AN EVALUATION OF THE LIVING IN CANADA SURVEY PILOT

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ABSTRACT

In the fall of 2008, Statistics Canada conducted a pilot survey in order to evaluate the proposed content and methodology for a long duration household panel survey. The Living in Canada Survey (LCS) pilot, which collected data on multiple aspects of individuals' lives, was conducted on about 2,000 households. It allowed for the testing of the collection methodology, mainly characterized by the use of non-proxy personal interviews of every adult in the sampled households. This paper provides a description of the main features of the LCS methodology and focuses on the analysis of the impact of the collection methodology and collection effort on nonresponse.

KEY WORDS: Collection Analysis, Non-Proxy Interview, Non-Response Analysis,

RÉSUMÉ

Statistique Canada a mené, à l'automne 2008, une enquête pilote afin d'évaluer le contenu et la méthodologie proposés pour une enquête par panel de longue durée auprès des ménages. L'Enquête Vivre au Canada (EVC) pilote, qui visait à recueillir des données sur divers aspects de la vie des individus, a été menée auprès d'environ 2 000 ménages. Elle a notamment permis la mise à l'essai de la méthodologie de collecte dont une des principales caractéristiques consiste à n'utiliser que des entrevues personnelles sans procuration auprès de chacun des adultes faisant partie des ménages échantillonnés. Cet article présente une description des principales caractéristiques de la méthodologie de l'EVC et s'intéresse plus particulièrement à l'analyse de l'impact de la méthodologie et de l'effort de collecte sur la non-réponse.

MOTS CLÉS: Évaluation de non-réponse; évaluation de la collecte; entrevue sans procuration.

1. INTRODUCTION

In 2006, a review of the existing longitudinal surveys at Statistics Canada led to the conclusion that there was a lack of a multi-topic, long-term longitudinal survey in Canada which could be used to study linkages between labour activities, education, family, health, and the impacts these factors have on well-being over the life-course of individuals (Picot *et al,* 2006). Developing a life-course focused household panel survey began with the Canadian Household Panel Survey (CHPS) project, the pilot of which was known as the Living in Canada Survey (LCS). Initial work on the development of the CHPS methodology began in 2007 and the pilot survey was conducted with field operations taking place in the fall 2008.

The experience of the LCS provided useful information for the development of the methodology envisioned for a future LCS-like longitudinal survey. This paper will focus on the information gained from studying several aspects of the LCS methodology and the data collection process. The paper begins by presenting some background information and the design of the pilot survey. The nonresponse analysis undertaken for the survey is described in section 3 followed by a summary of the analysis of the collection process in section 4. Finally, some concluding remarks are given in section 5.

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2. BACKGROUND AND PILOT SURVEY DESIGN

The goal of the LCS was to test various dimensions of the survey: the content of a new multi-topic questionnaire, the collection application, the survey's field operations, interviewer training, and some aspects of the methodology including the choice of frame as well as the feasibility of collecting data from all adult members of a household through a non-proxy computer assisted personal interview (CAPI). For operational and cost reasons, the pilot survey was conducted only in New Brunswick, Quebec, Ontario and Saskatchewan. The target population included individuals residing in these provinces excluding residents of institutions and persons living on Indian reserves or on military bases.

The longitudinal plan for the content was that some core content would be repeated at each wave of the survey, and in addition, rotating content would be added to later waves at differing intervals appropriate for the content. The LCS was meant to test the content of the first wave of the survey which covered the domains of work, income, family, education and health.

2.1 Frame and Sample

The LCS sample was composed of two separate samples selected from different frames. One sample consisted of a set of dwellings that had responded and rotated out of the Labour Force Survey (LFS) approximately one year prior to the LCS collection. The second sample was a 'fresh' sample of dwellings selected from the LFS area frame. The majority of the members of the area frame sample would likely not have had experience with Statistics Canada surveys other than the census.

In order to provide a better comparison of the two sources, diminish interviewer effect, and reduce collection costs, clusters were selected in a manner to maximize the overlap in clusters between the two samples. The result was that 60% of the households were selected from clusters common to the two samples. Since a cluster was generally assigned to one interviewer, the overlap of clusters between the two samples reduced travel costs and the total number of interviewers required. In addition, it increased the likelihood that interviewers would have cases assigned to them from both samples, thus diminishing the interviewer effect between the two samples.

