Index of Integration:
Toward a Summary Measure of a Multidimensional Concept

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Abstract

Measuring a concept such as social integration requires clarity of the concept itself and a decision about its measurement. This paper proposes an index of integration based on the multidimensional nature of integration measured at the individual level. Defining integration as cohesion viewed at the individual level, we see integration as having three major domains – social, political, and economic – and propose an index of integration derived from the latent measures obtained through structural equation models of the observed indicators on the three domains. We use the information gathered by the Canadian 2002 Ethnic Diversity Survey on the three domains of integration: political (voting in federal, provincial and municipal elections), economic (labour force participation and occupation prestige) and social (sense of belonging to community, province and to country). We illustrate the methods involved and specific usefulness of the measures of integration, both at the domain and at overall levels, for further analysis.

Key words: Integration, Latent scores, Structural equation modeling, Exponential regression, Non-linear regression, Ethnic Diversity Survey.

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"The cause can only be found in a single quality possessed by all these social groups, though perhaps to varying degrees. The only quality satisfying this condition is that they are all strongly integrated social groups. So we reach the general conclusion: suicide varies inversely with the degree of integration of the social groups of which the individual forms a part. But society cannot disintegrate without the individual simultaneously detaching himself from social life…"(Émile Durkheim,1897(1951):167)

Background to the Study

Integration is a subtle and fuzzy concept that is difficult to define, and hence to measure, uniquely. In the extant literature, other concepts such as social inclusion and social participation are also used synonymously with integration. And, the measures used to capture these concepts are based on non-institutional ties (e.g. with partners, families, ethnic groups) and on institutional and community ties (e.g. schools, workplaces, community participation, church membership). More importantly, many studies use one or two measures only, either at individual or aggregate level, as if one or two measures alone would adequately capture these fuzzy concepts.

Following Durkheim, to whom we owe the concepts of social cohesion and social integration, we view the latter emerging from the former. Contrary to widespread misunderstanding, as Thirlindsson and Bernburg (2004:271) pointed out, Durkheim actually never explicitly worked out a theory of social interaction. Rather, for Durkheim, the term "integration" refers to the social links that attach individuals to social groups and thus only indirectly brings out the importance of social interaction. Durkheim worked out a theory of emergence as a downward influence from the group or societal level to the individual level through specific processes (Sawyer, 2002). Durkheim himself acknowledged, as the quote at the head of this paper says, that a society cannot integrate or disintegrate without the individuals attaching to or detaching from social life. Integration therefore implies individual-level processes that connect individuals to society through commonly held values and beliefs, regardless of interpersonal relationships. "Integration

promotes the perception that people are part of a lager social whole, focusing their interests outside the individual self and counteracting egoism. Hence, social organization where integration is weak may foster excessive individualism and weakening of sentiments for collective norms and rules" (Thirlindsson and Bernburg (2004:272).

In our previous work (Rajulton, Ravanera and Beaujot, 2007) that tried to measure social cohesion, we viewed social cohesion as a process of "building shared values and communities of interpretation, reducing disparities in wealth and income, and generally enabling people to have a sense that they are engaged in a common enterprise, facing shared challenges and that they are members of the same community" (Rossell, 1995; Maxwell, 1996). A more specific definition was proposed by Soroka, Johnson and Banting (2007:8) wherein social cohesion is viewed in terms of ensuring "that different identities are recognized as legitimate, that newcomers are incorporated in the economy, that citizens bring their diverse values and identities into the political life and that all groups engage in the political institutions that manage the tensions inherent in modern diversity". These definitions recognize that social cohesion is a multidimensional concept encompassing *economic*, *social*, and *political* domains (Jenson, 1998, Bernard, 1999). In whatever way it is defined, it is clear, following Durkheim's idea, that social cohesion is an aggregate-level concept, which is implicit in non-academic definition of cohesion as "the act or condition of sticking together" (Canadian Oxford Dictionary, 1998). Social cohesion is thus an attribute of a society, from a small one, such as a community or neighbourhood, to a large aggregation such as a country.

In this study, from what was said above, we view integration as a "downward influence" from the societal to the individual level; in other words, integration is social cohesion viewed at the individual level (Ravanera and Rajulton, 2006). To integrate is to "bring or come into equal participation in or membership of society" (Canadian Oxford Dictionary, 1998). The focal point is the individual and whether he or she comes to be a part of society (Ravanera, Rajulton, and Turcotte, 2003). An individual is socially integrated when his/her identity is recognized as legitimate, he/she is incorporated into the economy and brings his/her values into and participates in the political life of the society. Thus, like social cohesion, integration is also a multi-dimensional concept. This multi-dimensionality is recognized in the literature, as when

integration is predicated with terms such as *economic*, *structural*, *cultural*, or *social* integration (see for example, Portes and Zhou, 1996; Hagendoorn, Veenman and Vollebergh, 2003; Heckmann and Schnapper, 2003). Going back to Durkheim himself, it is worth noting that in *Suicide,* Durkheim distinguished three types of integration: *religious*, *domestic* and *political*. Religion used to provide, and still provides, to most people a context wherein they can interact and form strong emotional, psychological, and social bonds. In a similar manner, intensity of family relationships strengthens families' common goals and togetherness. Durkheim also held the view that participating in organized groups and commitment to common social and political institutions foster stronger bonds between individuals and society. He showed with empirical data how "collective sentiments", sense of patriotism, and "political and national faith" emerging during societal disturbances or wars "at least temporarily cause stronger integration of society" (Durkheim, 1897/1951:166).

Although all these different types or dimensions are very relevant in measuring integration, we shall focus on three of them, namely social, political and economic, as we did in our earlier study of social cohesion. As with social cohesion (see Jenson, 1998; Bernard, 1999), we see integration as having three major "domains" (social, economic, and political) and two major "types" (formal and substantial), leading to six dimensions:

Dimensions of Social Cohesion		
Domain	**Type**	
	Formal	**Substantial**
Economic	Inclusion/Exclusion	Equality/Inequality
Political	Legitimacy/Illegitimacy	Participation/Passivity
Socio-cultural	Recognition/Rejection	Belonging/Isolation

Originally construed for measuring social cohesion at the aggregate level, we consider these dimensions having an equivalent at the individual level. The economic *inclusion/exclusion* dimension addresses the questions of who has opportunities to participate or who is marginalized or excluded from participation in the economy. The *equality/inequality* dimension, suggested by Bernard (1999) who argued that it is not enough to consider simply attenuated

forms such as availability of opportunities, explicitly focuses on inequality conditions that individuals experience in real life . The political *legitimacy/illegitimacy* dimension refers to how adequately the institutions (such as the government, political parties, and unions) represent the people. Political *participation/passivity* relates to people's involvement in governance or in politics. The *recognition/rejection* dimension under the Social domain recognizes the virtue of pluralism, while the dimension *belonging/isolation* relates to shared values or sense of being part of a community (Jenson, 1998). Although *legitimacy* and *equality* are inherently group attributes, measures could be derived for them at the individual level. For example, a measurement of (economic) *equality* could be the level of benefits derived by individuals from their economic activities. An individual whose income is much below the average would be weakly integrated into the society. As for political *legitimacy* that refers to whether organizations, usually political, duly represent their constituents, an individual level measure would be the exercise of one's right to vote or to elect one's representative.

Some practical observations are in order here. While these six dimensions are theoretically interesting and meaningful, the necessary data for all dimensions may not be available through national surveys. Even if the data are available in the form of "indicators", these indicators may be found to have weak validity and reliability. An additional problem is that these six dimensions are themselves interrelated, which can lead to problems in statistical discriminant analysis. Thus, for practical purposes, the measurements may be restricted to fewer dimensions but it is strongly recommended that a study uses indicators related to all the three broad domains (Economic, Political and Social), as illustrated in this paper.

Before moving on to the illustration, there is another important observation to make. Many studies, if not all, view integration as a process experienced by specific groups of persons like minority groups, ethnic minorities, refugees, and the underprivileged to integrate into the mainstream of the society. The main idea is to examine how these specific groups avail themselves of the opportunities, rights and services the members of the mainstream of the society enjoy. This should not come as a surprise because the idea of integration usually goes hand in hand with the idea of social solidarity (or cohesion) and social anomie. The United Nations has a

Social Integration Branch, which is a part of the Division for Social Policy and Development (Department of Economic and Social Affairs) and periodically publishes the Bulletin on Social Integration Policies. Corresponding institutions or commissions in various countries also follow this route, understanding integration as a process of inclusion of "migrants" into the core institutions of the host society, with structural, sociocultural, political and economic integration as dimensions of that process. Thus, integration is viewed as absence of ethnic conflicts and related forms of social differentiation and as "cohesion" among major social groups. All such ideas and views have an underlying assumption that the mainstream of a society is socially, politically and economically integrated in the first place, and such integration is necessary only among the groups received into the society. Our view is different. We think it important to study the integration of the mainstream of the society as well. Thus, the measurements or indicators used in this paper are for all individuals belonging to various ethnic groups, including those considered as the "mainstream" of the society.

