however, and in line with other recent findings (e.g. Lambert & Bihagen, 2012), it could also point at the weakness of the connection between the theoretical underpinnings and the empirical outcomes of the four research traditions in designing continuous measures of social stratification, since none of the measures we considered shows clear and strong connections with the theory which they are supposed to embody. As a third alternative explanation, all continuous measures of social position could highly correlate to one another because they have been built on the same piece of information, namely occupation, thus resulting in a methodological artefact.

In order to solve this puzzle, further research is needed. The first alternative explanation would imply that the vast body of empirical research produced good evidence that the relevant concepts are less sharply defined than expected. The burden then would be on theory, which should incorporate this evidence and find meaningful and sound connections between the various concepts.[26] The second explanation would entail a thorough check of the relationships between our theories and the way in which they are empirically tested. Finally, the last explanation could be tested by building a measure not directly derived from occupation,[27] also considering that already Hatt (1950) noted that occupation is just one of the many social structures an individual is embedded in. In case the non-occupational measure correlated well with the existing occupation-based ones, then the conclusions concerning the unidimensionality of the latent construct would be confirmed. Otherwise, a new path of research would open for attaining a better understanding of the nature of the available measures of social stratification, and for finding new operational definitions of the hierarchical dimension of social stratification.

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Notes

1. We intentionally leave social class out of this picture, since we consider a logical priority to examine whether all continuous measures of social stratification index the same latent construct, and only afterwards to consider whether this single construct is empirically distinct from measures of social class.
2. Hall and Caradog Jones (1950) recall that Stevenson built the first occupational classification based on prestige for the 1911 Census in England and Wales; however, it was more a class scheme than an occupational hierarchy as we know it nowadays (I. *Upper and middle class*; II. *Intermediate*; III. *Skilled workmen*; IV. *Intermediate*; V. *Unskilled workmen*).
3. See Davis (1927), Anderson (1927, 1934), Wilkinson (1929), Lehman and Witty (1931), Neitz (1935), Hall (1938).
4. Two exceptions to this rule are the study of Lehman and Witty (1931), whose sample of 26,878 students stands out, and of Smith (1943), who asked its respondents to rate a hundred occupations.
5. The list comprises

> status, rank, situs, socio-economic status, locum, stratum, station, standing (for naming a generic social position); upper-, middle-, lower-class, parvenu, arrivés, declassés, aristocracy (for specific social positions); prestige-hierarchy, economic-, political-, social-hierarchy (for stratification structures); wealth, power, prestige, achievement, ascription, style of life, status honor, authority (for attributes of positions); the exercising of power, control, influence, exclusion, domination, subordination, discrimination, coercion, manipulation (for the operation of the position). (Merton, 1949/1968, p. 472)

6. Some authors take a rather cautious stance; for example, Hatt agrees that occupation can be an 'index of [social] position … in spite of its inability to describe in detail the relevant areas of esteem and multi-structural position' (1950, p. 534).
7. Actually Weber himself did not draw as sharp boundaries between class and status groups as we may think: 'status *may* rest on class position of a distinct or ambiguous kind. However, it is not solely determined by it … Conversely, status may influence, if not completely determine, a class position without being identical with it' (Weber, 1922/1978, p. 306).
8. Some controversy has been raised about the type of data used for building social distance or social status scales, as for whether they come from data concerning friends, or the spouse. In our view, the solution to the controversy comes from going back to Weber's definition of status, which he portrays as entailing restrictions on the pattern of social intercourses as part of the style of life that defines a status group. Weber explicitly mentions two of these patterns, that is, conviviality and *connubium*, the first referring to the type of persons we eat with, and the second referring to the choice of a partner (Weber 1922/1978, p. 306). As a consequence, it seems that either considering friendship or conjugal association patterns, and as long as these patterns are both governed by status considerations, as Weber suggests, we ought to get the same (or a closely matching) picture.
9. Details of the procedure for the estimation of the scale scores can be found at the following web address: http://www.camsis.stir.ac.uk/overview.html. The original ISSP data files are available from Gesis (www.gesis.org) through the Zacat platform (http://zacat.gesis.org/webview/index.jsp?object=http://zacat.gesis.org/obj/fStudy/ZA3680).
10. For example, furriers and related workers (code 7434) had 3 cases for husbands and 17 for wives, and were joined to textile, leather and related pattern-makers and cutters (code 7435).
11. In our RC-II models, estimated through the software lEM (Vermunt, 1997), row and column scores were constrained to be equal. On a substantive ground, this means that it makes no difference whether it is a man or a woman who holds an occupation.
12. For example, charcoal burners and related workers (code 6142) were not present in the original data set; hence they were given the score of 26.16, which has been estimated for the neighbouring group of forestry workers and loggers (code 6141).
13. The Spss syntax for attributing the ICAMS scores to the ISCO-88 codes is available at the following address: http://www.camsis.stir.ac.uk/versions.html.
14. A third type of validity considered by Zeller and Carmines is content validity, that is, 'the extent to which a set of items taps the content of some domain of interest' (1980, p. 78). However, the authors note that 'there is no agreed-upon criteria for establishing whether, in fact, a measure has attained content validity' (1980, p. 79).

