



**Canada Standard Group Study**

**for the**

**Inventory for**  
**Work Attitude and Motivation**

**[Canada, 2011]**



## iWAM Standard Groups

### What is a Standard Group?

A standard group is an indication of how a population will typically score on a test item. The indication is a range of typical scores. jobEQ uses this range on its feedback reports in order to give a relative indication of where a person scores in comparison to others. The standard group can be any group, such as a team of sales people, all employees of a certain organization, or quite often the population of a country.

Once we know how a group typically scores, we can determine, in relative terms, whether a person's score is lower than, the same as, or higher than that of a particular population. For instance, an absolute score of 69% on the *Initiation* scale (proactivity) may be very high compared to typical scores (standard group) in France, while it will be within the mid-range of the standard group for the U.K. (percentages are relative scores). This person will be seen as very proactive by the majority of the French, while his proactivity will be considered about "average" in several other countries.

### How helpful are standard groups in adding to the validity of test results?

Standard groups are not intended to add statistical validity. Rather, standard groups help people understand the test results by showing how individuals compare to a given population or group. We use a standard group in iWAM reports to generate visual charts and/or textual explanations of a person's scores as those in the standard group would experience them.

Standard groups are not relevant when jobEQ questionnaires are used for making decisions such as in hiring or promotions. The correct process for making decisions in these cases is to compare an individual's scores to those of top performers in a certain position. This kind of comparison uses jobEQ's *Model of Excellence* technology.

### How are iWAM Standard Groups developed?

jobEQ's iWAM standard groups are calculated by taking the means of a sample of a group (e.g., a country such as Canada or the United States), adding one standard deviation to these means to find the upper limit of the standard group and subtracting one standard deviation from the mean to find the lower limit. If we presuppose that the population is approximately normally distributed, we know by definition that approximately two-thirds of the population will fall within the standard group range for the scale. In addition, we will assume that 1 out of 6 individuals will score higher than the standard group and 1 out of 6 will score lower.

Many tests developed in university settings calibrated their standard group by testing student populations. This method may, however, yield unrealistic results in terms of comparing the student-generated standard group to the larger population.

jobEQ uses *working-age participants* (18 to 65 years old). The test participants used for the jobEQ standard groups have all been tested since 2000. Most completed high school, and most are professionals or white-collar workers. The standard group populations are relatively evenly distributed between men and women.

jobEQ continues to create standard groups for countries around the world as our client list expands across the globe. Of course, existing standard groups get updated as well (See, for example, the documentation for the 2007 U.S. Standard Group).<sup>1</sup>

### **Are these Standard Groups statistically valid?**

The error margin for jobEQ's iWAM standard groups is always less than 5%. For Australia, it is 3.15%; for the U.K., it is 1.16%; and, for the U.S. the standard error is only 1.06%.

Once again, it is important to note that we use standard groups only as a guide to help understand test results. As a result, the key is not in determining the exact numbers; instead, it is important to get a close estimate that will illustrate how participants compare to the members of this group.

### **Canadian Standard Group**

The original Canadian iWAM Standard Group was created in 2002 based on the people who completed the iWAM and indicated "Canada" as their primary work country. Since then several hundred additional Canadians have completed the iWAM test.

Because jobEQ believes it is important to keep standard group statistics current, especially if there are potential shifts in the characteristics of the group, we updated the Canadian Standard Group based on tests taken through 2011.

This report summarizes the updated analysis of iWAM participants in Canada.

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<sup>1</sup> United States Standard Group Study for the Inventory for Work Attitude and Motivation. St. Louis, MO, USA: Institute for Work Attitude & Motivation, 2007.

## **Canada Standard Group Study for the Inventory for Work Attitude and Motivation [Canada, 2011]**

This report compares the Canadian group of individuals who completed the iWAM assessment (as of December 31, 2011) to the Canadian labour force at large based on official Canadian government Census data retrieved from Statistics Canada (<http://www.statcan.gc.ca>).

The 2011 Canadian standard group is based on 689 individuals who completed the iWAM questionnaire since 2000 and who indicate that their primary residence and/or work country is “Canada.”

The comparison of the 2011 Standard Group to labour force data with the Canada Labour force information (based on the 2006 Census) will provide an indication of the relationship between the Standard Group and the Canadian workforce. This comparison, then, is the basis for understanding how one's iWAM results would be viewed by the Standard Group.

### **Original Data Table**

The Canadian workforce data were taken from the Canadian Government statistics. The most recent information was for the 2006 work year.

We created Table 1 (see Appendix A) based on the categories in the jobEQ iWAM database (Standard Group) and the Canadian workforce data.

Because there were so many differences between the two categories, we had difficulty making a comparative analysis. After some discussion, we decided to see if we could combine some groups to make the data more comparable.

The result is Revised Table 1.