Method for deriving the index of integration

We propose an index of integration (see Figure 1) patterned after the method we developed for social cohesion (Rajulton, Ravanera, and Beaujot, 2007), which actually extends the methods used for computing the *Indices of Deprivation 2000* in England (Department of the Environment, Transport and the Regions, 2001). As seen in Figure 1, the method requires several variables (or indicators) to measure the six dimensions of the three domains. Assuming that these indicators are available through a national survey that covers all segments of society, the variables are first factor analyzed through exploratory and confirmatory methods to identify a relatively small number of unobserved "factors" or "latent variables" that represent relationships among the variables. The exploratory factor analysis helps identify latent constructs underlying the observed indicators. The confirmatory factor analysis (also known as structural equation modeling - SEM) helps examining the existence of and relationships among theoretically established latent constructs from the available indicators. The structural equation model also helps examining the measurement errors associated with indicators, and their reliability. More importantly, SEM yields the error (co)variances between the selected indicators and the underlying constructs, which then help reformulate and refine hypothesized theoretical relationships between the constructs.

The third step towards deriving an index of integration is to transform the latent scores on the three domains (Social, Political, and Economic) obtained from the structural equations models into one and the same metric such that they all have a common distribution, that is, all three distributions will have (almost) the same means, variances, skewness, and kurtosis. This is an important step and is explained below. The last step would be to derive an overall index of integration from the domain indices by assigning appropriate weights for each domain.

The individual index scores of integration, at domain level or overall, can be used either as dependent or independent variables in models that study differentials, determinants, and outcomes of integration. In this paper, we provide an illustration using them as dependent variables to examine their differentials by relevant socioeconomic characteristics. Doing so also helps confirming whether the latent scores on various domains have really captured the underlying concepts and their expected relationships with socioeconomic characteristics.

Data Source: Ethnic Diversity Survey 2002

In selecting the indicators for constructing an index of integration and for evaluating the impact of socioeconomic characteristics on integration, we set the following criteria: (a) timeliness – the data should be as recent as possible; (b) indicators should directly or indirectly measure a major aspect of integration; and c) selected measures should be statistically robust. For this study, the method proposed above is applied to data gathered through the Ethnic Diversity Survey (EDS) conducted by Statistics Canada in 2002. The survey provides detailed information on individual and family characteristics, attitudes and behaviours, ethnic ancestry, importance of ethnic identity to individuals, visible minority status, religious participation, membership in social groups and organizations, social networks, civic participation, volunteering, knowledge of languages, family background, family interaction, and socio-economic activities, voting in federal, provincial and municipal elections, experience of discrimination, language use, and sense of belonging to one's own ethnic group and to society at large, and so on (Statistics Canada, 2005).

The nation-wide survey had a total of 42500 respondents aged 15 years and older. We select only those men and women aged 25-64 for this study (14124 women and 13488 men) because those

below age 25 or above age 65 may not be engaged in activities related to the three domains used here. We do the analysis separately for men and women since it is obvious men and women are engaged differentially in the social, political and economic domains in any society. We also do separate analyses for two age groups, namely 25-44 when individuals are more actively engaged in various processes of integration, and 45-64 when individuals limit their engagement in various processes of integration for many reasons including familial and work-related reasons, and selective tastes and preferences that change with age. The survey weights are used in all statistical procedures used in this study, enabling us to make inferences to the Canadian population aged 25-64.

Several indicators were examined for their relevance with exploratory factor analysis for each domain, but the confirmatory factor analysis helped selecting a few (12 in total) robust indicators for further analysis. Table 1 lists the variables initially considered and the variables finally selected through structural equation models.

Latent Scores on the Three Domains - Structural Equation Model

Following the schema presented in Figure 1, our idea is to create an overall index of integration for each individual in the sample. This overall index, however, needs to be calculated from the three domain indices, which in turn are to be calculated from the relevant indicators of each dimension.[1] Figure 2 presents an example of SEM for men and women aged 45-64, and Table 2 presents the path coefficients and goodness of fit statistics from SEM, including those suggested by modification indices, for all the four models, made up of two age groups 25-44 and 45-64, done separately for men and women.

[1] Most of these indicators used in social science research will be either nominal or ordinal. One needs to convert the nominal variables into proper dummy variables for using them in structural equation models. The ordinal variables need to be treated as such; the implicit ordering is important in a study like this. Not all statistical (or SEM) software unfortunately treat ordinal variables as ordinal. Polychoric correlations (or the corresponding asymptotic covariance matrices) are the correct measures to use for ordinal variables. LISREL and MPlus work with these measures.

As seen in Table 2, most of the path coefficients are 0.75 or higher, assuring that the selected indicators are good in capturing the latent dimensions of interest. The corresponding R-square values measure the reliability of the indicators, and they suggest the adequacy of most of the indicators. Exception to this observation is sense of belonging to Canada as an indicator of integration on the social domain among both females and males, no matter of what age group. We have still retained that variable in the model.

The path coefficients indicated by an asterisk denote those suggested by modification indices that connect the manifest and latent variables over and beyond what is "theoretically" expected. Among females, for example, the LISREL package suggests connecting job prestige, sense of belonging to Canada and number of working weeks to the political domain, and voting in the municipal, provincial and federal elections to the economic domain. This is quite interesting, and it is possible to think of such relationships given the recent changes in women's involvement in political and economic spheres of life. The suggested modification indices for men are different. Connecting class of worker to the political domain, working part-time or full-time and job prestige to the social domain makes sense as well.

As mentioned earlier, the significant error covariances in these models portray possible hidden relationships between the indicators that we do not normally think of. Thus, for example, that voting in the federal election negatively covaries with sense of belonging to the province among both women and men is something interesting.

At least three out of four goodness of fit statistics given at the bottom of Table 2 confirm that these models are good fit. The RMSEA values are much smaller than suggested .05, and the normed and relative fit indices are much higher than the suggested 0.9. The p-values of chi-square statistic should not be significant for a good model fit, but given the large sample sizes, they are more than adequate.

Domain Scores and Overall Index of Integration

The relationships and error (co)variances identified by the structural equation model can be used to estimate the latent scores for each domain. Unlike the factor scores produced by exploratory

factor analysis, these latent scores (from structural equation models) are not orthogonal since the model suggests some relationships between the indicators identified under each domain.

These latent scores are usually in a standardized form (depending on the software used) and therefore will have a mean of zero and standard deviation of 1. Some scores will be positive and others negative. Negative scores stand for the less integrated and positive scores the more integrated. The latent scores for the three domains Social, Political and Economic range from -3.4 to 2.3, from -3.2 to 2.3, and from -1.4 to 1.5 respectively in the case of women (see Appendix Table 2, minimum and maximum columns in the first panel). Similarly, they range from -2.1 to 2.8, from -2.0 to 3.0, and from -0.9 to 3.0 respectively in the case of men.

Although the (standardized) latent scores have the same mean (=0) and variance (=1), they can have different measures of skewness and kurtosis for each domain. As seen in the Appendix Table 2, the measures of skewness and kurtosis vary a lot not only in their magnitudes but also in their directions. It is necessary, therefore, to convert all the distributions into one and the same metric, so that they all have the same mean, standard deviation, skewness and kurtosis (in other words, they all have a common distribution). Using a common distribution for all the three domains is necessary to safeguard against many pitfalls. One such pitfall, for example, occurs when we combine the three domain scores into a single score on integration; a high score in one domain can be fully cancelled out by a low score in another domain simply because of the differences in their distributions. In order to convert all the distributions into one and the same metric, we can transform either the latent scores themselves or their ranks into a common distribution. We use the latter procedure here. An exponential transformation is done as follows:

a) Domain ranks (R) range from 1 to N (sample size), 1 standing for the most integrated in that domain (corresponding to the highest positive latent score) and N the least integrated. [Note that the "least integrated" does not mean absence of integration.] These ranks can be rescaled to the range of (0, 1) by computing NR = R/N.
b) To transform these NR values into a common (exponential) distribution, we use the following procedure. For example for the Economic Domain:

$$TREconomic = -20 * \ln[(1 - NR) * (1 - \exp(-100/20)]$$

The value 20 stands for the mean of the exponential distribution. Trial and error will suggest the best value that gives a good exponential shape. These transformed values – let us call them exponentials of ranks - range from 0 to 100, zero standing for the most integrated and 100 the least integrated. This transformation results in a proper distribution that is common to all domains, with means around 20, standard deviations also around 20, skewness measures around 2 and kurtosis measures around 6 – see the second panel in the Appendix Table 2 and Appendix Figure 1 for a plot of all the distributions used in this study.[2] [It is good to recall that the theoretical exponential distribution has a skewness of 2 and a kurtosis of 9 (see Krishnamoorthy, 2006). In this exercise, we get some difference in kurtosis measures for different age and sex groups because we have used a common mean value of 20 for all the groups. More specific refinements will follow theoretical values, but practically such a procedure is not essential.] A more important point is that the skewness and kurtosis measures are such that they *reduce* any "cancellation effect" that will occur when high scores in one domain are combined with low scores in another.

Finally, the exponentials of ranks for each domain are combined to give an overall index of integration. Theoretically, a combination of three exponentially distributed scores results in a gamma distribution. The distribution of the overall index of integration, therefore, follows a gamma distribution; this information would be useful while working further with the combined scores of integration.

A practical problem at this stage is to decide on appropriate weights to use to combine the domain scores. We use weights of 40% for the Economic, and 30% each for the Social and Political Domains. The Economic domain is assigned a greater weight because discussions in the extant literature on integration (cohesion) or inclusion/exclusion predominantly, and justifiably, focus on the economic aspect – justifiably because when the economic integration is weak in a society, many other systems also become weak, in turn giving rise to weak social and political participation. Obviously, assigning different weights would produce different results. For the

[2] For space limitations, Appendix Table 1 giving the descriptive statistics of variables used in this study and Appendix Figure 1 plotting the distributions of all latent scores are not included in this manuscript. Interested readers can request them from the first author.

moment we leave the weights as above, since the path coefficients estimated through SEM also show greater importance and relevance of the indicators of the Economic domain (see above, Table 2). The descriptive statistics of this overall index are given in Appendix Table 2 and their distributions are presented in Appendix Figure 1.

