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Design Considerations for a Cross-cultural Enumeration Survey

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ABSTRACT

Researchers have acknowledged that understanding cultural differences, including the thoughts and behaviors of respondents in a multicultural context, are essential to create a valid and reliable enumeration survey. In order to establish estimates of media usage, The Nielsen Company initiated an enumeration survey in mainland China using a computer-assisted telephone interviewing (CATI) mode. One primary goal of this research was to discover whether the newly designed telephone interview survey, using best practices for survey design, can reach the targeted response rate in an initial pilot study and result in continued improvements for implementation in China. The findings of this research shed light on how to overcome methodological, cultural and operational barriers when developing a survey in China. We also recommended that building up cross-cultural research team, overcoming language barrier, recognizing cultural differences, and making more efforts on material translation and training interviewers should be taken into accounted for other cross-culture survey research.

Keywords: cross-cultural research, telephone surveys

1.0 INTRODUCTION

Cultural differences between survey designer and interviewers/respondents challenge survey designers' ability to develop a valid and reliable survey instrument. Survey instrument design in general survey research terms has developed from an "art" (Payne, 1951), toward a quality and survey error-oriented methodology and quantification of problems (Groves et al., 2004). Special strategies may be required to address such issues as social desirability, memory requirements, order effects, sensitivity of content, probes and persuaders (Harkness et al., 2010). For cross-cultural surveys, researchers need to take into consideration the factors, such as cultural differences, divergent cognitive and survey response processing when developing a survey instrument in another culture setting. Furthermore, conducting research in emergent markets is more complex than in developed markets. The research studies involve multiple agencies, languages, time zones, contact and time considerations (Mitchell, 2011).

Basic Culture Differences and Question Structure

In the social domain, Western cultures conceptualize the self as autonomous and relatively independent, characterized by unique internal attributes that are largely

independent of the momentary social situation (Markus & Kitayama, 1991). East Asian cultures constituted in relationship with others. Engagements with others follow set relational rules (Schwarz, 2010). The collective mindset is associated with procedures that facilitate the identification of relationships, emphasizing the embeddedness of a stimulus in its field (Norbert, Oyserman and Peytcheva, 2010). In a series of studies, Lalwani and colleagues (2006) demonstrated that while Americans and those higher in individualism use strategies that allow for positive self-presentation, those higher in collectivism are more likely to use strategies that allow for reduced chance of other's seeing the self in a negative light.

There is increasing evidence that there are cultural differences in how information is processed in understanding the cognitive and communicative process underlying survey responding (Sudman, Bradburn, & Schwarz, 1996; Tourgangueau, Rips & Rasinski, 2000). As a first step, respondents need to understand the question to determine what information they are to provide. The survey literature on question comprehensive has long focused on semantic issues, urging researchers to avoid unfamiliar terms and complex syntax (Harkness et al., 2010). It misses a critical point, yet, that language comprehension is not about words per se, but about speaker meaning (Clark & Schober, 1992). Respondents might understand the words, but they still need to determine which behaviors the researcher might be interested in before they can give a meaningful answer. Members of collective cultures are more sensitive to conversational context than are members of individual cultures.

Barriers to Cross-cultural Survey Design

Interviews are purposeful social interactions that are usually organized around questions posed by the interviewer to the respondent (Kadushin and Kadushin, 1997). The cross-cultural survey development is that in which the survey designer and interviewer/ respondent have different cultural memberships. The cultures of interests are typically national, ethnic, societal, or social units, but the survey designer and interviewers/ respondents are also affected by the meaning of respective culture attributes to age, race, gender, sexual orientation, religion, and socioeconomic status (Shah, 2004). Thus, cross-cultural interviews can cross multiple boundaries simultaneously (Sands et. al, 2007)

The traditional approach to research interviewing has been regarded the respondents as a passive "vessel" that supplies answers to the interviewer (Holstein and Gubrium, 1995). Alternatively, one can view interviewing as a collaborative process in which the interviewer and respondents co-construct meaning (Ryen, 2001). This conceptualization acknowledges that there is interview process and content develop from change in the context and "give and take" between the respondents (Holstein and Gubrium, 1995). It is hard to overcome the cross-cultural barriers when designing the survey from a different cultural perspective.