Table 1 – Number of dwellings after collection of the LCS

Province	Rotate-out sample	Area frame sample	Total
Total	1,009	1,350	2,359
New Brunswick	210	255	465
Quebec	243	372	615
Ontario	353	455	808
Saskatchewan	203	268	471

Dwellings were sampled and all household members residing in those dwellings became sample members. Interviews were conducted only with those who were 15 years of age or older. Table 1 provides counts of the number of dwellings including additional dwellings that were discovered at a few of the sampled addresses. More details on the frames, the reasons for their selection and the sample design can be found in Gossen (2009).

2.2 Collection Methodology and Application

The collection period for the LCS ran from October 15, 2008 to December 31, 2008. Interviewers were instructed to make every attempt to collect the data in person. The interviewers were provided with recent telephone numbers for the dwellings but the telephone numbers were to be used primarily for making contact with the household and setting up appointments for personal interviews in the event that attempts at making first contact in person failed. As a last resort, if it was impossible to conduct the interview in person, interviews were conducted using the CAPI collection instrument but with the interview taking place over the telephone.

The LCS questionnaire consisted of four different components. The first component was the Entry component whose primary goal is to collect a list of all household members and their relationship to each other, referred to as the roster. Two different components covered the content portion of the interview; the person component and the household component. An attempt was made to complete the person component with every member of the household 15 years of

age or older. Proxy responses were not accepted for the person component. The household component covered information for the entire household. The person most knowledgeable about the topics covered by this component was asked to complete it. Finally, the Exit component was mainly used to schedule further contacts if required, assign a status to the case and thank respondents for their participation. The questionnaire can be found in Statistics Canada (2009) and the questionnaire evaluation in Davis (2009).

3. NONRESPONSE ANALYSIS

The calculation of response rates during the collection process gave the regional offices practical measures and targets by which they could evaluate their performance. Collection response definitions were established for the person component and the household component. These two components were combined to create an overall definition at the household level. The nonresponse analysis presented in (Gossen et al., 2010) and (Cauchon et al., 2010) is summarized in this section.

3.1 Definition of Response

At the person level, the response definition differed slightly by age. Response for persons from 15 to 17 required that permission to access income tax data was obtained or that the respondent provided an estimate of their income. The income module was asked about two thirds of the way through the person component. For persons of age 18 or over, the respondents had to proceed slightly further and they had to have responded to questions on support payments which were not asked of those under 18. The household component was considered as a response if the respondent had reached at least the end of the material deprivation section. This section appeared near the end of the household component.

A household was considered a partial response if it had completed the Entry component and had at least a partial response to at least two other components (one person component and the household component, or two person components). A complete response was defined as finishing all components for all eligible household members in addition to the completion of the household component.

3.2 Household-level Response Rates

The overall household-level response rates based on the collection definitions are shown in Table 2. The response and nonresponse rates are calculated as percentages of the in-scope households, which exclude cases such as demolished, vacant or seasonal dwellings and households with no eligible members. Household members who have a usual place of residence elsewhere, such as students were considered ineligible. The rates presented in Table 2 assume that all nonresponding households are in-scope.

Table 2 – Household-level unweighted response rates based on collection definition of response

	Total number of dwellings	In-scope households	Nonresponse		Response					
					Overall response (complete and partial)		Complete response		Partial response	
			Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)
Total	2,359	2,122	511	24.1	1,611	75.9	1,405	66.2	206	9.7
Sample										
Area frame	1,350	1,180	269	22.8	911	77.2	793	67.2	118	10.0
Rotate-out	1,009	942	242	25.7	700	74.3	612	65.0	88	9.3
Province										
New Brunswick	465	398	92	23.1	306	76.9	267	67.1	39	9.8
Quebec	615	579	138	23.8	441	76.2	395	68.2	46	7.9
Ontario	808	743	203	27.3	540	72.7	452	60.8	88	11.8
Saskatchewan	471	402	78	19.4	324	80.6	291	72.4	33	8.2

The collection response rate was 75.9%. By province, the rates varied from 73% to 81%. This overall response rate was quite encouraging for a future survey. The collection offices were given a target response rate of 80, but the fact that the

collection period included the December holiday period may have contributed to the difficulty in reaching the target. The breakdown of the complete and partial response gives an idea of the quality of the response. The higher the ratio of completes to partials the better. While the overall household-level response rate is relatively good, there is room to improve it by completing more of the partial response cases. For instance, a longer collection period may have allowed for such an improvement of the response rate.