15. Were we to use the same data set on which the scale was built, a good or better performance of the ICAMS against the ISEI and the SIOPS could indeed be due to overfitting to the data used for building it, thus undermining any conclusion.
16. ISCO-88 is the International Standard Classification of Occupations 1988 (ILO, 1990).
17. Actually, the ISEI is estimated on male data, while the SIOPS is built on evaluation of occupational titles; hence only the SIOPS is truly independent from gender, as far as the evaluation of female-segregated occupations does not influence the rater's judgment.
18. Standardisation ensures that all coefficients refer to the same metric and are comparable to one another; within-country standardisation removes potential confounding effects of marginal distributions on coefficients in a pooled analysis (i.e. insofar as these are captured by means and standard deviations).
19. We prefer this measure over the International Standard Level of Education (ISLED), recently developed by Schröder and Ganzeboom (2014) and Schröder (2014), as the ISLED was developed on these same ESS data we use here. Nonetheless, our duration metric is strongly associated with ISLED ($r = 0.94$).
20. We used the following transformation: $\ln(HHinc) = ln(HHinc/mean_{ij}(HHinc))$, in which *HHinc* is the income variable in its original country-specific unit, and $mean_{ij}(HHinc)$ is its mean for country i and round j. Hence ln(*HHinc*) measures the log-scale deviation of each income amount from its country-by-round specific mean.
21. The coefficients *c12* and *c..* measure the true score correlation between the two latent occupations and the auxiliary variables; however, they are not under our focus here. We report on a highly constrained version of the model, in which all coefficients of the type *a* and *b* are constrained between occupations and all coefficients of the type *d* and *e* are constrained between scales. The model as displayed in Figure 1 is not identified all by itself, when restricted to two occupations with two indicators. However, it becomes identified if we include more covariates, either in the form of more occupations or in the form of auxiliary variables. We can then estimate the model either by alternating two indicators for each occupation at a time, or taking all three indicators simultaneously into account. We can also vary the estimation of the model by the subset of occupations involved.
22. In this analysis we complement the educational duration measure with an indicator of educational qualification, as measured by the variable *degree* in the ISSP 2007 original data file.
23. For reasons we gave elsewhere (see De Luca et al., 2012), we interpret the ICAMS as a status scale, while CAMSIS-like scales are usually interpreted as social distance scales (see for example Bottero & Prandy, 2003). In light of the results of our previous work, and of those we are going to present in this paper, the sharp distinction between the four conceptual areas we described in Section 2 (social status, prestige, social distance and socio-economic status) loses most of its relevance (see the Conclusion section in this paper).
24. All coefficients come from a model with three simultaneous indicators for the occupations, but the results would not be appreciably different, had the indicators been used on a pairwise basis.
25. We also note that, when two occupations are involved, these attenuations cumulate. For example, in men's case, the correlation between respondent's and spouse's occupation would drop from $0.41*0.96*0.96 = 0.38$ in the case of ISEI, to $0.41*0.94*0.94 = 0.36$ in the case of ICAMS, to $0.41*0.92*0.92 = 0.35$ in that of SIOPS.
26. An attempt in this direction is that of Meraviglia (2012b).
27. As an example, see the scale built by Chapin (1933), cited in Guttman (1942, p. 362).

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Appendix

Table A1. The ICAMS scores for the ISCO-88 occupational titles.

ISCO-88 code	ISCO-88 label	ICAMS score
1000	**MAJOR GROUP 1 LEGISLATORS, SENIOR OFFICIALS AND MANAGERS**	**65.07**
1100	LEGISLATORS AND SENIOR OFFICIALS	69.02
1110	LEGISLATORS	
1110	Legislators	70.82
1120	SENIOR GOVERNMENT OFFICIALS	
1120	Senior government officials	70.84
1130	TRADITIONAL CHIEFS AND HEADS OF VILLAGES	
1130	Traditional chiefs and heads of villages	49.86
1140	SENIOR OFFICIALS OF SPECIAL-INTEREST ORGANISATIONS	64.05
1141	Senior officials of political-party organisations	64.05
1142	Senior officials of employers', workers' and other economic-interest organisations	64.05
1143	Senior officials of humanitarian and other special-interest organisations	64.05
1200	CORPORATE MANAGERS	67.59
1210	DIRECTORS AND CHIEF EXECUTIVES	
1210	Directors and chief executives	66.87
1220	PRODUCTION AND OPERATIONS DEPARTMENT MANAGERS	62.86
1221	Production and operations department managers in agriculture, hunting, forestry and fishing	60.13
1222	Production and operations department managers in manufacturing	60.13
1223	Production and operations department managers in construction	60.13
1224	Production and operations department managers in wholesale and retail trade	58.52
1225	Production and operations department managers in restaurants and hotels	58.52
1226	Production and operations department managers in transport, storage and communications	58.52
1227	Production and operations department managers in business services	58.52
1228	Production and operations department managers in personal care, cleaning and related services	60.54
1229	Production and operations department managers not elsewhere classified	60.13
1230	OTHER DEPARTMENT MANAGERS	69.14
1231	Finance and administration department managers	67.11
1232	Personnel and industrial relations department managers	67.11
1233	Sales and marketing department managers	67.11
1234	Advertising and public relations department managers	67.11
1235	Supply and distribution department managers	67.11
1236	Computing services department managers	67.11
1237	Research and development department managers	76.04
1239	Other department managers not elsewhere classified	67.11
1300	GENERAL MANAGER	57.81
1310	GENERAL MANAGERS	57.27
1311	General managers in agriculture, hunting, forestry/ and fishing	41.55
1312	General managers in manufacturing	54.51
1313	General managers in construction	56.18
1314	General managers in wholesale and retail trade	56.18
1315	General managers of restaurants and hotels	56.18
1316	General managers in transport, storage and communications	54.51
1317	General managers of business services	56.18
1318	General managers in personal care, cleaning and related services	54.51
1319	General managers not elsewhere classified	56.18