Several criteria have been utilized to evaluate the success of data collection. Our criterion focuses on people's ability to use and apply developmental concepts in their responses. A lack of understanding and knowledge of developmental thinking would be revealed in respondents becoming frustrated, terminating the survey early, refusing to answer

questions, saying that they do not know how to answer the questions, and providing answers that do not appear to be related to the questions (Harkness et al., 2010). However, building a robust and adequate theoretical framework for an instrument used in another cultural settings still will take time and research.

Telephone Survey

The development and application of CATI (Computer-Assisted Telephone Interview) in China is still in the early stages. Most of populations are not familiar with this form of research method. The telephone interview is quite different from mail survey or in-person interview. Dillman (1978) indicated that telephone interviews depend entirely on verbal instead of visual communication. Second, an interviewer who is heard, but never seen, becomes an intermediary between the questionnaire and the respondent. That means some questionnaire construction requirements can be relaxed, including the requirements that the content be sufficiently enticing to serve effectively as the questionnaire's own advocate. Furthermore, it means there is a possibility that interviewers will read questions incorrectly and make errors. Often respondent are called to the telephone unexpectedly and are asked to do something that they do not yet fully understand. Their immediate feelings may be reluctant, anxiety or even excitement. Being interviewed by telephone requires a skill that is not well developed in many people. Respondents must reply solely on what is heard to formulate a response. A mispronounced word or the failure of respondents to understand a word for reasons beyond the control of bother interviewers and respondents may mean that a question becomes entirely incomprehensible. But telephone survey also several advantages, including high likelihood of getting far better responses to open-ended questions, exercise complete control over the order in which questions are asked, the ease with which large numbers of screened questions can be handled.

Given the difficulties for survey designers to develop a telephone survey for another cultural setting, it is critical to keep in mind that CATI script should help interviewer to develop rapport and relationship, address fears and concerns of respondents, and build a common language (Rubin & Rubin, 1995) via interviewer instructions, question wordings and persuader in order to overcome unit nonresponse and item nonresponse.

2.0 STUDY BACKGROUND

The Nielsen Company and China Cable Union Data Services established a joint venture, Nielsen-CCData, to pioneer the delivery of new, more detailed insight on China's growing digital TV market by providing the first-ever Chinese digital TV-specific consumer insight by measuring how users watch digital TV. Nielsen-CCData uses 10,000 sample households in the city of Hangzhou to establish its digital television ratings. Located along Southeast coast of China，Hangzhou is the capital of Zhejiang Province. The total area of the city covers 4.1 million acres with a population of 6.8 million as of December 2008. In order to gather demographic characteristics of the households living in Hangzhou, a telephone survey was designed to conduct an enumeration study in Hangzhou. Nielsen's Research Methods team, with rich experience in US household survey design developed the CATI script, calling rules and quality monitoring forms.

The CATI script was developed for a pilot study by incorporating best practices applied in US household recruitment telephone survey. It was found from pilot study that in order to encourage households' participation, reduce nonresponse rate and improve data quality, the cultural differences, divergent cognitive and information processing, and different respondent behavior pattern should be taken into consideration. Furthermore, interviewers were also guided by following best practices applied in US household survey too, such as rules of thumb for ensuring compliance excellence, and how to remain neutral (e.g. not leading the respondent or influencing their responses). Quality Control Form was also used to check if the interviewers followed the script and instructions when delivering the survey. The data collected from pilot study helped us gain insights regarding adaption of US best practices; better understand Chinese cultural factors and respondents' behavior components. Furthermore, it provided sufficient information to improve question wording, response options and probing skills for implementing the phoning script for implementation of enumeration study in Hangzhou and other cities across China.