The response rate for the area frame sample, 77.2%, slightly exceeds that of the rotate-out sample, 74.3%. Inherent in the rotate-out sample is an additional level of nonresponse that occurred at the time of the LFS but is not included in the figures presented in these tables. In September 2007, when the rotate-out sample was last in the LFS, the LFS response rate was 92.8%. When considering both sources of nonresponse for the rotate-out sample, the lower response rate for this option might lead one to conclude that an area frame option would be the better choice for the main survey. Response rate alone, however, does not give a true indication of the potential for nonresponse bias. The composition of the nonresponse and the ability to compensate for it are also important. In the case of a rotate-out sample of households, the availability of auxiliary data for nonresponse adjustment may result in less nonresponse bias, even though the response rate may be lower. It is difficult to identify the preferable frame option in this case given that the rotate-out sample was a sample of addresses rather than a sample of households residing at those addresses as is often the case with rotate-out samples from the LFS.

3.3 Type of nonresponse

As shown in Table 3, the majority of the nonresponse observed in the LCS consists of refusals, with two thirds of the nonresponding households being classified as refusals. The "No Contact" column consists of cases where contact was never made with the household. Nearly 3% of the in-scope households in Ontario, which is over 10% of the nonrespondents in Ontario, are cases where contact was never made. This might be an indication that the collection period may have been too short, at least in Ontario. The category of "Other nonresponse" includes a variety of situations, including outstanding appointments, no contact on the final attempt, special circumstances and threat to the safety of the interviewer. In fact, many of these cases could be considered implicit refusals. More analysis could be done on this group to look at the pattern of attempt outcomes over the collection period. For example, a series of appointments followed by no contacts could be an indication of an implicit refusal.

Table 3 – Type of Nonresponse

	Number of in-scope households	All types of nonresponse		Refusal		No contact		Other nonresponse	
		Number	%	Number	%	Number	%	Number	%
Total	2,122	511	24.1	349	16.4	36	1.7	126	5.9
Sample									
Area Frame	1,180	269	22.8	177	15.0	18	1.5	74	6.3
Rotate-out	942	242	25.7	172	18.3	18	1.9	52	5.5
Province									
New Brunswick	398	92	23.1	60	15.1	6	1.5	26	6.5
Quebec	579	138	23.8	108	18.7	2	0.3	28	4.8
Ontario	743	203	27.3	127	17.1	21	2.8	55	7.4
Saskatchewan	402	78	19.4	54	13.4	7	1.7	17	4.2

3.4 Refusals

The largest source of the nonresponse was refusals. If the response rates are to improve it is necessary to find ways to convert more of the refusals to respondents or to prevent the refusals from ever occurring in the first place. This could be addressed by attempting to improve respondent relations materials, finding better ways to "sell" the survey to respondents and by giving interviewers better tools to persuade the respondents that the survey is useful and important. With this in mind, this category of nonresponse was examined in further detail.

The collection application provided the interviewers with the opportunity to record the reason for refusal. As shown in Table 4, the most common reasons were that the individuals were "not interested", "did not have time", or "recently completed a survey". These three reasons are somewhat similar in that they do not express a particular concern with the

survey in general, but are reasons that someone would give if they just did not feel compelled to complete any survey. The confidentiality/privacy reason however points to a particular concern that the respondents had. The distribution between the first three reasons is different for the two samples, with the LFS rotate-out sample refusals citing the recent participation in the LFS as a reason 29% of the time. At first glance this might be an indication that the LFS experience was a large burden and therefore using a frame which did not come with such a restriction would be a better option. However, noting that the "not interested" and "did not have time" reasons have much lower rates for the LFS rotate-out sample, it would not be unreasonable to assume that a significant proportion of the individuals citing recent participation in a survey as a reason might otherwise have stated that they were not interested or did not have time. One interesting difference between the two samples is the percentage who cited confidentiality or privacy concerns as a reason for refusing. The rate for the area frame sample is higher than that for the rotate-out sample. It is difficult to determine from these results whether or not the participation in the LFS had alleviated some of these concerns but it might indicate the possibility to reduce refusals through improved respondent relations material on the topic of confidentiality and improved interviewer training on how to deal with these concerns.