## Revised Table 1

In the revised Table 1 below, we shaded the categories based on whether:

- a. the difference between the Standard Group and the workforce population was greater than 3% (yellow);
- b. the difference was less than 3% (green); or
- c. the numbers were such that we could not reach a conclusion (gray); for example, one group had no one in the category or the percentage was so small in one to make it insignificant.

Based on these similarities and differences, we propose the following concerning the 2011 Canadian Standard Group:

- the Standard Group contains a larger proportion of executives/senior management and general administrative/supervisory people than does the Canadian workforce.
- The Standard Group contains a lower proportion of sales and service personnel than the Canadian workforce (there is a good possibility that the difference is a result of a subset of this category related to “service”).
- The Standard Group has a much larger proportion of individuals who indicate “Consulting” as their work (the Canadian comparative category is called “Professional occupations in business and finance”).
- The Standard Group has a far smaller percentage of people in manufacturing than does the Canadian workforce.
- The Standard Group has a lower percentage of individuals who indicated that they were unemployed than was the case for the Canadian workforce.
- The Standard Group had 18.57% (N = 128) who did not indicate their type of work. The result is a product of two factors: (1) jobEQ did not collect this information prior to 2002 and (b) some registrants leave this particular demographic blank when completing the iWAM. The Canadian workforce data had no comparable data/category.
- The Standard Group had 4.49% (N = 31) who indicated that their employment status was “Student.” Again, the Canadian workforce had no category for students.
- The Standard Group had 6.24% (N = 43) who indicated that their work was “Other.” The Canadian data did not have this category.

We found that the following groups had similar proportions of people in them:

- Education
- Professional
- Government/Military (“Public Administration” in the Canadian data)

**Revised Table 1.**  
**Occupational Categories for iWAM Standard Group and Canadian Labour Force**

<b>Standard Group Occupation</b>	<b>N</b>	<b>Percentage of Total Sample</b>	<b>Canadian Labour Force Occupation/Industry<sup>1</sup></b>	<b>Percentage</b>
Executive/senior management	46	6.67%	Senior management occupations	1.27%
Sales/marketing/advertising	59	8.55%	Sales and service occupations	23.54%
Consulting	88	12.77%	Professional occupations in business and finance	2.49%
Computer related (Internet)		Professional	(see professional, scientific, and technical services)	
Computer related (other)		Professional	(see professional, scientific, and technical services)	
Accounting/Finance	19	2.75%	Finance and insurance	4.01%
Customer service/support		Sales & Mktg	(See sales and service occupations)	
Education/training	54	7.83%	Educational services	6.71%
Engineering	14	2.03%	Natural and applied sciences and related occupations	6.46%
General administrative/supervisory	39	5.66%	Administrative and regulatory occupations	2.06%
Manufacturing/production/operations	10	1.45%	Manufacturing	11.69%
Professional (medical, legal, computer)	53	7.68%	Professional, scientific, and technical services	6.54%
Research and development	6	0.87%	(see professional, scientific, and technical services)	
Self-employed/owner	57	8.27%	Self-employed (incorporated & unincorporated)	11.62%
Government/Military	25	3.62%	Public administration	5.70%
Tradesman/craftsman	3	0.43%	Trades helpers, construction and transportation labourers and related occupations	2.34%
Retired		Unemployed		
Unemployed/Between Jobs/Retired	14	2.02%	Unemployed	6.56%
Student	31	4.49%	Not included	
Other	43	6.24%	Not included	
Not Specified	128	18.57%	Not included	
<b>Total</b>	<b>689</b>	<b>100%</b>	<b>Total</b>	<b>17,146,135</b>

The "Percentage" column is based on the combined categories, that is, a group was combined with another group. When there is a label in the cell it indicates the category into which this group was combined. For example, "Customer Service and Support" was combined into Sales & Marketing.

<sup>1</sup> Based on total labour force 15 years and over by occupation - National Occupational Classification for Statistics 2006. See <http://www12.statcan.ca/census-recensement/2006/dp-pd/hlt/97-559/T601-eng.cfm?Lang=E&T=601&GH=4&SC=1&SO=99&O=A>

## Gender

In the table below there is a clear indication that the Standard Group has a significantly larger ratio of women-to-men (Women = 56+% versus Men = 42+ %) than does the Canadian workforce (Men = 52+% versus Women = 47+ %). The two ratios are almost the inverse of each other. Note that previous research by jobEQ on gender differences related to motivational and attitudinal patterns indicated that differences were small.<sup>2</sup> The differences in proportion, therefore, are not considered to be significant in terms of [P1]

**Table 2**  
**Comparison of Gender for the Canadian Standard Group and Workforce**

iWAM Gender	N	%	Canadian Labour Force <sup>2</sup>	%
Male	293	42.52	Male	52.61
Female	391	56.74	Female	47.38
Unspecified	5	0.72%		
Total	689	100%		100%

## Age

Table 3 compares the age ranges of the Standard Group and the Canadian workforce. The data indicate that the Standard Group is older in general than the Canadian workforce. 45-and-older members constitute about 58.5% of those in the iWAM Standard Group while they represent slightly less than 40% of the Canadian Labour force.

