World Values Survey Wave 7 in Hong Kong: Sample Design.

Parallel surveys were conducted by using two types of methodologies; face-to-face survey through paper questionnaire and online survey.

Sample Design for Face-to-Face Interviews

The Centre for Communication and Public Opinion Survey (CCPOS) of The Chinese University of Hong Kong was commissioned to conduct face-to-face interviews.

The target population for face-to-face interviews in Hong Kong was "resident population" over the age of 18, covering a broad range of demographic and socio-economic groups in terms of nationality, gender, class, education attainment and residence. This had been the approach taken by the Hong Kong Government in doing regular surveys to take account of the current residency and mobility patterns of the Hong Kong population.

The target sample was 1,000 cases of face-to-face interviews. In addition to 1,000 cases of online survey, a total of 2,000 individuals were sampled for the 7th wave of World Values Survey.

A territory-wide survey was conducted. The geographical coverage was specified by the District Council/Constituency Area demarcation system of the Hong Kong Government. With this system, Hong Kong was divided into 18 districts, 4 in Hong Kong Island (namely Central & Western, Eastern, Southern, and Wan Chai), 5 in Kowloon (namely Kowloon City, Kwun Tong, Sham Shui Po, Yau Tsim Mong, Wong Tai Sin), and 9 in New Territories (namely Islands, Kwai Tsing, North, Sai Kung, Sha Tin, Tai Po, Tsuen Wan, Tuen Mun, and Yuen Long). Hong Kong Island and Kowloon were considered as urban areas, while New Territories contained rural areas, as well as major developments and new towns. The survey covered all 18 districts. CCPOS visualized the location data of respondents of face-to-face interviews by creating a WVS (HK) map on the "Google My Map" platform.

CCPOS employed the sampling service of the Census and Statistics Department of the Hong Kong Government to select household samples. That is, CCPOS sampled the household from the "Register of Quarters" (RQ). As mentioned, the geographical coverage was specified by the District Council/Constituency Area demarcation system of the Hong Kong Government which had divided Hong Kong into 18 districts. RQ was a list of addresses of permanent quarters in built-up areas including urban areas (that is Hong Kong Island and Kowloon), new towns and major developments in the New Territories. Each unit of quarters was identified by a unique address. Temporary structures like roof-top and back lane structures were usually not listed in the RQ.

Records of quarters in the RQ were first sorted by geographical areas and quarters type group. Systematic replicated sampling was then applied for the sample selection of quarters from the RQ. Sampling units were drawn with a fixed interval after selecting a random start to form sample replicates. The existing size of each sample replicate of quarters in the RQ was about 470 quarters (excluding those not for residential or partially residential purposes). Each replicate contained a representative sample list of quarters (excluding those not for residential or partially residential purposes) in each combination of District Council district

and quarters type group. As at end of 3rd quarter of 2017, there were 2.60 million quarters (excluding those not for residential or partially residential purposes) in the RQ.

Hong Kong is a small city with an extremely high level of urbanization. According to the World Bank and CIA's World Factbook, Hong Kong has a 100% of urban population. It means that nearly all people in Hong Kong live in urban areas. Therefore, rural representation did not apply.

As mentioned, primary sampling units (PSUs) were drawn with a fixed interval after selecting a random start to form sample replicates. The existing size of each sample replicate of quarters in the RQ was about 470 quarters (excluding those not for residential or partially residential purposes). Each replicate contained a representative sample list of quarters (excluding those not for residential or partially residential purposes) in each combination of District Council district and quarters type group.

The regular route length was relatively short. As Hong Kong is a small urban city, most of the places in Hong Kong were easily accessed via transportation. As there were 18 districts in Hong Kong, different interviewers were assigned to each of these districts. Thus, it was very convenient for them to reach the sampled households in the responsible districts. The distance between each sampled household within the same district was at most a few blocks or a few streets away.

To avoid selection bias, interviewers did not simply interview the household members who opened the door or those who happened to have spare time or interest to do the interviews. CCPOS adopted the commonly-used "next birthday rule" to randomly select an eligible respondent within each household for face-to-face interviews.

For face-to-face interview, the traditional method of paper questionnaire was adopted. It reduced the survey cost and speeded up the survey preparation process.

The surveys were conducted on all seven days in a week. On weekdays, the interview was conducted in the evening when people were back from work and school. And on weekends, the interview was conducted in the afternoon and evening. Based on previous experience, these were considered as the best timings to search and interview the target respondents.

For face-to-face interviews, CCPOS conducted back-checking (checking with the interviewees via phone after the completion of interviews or repeated visits to the respondents) to verify data.

CCPOS complied with WVSA's requirement to conduct back-checking on 10% of the total sample.

Weighting was applied to data. In this household face-to-face survey, the final sample was weighted by the proportions of gender, age and educational levels according to the latest population profile published by the Census and Statistics Department (CSD) of Hong Kong to ensure that the sample was representative of the population of Hong Kong.

The percentage difference between gender groups in the sample (before weighting) and the actual population was around 10%. For example, if the percent of females in the society was

around 50%, the percent in this sample was around 60%. For age groups, the percentage difference was estimated to be within 6-7%. The estimation was based upon past research experiences.