Table 4 – Reasons for refusals by sample

Reason for Refusal	Area Frame Sample	Rotate-out Sample	Total sample
Not interested	41%	29%	35%
Does not have time / does not want to be disturbed	21%	8%	14%
Recently completed a survey	1%	29%	15%
Confidentiality / Privacy	7%	2%	5%
Other reasons	30%	32%	31%

Table 5 gives an indication of the amount of success the interviewers had in converting refusals. The information available on the data collection process was used to identify all households that had, at some point in the collection process refused to participate in the survey. For 101 of the 452 households that had ever refused to participate in the survey, interviewers succeeded in collecting at least partial information through conversion efforts. The conversion success rate was slightly higher in Ontario and Quebec but the rate at which households refused was also higher in these two provinces.

Table 5 – Refusal Conversion

	Number of ever refused	Conversion	
		Number	%
Total	452	101	22.3
Sample			
Area Frame	232	53	22.8
Rotate-out	220	48	21.8
Province			
New Brunswick	73	13	17.8
Quebec	140	32	22.9
Ontario	170	41	24.1
Saskatchewan	69	15	21.7

The overall conversion rate of 22.3% is quite encouraging and is a testament to the interviewers' skills in convincing a significant proportion of the initial refusals of the value of the survey. A considerable amount of effort was spent attempting to convert refusals. The median number of attempts to convert refusing households was four. This led to a median of seven attempts for the households that had ever refused when taking into account all attempts including those prior to the refusal. This is higher than what was observed for all the responding households as will be seen in section 4.1. Given this, it might be preferable to develop a better strategy to avoid refusals rather than simply concentrating on improving strategies to convert refusals.

3.5 Person Level Response Rates

The sample for the LCS consisted of a sample of dwellings, or addresses, without prior information on the household composition. It was only at the time of the collection of the household roster that the number of individuals residing in a dwelling was known. It is therefore impossible to calculate a person-level response rate for the entire sample. Table 6

presents the person-level response and nonresponse rates based on households for which a roster was completed. These response rates are relatively high at the person level—not overly surprising since these are individuals in households where a certain amount of co-operation was already obtained in order to complete the roster. All provinces other than Ontario (87.6%) had person level response rates over 90%.

Table 6 – Person component nonresponse (based on 1,640 in-scope rostered households)

	Rostered In-scope Persons	Unweighted Rates			
		Nonresponse		Response	
		Persons	Rate (%)	Persons	Rate (%)
Total	3,205	310	9.7	2,895	90.3
New Brunswick	586	49	8.4	537	91.6
Quebec	863	73	8.5	790	91.5
Ontario	1,165	145	12.5	1,020	87.6
Saskatchewan	591	43	7.3	548	92.7

The person-level response rate was slightly higher for females than for males, and increased with age. Single individuals were also less likely to respond. The person-level response rates tended to decrease with the size of the household, especially when more than two adults were present in the household. The pattern in response rates was similar to other surveys in that the more difficult to get respondents were young people, single individuals, and males. These are the demographic groups that many surveys have difficulty reaching. (Data referred to in this paragraph are not shown).

4. COLLECTION ANALYSIS

In addition to the interview data, the collection of the LCS also included data related to the survey process, referred to as paradata. Paradata are recorded for each attempt the interviewers made for each household in the sample. The information includes details such as the time and date of the attempt, the duration of the attempt excluding the travel time, the mode of collection and the outcome of the attempt. An attempt is recorded each time an interviewer opens a case and some information is entered, reviewed or finalized. Paradata were used to evaluate the collection process (Cauchon *et al,* 2010).

4.1 Collection Effort

Table 7 shows the median number of attempts, contacts and time spent per household. As expected, the median number of attempts and contacts were higher for the nonresponding households than for the responding households. This shows that the effort made in trying to get the cooperation of nonresponding households is not negligible.