A specific usefulness of the above measures of integration, either at domain level or at overall level, is that they can be used either as dependent or independent variables in analytical models. We turn to this in the next section.

Determinants of Integration

Using the individual-level latent scores of integration as dependent variables, we can examine the influence of various socioeconomic covariates on scores of integration. These scores however follow an exponential distribution as described above, which implies the model is defined as $Y = \lambda e^{-\lambda \sum \beta X}$, where λ is the reciprocal of the mean of the distribution (here, $\lambda = 1/20 = .05$), X denotes the covariates, and β their coefficients. Ordinary (linear) multiple regression model, therefore, is ruled out since it is built on the assumption that Y follows a normal distribution. It is possible however to take the logarithm on both sides and use the multiple regression model but the logarithm of Y need not follow a normal distribution either. The best would be to use the non-linear programs available in most statistical software and fit an exponential regression model as it is. The three domain scores follow an exponential distribution, so there is no problem with them. The overall index scores however follow a gamma distribution, fitting of which is not always easy. However, approximating it by an exponential distribution may be more practical and easy to handle. In this paper, we illustrate the use of exponential regression models for all the latent scores.

The literature on integration has investigated a variety of factors that affect integration, mostly focusing on the economic domain, and that too limited to immigrant and ethnic groups. As pointed out in the introduction, we are taking a different view in this study and examine the factors that affect social, political, and economic integration of everybody, whether immigrant or "native", whether dominant or minority groups, whether visible minority or mainstream groups.

The list of possible factors that can influence the three domains of integration, as well as the overall index of integration, is presented in Appendix Table 1, along with their descriptive statistics. As far as possible, for comparative purposes, same variables are included in all the four models run separately for the sex and age groups, excepting the situations when one or more variables are highly collinear with other variables. Results from the nonlinear exponential regression models for the overall score of integration (column A) as well as for the three domains separately (columns B to D) are presented in Table 3. Since the exponentially distributed dependent scores are based on ranks, lower scores imply greater integration and larger scores imply lower integration. Thus, negative beta coefficients in Table 3 represent greater integration and positive coefficients lower integration. The coefficients that are significant *at least* at 5% level are highlighted in the Table.

1) *Visible minority status*: The EDS sample has a majority (85% or more) of individuals belonging to the mainstream (Caucasian) group. As seen in Table 3 column A, visible minority (VISMIN) respondents are *not* different from the non-VISMIN respondents in their integration. Exceptions occur only in certain domains. Women aged 45-64 and classified as "others" have significantly higher scores on political integration but significantly lower scores on economic integration, compared to non-VISMIN women (see Table 3b columns C and D. Black men aged 25-44 score significantly greater in their social integration (Table 3d column B), while both the Chinese and South Asian men aged 45-64 score significantly lower in their political integration (Table 3d column C), the former more so than the latter. These findings are similar to what we found in our earlier studies (see Ravanera and Rajulton, 2009).

2) *Marital Status*: While marital status makes no significant difference among younger women (aged 25-44), it does so among women aged 45-64. Compared to single women, previously married women aged 45-64 score higher on overall integration (Table 3b column A). Under each domain, we see that married women aged 25-44 score significantly higher than single women on the political domain (Table 3a column C), while married women aged 45-64 score significantly lower (Table 3b column C). The previously married women aged 45-64 score significantly higher on the social domain (Table 3b column B). The aggregate sample of women (not shown here) confirms the familiar idea: Married and previously married women score higher on the social domain but score lower on the economic domain, compared to their single counterparts.

[For easy reading, we shall omit hereafter references to columns in Table 3, hoping that by now the readers are used to the variety of results presented in that Table.]

The impact of marital status on men's integration tells again the familiar story. Married men are more integrated than single men. In particular, married men aged 25-44 are more integrated on political and economic domains. Married men aged 45-64 are more integrated on economic domain but less integrated on social and political domains. These results on marital status bring out clearly not only the differences between men and women but also the changes that may take place over the life course.

3) *Parental and respondent's own education*: Among younger women (aged 25-44), parental education has no significant impact on their integration, but among older women, it does so. Women whose parents had some postsecondary education score higher on the social domain compared to women whose parents had less education. More educated parents seem to pass on "social values" to their female children. But the story is different in the case of men. Men whose parents had postsecondary education score higher on the political and economic domains. This result holds even for separate age groups.

Respondents' own education significantly affects their process of integration. Younger women with some postsecondary education score higher on the political and economic domains but lower on the social domain, both in comparison to women with less education. Older women (aged 45-64) with postsecondary education in contrast score higher on the social and economic domains but lower on the political domain. Men with postsecondary education consistently score lower on the social domain but higher scores on the political and economic domains. This picture reveals that the social domain is somehow relegated to less importance among younger and higher educated men and women; their integration into society is more through political and economic activities than through socially conscious activities.

4) *Participation in group activities*: Two variables – number of groups/organizations of which a respondent is a member and degree of participation in group activities – try to capture the impact of active involvement in community groups. Membership in groups helps in getting higher scores on the overall index of integration among both women and men, but the pattern is not clear. Younger women who are involved in groups/organizations score higher on the political

domain; older women score lower on the social and political domains but higher on the economic domain. In contrast, younger men involved in groups score higher on both the political and economic domains, older men score higher only on the economic domain. Overall, it looks like membership in groups helps integration on the political and economic domains.

The degree of participation in group activities does not generally lead to increased integration among men and women. There are however some specific exceptions. Younger women who participate weekly in group activities tend to be more economically integrated. In contrast, older women who participate both monthly and weekly in group activities score lower on economic integration. But, as seen above, participation in group activities is significantly associated with higher scores on the social domain among older women. In the case of men, participation in group activities, either monthly or weekly, is associated with higher scores on the political and economic domains but lower scores on the social domain.

5) *Group ethnicity*: This variable is intended to capture the impact of ethnic mix in group activities. The groups comprising 50% of the membership from the same ethnic origin would certainly be different in their processes of integration from those groups whose members are 100% from the same ethnic origin. In general, we expect *diversity* of groups to be more conducive to integration, either social or political or economic. Thus, the greater the diversity (here, 50% of members from the same ethnic origin), the higher would be the score of integration. But the results in Table 3 for the overall measure of integration do not show any evidence for this. However, there are some significant coefficients by domains that are interesting. Women who are members of groups that have no ethnic mix (that is, 100% from the same ethnic origin) have lower scores on the social domain, as we expect. But contrary to our expectation, older women whose groups have a good ethnic mix have much lower score on the social domain. More interestingly, the greater homogeneity of groups seems to help older women to be more politically integrated. The only significant coefficient in the case of men is, again contrary to our expectation, with respect to their social integration; men whose groups are homogenous (100% from the same ethnic origin) score higher on their social integration.

6) *Experience of discrimination*: What can we say about the integration scores of those who report having experienced discrimination in various contexts such as workplace, community, etc.? The results in Table 3 show very little evidence of any relationship between experience of

discrimination and social, political, or economic integration. Among women aged 45-64, those who report having experienced discrimination sometime score higher on the political domain and those who experienced it rarely score higher on the economic domain. In contrast, men who experienced some form of discrimination score lower on all domains, and hence on the overall index as well, the only exception being that those who report having experienced it often score higher on the social domain. Obviously, with cross-sectional data like this, we cannot definitely say whether experience of discrimination affects integration or lack of integration leads to some form of discrimination.

7) *Presence of Children*: Earlier studies have found that presence of children enables parents, especially women, to be more involved or integrated into social networks, but presence of very young children may be inhibiting women to be fully engaged in the economic sphere. We have used in the model two variables - presence of children under and above age 3 - and expect the former to have more influence on integration scores. As seen in Table 3, among younger women, presence of children does indeed lead to higher scores on the social domain and lower scores on the economic domain. Curiously enough, among older women, presence of children under 3 is associated with higher scores on the political domain. However, the aggregate sample of women (not shown here) gives the expected results neatly: Presence of very young children is associated with higher scores on the social domain but lower scores on the political and economic domains, and hence also on the overall index of integration.

Men show a different pattern. Presence of children of whatever age has no significant impact on the integration scores of younger men aged 25-44. In contrast, men aged 45-64 score higher on the social domain when children under 3 are present in the household, but lower scores when children are aged 4-15. Thus, for these men the overall index scores are higher with children under 3 and lower with children aged above 3.

8) *Importance of ethnic identity*: The extant literature is not clear regarding the relationship between sense of importance to one's own ethnic identity and integration. At least with respect to immigrants, the general idea is that those who are "assimilated" are more likely to be integrated. Does that mean that those who report their ethnic identity is least important are more integrated than those who report otherwise? The results in Table 3 are not very conclusive on this point. More importantly, there seems to be a divide between women and men. The higher the

importance of ethnic identity, the higher are the scores on the social domain in the case of younger women (although the significant coefficient is found only for those women who report ethnic identity is very important). A contrary picture emerges in the case of older women; the higher the importance of ethnic identity, the lower are the scores on the social domain. Men of the same age group (45-64) are different; they follow the pattern exhibited by younger women.

In general, the importance of ethnic identity has strong effect on the social domain, not on other domains. If at all it has any impact on the political and economic domains, it is seen only in the case of pooled sample of men; the higher the importance of ethnic identity, the lower are the scores on these two domains, and hence on the overall index.