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
2000	**MAJOR GROUP 2 PROFESSIONALS**	**70.89**
2100	PHYSICAL, MATHEMATICAL AND ENGINEERING SCIENCE PROFESSIONALS	75.42
2110	PHYSICISTS, CHEMISTS AND RELATED PROFESSIONALS	81.92
2111	Physicists and astronomers	80.22
2112	Meteorologists	80.22
2113	Chemists	80.22
2114	Geologists and geophysicists	80.22
2120	MATHEMATICIANS, STATISTICIANS AND RELATED PROFESSIONALS	85.27
2121	Mathematicians and related professionals	85.27
2122	Statisticians	85.27
2130	COMPUTING PROFESSIONALS	75.15
2131	Computer systems designers and analysts	75.39
2132	Computer programmers	72.17
2139	Computing professionals not elsewhere classified	75.39
2140	ARCHITECTS, ENGINEERS AND RELATED PROFESSIONALS	73.00
2141	Architects, town and traffic planners	73.00
2142	Civil engineers	73.00
2143	Electrical engineers	73.00
2144	Electronics and telecommunications engineers	73.00
2145	Mechanical engineers	73.00
2146	Chemical engineers	73.00
2147	Mining engineers, metallurgists and related professionals	73.00
2148	Cartographers and surveyors	73.00
2149	Architects, engineers and related professionals not elsewhere classified	73.00
2200	LIFE SCIENCE AND HEALTH PROFESSIONALS	70.25
2210	LIFE SCIENCE PROFESSIONALS	68.98
2211	Biologists, botanists, zoologists and related professionals	68.98
2212	Pharmacologists, pathologists and related professionals	68.98
2213	Agronomists and related professionals	68.98
2220	HEALTH PROFESSIONALS (except nursing)	78.57
2221	Medical doctors	78.57
2222	Dentists	78.57
2223	Veterinarians	78.57
2224	Pharmacists	78.57
2229	Health professionals (except nursing) not elsewhere classified	78.57
2230	NURSING AND MIDWIFERY PROFESSIONALS	63.21
2230	Nursing and midwifery professionals	
2300	TEACHING PROFESSIONALS	69.75
2310	COLLEGE, UNIVERSITY AND HIGHER EDUCATION TEACHING PROFESSIONALS	
2310	College, university and higher education teaching professionals	82.71
2320	SECONDARY EDUCATION TEACHING PROFESSIONALS	
2320	Secondary education teaching professionals	71.89
2330	PRIMARY AND PREPRIMARY EDUCATION TEACHING PROFESSIONALS	63.79
2331	Primary education teaching professionals	63.79
2332	Preprimary education teaching professionals	63.79
2340	SPECIAL EDUCATION TEACHING PROFESSIONALS	
2340	Special education teaching professionals	73.49
2350	OTHER TEACHING PROFESSIONALS	68.47
2351	Education methods specialists	68.47

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
2352	School inspectors	68.47
2359	Other teaching professionals not elsewhere classified	68.47
2400	OTHER PROFESSIONALS	74.02
2410	BUSINESS PROFESSIONALS	68.40
2411	Accountants	68.40
2412	Personnel and careers professionals	68.40
2419	Business professionals not elsewhere classified	68.40
2420	LEGAL PROFESSIONALS	80.43
2421	Lawyers	80.43
2422	Judges	80.43
2429	Legal professionals not elsewhere classified	80.43
2430	ARCHIVISTS, LIBRARIANS AND RELATED INFORMATION PROFESSIONALS	72.95
2431	Archivists and curators	72.95
2432	Librarians and related information professionals	72.95
2440	SOCIAL SCIENCE AND RELATED PROFESSIONALS	76.83
2441	Economists	76.83
2442	Sociologists, anthropologists and related professionals	76.83
2443	Philosophers, historians and political scientists	76.83
2444	Philologists, translators and interpreters	76.83
2445	Psychologists	76.83
2446	Social work professionals	76.83
2450	WRITERS AND CREATIVE OR PERFORMING ARTISTS	77.15
2451	Authors, journalists and other writers	80.08
2452	Sculptors, painters and related artists	73.32
2453	Composers, musicians and singers	73.32
2454	Choreographers and dancers	73.32
2455	Film, stage and related actors and directors	73.32
2460	RELIGIOUS PROFESSIONALS	73.02
2460	Religious professionals	
3000	**MAJOR GROUP 3 TECHNICIANS AND ASSOCIATE PROFESSIONALS**	**61.26**
3100	PHYSICAL AND ENGINEERING SCIENCE ASSOCIATE PROFESSIONALS	56.68
3110	PHYSICAL AND ENGINEERING SCIENCE TECHNICIANS	54.25
3111	Chemical and physical science technicians	53.17
3112	Civil engineering technicians	53.53
3113	Electrical engineering technicians	53.17
3114	Electronics and telecommunications engineering technicians	53.17
3115	Mechanical engineering technicians	53.53
3116	Chemical engineering technicians	53.17
3117	Mining and metallurgical technicians	53.17
3118	Draughtspersons	53.17
3119	Physical and engineering science technicians not elsewhere classified	53.17
3120	COMPUTER ASSOCIATE PROFESSIONALS	63.23
3121	Computer assistants	63.01
3122	Computer equipment operators	63.01
3123	Industrial robot controllers	63.01
3130	OPTICAL AND ELECTRONIC EQUIPMENT OPERATORS	61.73
3131	Photographers and image and sound recording equipment operators	61.73
3132	Broadcasting and telecommunications equipment operators	61.73
3133	Medical equipment operators	61.73