Table 7 – Median number of attempts, contacts and time spent per household

	Medians		
	Attempts	Contacts	Time (in minutes)
Total sample	5	3	51
Responding households	4	2	67
Nonresponding households	8	4	8
Out-of-scope units	2	1	2

4.2 Mode of collection

As mentioned previously, interviewers were instructed to try to conduct the interviews in person. In fact, in 98% of the cases, the first attempt was made in person, and in 88% of cases, the first contact was made in person. Figure 1 illustrates the distribution of attempts throughout the collection period by collection mode. The number of attempts per day was greater at the beginning of collection than at the end. In addition, the number of telephone attempts was very low at the beginning of collection and increased gradually until almost the end of the collection period. As the end of the collection period approached, more and more use of the telephone was made in an attempt to complete cases.

The outcomes of attempts were examined by mode of collection to determine how the telephone was used (appointments, interviews, etc.) and how the mode affected the outcome. Figure 2 shows the outcomes of attempts by mode of collection.

Although the "no contact" rate was higher when attempts were made in person (49.1%) rather than by telephone (40.5%), the total percentage of attempts that resulted in a response, either complete or partial, was about the same in person and by telephone. Note that the proportion of attempts resulting in a complete response (as opposed to a partial response) was significantly higher when the attempt was made in person. This may be related to the fact that interviewers were instructed to do interviews in person when possible and may have used first telephone contact as a means of arranging an in-person interview. Consequently, fewer completed responses and more appointments should have been associated with the telephone attempts. Figure 2 shows that, overall, the percentage of attempts resulting in appointments is only slightly higher for telephone attempts compared with in-person attempts. However, if only the attempts that resulted in a contact are considered, the telephone appointment rate is about 5 percentage points higher than the in-person appointment rate (data not shown).

Figure 1– Number of attempts by date and collection mode

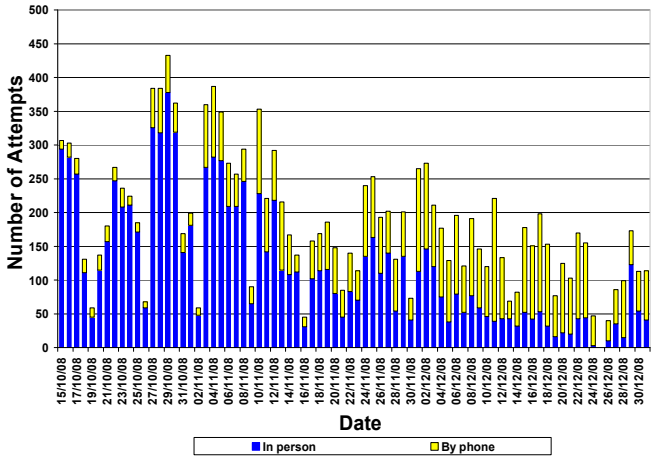


Figure 2– Outcome of call attempts by mode of collection

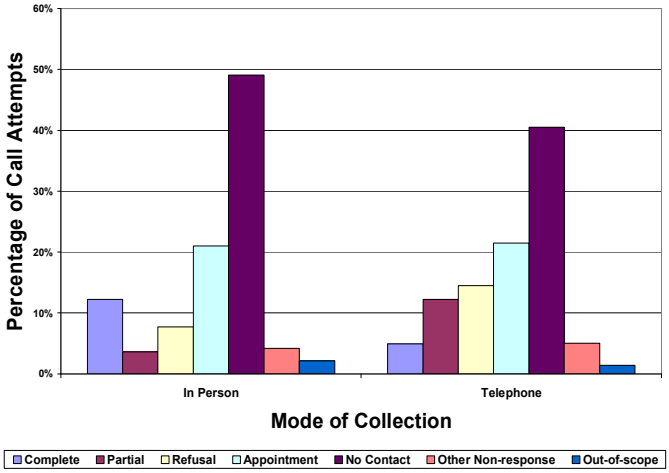


Figure 2 also shows that telephone attempts were more likely to yield a refusal than in-person attempts. However, some of this difference is likely because attempts at refusal conversion were frequently carried out by senior interviewers over the telephone. Excluding attempts by the senior interviewers and program managers (data not shown), the difference in the refusal rates by mode was not as pronounced but the refusal rate for telephone attempts (8.9%) was somewhat higher than those for in-person attempts (6.4%).