3.0 METHODOLOGY

According to the experience and expertise in television household recruitment survey Nielsen has in US and other countries, the CATI survey was determined as the most scientific and cost-effective method for household recruitment. Prior to implementing the enumeration study, an initial pilot study was conducted in Hangzhou in November 2010. There were 1,000 sample households living Hangzhou was contacted via the phone number provide by the local cable company. The objectives of this pilot test were to 1) test whether the newly built CATI programming works well, 2) to measure if the cooperation rate can reach the targeted rate, and 3) to examine the compliance from respondent in Hangzhou. Based upon the pilot results, by looking at the question refusal rate, the question wording, response option, question order and persuader were revised with the purpose to improve cooperation rate and data quality.

The English version of phoning script was developed by the Research Methodologists with experience in US household survey. The CATI script includes question wording, coding options, interview instructions and logics for skip patterns. The questions include a set up screening questions, including if respondent is over 16 years old, primary decision maker, which district they live, primary residence, and media employee. Then demographic questions for each household member (up to 6 household members) are followed. Car ownership and relationship to the respondent (primary decision maker) are also asked at individual level. Then the English version was translated into Chinese. The Chinese translation then was revised and edited by Research Methodologist with Chinese language capability. The Chinese script was programmed and survey was conducted by Chinese interviewers. Research Methodologist provided training to the trainer. After the pilot study, Research Methodologists analyzed pilot data, then provided recommendations based upon the pilot results by taking cultural differences into consideration and corrected any logic errors in programming. Then the implemented telephone script was improved in terms of the learning from pilot study.

4.0 RESULTS

In this section, we will discuss the improvements made in the CATI script based upon the results from pilot study. We explored the refusal rate and break-off rate for each single question in the survey and which questions have high dropouts to investigate whether the question wording, response option or interview instructions need to be revised to gain households' cooperation.

Introduction Screen

In the pilot study, the interview should code who/what they reached before they speak. It was suggested to move the introduction screen to the very beginning so it was delivered immediately after respondent answers the phone, while allowing the valuable coding options (e.g. *Respondent, Non-Respondent, Group Housing, …)* to be coded after wards. This change allows the interviewer to greet and introduce the purpose of calling without waiting. As a result of this change, the refusal rates dropped from 44 percent to 36 percent significantly.

Persuader for Initial Refusal

The telephone survey starts from the Introduction Screen "*Hello, this is the Nielsen Company calling. My name is [Interview Name]. I am conducting a brief study about Media usage. Will you take a few moments to answer my question*?" If respondent refused, a persuader will be delivered to convince their participation. A more detail introduction about Nielsen will be communicated to respondent "*Nielsen is a research company which gathers information about media usage. We have nothing to sell to you …"*. The pilot study shows there are 187 respondents (88.7%) got to Persuader Screen still refused. Given it is not clear the awareness of Nielsen company in city of Hangzhou, it was suggested to point out "*Nielsen is a famous research company that works with advertising, agencies, TV stations, and networks. … Your household is selected to represent Hangzhou in our household survey …"*. There are three changes made: 1) The new wording specifies Nielsen's role in research industry and who Nielsen is partnering with; 2) This also clarifies that the survey does not associate with the government in the event that household might be concerned; 3) The survey was defined as a household survey to replace media survey to more accurately reflect the nature of this survey. Yet, there were 2,616 respondents (96.8%) still refused on Persuader screen in HZ ES survey, we still see the drop-off rate increased 8.1% significantly compared to pilot study. Debriefs with interviewers and operation team will be conducted to investigate the most efficient persuader way.