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
3139	Optical and electronic equipment operators not elsewhere classified	61.73
3140	SHIP AND AIRCRAFT CONTROLLERS AND TECHNICIANS	56.89
3141	Ships' engineers	56.89
3142	Ships' deck officers and pilots	56.89
3143	Aircraft pilots and related associate professionals	56.89
3144	Air traffic controllers	56.89
3145	Air traffic safety technicians	56.89
3150	SAFETY AND QUALITY INSPECTORS	50.50
3151	Building and fire inspectors	50.50
3152	Safety, health and quality inspectors	50.50
3200	LIFE SCIENCE AND HEALTH ASSOCIATE PROFESSIONALS	59.23
3210	LIFE SCIENCE TECHNICIANS AND RELATED ASSOCIATE PROFESSIONALS	56.58
3211	Life science technicians	56.58
3212	Agronomy and forestry technicians	56.58
3213	Farming and forestry advisers	56.58
3220	MODERN HEALTH ASSOCIATE PROFESSIONALS (except nursing)	68.70
3221	Medical assistants	60.63
3222	Sanitarians	58.95
3223	Dieticians and nutritionists	58.95
3224	Optometrists and opticians	58.95
3225	Dental assistants	58.95
3226	Physiotherapists and related associate professionals	60.63
3227	Veterinary assistants	58.95
3228	Pharmaceutical assistants	58.95
3229	Modern health associate professionals (except nursing) not elsewhere classified	60.63
3230	NURSING AND MIDWIFERY ASSOCIATE PROFESSIONALS	58.79
3231	Nursing associate professionals	58.79
3232	Midwifery associate professionals	58.79
3240	TRADITIONAL MEDICINE PRACTITIONERS AND FAITH HEALERS	48.10
3241	Traditional medicine practitioners	48.10
3242	Faith healers	48.10
3300	TEACHING ASSOCIATE PROFESSIONALS	62.76
3310	PRIMARY EDUCATION TEACHING ASSOCIATE PROFESSIONALS	
3310	Primary education teaching associate professionals	66.16
3320	PREPRIMARY EDUCATION TEACHING ASSOCIATE PROFESSIONALS	
3320	Preprimary education teaching associate professionals	57.73
3330	SPECIAL EDUCATION TEACHING ASSOCIATE PROFESSIONALS	
3330	Special education teaching associate professionals	66.05
3340	OTHER TEACHING ASSOCIATE PROFESSIONALS	
3340	Other teaching associate professionals	64.70
3400	OTHER ASSOCIATE PROFESSIONALS	60.89
3410	FINANCE AND SALES ASSOCIATE PROFESSIONALS	60.99
3411	Securities and finance dealers and brokers	59.95
3412	Insurance representatives	59.95
3413	Estate agents	59.95
3414	Travel consultants and organisers	59.95
3415	Technical and commercial sales representatives	59.95
3416	Buyers	54.30
3417	Appraisers, valuers and auctioneers	59.95
3419	Finance and sales associate professionals not elsewhere classified	54.30

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
3420	BUSINESS SERVICES AGENTS AND TRADE BROKERS	60.84
3421	Trade brokers	60.84
3422	Clearing and forwarding agents	60.84
3423	Employment agents and labour contractors	60.84
3429	Business services agents and trade brokers not elsewhere classified	60.84
3430	ADMINISTRATIVE ASSOCIATE PROFESSIONALS	59.99
3431	Administrative secretaries and related associate professionals	58.22
3432	Legal and related business associate professionals	60.33
3433	Bookkeepers	58.22
3434	Statistical, mathematical and related associate professionals	60.33
3439	Administrative associate professionals not elsewhere classified	58.22
3440	CUSTOMS, TAX AND RELATED GOVERNMENT ASSOCIATE PROFESSIONALS	61.24
3441	Customs and architect border inspectors	57.79
3442	Government tax and excise officials	57.79
3443	Government social benefits officials	57.79
3444	Government licensing officials	57.79
3449	Customs, tax and related government associate professionals not elsewhere classified	55.23
3450	POLICE INSPECTORS AND DETECTIVES	
3450	Police inspectors and detectives	53.56
3460	SOCIAL WORK ASSOCIATE PROFESSIONALS	
3460	Social work associate professionals	61.32
3470	ARTISTIC, ENTERTAINMENT AND SPORTS ASSOCIATE PROFESSIONALS	63.04
3471	Decorators and commercial designers	67.45
3472	Radio, television and other announcers	61.96
3473	Street, night-club and related musicians, singers and dancers	61.96
3474	Clowns, magicians, acrobats and related associate professionals	61.96
3475	Athletes, sportspersons and related associate professionals	61.96
3480	RELIGIOUS ASSOCIATE PROFESSIONALS	
3480	Religious associate professionals	64.85
4000	**MAJOR GROUP 4 CLERKS**	**55.54**
4100	OFFICE CLERKS	55.33
4110	SECRETARIES AND KEYBOARD-OPERATING CLERKS	59.26
4111	Stenographers and typists	59.26
4112	Word-processor and related operators	59.26
4113	Data entry operators	59.26
4114	Calculating-machine operators	59.26
4115	Secretaries	59.26
4120	NUMERICAL CLERKS	56.87
4121	Accounting and bookkeeping clerks	55.80
4122	Statistical and finance clerks	55.80
4130	MATERIAL-RECORDING AND TRANSPORT CLERKS	44.97
4131	Stock clerks	44.97
4132	Production clerks	44.97
4133	Transport clerks	44.97
4140	LIBRARY, MAIL AND RELATED CLERKS	48.77
4141	Library and filing clerks	48.77
4142	Mail carriers and sorting clerks	48.77
4143	Coding, proof-reading and related clerks	48.77
4144	Scribes and related workers	48.77
4190	OTHER OFFICE CLERKS	