Outcomes of the first contact are shown in Figure 3. When the first contact was made in person, it was more likely to result in a response, either complete or partial, than if the first contact was made by telephone, as would be expected based on the instructions given to the interviewers. Also as expected, when the first contact was made by telephone, it was more likely to result in an appointment than when the first contact was made in person. Interestingly, the rate of refusal was approximately the same on the first contact, regardless of contact mode. This could be an indication that collection mode had no impact on the refusal rate. Alternatively, it may be an indication of an implicit refusal. The rate of explicit refusals was approximately the same on the first contact; however, respondents who did not explicitly refuse may have been trying to avoid the interview by making an appointment, which presumably is easier over the telephone. Figure 4 is an attempt to test this theory.

Attempts where the previous attempt resulted in the setting of an appointment were examined. Figure 4 shows the outcomes of the second attempt by collection mode of the second attempt. Assuming that the second attempt is indeed the appointment, there is some evidence that respondents may have been using appointments as a means of avoiding the interview. Half of all appointments conducted by telephone resulted in the setting of another appointment, regardless of whether the original appointment was a hard or soft appointment. Only 10% of telephone appointments resulted in a complete response, and for almost 24% there was no contact. Appointments conducted in person met with more success. In 44.4% of hard appointments attempted in-person, and 11.5% of soft appointments, the result was a complete response.

This analysis seems to indicate that the approach of conducting personal interviews as much as possible may have led to better response rates, or at least more complete responses. Further analysis is however required to determine if this was

necessarily true for all types of individuals and/or households. If, however, this approach caused some types of individuals or households to be under-represented, the survey results could be biased.

Figure 3 – Outcome of first contact by mode of collection

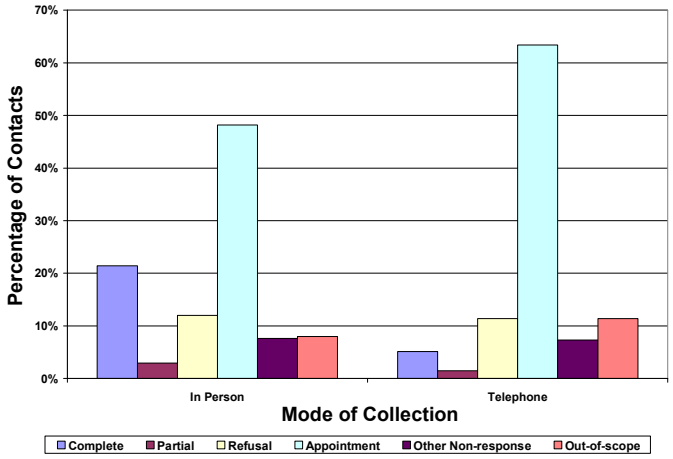
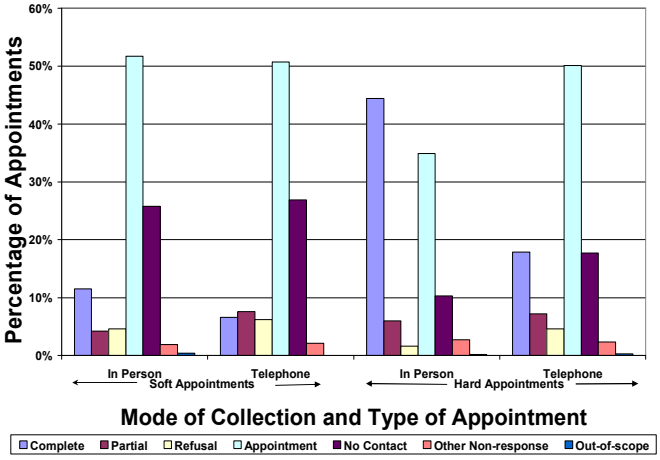


Figure 4 – Outcome of appointments by mode of collection



4.3 Length of collection period

Table 3 suggested that the collection period may not have been long enough because of the number of cases that had never been contacted. Another way of trying to determine whether the length of the collection period was appropriate is to observe the daily progress of collection; that is, to examine whether collection progressed steadily over time or tailed off.

