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Literature Review on Mixed Mode Data Collection

In order to predict the future trend on a certain product, or to provide a full analysis on the object, we need to do surveys to collect the information we need. This process is known as data collection. traditionally, there are various ways to collect data. With the rapid growth of science and technology, people have requirements on larger scales of data with higher reliability and accuracy, therefore new ways of data collection emerged inevitably. One of those is web survey. It has a great potential but it also create some problems such as nonresponse. Since the limitations to the traditional mode/single mode data collection, mixed mode data collection is developed to overcome these limitations. Some of those data collections are mixed by web and mail survey, while some other data collections are formed by web and telephone survey. While the mixed mode data collection is a new way in this field, we still do not know it actually improved the reliability and accuracy on data. Thus, we need to research on the performance of mixed mode data collection.

Researchers from Data Recognition Corporation pointed out that mixed-mode survey can incorporate more possibilities. The paper suggests that when we consider a telephone survey by a live person or interactive voice response, data collectors should take potential respondents into consideration. The paper uses a example supposing we

are using online interview but some interviewers do not know how to access to webs, data collectors should prepare some alternative ways for them to respond, such as papers and pencils for written responses. Those researchers also argues about “the pragmatic reasons of cost and time” (Baum et al), arguing that it is better to conduct the survey by mixing written survey and computer-assisted telephone interview (CATI). Because to conduct a mixed mode data collection than single mode data collection gives responders better reply experiences and results in better response and bigger response sizes. Researchers compared mailing survey with CATI and concluded that mixing data collection methods results in more response rate and less expensive than pure CATI survey (Baum et al). Herbert stated that the main limitations by traditional mode are cost, time, coverage, response rate, and preferences of respondents, and the usage of mix mode data helps to reduce and even eliminated traditional mode’s disadvantages. Helbert explains by supposing a hypothetical survey, and mix mode collection allow data collectors spend less money on printing the survey by can conducting the survey online, which minimizes collectors collection time since online surveys don’t require collectors to wait for the paper responses. Overall, Helbert and his team suggests in his paper that mixed mode data collection increases the response rate by offering the respondents different options to do the survey.

By enhancing the advantages of mixed mode surveys, the paper *Mixed-Mode Surveys: A Strategy to Reduce Costs and Enhance Response Rates* did a research on 219 people who took the same workshop excluding the five people’s data due to error

measurements. The research starts by sending the emails to all responders with a email available, then by sending mails to people who did not leave a email, and calls responders to fill out the survey who did not respond. As the result, they figured out that early respondent are 74 people (34.5%), late respondent but before phone call are 29 people (13.5%), and late respondent after phone call would be 41 people (19.1%). They finally received 144 response (67.1%). At the end of this particular survey, researchers state that they saved \$250 by reducing the number of sending postal mails. Since mix mode data collection reduces cost of the collection process, mix mode is very recommended for researchers with limited budget cost. Daniel and his team agrees with the Helbert that single mode data collection can be costly and unfavorable response rate. To improve such limitations and disadvantages of single mode collection, Daniel and Helbert's report encourages the application of mix mode data, which proves to maintain response rates with better cost.

However, although mix mode data collection improves some disadvantages of single mode, some argue that mix mode data collection has its downsides and achieve worse collection than traditional methods. As author B.Janssen mentioned in the paper *Web data collection in a mixed mode approach: an experiment*, it is possible for the respondents provide different answers to the same problems just due to different modes. For example, they might not pay much attention to those problems since the problems are not relate to their lives at all. But the questionnaire required the respondents to answer, one of the solution for them is to randomly select a choice. Another issue Janssen concerned about is how to minimize the previous problem if

the someone did answer differently. Through mix-mode collection, responders may find “escapes” which can help them finish the task in a more convenient fashion. Another experiment in Janssen’s report that concluded interview mode influences collection of data. The experiment utilized different surveys in Netherland through different modes combination, and data was collected, the internet response level varies between 25 to 30 percent depending on the approach strategy in compare to the paper response level, which varies around 10 percent. The experiment lead Janssen to conflicts that there difficulties technically, logistically and indeficiency. Technical difficulties may take form as pop-up blockers on the computers and logistic difficulties may involve printing errors. Indeficiency in data collection is a combination of the above two pitfalls and lack of appropriate facilities. These challenges are complicated to overcome since “there was no proper provision for a successive approach of sampled units with the same or various modes” (Janssen). Therefore, although mix mode increases the capacity for possibilities, it can not satisfy all situations. Janssen’s team thus believe that mix mode creates more problem than traditional ways to collect data.

EKOS Research Associates Inc. figured out that mixed-mode on survey can overcome the problems mentioned by Janssen. EKOS’ research associates proposed the survey by telephone, and then they figured out the rigorous and cost-effective while doing the survey online. In essence, the team conducted two mode survey, in which one mode online survey and the other is through telephone. Both modes contain some items for producing comparable results so they take the midpoint option

which would affect the result. Moreover, EKOS research Associates also pointed out by using a hybrid online and telephone survey would keep the costs at a reasonable level. They also figured out that an online questionnaire would arouse awareness of a visual depiction of a campaign.

Author Edith D. de Leeuw wrote in the article *To Mix or Not to Mix Data Collection Modes in Surveys* also argues that choosing mixed-mode data collection compensates the weakness of each individual mode at affordable cost, which is mentioned in the first journal by Helber's team. The author also suggests for most literature on mixed-mode applications refers to the reduction of nonresponse errors, which agrees with second paper on response rate. Also, the author pointed out the limitation of mixing mailing and Internet survey because it requires some technical background to conduct the survey that is resolved in technical difficulties mentioned by Jessan and Jessan's team.

In general, these researches raised different perspectives in regards to mix mode data collection. Among them, most of the researchers believes that mixed-mode data gathering brings the data more accuracy and reliability while others argue difficulties exists in application of mix mode data collection in actual conduction of the survey. Although these reports disagree over aspects of mix mode data collection, reports does credit the innovation of such data collection method. However, since mix mode data collection involves various combinations of modes, conclusion of merely one combination upon one survey is insufficient. To evaluate mixed mode data collection, more researches on more circumstances is inevitably needed.

Works Cited

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