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
4190	Other office clerks	56.27
4200	CUSTOMER SERVICES CLERKS	52.33
4210	CASHIERS, TELLERS AND RELATED CLERKS	50.16
4211	Cashiers and ticket clerks	50.16
4212	Tellers and other counter clerks	50.16
4213	Bookmakers and croupiers	50.16
4214	Pawnbrokers and money-lenders	50.16
4215	Debt-collectors and related workers	50.16
4220	CLIENT INFORMATION CLERKS	54.96
4221	Travel agency and related clerks	54.96
4222	Receptionists and information clerks	54.96
4223	Telephone switchboard operators	54.96
5000	**MAJOR GROUP 5 SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS**	**43.65**
5100	PERSONAL AND PROTECTIVE SERVICES WORKERS	43.44
5110	TRAVEL ATTENDANTS AND RELATED WORKERS	51.45
5111	Travel attendants and travel stewards	51.45
5112	Transport conductors	51.45
5113	Travel guides	51.45
5120	HOUSEKEEPING AND RESTAURANT SERVICES WORKERS	38.29
5121	Housekeepers and related workers	38.29
5122	Cooks	38.29
5123	Waiters, waitresses and bartenders	38.29
5130	PERSONAL CARE AND RELATED WORKERS	45.77
5131	Child-care workers	45.77
5132	Institution-based personal care workers	45.77
5133	Home-based personal care workers	45.77
5139	Personal care and related workers not elsewhere classified	45.77
5140	OTHER PERSONAL SERVICES WORKERS	46.24
5141	Hairdressers, barbers, beauticians and related workers	46.16
5142	Companions and valets	25.51
5143	Undertakers and embalmers	43.35
5149	Other personal services workers not elsewhere classified	43.35
5150	ASTROLOGERS, FORTUNE-TELLERS AND RELATED WORKERS	33.43
5151	Astrologers and related workers	33.43
5152	Fortune-tellers, palmists and related workers	33.43
5160	PROTECTIVE SERVICES WORKERS	45.99
5161	Fire-fighters	44.73
5162	Police officers	44.73
5163	Prison guards	44.73
5169	Protective services workers not elsewhere classified	44.73
5200	MODELS, SALESPERSONS AND DEMONSTRATORS	44.41
5210	FASHION AND OTHER MODELS	
5210	Fashion and other models	49.36
5220	SHOP SALESPERSONS AND DEMONSTRATORS	
5220	Shop salespersons and demonstrators	45.26
5230	STALL AND MARKET SALESPERSONS	
5230	Stall and market salespersons	35.48
6000	**MAJOR GROUP 6 SKILLED AGRICULTURAL AND FISHERY WORKERS**	**36.49**
6100	MARKET-ORIENTED SKILLED AGRICULTURAL AND FISHERY WORKERS	38.31
6110	MARKET GARDENERS AND CROP GROWERS	38.20