Figure 5 – Daily partial/complete case success rate

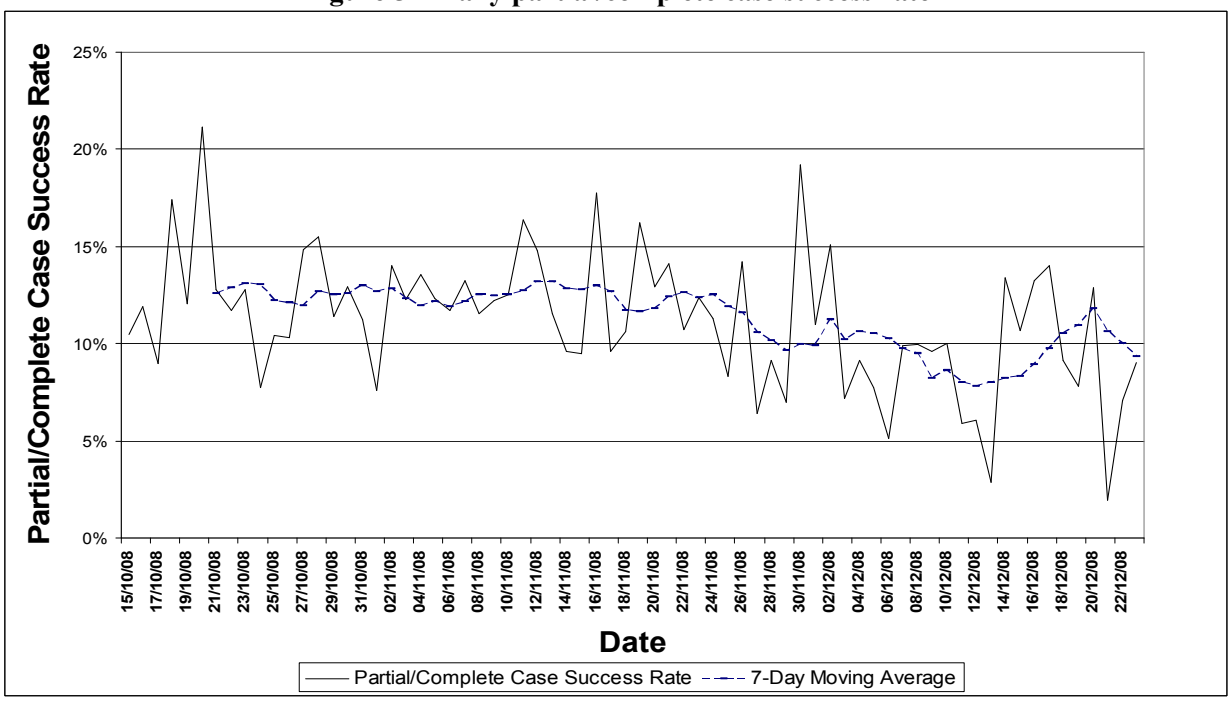


Figure 5 shows the daily success rate for finalizing a case as a complete or partial respondent up to December 23, 2008. The last week of collection (December 24 to 31) was excluded because the number of attempts by day during that specific week was very small compared to the rest of collection because the senior interviewers were likely finalizing the remaining cases. The dashed line is a moving average that was calculated over 7 days to remove the variability due to the weekday. In the first half of the graph, the average partial/complete case success rate hovers around 12%. In the second half, the average dips to just below 10%, which suggests that collection had slowed slightly but was still effective. The

information in Figure 5 does not discredit the idea that the collection period could have been longer, which probably would have yielded a higher response rate for the pilot.

4.4 Non-proxy Reporting of All Adults

The person component of the LCS questionnaire contained questions of a subjective nature related to topics such as behaviours, attitudes and perceptions. These types of questions do not lend themselves well to proxy reporting, therefore it was essential to conduct the interview with the targeted individual. Moreover, each member of the household aged 15 and older had to be interviewed. Clearly, these design features imply greater interviewer effort than if proxy reporting had been allowed or if a single respondent had been selected from each household. The impact of non-proxy interviewing on the collection process was however difficult to isolate from the impact of interviewing all adult household members. The two are very much related and could in some respects only be studied together.

