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Summer 2018 Atlantic Quarterly Client Commissioned Questions

~ Methodological Report ~

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Executive Summary

Background

Adding questions to an omnibus study is a cost-effective means of obtaining information relevant to the Government of Canada. In a continuing effort to be aware of trends in economic, political and social issues affecting Atlantic Canadians, the Atlantic Canada Opportunities Agency (ACOA) has included questions in the Atlantic Quarterly to help gauge trends in automation among regional business owners.

Experts agree that advanced manufacturing and automation are the way forward in terms of economic growth and long-term prosperity. Dubbed the fourth industrial revolution, advanced manufacturing and related technologies will represent worldwide investments of over $900 Billion USD per year until 2020.

As fueling innovation is a priority for ACOA, it is important to get a sense of how many businesses in Atlantic Canada are already planning to automate. By getting an idea of the prevalence of automation in the region, ACOA will be able to adapt its outreach efforts to promote policies and programs that support innovation and automation.

Research Objectives

The objective of asking questions about automation in the Atlantic Quarterly's omnibus survey was to gather insight into business owners' intentions to automate in the next year, as well as their plans to seek government funding to do so. This method represents a cost-effective way to gather baseline information on the subject.

The data made available by asking questions on automation will benefit Canadians by ensuring ACOA has a better understanding of regional trends. This initiative also supports the government's efforts to listen to the views of Canadians in developing relevant policies and programs. It provides insight on opportunities for further improvements and help the Agency focus its efforts on high-priority areas.

Methodology

To fulfill these objectives, ACOA used the *Atlantic Quarterly*® omnibus product. The Atlantic Quarterly survey was comprised of telephone interviews (French or English in New Brunswick, English in Prince Edward Island, Nova Scotia and Newfoundland and Labrador) with a representative sample of 1,500 Atlantic Canadians (18 years and older), stratified across the four provinces to minimize the sampling error of provincial sub-samples. The survey was conducted using probability sampling, with quotas for age, gender and region within each province. The data was subsequently weighted to ensure results reflect the true population distribution.

The survey was conducted by telephone from August 1st to August 21st, 2018, with response rates calculated as five percent across Atlantic Canada.

Research Usage

The survey data was collected to gauge the incidence of business owners in the Atlantic Canadian general population. Among the business owners identified in the region, the surveys explored the likelihood of investing in advanced manufacturing or automation in the next year. Furthermore, Atlantic Canadian business owners were asked to assess the likelihood of approaching the Atlantic Canada Opportunities Agency, or any other federal government department, to help invest in advanced manufacturing or automation in the next year.

Similar to questions ACOA has previously asked about business owners as part of CRA's Atlantic Quarterly, results indicate that incidence is approximately 10%, meaning that the follow-up questions on automation have 159 respondents. These results provide a baseline of information to help the Agency determine if they need to pursue additional survey activities in coming years.

Expenditure

The survey entailed the expenditure of $3,898.50, including HST.

Consent

Corporate Research Associates offers this written consent allowing the Librarian and Archivist of Canada to post, in both official languages, this Methodological Report.

Political Neutrality Statement and Contact Information

I hereby certify as a representative Corporate Research Associates that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the Communications Policy of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research. Specifically, the deliverables do not contain any reference to electoral voting intentions, political party preferences, standings with the electorate, or ratings of the performance of a political party or its leader.

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Appendix A: Study Methodology

Questionnaire Design

The questions utilized in this study were designed by Corporate Research Associates Inc., in consultation with Atlantic Canada Opportunity Agency staff. Respondents were asked to indicate whether or not they currently own or operate their own business, and those who qualified were asked follow-up questions to assess the likelihood of investing in advanced manufacturing or automation, and of using ACOA or any other federal government department to do so, in the next year.

Sampling

The overall results, based on 1,500 interviews with individuals 18 years or older from the Atlantic Canadian populations, would be expected to provide results accurate to within plus or minus 2.5 percentage points in 95 out of 100 samples.

A probability sample was used, with the sample drawn using systematic sampling procedures from a list of randomly-selected households compiled from random digit dialing cellular and landline telephone numbers in each province.

The sampling approach was designed to closely represent the actual, true target population in terms of gender, age, and region. To this end, quotas were implemented for gender (male/female), age (18-34/35-54/55+), and regions within each of the four provinces for a total of 400 interviews in each of Nova Scotia, New Brunswick, and Newfoundland and Labrador, and 300 in Prince Edward Island). Statistical weighting of the survey data was implemented to adjust for the differences between the target data collection quotas and the actual distribution of survey completions.