District Question

Hangzhou region contains six central urban districts and two suburban districts. The respondents who are living in the two suburban districts were excluded from this study. So the screening question "*What district do you live in*?" is to verify if respondent is qualified. There were 4.8 percent of respondents who got to this screen refused to answer in pilot study. Compared with other more sensitive questions, such as age, income, education, or occupation, surprisingly this question had the highest refusal rate. It was revealed the residency area is considered as a sensitive and private question for some respondents. To avoid the high break-off rate, explaining to the respondent is necessary

and critical. The question was reworded to "*We are conducting this research in many districts within Hangzhou. We use this information only for research purpose. Can you tell me what district you live in*?" The refusal rate dropped significantly (4.8% vs. 2.3%) by adding the purpose of asking this question.

Temporary Residence Question

Another question with the second highest break-off rate is Temporary Residence question "*Do you live this address at least six month per year"*. There are 6 respondents (4%) terminated the survey when were asked this question. The purpose of this question is to understand if this is the primary address households live in order to qualify if the household can participate in panel for a long commitment. Yet, respondents might be suspicious and concerned their safety. Instead of asking the length of household residence, using the concept of "primary address" and "if this is the address they can be reached" would help respondent understand the reason behind the question. The question was revised to "*Do you consider this address to be your primary addresses or the address you can be reached most of the time?"* It was showed in Chart 2 that the new question wording improved households' cooperation rate (4.0% vs. 2.3%). Due to the small sample size in pilot study, this difference however wasn't significant.

Household Income Question

No surprise that household income question is also considered as very sensitive question in China. Although the question was asked at the very last, it still encountered high refusal rate (7.3% vs. 10.5%). The question wording and response option need to be improved in future study. Given the commonality between the cultures in terms of confidentiality concern, it is suggested to deliver confidentiality statement and only for statistical purpose should be added in probing. Other questions with higher refusal rate are household size, household member employment status, and car ownership. Debriefs with interviewers should be conducted to further understand how to improve the cooperation rate when enumeration study will be extended to other cities across China.

Demographic Distribution

Table 2 shows the respondents at demographic level. Given the sample size is quite larger in HZ ES than pilot study, the distribution differs considerably, which might be another factor that influences the different refusal rate and break-off rate.

5.0 CONCLUSION

Cross-cultural survey instrument design has been a heated topic in survey research area. Depending on the different country, survey designer should take cultural, social, psychological, religious, respondent behavior factors into consideration of survey development. Meanwhile, training the interviewer to understand the survey and how to handle with households' refusal and don't know scenario plays a critical role to achieve a successful cooperation rate. On the basis of the challenges this survey presented and how they were overcome, we make the following recommendations for cross-cultural survey design.

Cross-cultural Research Team

Despite a number of articles addressing the disparity between cultures, countries and nationalities, there are a lot of commonalities between cultures. When we introduce survey methodology to China or other countries, researchers should not overestimate the differences between cultures and regions with the factor we have to acknowledge there are a lot of commonalities in human society. However, it is important not to underestimate geographical and regional differences in any country as well. Researchers should not treat a large and heterogeneous area (Mitchell, 2011), such as China as a single market. In accordance with Shah (2004) and Sands (2007), we suggest the use of cross-cultural research team in survey design to allow the best practices of survey research from western countries can be integrated with local culture. This affords researchers the opportunity to account for different viewpoints.

It is important that the purpose of the survey be clear from the first contact. It is recommended that before interviewing, survey researchers need to communicate clearly with local operation teams to fully understand the potential roadblocks. The difficulties or complexity of communicating question wording and response options should be avoided. Also survey designer should ensure translator and interviewers understand the purpose underneath the questions, in order to ensure translators can find appropriate word in targeted language and interviewer can deliver the questions as expected. Shah (2004) suggests training researchers to be culturally aware and avoid stereotypes; cultural matching of researchers and participants; and the use of cross-cultural teams. Building cultural competence requires the development of awareness, knowledge and skills (Fong, 2001; Lum, 2007).