As household size increased, the number of visits required to complete a case increased. This could have been because it was simply not feasible or reasonable for an interviewer to remain in the household for the length of time required to complete the household component and all person components in one visit. The increase in visits could also have been due to the fact that as the number of adults in the household increased the likelihood that the interviewer would actually find all household members at home at the same time decreased. Since proxy reporting was not allowed, additional visits were required.

Table 8 shows the effort made to collect the data in terms of attempts, contacts and time by the number of adults in the household. As prior information regarding household membership was not available for all sample units, this analysis was restricted to households where the interviewers completed the household roster, at a minimum.

Table 8 – Collection effort by number of adults in the household (based on 1,640 in-scope rostered households)

Number of adults per household	Number of rostered households	Households with all adults responding (%)	Median number of attempts	Median number of contacts	Median Time (in minutes)
1	503	98.8	3	2	47
2	842	85.3	4	3	71
3	195	66.2	6	4	89
4	71	76.1	7	4	114
5	25	56.0	8	6	143
6	4	25.0	15.5	11.5	115.5

It is evident from Table 8 that, for households where the roster was completed, the rate of obtaining responses from all household members generally decreased as the size of the household increased. There was a bit of a deviation from this pattern for households of size 4 but the small sample size of the larger households must be kept in mind when studying these results.

Even though it was relatively more difficult to obtain responses from all household members as the household size increased, once the roster was obtained it was rare to have cases where no person components were completed. In the vast majority of cases at least one person had responded in the household. There were no household members at all responding to the person components in only 21(0.8%) of the 1,640 households with completed rosters. It was not surprising to see such a low rate of total person nonresponse within households given that the analysis was restricted to those households where the interviewer was already successful in gaining the cooperation of the respondents to complete the household roster. It is impossible to say whether the increased difficulty in obtaining data for the complete household in the larger households was due to non-proxy reporting or merely the time necessary to complete the interview for a larger number of individuals.

There appeared to be a linear relationship between the number of attempts and the household size. For households of size 1 a median of 3 attempts was required. For each additional adult in the household the median number of attempts increased by one. Generally a similar relationship existed for the contacts. There seemed to be an almost constant increase in time as the household size increased. This analysis however is based on the total time for the household without making a distinction between the time spent in the household and person components. It is possible that the time

for the household component was increasing with the household size while at the same time the average time for the person component decreased. This could have led to a constant increase in total time. A situation such as this could be related to the household composition. If the larger households consisted of families with one or more teenagers 15 to 17 years of age, the average time per person component would be less than a household with all adults over 18, but perhaps the household component may have taken more time. This level of analysis has not yet been performed.

5. CONCLUDING REMARKS

The Living in Canada Survey provided valuable information on the feasibility of a multi-topic long-term household panel survey in Canada. The overall collection household response rate of 75.9% suggests that it is possible to obtain cooperation from respondents for such a survey, at least at the initial wave. However, given the importance of the interactions between household members to studying life-course dynamics, it would be important for a future survey to improve the collection management strategy to improve upon the 66.2% complete-response rate. Prioritizing personal over telephone interviews seems to have had a positive impact on obtaining complete responses. Further improvement in the complete response rate could be achieved by extending the collection period.

Much effort was made to get the hard-to-reach to respond as well as for the conversion of explicit refusals, which was the main cause for nonresponse. Although successful, the refusal conversion effort was not sufficient to reach the 80% targeted response rate. Analysis also demonstrated that respondents may have used appointments as a means of avoiding the interview. Priority should be put on developing a strategy to better persuade the respondents to participate in order to improve the response rate. More generally, further analysis will be required to improve the collection process. One example would be an analysis to better understand the multiple-visit situation arising from non-proxy interviews.

Considering only the LCS response rates, it might seem preferable to opt for a fresh sample (77.2%) rather than an LFS rotate-out sample of dwellings (74.3%), especially when taking into account that the latter also suffers from nonresponse to the LFS. A better alternative would have been to use a sample of households, rather than dwellings, that rotated-out of the LFS. This was not operationally feasible in the LCS. Under such an approach there would have been a potential for bias reduction arising from the additional amount of auxiliary information. Given that the pilot didn't include this alternative, it is not possible to study differences between this approach and the fresh sample option.

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