9) *Place of birth* and *Canadian citizenship*: Those born in Canada are expected to be more integrated because of growing up in the society. However, place of birth generally has no significant impact on integration, except for few specific cases. Younger women born outside of Canada show significantly greater economic integration; this was confirmed by earlier studies as well (Statistics Canada's Daily). Older women born outside of Canada show significantly lower score on the social domain. In contrast, men of both age groups and born outside of Canada have significantly greater score on the social domain.

Canadian citizens are expected to be more integrated socially, politically and economically. The results in Table 3 show that it is indeed the case. All the significant coefficients are negative, denoting higher scores on the three domains and on the overall index.

10) *Importance of religion*: The literature on integration often cites church membership *per se* as an index of social integration, which itself is an idea coming from Durkheim's original types of integration. We use a better variable in the model, namely importance of religion to respondents, although we do not have any guidelines from previous research as to the impact pattern of this specific variable. Given the social networks that churches create for their members, we can expect greater social integration among those who report religion as very important. But its impact on other domains of integration is not clear cut.

The results in Table 3 show that the higher the importance of religion in one's life, the greater is the score on the overall index of integration among younger women, but the opposite holds true for older women. In addition, younger women reporting greater importance of religion in their

lives also score higher on the political domain, while older women reporting greater importance of religion score lower on the social domain.

In the case of men, however, importance of religion has no significant effect at all on the overall index. Men from both age groups show a pattern different from that of women, namely the greater the importance of religion, the higher the score on the social domain.

11) *Trust in neighbourhood* and *trust in people at workplace/school*: The literature on integration uses these two variables as markers of integration, the first as an indicator of social integration, and the second as an indicator of economic integration. The higher the degree of trust in neighbourhood or in the colleagues at workplace, the higher is the degree of integration on the corresponding domain. This seems to be confirmed, although not linearly, among younger women; the coefficients on the social domain change from being positive to negative over the values of the ordinal variable, thus indicating higher degree of integration. The same picture comes out on the political domain with trust in neighbourhood and on the economic domain with trust in the workplace. Among older women, surprisingly, the higher the trust in neighbourhood, the lower is the score on social integration, and higher the trust in the workplace, the higher is the score on the economic domain (although not all the coefficients are significant).

The expected direction of relationships holds good, generally in the case of younger men. The higher the degree of trust in neighbourhood or in the workplace, the greater is the score on the social domain or on the economic domain. Such a neat relationship is not found among older men. The pooled sample captures such a relationship but not satisfactorily enough (that is, not all the coefficients are significant).

12) *Volunteering* has been considered in many studies as a good indicator of social integration, but its impact on other domains is not clear. Volunteering can be time-consuming, and if individuals volunteer for community activities, they should be able to find time after work or they may already be out of work and thus may score lower on the economic domain. This is evident in the results shown in Table 3. Younger women who do volunteer work score higher on the social domain but lower on the economic and political domains, thus leading to lower score on the overall index of integration. The impact of volunteering comes out strongly only on the

economic domain in the case of older women. Volunteering has next to nil impact on the integration on all domains among men.

Discussion

The main aim of this study was to try out a measure of integration that considers the multidimensional aspect of the concept. Using the Canadian Ethnic Diversity Survey 2002, we have shown that it is possible to construct a measure of integration from the many indicators covering the major dimensions/domains developed by many scholars to elucidate the evasive concept of integration. The multidimensionality of the concept calls for a measure that combines all three domains together. Integration cannot be examined thoroughly making use of just one or two indicators only.

Defining integration as social cohesion viewed at the individual level, extending the social cohesion paradigm developed by Canadian researchers over time, and making use of data from a major Canadian social survey, this study shows the validity of some of the important aspects of the paradigm as well as the utility of the procedures and models. Both the exploratory and confirmatory factor analyses highlighted the multidimensionality of the concept that encompasses the economic, social, and political domains. However, lack of good and reliable data did not allow us to include all the six dimensions implied in the paradigm. Although many social surveys nowadays collect a lot of indicators, many of them do not neatly group themselves under the theoretical framework we work with, nor do they prove themselves as reliable in statistical sense in building the models. In the political domain, for example, volunteering and association membership indicative of political participation do not statistically fit in with voting behaviour. Rather, they fit in better with the variables representing the social domain. This study therefore points to the need for more refined conceptualization of the complex relationships among the various dimensions of integration.

The major use of the latent scores of integration generated by the model is twofold. First, we can examine the impact of socioeconomic characteristics on scores of integration, as we have illustrated in this study, with the intention of checking whether the measure of integration derived from multidimensional data have any construct validity, that is, whether the measure

"abides by" the theoretical relationships we expect between integration and socioeconomic characteristics. Second, and more interestingly, the individual scores of integration can be used to study the impact of integration on other outcomes such as health or the well-being of children and youth, criminal behavior, etc. as many studies currently do but with just a few indicators that, in our view, do not adequately capture the multidimensionality of the concept.

Apart from the methodology, a specific contribution of this study lies in measuring integration at the population level[3], without focusing on only certain major (ethnic or immigrant) groups as studies on integration normally do, and examining the impact of socioeconomic characteristics on the integration scores obtained through the suggested methodology. Our view is based on the idea that integration is not "assimilation", a concept exclusively referring to the adaptation of immigrants into a host society. Rather, integration refers to participation of all the people in all aspects of the economic, social, cultural, civil and political life of the country. Integration bestows on all people a sense of belonging and membership in the society. If at all immigrant and other groups need to be brought into the picture, it refers to adaptation on the part of everybody, both the mainstream and minority populations. Looking at integration in this manner, and measuring it accordingly, this study clearly shows that there are no significant differences in the integration scores by visible minority status. If there are any significant differences at all, they are found only in the case of individuals from certain visible minority groups who actually score higher in certain domains when compared to mainstream individuals.

Examining the differentials in integration scores by sex and age groups in this study also brought to the fore one specific point. Integration in all aspects of life can change from one life course stage to another. This point was brought out again and again in the results presented in the previous section. Younger women (aged 25-44) make up a uniquely different group from older women (aged 45-64) in their integration patterns, while such unique differences are not found among the two age groups of men. It may be pointed out that the models built in this study, including the structural equation, the exponential regression, and the statistical distributions of scores on the three domains, all of them show the unique changes that have taken place among

[3] It has to be pointed out, however, the Ethnic Diversity Survey excluded the persons living on Indian reserves, persons of aboriginal origins living off-reserve, because there was a separate survey designed for aboriginal people in 2001 and 2002 (see Statistics Canada, 2002).

women's cohorts. Marital status makes a difference in the type of integration among older women but shows no difference among younger women. Younger women with higher education have significantly higher scores on the political and economic integration but older women on the social integration, and so on. We find that social domain is less important among younger and higher educated men and women; their integration into society is more through political and economic activities than through social activities, which were the dominant type of integration among older women. The exception to this occurs, however, among younger women with children. In the presence of children, younger women get higher scores on the social domain and lower scores on the economic domain. In contrast, presence of children has no significant impact on the integration scores of younger men. These findings reveal that types of integration processes do differ by gender and age, and perhaps also by cultural norms and values on gender roles. It may be worth repeating this study in the near future to check whether the recent family transformations and changing gender roles will give a different picture.

Finally, a note on the variables used in this study. In the section on the structural equation model, it was pointed out that only ten out of the many initially considered variables were finally selected for measuring the latent scores because of poor reliability measures of many variables. This problem is serious in social research and it definitely points to refining the measures in national surveys. In addition, the structural equation models presented in this study cover mostly "action" variables (like voting and working), not "orientation" or "attitudinal" variables (like sense of belonging). Indicators on the economic domain are usually "hard" data such as the ones we have used, but economic integration encompasses the *inclusion* aspect that connotes certain attitudes as well (for example, attitudes towards immigrants as co-workers). And, the socio-cultural dimension of *recognition* (or related concept of *tolerance*) is more attitudinal than behavioural – a dimension that we were not able to include here for lack of data. Thus, it is possible that a strong sense of belonging to community, province and to the country at large may be accompanied by low tolerance for diversity, which however can be measured only by attitudinal variables. If future surveys will be able to give more attention to this point, further refinement of the models is always possible.