Language barriers

A national survey conducted in China (China Daily, 2005) indicated that nearly half of the Chinese population cannot communicate in the national language, Mandarin. Despite no recent statistics, increasing number of population can speak Mandarin in the past years. Given the country's vast geographic dimension and diversified culture, communication between different regions often has to surmount many linguistic obstacles. China has fifty six ethnic groups and seven main Chinese dialects, with each further divided into several local accents. In some extreme cases, people in two bordering counties may not able to speak in mutually-understood terms. Even though China has acknowledged the increased economic activities and cross-region labor mobility, which make it necessary to find a common language for people to communicate, it still takes times to change the situation. Survey researchers need to keep in mind the language or dialect barriers when conducting a national survey or in an area where targeted population might not have capability to speak in Mandarin.

It is recognized language or dialect carries culture, and plays a key role in rapport development. In our cases, which district the household lives and the primary residence questions encountered higher refusal rate beyond our expectation. Further investigation explored respondents might misinterpret the purpose of the question, which resulted in suspicious and reluctance to answer the question. It was recommended providing sufficient information to respondents and engaging them in a more positive way would

help maximize cooperation. The qualitative interviews in another study indicated the interviewer's language ability also influence on household's cooperation. If interview can speak local dialect or has the similar accent with respondent, this will help build up trust and relationship between respondent and interviewer.

Cultural Differences

Although CATI has been prevalent in US and Western countries, it is still a new form of survey in China or some emerging countries. Survey researchers from western culture need to be patient to cultivate the market, including local researchers, interviewers and respondents. How to develop rapport and introduction of a survey in the initial stage to avoid immediate refusal becomes extremely important. Especially for the households who are never aware of type of survey or the research entity, the first reaction is to hang up with the thinking that it is sales or marketing call or dialing wrong number. From the analysis of Nielsen survey, we can tell the majority of refusals occurred at the introduction screen (36% in HZ ES and 44% in pilot study). Once the respondent starts the survey, the refusal rate decreased dramatically.

Head of households usually is the qualified person to make commitment to the survey in US. In our survey, decision maker who makes the primary decision for your household should be the respondent. Yet, the head of household has been defined clearly, to avoid households' confusion, the qualified person need to be defined in the survey to help interviewer to find the appropriate respondent.

In China and Asian culture, the concept of face is well-known factor influencing people's communication and interaction. It also impacts the way how respondent process information and answer the questions. It was also suggested that respondents can also be overly positive in order not to offend, and in a group scenario, some avoid articulating an alternative viewpoint for fear of being identified as a dissenter or non-conformist. It is important to use more indirect questioning techniques and factor these cultural nuances into analysis (Schwarz, 2010).

Survey Material Translation

Be sure that questionnaire and survey materials are translated into the local dialect and verified, but the industry is guilty of relying on western research communication terminology to explain a new strategy or concept. Some terms are common terms in English speaking markets, but fail to translate with the same intonation in regions or countries where English is not prevalent. Yet, the importance of translating survey materials hasn't been recognized by the operation teams besides survey researchers, especially in some emerging markets. Due to the budget and time constraints, the translation work was completed by the operation teams who has language capability but without survey research knowledge. This added potential risks on the validity and reliability of survey materials. Survey researchers need to educate operation teams to change their mindset to ensure the quality of survey materials in targeted language.

Training

In cross-cultural research, the survey designer, and the interviewer/respondent come from different countries. The beliefs, norms, values, rituals, behaviors, habits, learning, language, age, gender, race and contexts must be taken into consideration as possible contributory factors to the generation of data. The researcher has his/her own culture, which includes the convention of setting questions and the expectation of having them answered in a certain manner. The interviewer and respondent bring to the interview situation their own culture and therefore the convention of responding in a certain manner. In any interaction a culture of power can be at play between participants and it can take various forms and degrees (Sands et al., 2007). It was recommended to have survey designer to provide training to interviewers to ensure interviewers have clear understanding what information will be collected, the strategy and how to adapt the question wording in local cultural context.