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
6111	Field crop and vegetable growers	32.13
6112	Tree and shrub crop growers	36.35
6113	Gardeners, horticultural and nursery growers	36.35
6114	Mixed-crop growers	33.15
6120	MARKET-ORIENTED ANIMAL PRODUCERS AND RELATED WORKERS	42.35
6121	Dairy and livestock producers	42.17
6122	Poultry producers	42.17
6123	Apiarists and sericulturists	42.17
6124	Mixed-animal producers	42.17
6129	Market-oriented animal producers and related workers not elsewhere classified	42.17
6130	MARKET-ORIENTED CROP AND ANIMAL PRODUCERS	
6130	Market-oriented crop and animal producers	41.55
6140	FORESTRY AND RELATED WORKERS	30.08
6141	Forestry workers and loggers	26.19
6142	Charcoal burners and related workers	26.19
6150	FISHERY WORKERS, HUNTERS AND TRAPPERS	21.98
6151	Aquatic-life cultivation workers	33.33
6152	Inland and coastal waters fishery/ workers	19.64
6153	Deep-sea fishery workers	19.64
6154	Hunters and trappers	19.64
6200	SUBSISTENCE AGRICULTURAL AND FISHERY WORKERS	13.19
6210	SUBSISTENCE AGRICULTURAL AND FISHERY WORKERS	
6210	Subsistence agricultural and fishery/ workers	13.19
7000	**MAJOR GROUP 7 CRAFT AND RELATED TRADES WORKERS**	**34.89**
7100	EXTRACTION AND BUILDING TRADES WORKERS	32.92
7110	MINERS, SHOTFIRERS, STONE CUTTERS AND CARVERS	29.42
7111	Miners and quarry workers	26.39
7112	Shotfirers and blasters	26.39
7113	Stone splitters, cutters and carvers	26.39
7120	BUILDING FRAME AND RELATED TRADES WORKERS	31.41
7121	Builders, traditional materials	30.68
7122	Bricklayers and stonemasons	30.68
7123	Concrete placers, concrete finishers and related workers	26.14
7124	Carpenters and joiners	30.68
7129	Building frame and related trades workers not elsewhere classified	30.68
7130	BUILDING FINISHERS AND RELATED TRADES WORKERS	39.00
7131	Roofers	39.00
7132	Floor layers and tile setters	39.00
7133	Plasterers	39.00
7134	Insulation workers	39.00
7135	Glaziers	39.00
7136	Plumbers and pipe fitters	39.00
7137	Building and related electricians	39.00
7140	PAINTERS, BUILDING STRUCTURE CLEANERS AND RELATED TRADES WORKERS	32.95
7141	Painters and related workers	32.24
7142	Varnishers and related painters	32.94
7143	Building structure cleaners	32.94
7200	METAL, MACHINERY AND RELATED TRADES WORKERS	37.97

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
7210	METAL MOULDERS, WELDERS, SHEET-METAL WORKERS, STRUCTURAL- METAL PREPARERS, AND RELATED TRADES WORKERS	33.30
7211	Metal moulders and coremakers	33.30
7212	Welders and flamecutters	33.30
7213	Sheet metal workers	33.30
7214	Structural-metal preparers and erectors	33.30
7215	Riggers and cable splicers	33.30
7216	Underwater workers	35.65
7220	BLACKSMITHS, TOOL-MAKERS AND RELATED TRADES WORKERS	35.65
7221	Blacksmiths, hammer-smiths and forging-press workers	35.65
7222	Tool-makers and related workers	35.65
7223	Machine-tool setters and setter-operators	35.65
7224	Metal wheel-grinders, polishers and tool sharpeners	35.65
7230	MACHINERY MECHANICS AND FITTERS	39.82
7231	Motor vehicle mechanics and fitters	39.43
7232	Aircraft engine mechanics and fitters	50.81
7233	Agricultural- or industrial-machinery mechanics and fitters	35.44
7240	ELECTRICAL AND ELECTRONIC EQUIPMENT MECHANICS AND FITTERS	43.57
7241	Electrical mechanics and fitters	42.58
7242	Electronics fitters	42.58
7243	Electronics mechanics and servicers	46.59
7244	Telegraph and telephone installers and servicers	42.58
7245	Electrical line installers, repairers and cable jointers	42.58
7300	PRECISION, HANDICRAFT, PRINTING AND RELATED TRADES WORKERS	43.86
7310	PRECISION WORKERS IN METAL AND RELATED MATERIALS	46.82
7311	Precision-instrument makers and repairers	45.98
7312	Musical instrument makers and tuners	45.98
7313	Jewellery and precious-metal workers	45.98
7320	POTTERS, GLASS-MAKERS AND RELATED TRADES WORKERS	32.12
7321	Abrasive wheel formers, potters and related workers	32.12
7322	Glass makers, cutters, grinders and finishers	32.12
7323	Glass engravers and etchers	32.12
7324	Glass, ceramics and related decorative painters	32.12
7330	HANDICRAFT WORKERS IN WOOD,TEXTILE, LEATHER AND RELATED MATERIALS	39.72
7331	Handicraft workers in wood and related materials	38.27
7332	Handicraft workers in textile, leather and related materials	38.27
7340	PRINTING AND RELATED TRADES WORKERS	47.39
7341	Compositors, typesetters and related workers	47.39
7342	Stereotypers and electrotypers	47.39
7343	Printing engravers and etchers	47.39
7344	Photographic and related workers	47.39
7345	Bookbinders and related workers	47.39
7346	Silk-screen, block and textile printers	47.39
7400	OTHER CRAFT AND RELATED TRADES WORKERS	32.57
7410	FOOD PROCESSING AND RELATED TRADES WORKERS	31.22
7411	Butchers, fishmongers and related food preparers	28.43
7412	Bakers, pastry-cooks and confectionery makers	31.36
7413	Dairy-products makers	31.36
7414	Fruit, vegetable and related preservers	28.43