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Figure 1: Methodology used for analysis of indicators of integration

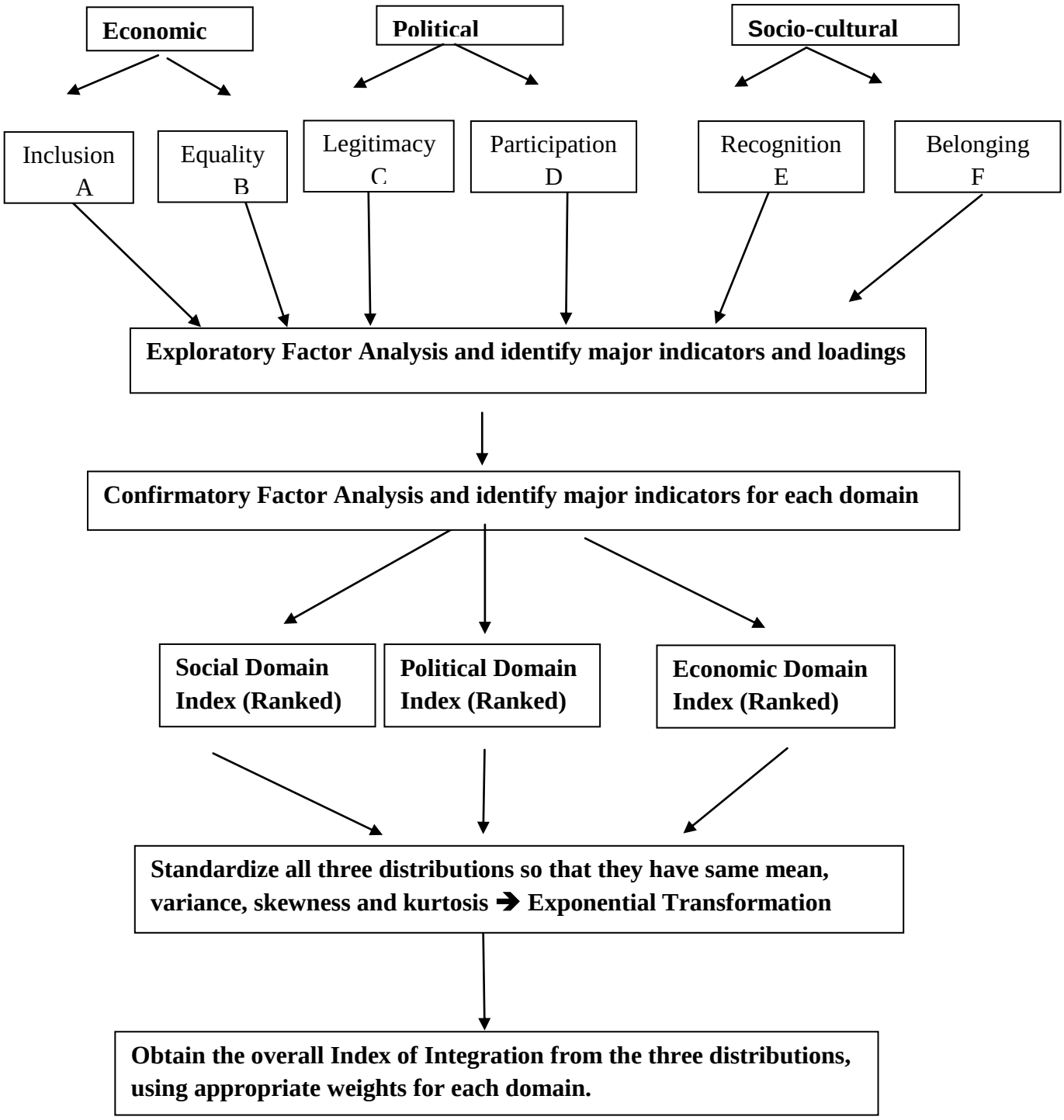
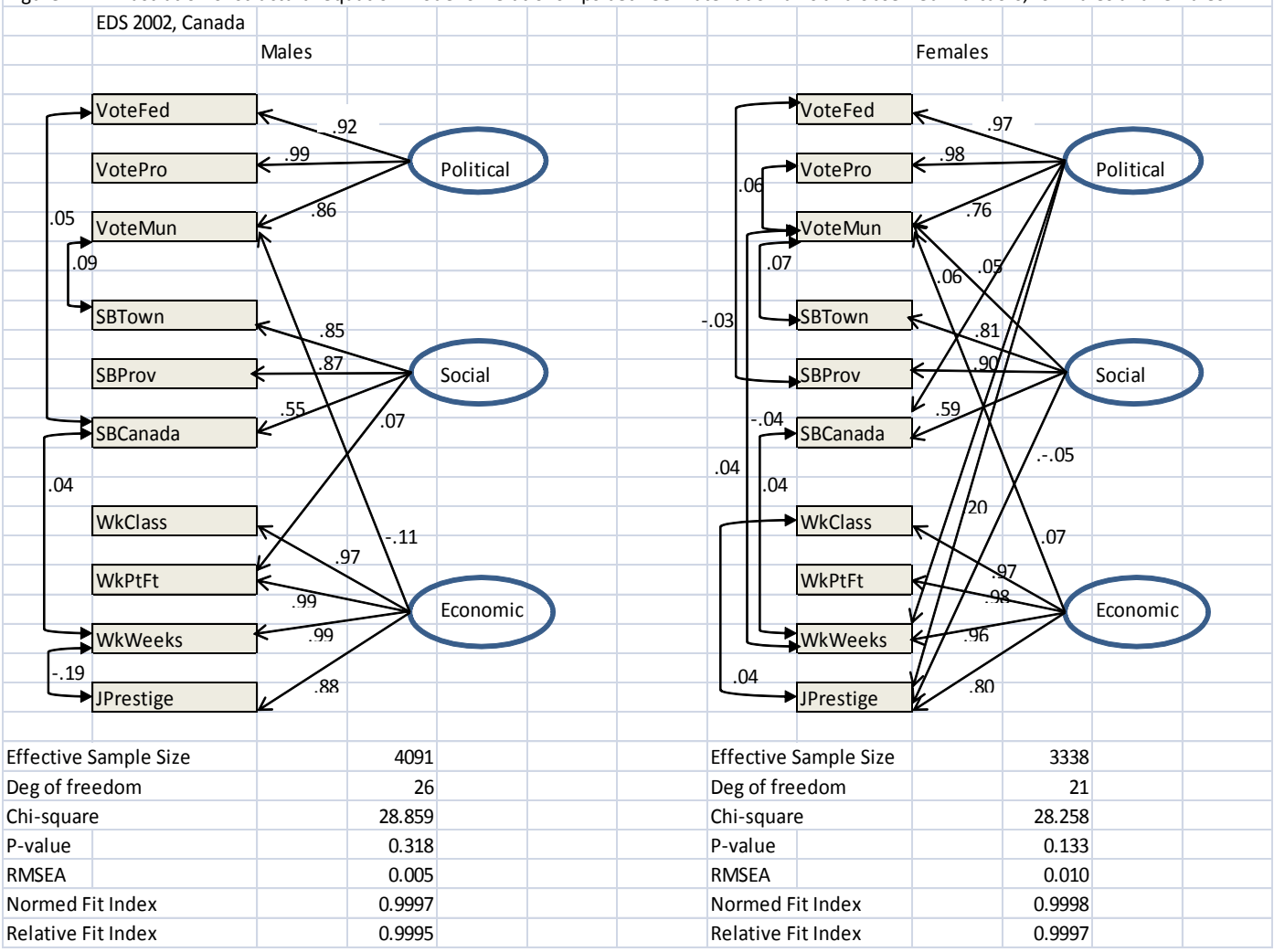


Table 1: Variables used in the expoloratory factor analysis (EFA), and those selected for confirmatory factor analysis (CFA).

N.B. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .796

Domain	Variable	Variable Type	Selected for CFA
Social	Frequency of contact with family living in Canada	Ordinal	No
	Taken part in the activities of group	Dichotomous	No
	Number of types of groups or organizations	Ordinal	No
	Experienced discrimination in Canada in past five years	Dichotomous	No
	Frequency of descrimination: Summary with 'no'	Ordinal	No
	Strength of sense of belonging to family	Ordinal	No
	Strength of sense of belonging to Ethnic or cultural	Ordinal	No
	Strength of sense of belonging to Town, city or municip	Ordinal	Yes
	Strength of sense of belonging to Province	Ordinal	Yes
	Strength of sense of belonging to Canada	Ordinal	Yes
	Amount you trust people in your family	Ordinal	No
	Amount you trust people in your neighborhood	Ordinal	No
	Amount you trust people at work or school	Ordinal	No
	Group ethnicity	Nominal	No
Economic	Work: class of worker	Ordinal	Yes
	Work: Part-time or full time status	Ordinal	Yes
	Work: Hours worked per week	Ordinal	No
	Work: Weeks worked	Ordinal	Yes
	Personal income (6 groups)	Ordinal	
	Occupation Prestige scale (not from the survey, but follow the scores from Goyder & Frank (2007)	Interval	Yes
Political	Volunteering	Dichotomous	No
	Voted in federal election	Dichotomous	Yes
	Voted in provincial election	Dichotomous	Yes
	Voted in municipal election	Dichotomous	Yes

Figure 2: An illustration of structural equation model of relationships between latent domains and observed indicaors, for males and females



Effective Sample Size		4091		Effective Sample Size	3338
Deg of freedom		26		Deg of freedom	21
Chi-square		28.859		Chi-square	28.258
P-value		0.318		P-value	0.133
RMSEA		0.005		RMSEA	0.010
Normed Fit Index		0.9997		Normed Fit Index	0.9998
Relative Fit Index		0.9995		Relative Fit Index	0.9997

Table 2: Path coefficients from the Structural Equation Models, classified by sex and age groups