Last but not the least, the research strategies adopted in different locations were in part determined by the expertise available locally, but we also worked incrementally using insights gained from other local projects. Creating comparable measures across very different societies with divergent languages is an exceptionally challenging undertaking. Our plans include ongoing evaluation of the data collected in other cities across China. In an effort to investigate the refusal reasons, it was recommended to add post-survey questions regarding to each attempt right after each survey, and conduct debriefs with interviewers collect in-depth information. Meanwhile post-survey with respondent should be considered as well to further understand how the respondents differ from nonrespondent. Due to the enumeration survey will be extended to other cities in China, we'd expect that the analysis in one city will shed light on the areas that we have succeeded and failed. The subsequent studies in different cities can provide us with a full-view of various socialdemographics' attitude to household survey in different geographic locations across China.

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APPENDIX

Table 1: Refusal Rate of Pilot Study vs. HangZhou Enumeration Study

Question	Pilot Study			HZ Enumeration Study		
	# of Respondents who got to screen	Refusals	Refusals (%)	# of Respondents who got to screen	Refusals	Refusals (%)
Introduction Screen	484	213	44.0%	7,518	2703	36.0%*
Persuader for Initial Refusals	213	189	88.7%	2,703	2616	96.8%*
Household Member Age 16+	193	4	2.1%	3,263	49	1.5%
District	166	8	4.8%	3,072	70	2.3%*
Permanent Residence	151	6	4.0%	2,825	62	2.2%
Media Empoyment	136	1	0.7%	2,665	11	0.4%
No of TVs	131	1	0.8%	2,519	5	0.2%
Broadband	-	-	-	2,501	6	0.2%
Landline	-	-	-	2,491	9	0.4%
No of Computers	126	1	0.8%	2,486	5	0.2%
Household Size	126	3	2.4%	2,479	52	2.1%
Homeowner	123	1	0.8%	2,435	28	1.1%
Residency Length	122	1	0.8%	2,414	25	1.0%
HHM1 Age	122	0	0.0%	2,391	49	2.0%
HHM1 Gender	119	0	0.0%	2,335	9	0.4%
HHM1 Registered	119	1	0.8%	2,331	16	0.7%
HHM1 Education	119	1	0.8%	2,325	70	3.0%
HHM1 Employment Status	117	4	3.4%	2,310	60	2.6%
HHM1 Car Ownership	117	5	4.3%	2,299	66	2.9%
Household Member Relation	-	-	-	2,058	8	0.4%
Household Monthly Income	109	8	7.3%	2229	233	10.5%

Note: * $p<0.05$

Table 2: Demographic Characteristics of Completed Respondents in Hangzhou Enumeration Study

		Pilot Study (%)	HZ ES (%)
Gender	Male	50.9	62.7
	Female	49.1	37.3
Age	18-34	32.4	26.9
	35-49	36.1	30.1
	50-74	25.9	36.9
	> 74	2.8	6.0
Registered Resident	Yes	85.2	95.6
	No	13.9	4.4
Education	Primary school or less	5.6	6.8
	Jr High	16.7	14.7
	Sr HIgh	15.7	20.3
	Diploma (some college)	19.4	20.2
	Bachelor's	33.3	32.1
	Master's	5.6	4.9
	Doctorate	2.8	1.0
Occupation	Govt Mgmt	13.9	7.4
	Govt Non-mgmt	2.8	4.8
	Corp Mgmt	21.3	4.2
	Corp Non-Mgmt	18.5	24.0
	Self-Empoloyment	11.1	16.4
	Homemaker	2.8	13.5
	Retired	21.3	1.8
	Unemployed	.9	24.6
	Student	1.9	1.7
	Other	2.8	1.4
Car Ownership	Car	43.5	39.0
	Motorcycle	3.7	1.4
	Neither	49.1	56.4
	Both	-	3.2
Income	0 - 2,999 RMB	5.6	11.6
	3,000 - 4,999 RMB	15.7	22.0
	5,000 - 7,999 RMB	25	28.5
	8,000 - 14,999 RMB	25.9	24.4
	> 15,000 RMB	16.7	13.5