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
7415	Food and beverage tasters and graders	28.43
7416	Tobacco preparers and tobacco products makers	28.43
7420	WOOD TREATERS, CABINET-MAKERS AND RELATED TRADES WORKERS	34.59
7421	Wood treaters	28.25
7422	Cabinet makers and related workers	35.48
7423	Woodworking machine setters and setter-operators	28.25
7424	Basketry weavers, brush makers and related workers	34.59
7430	TEXTILE, GARMENT AND RELATED TRADES WORKERS	34.28
7431	Fibre preparers	31.58
7432	Weavers, knitters and related workers	31.58
7433	Tailors, dressmakers and hatters	31.58
7434	Furriers and related workers	34.44
7435	Textile, leather and related pattern-makers and cutters	34.44
7436	Sewers, embroiderers and related workers	31.58
7437	Upholsterers and related workers	31.58
7440	PELT, LEATHER AND SHOEMAKING TRADES WORKERS	25.96
7441	Pelt dressers, tanners and fellmongers	22.20
7442	Shoe-makers and related workers and related workers	25.30
8000	**MAJOR GROUP 8 PLANT AND MACHINE OPERATORS AND ASSEMBLERS**	**32.80**
8100	STATIONARY-PLANT AND RELATED OPERATORS	33.31
8110	MINING- AND MINERAL-PROCESSING PLANT OPERATORS	36.94
8111	Mining-plant operators	32.92
8112	Mineral-ore- and stone-processing-plan operators	36.75
8113	Well drillers and borers and related workers	36.75
8120	METAL-PROCESSING-PLANT OPERATORS	27.00
8121	Ore and metal furnace operators	27.00
8122	Metal melters, casters and rolling-mill operators	27.00
8123	Metal-heat-treating-plant operators	27.00
8124	Metal drawers and extruders	27.00
8130	GLASS, CERAMICS AND RELATED PLANT OPERATORS	25.76
8131	Glass and ceramics kiln and related machine operators	25.76
8139	Glass, ceramics and related plant operators not elsewhere classified	25.76
8140	WOOD-PROCESSING- AND PAPERMAKING-PLANT OPERATORS	31.66
8141	Wood-processing-plant operators	31.66
8142	Paper-pulp plant operators	31.66
8143	Papermaking-plant operators	31.66
8150	CHEMICAL-PROCESSING-PLANT OPERATORS	37.27
8151	Crushing-, grinding- and chemical-mixing machinery operators	37.27
8152	Chemical-heat-treating-plant operators	37.27
8153	Chemical-filtering- and separating-equipment operators	37.27
8154	Chemical-still and reactor operators (except petroleum and natural gas)	37.27
8155	Petroleum- and natural-gas-refining-plant operators	37.27
8159	Chemical-processing-plant operators not elsewhere classified	37.27
8160	POWER-PRODUCTION AND RELATED PLANT OPERATORS	36.70
8161	Power-production plant operators	37.80
8162	Steam-engine and boiler operators	32.97
8163	Incinerator, water-treatment and related plant operators	32.97
8170	AUTOMATED-ASSEMBLY-LINE AND INDUSTRIAL-ROBOT OPERATORS	37.92
8171	Automated-assembly-line operators	37.92
8172	Industrial-robot operators	37.92

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
8200	MACHINE OPERATORS AND ASSEMBLERS	32.71
8210	METAL- AND MINERAL-PRODUCTS MACHINE OPERATORS	30.77
8211	Machine-tool operators	30.77
8212	Cement and other mineral products machine operators	30.77
8220	CHEMICAL-PRODUCTS MACHINE OPERATORS	33.41
8221	Pharmaceutical- and toiletry-products machine operators	28.95
8222	Ammunition- and explosive-products machine operators	33.41
8223	Metal finishing-, plating- and coating-machine operators	28.95
8224	Photographic-products machine operators	45.26
8229	Chemical-products machine operators not elsewhere classified	28.95
8230	RUBBER- AND PLASTIC-PRODUCTS MACHINE OPERATORS	28.18
8231	Rubber-products machine operators	28.18
8232	Plastic-products machine operators	28.18
8240	WOOD-PRODUCTS MACHINE OPERATORS	26.09
8240	Wood-products machine operators	
8250	PRINTING-, BINDING- AND PAPER-PRODUCTS MACHINE OPERATORS	40.54
8251	Printing-machine operators	40.88
8252	Bookbinding-machine operators	40.88
8253	Paper-products machine operators	40.88
8260	TEXTILE-, FUR- AND LEATHER-PRODUCTS MACHINE OPERATORS	30.00
8261	Fibre-preparing-, spinning- and winding machine operators	24.65
8262	Weaving- and knitting-machine operators	24.65
8263	Sewing machine operators	29.14
8264	Bleaching-, dyeing- and cleaning-machine operators	29.14
8265	Fur and leather-preparing-machine operators	24.65
8266	Shoemaking- and related machine operators	24.65
8269	Textile-, fur- and leather-products machine operators not elsewhere classified	24.65
8270	FOOD AND RELATED PRODUCTS MACHINE OPERATORS	28.38
8271	Meat- and fish-processing-machine operators	28.34
8272	Dairy-products machine operators	28.34
8273	Grain- and spice-milling-machine operators	28.34
8274	Baked-goods, cereal and chocolate-products machine operators	28.34
8275	Fruit-, vegetable- and nut-processing-machine operators	28.34
8276	Sugar production machine operators	28.34
8277	Tea-, coffee-, and cocoa-processing-machine operators	28.34
8278	Brewers-, wine and other beverage machine operators	28.34
8279	Tobacco production machine operators	28.34
8280	ASSEMBLERS	37.52
8281	Mechanical-machinery assemblers	37.52
8282	Electrical-equipment assemblers	37.52
8283	Electronic-equipment assemblers	37.52
8284	Metal-, rubber- and plastic-products assemblers	37.52
8285	Wood and related products assemblers	37.52
8286	Paperboard, textile and related products assemblers	37.52
8290	OTHER MACHINE OPERATORS AND ASSEMBLERS	34.52
8290	Other machine operators and assemblers	34.52
8300	DRIVERS AND MOBILE-PLANT OPERATORS	34.75
8310	LOCOMOTIVE-ENGINE DRIVERS AND RELATED WORKERS	37.45
8311	Locomotive-engine drivers	37.45
8312	Railway brakers, signallers and shunters	37.45
8320	MOTOR-VEHICLE DRIVERS	36.43
8321	Motor-cycle drivers	24.76

(*Continued*)

Table A1. Continued.