N.B. Paths with * denote extra paths suggested by the modification indices

	Females 25-44			Females 45-64		
Paths	Coefficient	Std Error	R-square	Coefficient	Std Error	R-square
Political → VOTEFED	0.951	0.007	0.904	0.972	0.009	0.940
Political → VOTEPRO	0.979	0.007	0.958	0.980	0.011	0.961
Political → VOTEMUN	0.846	0.009	0.716	0.762	0.022	0.596
Political → JOBPRESTIGE *	0.082	0.012	0.673	0.119	0.018	0.656
Political → SBCANADA *				0.053	0.025	0.358
Political → WKWEEKS *				-0.038	0.016	0.924
Social → SBTOWN	0.947	0.012	0.558	0.814	0.016	0.663
Social → SBPROV	0.926	0.013	0.858	0.904	0.016	0.817
Social → SBCANADA	0.620	0.014	0.384	0.592	0.019	0.358
Social → VOTEMUN *				0.057	0.026	0.596
Social → JOBPRESTIGE *				-0.048	0.013	0.656
Economic → WKCLASS	0.988	0.002	0.976	0.974	0.003	0.949
Economic → WKPTFT	0.995	0.001	0.990	0.985	0.002	0.971
Economic → WKWEEKS	0.974	0.002	0.948	0.960	0.003	0.924
Economic → JOBPRESTIGE	0.818	0.010	0.673	0.799	0.013	0.656
Economic → VOTEMUN *				-0.074	0.025	0.596
Economic → VOTEFED *						
Economic → VOTEPRO *						
Significant error covariances						
VOTEMUN ↔ VOTEPRO				0.065	0.025	
SBTOWN ↔ VOTEPRO	0.046	0.011				
SBTOWN ↔ VOTEMUN	0.143	0.012		0.074	0.017	
SBPROV ↔ VOTEFED	-0.069	0.011		-0.028	0.014	
SBCANADA ↔ VOTEFED	0.022	0.013				
WKCLASS ↔ VOTEPRO	0.026	0.006				
WKCLASS ↔ JOBPRESTIGE	0.067	0.013		0.044	0.016	
WKWEEKS ↔ VOTEMUN				0.036	0.013	
WKWEEKS ↔ SBCANADA				0.040	0.010	
Effective Sample Size	5022			3338		
Deg of freedom	25			21		
Chi-square	39.888			28.258		
P-value	0.030			0.133		
RMSEA	0.011			0.010		
Normed Fit Index	1.0000			0.9998		
Relative Fit Index	0.9990			0.9997		

Table 2 Contd: Path coefficients from the Structural Equation Models, classified by sex and age groups

N.B. Paths with * denote extra paths suggested by the modification indices

	Males 25-44			Males 45-64		
Path	Coefficient	Std Error	R-square	Coefficient	Std Error	R-square
Political → VOTEFED	0.934	0.008	0.873	0.916	0.012	0.839
Political → VOTEPRO	0.987	0.008	0.974	0.985	0.011	0.971
Political → VOTEMUN	0.808	0.011	0.660	0.861	0.014	0.723
Political → WKCLASS *	-0.069	0.016	0.602			
Social → SBTOWN	0.787	0.015	0.619	0.853	0.014	0.727
Social → SBPROV	0.853	0.016	0.728	0.869	0.014	0.754
Social → SBCANADA	0.528	0.016	0.285	0.554	0.017	0.307
Social → VOTEMUN *	0.059	0.018	0.660			
Social → WKPTFT *	0.039	0.016	0.940	0.069	0.017	0.972
Social → JOBPRESTIGE *	-0.031	0.011	0.657			
Economic → WKCLASS	0.783	0.012	0.602	0.970	0.008	0.940
Economic → WKPTFT	0.968	0.007	0.940	0.991	0.047	0.972
Economic → WKWEEKS	0.974	0.009	0.949	0.990	0.045	0.981
Economic → JOBPRESTIGE	0.812	0.012	0.657	0.878	0.044	0.771
Economic → VOTEMUN *	-0.049	0.009	0.660	-0.109	0.021	0.723
Economic → SBCANADA *	0.051	0.013	0.285			
Significant error covariances						
VOTEMUN ↔ VOTEPRO						
SBTOWN ↔ VOTEPRO	0.051	0.012				
SBTOWN ↔ VOTEMUN	0.106	0.014		0.086	0.014	
SBPROV ↔ VOTEFED	-0.041	0.013				
SBCANADA ↔ VOTEFED	0.066	0.013		0.047	0.023	
SBCANADA ↔ VOTEPRO				-0.081	0.023	
WKCLASS ↔ VOTEPRO						
WKCLASS ↔ SBPROV	0.035	0.010				
WKCLASS ↔ WKPTFT	0.195	0.017				
WKCLASS ↔ JOBPRESTIGE						
WKWEEKS ↔ VOTEMUN						
WKWEEKS ↔ SBCANADA	0.025	0.013		0.044	0.013	
WKWEEKS ↔ JOBPRESTIGE	-0.013	0.018		-0.1953	0.07932	
Effective Sample Size	5314			4091		
Deg of freedom	19			26		
Chi-square	25.495			28.859		
P-value	0.145			0.318		
RMSEA	0.008			0.005		
Normed Fit Index	0.9996			0.9997		
Relative Fit Index	0.9990			0.9995		

Table 3: Nonlinear Regression Coefficients and standard errors of exponential transforms of latent variables Social, Political, Economic and overall Integration, classified by age groups and sex - Ethnic Diversity Survey 2002, Canada

a) Females 25-44

	(A)		(B)		(C)		(D)	
Latent Variables	INTEGRATION		SOCIAL		POLITICAL		ECONOMIC	
R-square *	0.03		0.12		0.10		0.08	
Effective sample size	5119		5119		5119		5119	
Covariates	β	se(β)	β	se(β)	β	se(β)	β	se(β)
Visible Minority Status								
Non-Visible minority (Ref)								
Chinese	0.27	1.28	0.16	2.24	3.09	2.49	-2.12	1.87
South Asian	-1.24	0.84	-0.87	1.35	-2.38	1.44	-2.65	1.38
Black	-0.98	1.09	0.32	1.83	-1.79	1.88	-2.02	1.79
Others	0.08	0.80	1.58	1.28	0.64	1.46	-0.87	1.33
Marital status								
Single (Ref)								
Married	-0.52	0.43	-0.73	0.82	-1.64	0.71	-0.49	0.67
Prev. Married	0.83	0.64	0.32	1.18	0.43	1.07	0.82	1.04
Mother's Education								
< post-secondary (Ref)								
Post Secondary	0.49	0.36	-1.04	0.63	0.81	0.60	0.79	0.60
Father's Education								
< post-secondary (Ref)								
Post Secondary	0.14	0.36	0.46	0.62	-0.50	0.58	0.91	0.59
Respondent's Education								
<= High school (Ref)								
Post Secondary	-2.16	0.58	1.52	0.84	-3.80	1.07	-5.17	1.08
Diploma	-5.09	0.40	3.79	0.58	-8.87	0.75	-10.14	0.78
Number of groups/Org.	-0.72	0.29	0.17	0.53	-1.10	0.46	-0.60	0.50
Participation in group activities								
No participation (Ref)								
Monthly Participation	-0.73	0.61	1.26	1.06	-1.72	0.97	-1.55	1.01
Weekly Participation	-0.87	0.54	0.94	0.96	-1.34	0.86	-2.24	0.87
Group Ethnicity								
No group (Ref)								
Half the same	0.28	0.96	0.75	1.62	-1.08	1.48	0.20	1.65
All the same	1.02	0.54	3.00	1.00	0.14	0.84	1.02	0.90
Experienced Discrimination								
No								
Rarely	0.65	0.65	0.56	1.13	1.07	1.11	0.39	1.06
Sometime	0.21	0.62	-0.79	1.04	0.70	1.04	0.62	1.03
Often	0.12	1.33	3.47	2.60	1.48	2.33	0.01	2.11
Children under 3								
No (Ref)								
Yes	3.02	0.46	-6.15	0.58	8.59	0.92	7.72	0.92
Children aged 4-15								
No (Ref)								
Yes	0.50	0.34	-1.89	0.56	0.40	0.56	2.43	0.57

Importance of ethnic identity								
1 - Not at all (Ref)								
2	–	–	-0.20	2.94	-1.93	2.80	–	–
3	–	–	0.16	2.27	-0.53	2.18	–	–
4	–	–	-2.47	2.16	-2.61	2.08	–	–
5 - Very important	–	–	-4.84	2.10	-3.01	2.03	–	–
Place of birth								
Born in Canada (Ref)								
Born outside Canada	-1.00	0.56	-1.36	0.89	0.13	0.97	-1.90	0.92
Canadian Citizenship								
No (Ref)								
Yes	-1.61	0.71	-5.02	1.20	-2.74	1.32	-4.07	1.27
Importance of religion								
1 - Not at all (Ref)								
2	-1.80	0.74	1.05	1.35	-3.12	1.25	-2.28	1.16
3	-1.50	0.66	0.16	1.16	-3.44	1.12	-1.64	1.04
4	-1.56	0.69	0.28	1.22	-2.92	1.17	-1.13	1.09
5 - Very important	-2.16	0.66	-3.00	1.13	-3.03	1.13	-0.37	1.06
Trust in neighbourhood								
1 - Can't be trusted at all (Ref)								
2	1.13	0.52	1.33	0.86	3.82	1.00	-0.17	0.81
3	0.32	0.30	1.19	0.51	0.18	0.54	0.02	0.49
4	-1.20	0.29	0.09	0.49	-2.75	0.50	-1.20	0.46
5 - Can be trusted a lot	-0.37	0.34	-2.46	0.51	-1.20	0.59	1.15	0.58
Trust in people at work/school								
1 - Can't be trusted at all (Ref)								
2	0.73	0.60	3.49	1.18	-1.09	0.93	1.08	0.99
3	0.56	0.33	-2.72	0.60	1.65	0.55	1.96	0.56
4	-0.19	0.31	-0.03	0.59	0.29	0.48	-0.32	0.50
5 - Can be trusted a lot	-0.80	0.34	-1.94	0.61	0.75	0.56	-1.09	0.57
Volunteering								
No (Ref)								
Yes	1.05	0.50	-2.15	0.90	1.68	0.80	2.37	0.81