Mixed methods (face-to-face and online survey) were used due to the following difficulties to complete long survey solely through face-to-face survey:

First, most private households in Hong Kong are gated communities that place various restrictions on visits from non-residents. This creates huge difficulties for interviewers to visit and back-check the sampled households.

Second, a long questionnaire also requires huge incentives to solicit respondents. These two factors significantly increase the survey cost that cannot be covered by funding.

Given the high internet penetration rate and the availability of well-established digital research agencies, online survey is a regular survey method for long survey in Hong Kong. The limitations of online survey in sampling were taken into account and the responsible organization worked closely with SSI to ensure a balance representation of the sample.

The responsible organization did not need any special permission from the state governing bodies in order to do the WVS-7.

Sample Design for Online Surveys

The Survey Sampling International (SSI), a well-established digital research agency, was commissioned to conduct online survey.

The target population for online surveys in Hong Kong was "resident population" over the age of 18, covering a broad range of demographic and socio-economic groups in terms of nationality, gender, class, education attainment and residence. This had been the approach taken by the Hong Kong Government in doing regular surveys to take account of the current residency and mobility patterns of the Hong Kong population.

The target sample was 1,000 cases of online surveys. In addition to 1,000 cases of face-to-face interviews, a total of 2,000 individuals were sampled for the 7th wave of World Values Survey.

A territory-wide survey was conducted. The geographical coverage was specified by the District Council/Constituency Area demarcation system of the Hong Kong Government. With this system, Hong Kong was divided into 18 districts, 4 in Hong Kong Island (namely Central & Western, Eastern, Southern, and Wan Chai), 5 in Kowloon (namely Kowloon City, Kwun Tong, Sham Shui Po, Yau Tsim Mong, Wong Tai Sin), and 9 in New Territories (namely Islands, Kwai Tsing, North, Sai Kung, Sha Tin, Tai Po, Tsuen Wan, Tuen Mun, and Yuen Long). Hong Kong Island and Kowloon were considered as urban areas, while New Territories contained rural areas, as well as major developments and new towns. The survey covered all 18 districts.

SSI collected the geographical information of the respondents of online survey via a question in the survey, which were completed by the respondent himself/herself. In the end,

geographical information (by district) were included as part of the set of final survey data, in form of data codes.

For online survey, the respondents came from SSI's growing online panel, the members of which were recruited through online means. In particular, SSI mainly recruited people aged 18-65 to their panel with demographic balance being closely monitored through quota sampling.

Hong Kong is a small city with an extremely high level of urbanization. According to the World Bank and CIA's World Factbook, Hong Kong has a 100% of urban population. It means that nearly all people in Hong Kong live in urban areas. Rural representation did not apply.

The survey was conducted by online means via SSI's proprietary sampling platform. It is distributed randomly to eligible respondents who log-in the platform. Respondents completed the survey on self-completion basis.

Selection in household is irrelevant here as sampling methodology is online in nature. Respondents on SSI's sampling platform were the one who answered the survey, and answered on behalf of the household insofar for questions concerned.

Large-scale and territory-wide regular surveys in Hong Kong are mainly conducted by the Hong Kong government and tertiary institutions. These surveys normally take place in the form of face-to-face interviews in the respondents' residence. However, in Hong Kong most private estates are highly restrictive gated communities. This creates huge difficulties for interviewers of non-governmental agencies, including tertiary institutions, to approach residents in private estates for data collection and back-checking. This problem also significantly increases the survey cost.

Given the high rate of internet penetration and availability of well-established digital research agencies in Hong Kong, online methodology is widely accepted by major research institutions in Hong Kong, including Survey Sampling International, given its benefit in quicker data turnaround and lower cost factor than that of offline methods.

There were no specific time constraints for online survey, as the respondents were able to arrange time to respond to the questionnaire on their own. SSI had a test run on the questionnaire and it was 25 minutes long in an online self-completion environment, which was manageable compared to their other projects.

For online survey, SSI also conducted data checking process to ensure validity and reliability of data collected. A dedicated project manager will scrutinise data to ensure that answers are not filled unfaithfully. QC will be carried out on data level, by means of checking the time taken to complete, straight-lining answer patterns, contradictory answer patterns etc.

All interviews were checked by SSI.

Weighting was applied to data. In this online survey, the final sample was weighted by the proportions of gender, age and educational levels according to the latest population profile

published by the Census and Statistics Department (CSD) of Hong Kong to ensure that the sample was representative of the population of Hong Kong.

For sex groups, data yielded the same percentage as population statistics. The difference in percentage between age groups in the survey data compared to census data: 45-54 years old -5.2% and 55-65 years old -15.1%.

As mentioned above, the major difficulties in conducting face-to-face interviews in Hong Kong were expected to arise from restrictive private estates and high survey costs. That is why mixed methods of face-to-face interviews and online survey were employed, to ensure the completion of 2,000 cases of long survey.

However, there were limitations that were taken into account during the planning of online sampling, as certain demographic groups are more likely to register to panel; while some groups are less likely, e.g. groups of very low income, very high income, low education and elderlies. Therefore, SSI, as well as the Hong Kong team, closely monitored the survey process, so as to ensure a balanced representation in terms of demographic backgrounds and geographical distribution of the sample.

The responsible organization did not need any special permission from the state governing bodies in order to do the WVS-7.