Sample Size and Tolerances

As margins of error for various sub-samples will vary based on sample size and proportion of the obtained result, a selection of sampling tolerances is presented in the following table:

Sample Size	Proportion				
	90% 10%	80% 20%	70% 30%	60% 40%	50% 50%
50	8.3%	11.1%	12.7%	13.6%	13.9%
100	5.9%	7.8%	9.0%	9.6%	9.8%
200	4.2%	5.5%	6.3%	6.8%	6.9%

300	3.4%	4.5%	5.2%	5.5%	5.6%
400	2.9%	3.9%	4.5%	4.8%	4.9%
500	2.6%	3.5%	4.0%	4.3%	4.4%
750	2.1%	2.9%	3.3%	3.5%	3.6%
1,000	1.9%	2.5%	2.8%	3.0%	3.1%
1,200	1.7%	2.3%	2.6%	2.8%	2.8%
1,500	1.5%	2.0%	2.3%	2.5%	2.5%

Survey Administration

Survey Programming and Testing

Surveys were programmed by CRA, and tested to ensure question order and skip patterns were properly implemented.

In addition, a pre-test was conducted among respondents. Approximately 15-20 pre-test surveys were completed in each province. The pre-testing of the surveys allowed the collected data to be reviewed to ensure accuracy and to identify any programming aspects that should be modified. No substantive data quality issues arose as a result of the pre-test, and thus the pre-test data was maintained in the final data sets.

Data Collection

The survey was administered by telephone from August 1st to 21st, 2018. Interviews were conducted in French or English in New Brunswick and in English in Prince Edward Island, Nova Scotia and Newfoundland and Labrador. CRA utilized the services of its trusted data collection partner, nlogic, to undertake the telephone interviewing for the Atlantic Quarterly project. Fieldwork was monitored and reviewed on an ongoing basis to ensure target quotas were being met.

Data Tabulation: Results were first weighted within each province. There were a total of 36 overlapping or interlocking statistical weighting cells within each province created from the study design using the weighting factors of: Region (3); Age group (6); and Gender (2). The results were further weighted by province (4) to determine results for Atlantic Canada overall.

Completion Rates: The final disposition of all telephone numbers called is shown below:

Completion Results	
	Atlantic Canada (Total)
A. Total Numbers Attempted	**83,048**
Not in Service/Blocked Number	33,047
Fax/Modem	327
Cell Phone/Pager	55
Incorrect/Business Number	2,353
Duplicates	4
B. Total Eligible Numbers	**47,262**
Busy	1,428
Answering Machine	6,622
No Answer	18,218
Illness, Incapable	65
Language Barrier	124
Selected/Eligible Respondent Not Available/Callbacks	678
C. Total Asked	**20,127**
Never Call List	188
Gatekeeper Refusal	7,346
Respondent Refusal	565
Terminated/Hang up	9,438
D. Co-operative Contacts	**2,590**
Disqualified/Quota Full/Terminate	1,090
Complete	1,500

Among all eligible respondents contacted, the rate of interview completion was five percent. Completion rate is calculated as the number of co-operative contacts (2,590) divided by the total eligible numbers (47,262).

Non-Response Bias Analysis

Any survey that is conducted is potentially subject to bias or error. When a survey is conducted with a sample of the population, there are two general classes of bias or error: sampling error, which is quantifiable, and non-sampling error, which is typically not quantifiable. Sampling error arises from the fact that interviews are conducted with only a subset of the population, and thus it is possible that the results obtained from this group of respondents is not reflective of the population as a whole. In contrast, non-sampling error encompasses a number of different types of errors including coverage error, measurement error, non-response error, and processing error.

Sampling error is primarily dependent on the sample size; the larger the sample size, the smaller the sampling error. As noted earlier, in the current studies, the sample size, across Atlantic Canada, was 1,500. This sample size is large by industry standards, and serves to minimize the sampling error. Indeed, the overall margin of error was ±2.5 percentage points (19 times out of 20). Margins of error will be larger for subsamples as indicated in the Sampling Tolerances table above.

With respect to non-sampling error, a number of steps were taken to minimize bias due to these sources. All surveys utilized computer assisted telephone interviewing (CATI) technology to ensure proper survey skip patterns were followed and to minimize errors due to data entry and data capture. In addition, interviews were conducted by fully trained interviewers, with a minimum of 10 percent of interviews verified after the fact to ensure high quality data. The survey instruments themselves were pretested with a small sample of respondents to ensure the survey material was easily understood by both respondents and interviewers, and that the resultant data were being captured properly.