Table 3 Contd: Nonlinear Regression Coefficients and standard errors of exponential transforms of latent variables Social, Political, Economic and overall Integration, classified by age groups and sex - Ethnic Diversity Survey 2002, Canada

b) Females 45-64

	(A)		(B)		(C)		(D)	
Latent Variables	INTEGRATION		SOCIAL		POLITICAL		ECONOMIC	
R-square *	0.13		0.18		0.17		0.21	
Effective sample size	4107		4107		4107		4107	
Covariates	β	se(β)	β	se(β)	β	se(β)	β	se(β)
Visible Minority Status								
Non-Visible minority (Ref)								
Chinese	1.11	1.40	1.12	2.32	-3.28	1.94	0.47	2.03
South Asian	0.83	1.39	3.31	2.60	-2.88	1.95	1.42	2.18
Black	2.35	1.76	3.16	2.87	-1.14	2.39	2.32	2.77
Others	0.24	0.99	-0.26	1.54	-2.97	1.46	3.24	1.65
Marital status								
Single (Ref)								
Married	0.08	0.70	-0.91	0.98	2.42	1.06	0.09	1.05
Prev. Married	-1.89	0.75	-2.83	1.05	-1.66	1.13	-1.07	1.14
Mother's Education								
< post-secondary (Ref)								
Post Secondary	-0.28	0.54	-2.06	0.69	0.61	0.94	0.01	0.81
Father's Education								
< post-secondary (Ref)								
Post Secondary	0.75	0.52	-3.10	0.64	3.14	0.92	1.57	0.80
Respondent's Education								
<= High school (Ref)								
Post Secondary	-0.42	0.58	-2.47	0.84	3.49	1.02	-1.91	0.83
Diploma	0.63	0.41	-1.65	0.62	3.84	0.65	-0.02	0.60
Number of groups/Org.	-0.38	0.37	1.48	0.61	1.61	0.67	-1.56	0.52
Participation in group activities								
No participation (Ref)								
Monthly Participation	1.45	0.74	-2.25	1.10	0.95	1.17	3.41	1.07
Weekly Participation	0.70	0.65	-2.82	0.98	0.21	1.05	3.38	0.96
Group Ethnicity								
No group (Ref)								
Half the same	0.61	1.18	9.05	2.46	-4.18	1.71	-0.74	1.64
All the same	-0.14	0.61	3.02	1.06	-4.54	0.87	-0.20	0.87
Experienced Discrimination								
No								
Rarely	-1.69	0.84	-1.44	1.26	0.94	1.57	-2.38	1.20
Sometime	-0.53	0.80	1.10	1.22	-2.62	1.16	-0.80	1.26
Often	1.69	1.51	2.49	2.62	-1.61	1.98	3.99	2.45
Children under 3								
No (Ref)								
Yes	0.67	3.48	8.43	7.82	-10.02	3.99	7.14	6.36
Children aged 4-15								
No (Ref)								
Yes	-1.05	0.54	-1.32	0.71	-0.30	0.92	-1.16	0.85

Importance of ethnic identity								
1 - Not at all (Ref)								
2	-1.47	1.60	1.55	1.82	0.42	2.55	-1.13	3.00
3	-1.10	1.30	5.59	1.65	0.08	1.98	-5.28	2.09
4	-0.79	1.25	3.52	1.58	-0.71	1.87	-2.56	2.00
5 - Very important	1.14	1.19	8.56	1.52	2.21	1.78	-3.50	1.90
Place of birth								
Born in Canada (Ref)								
Born outside Canada	0.02	0.53	2.02	0.84	0.74	0.85	-0.46	0.75
Canadian Citizenship								
No (Ref)								
Yes	0.37	0.93	1.44	1.45	-3.52	1.69	-3.80	1.62
Importance of religion								
1 - Not at all (Ref)								
2	0.25	0.82	1.00	0.97	-1.16	1.50	0.23	1.33
3	1.53	0.71	3.63	0.88	-1.13	1.26	0.19	1.13
4	2.04	0.76	3.56	0.98	-1.80	1.32	1.37	1.19
5 - Very important	1.93	0.68	6.55	0.89	-1.78	1.22	0.83	1.09
Trust in neighbourhood								
1 - Can't be trusted at all (Ref)								
2	-2.94	0.55	-4.87	0.76	-4.36	0.77	-1.21	0.92
3	0.57	0.35	-0.12	0.49	1.83	0.55	0.01	0.55
4	1.72	0.34	1.56	0.47	2.81	0.53	1.57	0.53
5 - Can be trusted a lot	0.98	0.34	2.99	0.54	0.53	0.49	0.08	0.49
Trust in people at work/school								
1 - Can't be trusted at all (Ref)								
2	1.29	0.93	2.54	1.08	-1.36	1.35	2.77	2.06
3	-1.73	0.50	-0.81	0.57	-2.05	0.80	-1.43	1.04
4	-0.57	0.46	-1.52	0.54	1.33	0.77	-0.77	0.94
5 - Can be trusted a lot	0.01	0.49	1.59	0.62	0.57	0.78	-2.70	0.93
Volunteering								
No (Ref)								
Yes	-0.91	0.60	0.76	0.91	-1.75	0.95	-2.22	0.90

Table 3 Contd: Nonlinear Regression Coefficients and standard errors of exponential transforms of latent variables Social, Political, Economic and overall Integration, classified by age groups and sex - Ethnic Diversity Survey 2002, Canada

d) Males 25-44

	(A)		(B)		(C)		(D)	
Latent Variables	INTEGRATION		SOCIAL		POLITICAL		ECONOMIC	
R-square *	0.06		0.03		0.09		0.12	
Effective sample size	3922		3922		3922		3922	
Covariates	β	se(β)	β	se(β)	β	se(β)	β	se(β)
Visible Minority Status								
Non-Visible minority (Ref)								
Chinese	-1.47	1.91	4.12	3.17	-2.82	2.40	-3.58	2.18
South Asian	0.23	1.28	0.11	1.53	0.62	1.71	0.11	1.63
Black	-1.41	1.77	-5.72	2.05	-2.96	2.16	-0.59	2.29
Others	1.29	1.27	-2.46	1.46	2.94	1.73	2.07	1.65
Marital status								
Single (Ref)								
Married	-2.33	0.66	-0.60	0.92	-3.46	0.85	-2.82	0.80
Prev. Married	0.30	1.14	-1.11	1.35	1.14	1.58	1.07	1.48
Mother's Education								
< post-secondary (Ref)								
Post Secondary	-0.80	0.54	1.07	0.79	-1.52	0.67	-1.89	0.64
Father's Education								
< post-secondary (Ref)								
Post Secondary	-0.88	0.54	0.12	0.77	-1.44	0.67	-0.91	0.64
Respondent's Education								
<= High school (Ref)								
Post Secondary	-1.03	0.97	3.18	1.13	-2.87	1.37	-3.84	1.30
Diploma	-6.10	0.63	1.90	0.71	-9.81	0.90	-10.56	0.89
Number of groups/Org.	-0.86	0.46	1.06	0.73	-1.53	0.56	-1.10	0.54
Participation in group activities								
No participation (Ref)								
Monthly Participation	-2.67	0.90	0.81	1.34	-4.86	1.09	-3.93	1.05
Weekly Participation	-1.23	0.76	-0.60	1.07	-1.77	0.97	-1.74	0.92
Group Ethnicity								
No group (Ref)								
Half the same	0.23	1.48	-0.80	1.97	–	–	1.48	1.83
All the same	-0.72	0.79	-4.58	1.01	–	–	0.20	0.97
Experienced Discrimination								
No								
Rarely	–	–	–	–	0.68	1.01	0.69	0.94
Sometime	–	–	–	–	3.65	1.40	2.94	1.31
Often	–	–	–	–	0.58	2.03	4.55	2.28
Children under 3								
No (Ref)								
Yes	-0.19	0.62	-1.04	0.82	-0.71	0.77	0.28	0.76
Children aged 4-15								
No (Ref)								
Yes	0.00	0.54	-0.91	0.72	-0.06	0.68	0.26	0.66

Importance of ethnic identity								
1 - Not at all (Ref)								
2	0.67	1.85	9.49	3.52	-1.63	2.20	-0.48	2.05
3	0.32	1.60	1.80	2.44	-1.17	1.99	0.22	1.83
4	2.81	1.54	4.36	2.32	1.51	1.93	2.71	1.76
5 - Very important	0.79	1.46	-3.21	2.15	1.71	1.85	3.18	1.68
Place of birth								
Born in Canada (Ref)								
Born outside Canada	-1.47	0.85	-2.57	1.06	-0.49	1.11	-0.08	1.08
Canadian Citizenship								
No (Ref)								
Yes	-4.76	1.23	-10.69	1.75	-3.16	1.57	-3.50	1.56
Importance of religion								
1 - Not at all (Ref)								
2	1.15	0.84	-0.13	1.31	1.69	1.02	1.70	0.99
3	0.69	0.74	-3.01	1.13	1.73	0.90	1.82	0.88
4	-0.71	0.80	-4.32	1.20	0.71	0.99	0.40	0.95
5 - Very important	-1.16	0.78	-6.15	1.12	0.30	0.97	0.02	0.94
Trust in neighbourhood								
1 - Can't be trusted at all (Ref)								
2	1.04	0.78	4.72	1.36	-1.17	0.89	-0.12	0.91
3	0.49	0.48	0.09	0.73	0.57	0.59	0.73	0.58
4	0.03	0.43	-0.56	0.66	0.55	0.53	0.09	0.51
5 - Can be trusted a lot	-1.52	0.52	-4.35	0.72	0.23	0.66	-0.63	0.64
Trust in people at work/school								
1 - Can't be trusted at all (Ref)								
2	1.22	0.88	–	–	0.31	1.03	1.81	1.09
3	2.27	0.53	–	–	3.04	0.67	2.04	0.66
4	-0.79	0.45	–	–	-0.88	0.55	-1.42	0.55
5 - Can be trusted a lot	-1.76	0.53	–	–	-1.78	0.66	-1.35	0.67
Volunteering								
No (Ref)								
Yes	0.02	0.68	0.78	0.99	0.63	0.85	-0.81	0.82