ISCO-88 code	ISCO-88 label	ICAMS score
8322	Car, taxi and van drivers	35.67
8323	Bus and tram drivers	35.67
8324	Heavy truck and lorry drivers	35.67
8330	AGRICULTURAL AND OTHER MOBILE-PLANT OPERATORS	31.86
8331	Motorised farm and forestry plant operators	31.86
8332	Earth-moving and related plant operators	31.86
8333	Crane, hoist and related plant operators	31.86
8334	Lifting-truck operators	31.86
8340	SHIPS' DECK CREWS AND RELATED WORKERS	43.00
8340	Ships' deck crews and related workers	
9000	**MAJOR GROUP 9 ELEMENTARY OCCUPATIONS**	**27.85**
9100	SALES AND SERVICES ELEMENTARY OCCUPATIONS	28.70
9110	STREET VENDORS AND RELATED WORKERS	33.37
9111	Street food vendors	35.05
9112	Street vendors, non-food products	30.41
9113	Door-to-door and telephone salespersons	35.05
9120	SHOE CLEANING AND OTHER STREET SERVICES ELEMENTARY OCCUPATIONS	
9120	Shoe cleaning and other street services elementary occupations	25.69
9130	DOMESTIC AND RELATED HELPERS, CLEANERS AND LAUNDERERS	26.71
9131	Domestic helpers and cleaners	25.01
9132	Helpers and cleaners in offices, hotels and other establishments	25.01
9133	Hand-launderers and pressers	24.69
9140	BUILDING CARETAKERS, WINDOW AND RELATED CLEANERS	35.41
9141	Building caretakers	35.42
9142	Vehicle, window and related cleaners	29.68
9150	MESSENGERS, PORTERS, DOORKEEPERS AND RELATED WORKERS	33.34
9151	Messengers, package and luggage porters and deliverers	33.34
9152	Doorkeepers, watchpersons and related workers	33.34
9153	Vending-machine money collectors, meter readers and related workers	33.34
9160	GARBAGE COLLECTORS AND RELATED LABOURERS	21.07
9161	Garbage collectors	21.07
9162	Sweepers and related labourers	21.07
9200	AGRICULTURAL, FISHERY AND RELATED LABOURERS	22.45
9210	AGRICULTURAL, FISHERY AND RELATED LABOURERS	23.43
9211	Farm-hands and labourers	23.43
9212	Forestry labourers	23.43
9213	Fishery, hunting and trapping labourers	23.43
9300	LABOURERS IN MINING, CONSTRUCTION, MANUFACTURING AND TRANSPORT	28.16
9310	MINING AND CONSTRUCTION LABOURERS	26.18
9311	Mining and quarrying labourers	26.12
9312	Construction and maintenance labourers: roads, dams and similar constructions	26.12
9313	Building construction labourers	24.99
9320	MANUFACTURING LABOURERS	30.71
9321	Assembling labourers	30.71
9322	Hand packers and other manufacturing labourers	30.71
9330	TRANSPORT LABOURERS AND FREIGHT HANDLERS	31.24
9331	Hand or pedal vehicle drivers	23.60
9332	Drivers of animal-drawn vehicles and machinery	23.60
9333	Freight handlers	29.48

Table A2. Latent correlations between the latent variables with one another, and with the auxiliary variables (generic MTMM model, women and men).

		Occupation				Education				Household income
		Father	Mother	Respondent	Spouse	Father	Mother	Respondent	Spouse	
(a) Women										
Occupation	Father	1								
	Mother	0.486	1							
	Respondent	0.314	0.329	1						
	Spouse	0.274	0.268	0.447	1					
Education	Father	0.545	0.444	0.335	0.291	1				
	Mother	0.414	0.565	0.322	0.266	0.657	1			
	Respondent	0.353	0.372	0.644	0.430	0.432	0.423	1		
	Spouse	0.285	0.279	0.429	0.611	0.400	0.367	0.524	1	
Household income		0.162	0.165	0.341	0.361	0.173	0.170	0.312	0.313	1
(b) Men										
Occupation	Father	1								
	Mother	0.483	1							
	Respondent	0.318	0.296	1						
	Spouse	0.269	0.283	0.447	1					
Education	Father	0.547	0.444	0.323	0.299	1				
	Mother	0.417	0.564	0.279	0.280	0.655	1			
	Respondent	0.351	0.336	0.623	0.457	0.420	0.375	1		
	Spouse	0.282	0.293	0.408	0.619	0.399	0.393	0.532	1	
Household income		0.173	0.163	0.364	0.360	0.183	0.160	0.330	0.330	1