In the younger age group (for the Standard Group the range is 21-44; for the Canada data, it is 20-44), the Standard Group has about 33% in this range while the Canadian labour force has almost 54%. As a result, we conclude that the iWAM Standard Group for Canada is slightly older than the comparable Canadian labour force.

In research on the relationship between age and motivational and attitudinal patterns, jobEQ concluded that “. . . we cannot prove that ‘getting older’ is a determining factor for these metaprograms. Even if metaprograms change slightly with age, the degree that they do does not justify creating separate standard groups. Age just doesn’t seem to be an especially important factor.” (2005, p.1)<sup>3</sup> We cannot be certain that the younger members of the workforce or standard group do or do not have different patterns than older members, but since younger members are the smallest proportion of the total, they probably do not affect the overall pattern of the standard group. Over time as the number of Canadian iWAM participants increases, we can do further analysis on the question of age.

<sup>2</sup> Merlevede, Patrick. “Are Men from Mars and Women from Venus?” Eeklo, Belgium: jobEQ, 2006.

<sup>3</sup> Merlevede, Patrick. “Do Metaprograms Evolve With Age?” Eeklo, Belgium: jobEQ, 2005.

**Table 3.**  
**2012 iWAM vs. Canada Employment Age Group Dispersion**

<b>iWAM Age Group</b>	<b>N</b>	<b>%</b>	<b>Canadian Age Grouping</b>	<b>%</b>
<21 years	1	0.14%	<b>&lt;19 years</b>	6.36%
21 – 30	55	7.98%	<b>20 - 24</b>	9.72%
31-44	172	24.96%	<b>25 – 44</b>	44.17%
45-60	301	43.68%	<b>45 – 64</b>	37.15%
>60 years	102	14.8%	<b>&gt;65 years</b>	2.58%

### Overall Conclusions

Based on the analysis of the data in this study, we conclude that the iWAM Canadian Standard Group (2011) is:

- slightly older than the labour force
- comprised of a higher proportion of females than the labour force, and
- more likely to be in an executive, managerial, or supervisory role than is a member of the Canadian labor force.

The broad conclusions provide a fundamental understanding of the nature of this group and, in turn, the nature of the comparison it provides when interpreting an individual's score.

Note that there was no attempt to explore potential differences between French- and English-speaking members of the Standard Group. There were no such distinctions in the Canadian Labour Force data and the numbers in the Standard Group for individuals who completed the instrument in French are sufficiently small that a comparison would be based on vastly different numbers for the two groups.



## Appendix A

**Table 1.**  
**Canadian Standard Group Based on JobEQ Occupational Categories**

iWAM Standard Group			Canadian Labour Force	
Occupation	N	%	Occupation/Industry <sup>1</sup>	%
Executive/senior management	46	6.67%	Senior management occupations	1.27%
Sales/marketing/advertising	42	6.09%	Sales and service occupations	23.54%
Consulting	88	12.77%	Professional occupations in business and finance	2.49%
Computer related (Internet)	4	0.58%	(see professional, scientific, and technical services)	
Computer related (other)	27	3.91%	(see professional, scientific, and technical services)	
Accounting/Finance	19	2.75%	Finance and insurance	4.01%
Customer service/support	17	2.46%	(See sales and service occupations)	
Education/training	54	7.83%	Educational services	6.71%
Engineering	14	2.03%	Natural and applied sciences and related occupations	6.46%
General administrative/supervisory	39	5.66%	Administrative and regulatory occupations	2.06%
Manufacturing/production/operations	10	1.45%	Manufacturing	11.69%
Professional (medical, legal, etc.)	22	3.19%	Professional, scientific, and technical services	6.54%
Research and development	6	0.87%	(see professional, scientific, and technical services)	
Self-employed/owner	57	8.27%	Self-employed (incorporated & unincorporated)	11.62%
Government/Military	25	3.62%	Public administration	5.70%
Tradesman/craftsman	3	0.43%	Trades helpers, construction and transportation labourers and related occupations	2.34%

<sup>1</sup> Based on total labour force 15 years and over by occupation - National Occupational Classification for Statistics 2006

Student	31	4.49%	(not included in Canadian Labour Force data)	
Unemployed/Between Jobs	9	1.3%	Unemployed	6.56%
Retired	5	0.72%	(not included in Canadian Labour Force data)	
Other	43	6.24%	N/A	
[NOT SPECIFIED]	128	18.57%	N/A	