Table 3 Contd: Nonlinear Regression Coefficients and standard errors of exponential transforms of latent variables Social, Political, Economic and overall Integration, classified by age groups and sex - Ethnic Diversity Survey 2002, Canada

e) Males 45-64

	(A)		(B)		(C)		(D)	
Latent Variables	INTEGRATION		SOCIAL		POLITICAL		ECONOMIC	
R-square *	0.15		0.26		0.19		0.15	
Effective sample size	3352		3352		3352		3352	
Covariates	β	se(β)	β	se(β)	β	se(β)	β	se(β)
Visible Minority Status								
Non-Visible minority (Ref)								
Chinese	1.50	1.22	4.12	3.20	10.48	4.41	-2.27	2.41
South Asian	1.01	0.80	0.14	1.56	5.12	2.36	-0.97	1.76
Black	0.78	1.38	2.12	2.99	5.67	4.62	-1.80	2.69
Others	-1.45	0.69	-2.20	1.34	-3.05	1.70	2.26	1.74
Marital status								
Single (Ref)								
Married	-0.09	0.56	3.84	1.07	2.76	1.21	-4.95	1.49
Prev. Married	-0.09	0.65	2.18	1.21	3.87	1.42	-4.73	1.71
Mother's Education								
< post-secondary (Ref)								
Post Secondary	0.51	0.40	3.77	1.01	1.22	1.00	-1.38	0.78
Father's Education								
< post-secondary (Ref)								
Post Secondary	-1.18	0.36	-0.36	0.82	0.87	0.90	-3.12	0.72
Respondent's Education								
<= High school (Ref)								
Post Secondary	0.18	0.47	1.55	0.93	2.06	1.06	-4.73	1.15
Diploma	-1.56	0.29	4.38	0.62	1.33	0.67	-9.75	0.76
Number of groups/Org.	-0.47	0.26	0.03	0.59	1.07	0.66	-1.55	0.53
Participation in group activities								
No participation (Ref)								
Monthly Participation	-1.00	0.50	1.17	1.11	-5.57	1.19	0.23	1.10
Weekly Participation	-0.38	0.46	1.18	1.00	-5.11	1.08	1.07	1.02
Group Ethnicity								
No group (Ref)								
Half the same	0.74	0.81	-0.78	1.73	4.13	2.34	0.41	1.63
All the same	-0.56	0.42	-0.15	0.87	-0.31	0.95	-0.31	0.95
Experienced Discrimination								
No								
Rarely	0.95	0.53	1.36	1.14	-0.46	1.20	0.37	1.12
Sometime	0.73	0.62	1.88	1.44	-1.63	1.34	1.09	1.33
Often	-0.28	0.95	-2.55	1.90	-1.16	2.11	3.94	2.78
Children under 3								
No (Ref)								
Yes	-2.83	1.17	-11.24	2.14	6.86	4.98	0.47	2.53
Children aged 4-15								
No (Ref)								
Yes	0.89	0.35	3.79	0.89	2.37	0.95	-1.77	0.69

Importance of ethnic identity								
1 - Not at all (Ref)								
2	1.80	1.07	0.83	2.78	-1.78	2.12	8.44	2.39
3	1.60	0.88	-4.86	2.15	1.10	1.92	6.00	1.77
4	1.99	0.85	-2.67	2.11	0.22	1.82	6.86	1.69
5 - Very important	1.14	0.80	-6.15	1.96	2.05	1.71	5.95	1.57
Place of birth								
Born in Canada (Ref)								
Born outside Canada	-0.43	0.37	-2.39	0.78	0.23	0.94	0.89	0.85
Canadian Citizenship								
No (Ref)								
Yes	–	–	-9.11	1.88	-2.20	1.99	1.33	1.51
Importance of religion								
1 - Not at all (Ref)								
2	0.39	0.51	-0.98	1.37	2.21	1.12	-2.23	1.02
3	0.01	0.46	-4.39	1.19	2.26	1.03	-0.10	0.96
4	-0.76	0.50	-6.23	1.24	0.45	1.09	-0.29	1.11
5 - Very important	-0.86	0.45	-8.54	1.12	1.38	0.98	2.11	1.01
Trust in neighbourhood								
1 - Can't be trusted at all (Ref)								
2	-0.83	0.52	1.64	1.17	-2.82	0.96	0.89	1.35
3	0.96	0.29	1.97	0.65	1.08	0.62	-0.87	0.69
4	0.47	0.27	1.17	0.61	1.86	0.57	-0.74	0.65
5 - Can be trusted a lot	-0.33	0.29	-2.41	0.59	-0.17	0.59	0.87	0.72
Trust in people at work/school								
1 - Can't be trusted at all (Ref)								
2	0.52	0.61	2.37	1.72	-0.91	1.44	0.68	1.25
3	-0.18	0.34	-3.16	0.82	-1.35	0.82	2.78	0.73
4	-0.63	0.30	0.14	0.79	-0.44	0.75	-0.28	0.62
5 - Can be trusted a lot	-0.59	0.32	-1.21	0.78	0.67	0.80	-0.96	0.69
Volunteering								
No (Ref)								
Yes	0.10	0.42	-1.20	0.92	-0.01	0.95	1.33	0.93

Appendix Table 2: Descriptive statistics of latent scores on Social, Political and Economic domains, classified by sex and age groups - EDS 2002

a) Standardized Latent Scores

		Females							Males						
Age group	Domain	N	Minimum	Maximum	Mean	Std.Dev	Skewness	Kurtosis	N	Minimum	Maximum	Mean	Std.Dev	Skewness	Kurtosis
25-44	Social	7628	-1.88	2.33	0.00	1.00	-0.50	-0.99	7218	-1.45	2.76	0.00	1.00	0.55	-0.37
	Political	7628	-1.18	1.72	0.00	1.00	0.71	-1.34	7218	-0.95	3.00	0.00	1.00	2.29	3.96
	Economic	7628	-0.96	1.51	0.00	1.00	0.75	-1.35	7218	-0.89	3.03	0.00	1.00	2.39	4.25
45-64	Social	6505	-3.03	1.60	0.00	1.00	-0.25	-0.53	6278	-2.03	1.87	0.00	1.00	-0.91	-0.46
	Political	6505	-2.80	1.24	0.00	1.00	-0.78	-0.03	6278	-2.04	1.12	0.00	1.00	-1.11	-0.55
	Economic	6505	-1.24	1.15	0.00	1.00	-0.28	-1.83	6278	-0.93	1.78	0.00	1.00	1.14	-0.54
ALL (25-64)	Social	14133	-3.36	1.92	0.00	1.00	-0.58	-0.17	13497	-2.12	2.63	0.00	1.00	0.14	-0.18
	Political	14133	-3.18	2.30	0.00	1.00	-0.51	-0.43	13497	-0.97	2.34	0.00	1.00	1.61	0.90
	Economic	14133	-1.39	0.99	0.00	1.00	-0.55	-1.64	13497	-0.90	2.29	0.00	1.00	1.65	0.99

a) Exponentially transformed Latent Scores

		Females							Males						
Age group	Domain	N	Minimum	Maximum	Mean	Std.Dev	Skewness	Kurtosis	N	Minimum	Maximum	Mean	Std.Dev	Skewness	Kurtosis
25-44	Social	7628	0.14	116.89	20.06	19.60	1.82	4.25	7218	0.14	223.63	20.15	20.07	2.04	6.53
	Political	7628	0.14	183.74	20.15	20.07	2.03	6.25	7218	0.14	172.21	20.12	19.93	1.95	5.36
	Economic	7628	0.14	173.35	20.12	19.93	1.95	5.41	7218	0.14	173.07	20.12	19.94	1.95	5.42
	Integration	7627	5.61	83.47	20.11	10.96	1.66	2.92	7216	0.52	134.58	20.13	15.36	1.64	4.19
45-64	Social	6505	0.15	208.49	20.15	20.05	2.03	6.38	6278	0.14	135.34	20.06	19.67	1.88	4.92
	Political	6505	0.14	186.82	20.13	20.01	2.02	6.13	6277	0.14	159.53	20.12	19.91	1.95	5.34
	Economic	6505	0.14	221.98	20.12	20.03	2.06	6.75	6278	0.16	170.34	20.16	20.07	2.02	6.07
	Integration	6505	4.07	114.06	20.13	12.34	2.00	6.80	6277	5.74	68.23	20.12	8.30	1.31	2.05
ALL (25-64)	Social	14133	0.14	260.31	20.15	20.06	2.05	6.63	13497	0.14	169.14	20.07	19.70	1.89	5.12
	Political	14133	0.14	175.66	20.11	19.91	1.96	5.52	13497	0.14	208.94	20.14	20.00	2.00	5.98
	Economic	14133	0.14	185.69	20.12	19.94	1.97	5.62	13497	0.14	211.78	20.14	20.00	1.99	5.89
	Integration	14131	3.23	112.02	20.12	13.09	1.57	3.43	13497	2.03	110.24	20.12	12.69	1.69	4.45