



Research position paper

Online research versus Computer Assisted Telephone Interviewing (CATI)

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For brandmanagement

Overview

Despite concerns in the early years of adoption, online surveys have now proven to provide equivalent or superior data collection compared with CATI, with greater speed and at a reduced expense. While CATI used to be king of market research methodologies, telephone surveys have experienced a dramatically declining response rate in recent decades. Meanwhile online survey methods are rapidly increasing in use. Currently high online access rates by diverse segments of the Australian population means that previously observed concerns about coverage issues for online delivery are becoming less relevant. Furthermore, quota sampling and weighting data sets to the Australian population can be used to ensure a more representative sample is gathered online. Certain research areas are arguably less amenable to this delivery mode because they target (or need to comprehensively include) groups that are specifically less likely to have online access. In these cases, mix mode delivery is certainly recommendable, although understandably coming at significantly higher cost. Online users now represent a large, diverse and important consumer group in the Australian population, with online survey delivery fast becoming the standard for market research in Australia and overseas.

Critical issues to be compared between online and CATI surveys include;

- Sampling issues
 - Response rates
 - Selection biases

- Data issues
 - Measurement error
 - Social desirability and sensitivity of questions
 - Item response rate
 - Depth of response and data quality

- Operational issues
 - Expense
 - Speed

Sampling issues

Response rates

Response rates for paper based and CATI surveys have been rapidly falling for some time (Owen, 2002; Curtin et al. 2005). Technology such as answering machines and caller ID has contributed to declines in response rates and has increased costs of conducting telephone surveys. The exponential increase in personal mobile phone utilisation replacing household accounts also presents a challenge to the tradition of households telephone surveys (Kempf & Remington, 2007). Finally, after the boom in popularity of telephone surveys in the 1970s and 1980s, consumers have become fatigued with receiving market research through this channel which is not at a time of their choice and often received at inconvenient times such as dinner (Manfreda et al. 2008; Kempf & Remington, 2007; Johnson, 2006).

Conversely, response rates for web based surveys have been growing with increasing internet adoption among the public (Manfreda et al. 2008; Kaplowitz et al. 2004). Studies have found fewer individuals were required to be contacted to achieve target sample sizes using online versus telephone methods (Bethell et al. 2004). Response rates are particularly good when there is an email invite associated with the survey and reward incentives (Kaplowitz et al. 2004; Dillman et al. 2001; Vehovar et al. 2002;). Over the past decade, the use of the internet has become more widespread, and many social scientists have started to turn to online designs to conduct survey research (Manfreda et al. 2008; Fraley, 2004). Internet-based questionnaires accounted for nearly one third of US spending on market-research surveys in 2006 (Johnson 2006).

Many consumers now have a preference for the convenience of web based surveys. Online surveys are a non-interruption surveying method and are taken at a convenient time for the respondent, not the market research company (Gonzalez, 2002). Studies have found that when given a choice, 88% of CATI respondents, many of whom would have terminated, agreed to continue their interview on the web (Alison and O'Konis, 2002).

Research comparing response rates among online, mail, and telephone surveys has traditionally found that response rates are generally lower for online surveys than for mail or telephone surveys (Kraut et al. 2004; Cook et al. 2000). Meta analysis of more recent studies have found that on average, web surveys yield only an 11% lower response rate compared to other modes (95% confidence interval 6%-15%). However, response rates are greatly increased when using targeted email invites from a database (Manfreda et al. 2008).

Selection biases

Online surveys, as with any methodology, are vulnerable to biases in the selection of samples. The greatest issues for online survey samples are self selection bias and differences between the online users and non online users.

It is well known that self-selection may negatively influence the quality of data collection on the internet, particularly with potential professionalisation and spontaneous self-recruitment of certain respondents (Manfreda et al. 2008). However, issues with respondent identity can be at least partially countered by using IP checks for repetition and blacklisted respondents. Obviously if online surveys rely solely on web traffic to capture respondents such as when recruitment relies on a web page link to a survey, there is a real danger that respondents that come across this site and then decide to complete the survey are prone to self selection bias. However self selection bias has been found to be better in online surveys than CATI surveys if using targeted email invites to recruit respondents (Manfreda et al. 2008, Askew et al. 2000; Krotki & Dennis, 2001; McCready, 2000).

The other selection bias that may occur for online surveys is that internet usage is associated with age, gender and socioeconomic status (ABS, 2008). Senior citizens are traditionally poorly represented, however uptake in recent years has accelerated rapidly in these older age groups (Manfreda et al. 2008; Gosling et al. 2004). Additionally this group is usually the lowest priority for many market research studies which often tend to target those in more active consumerism phases of their life cycle. Although the use of internet is still more common among people in the middle and upper-middle class individuals than those in the lower socioeconomic class, evidence indicates that this gap is narrowing and internet samples are becoming more representative. Geographic segments are not an important issue for online surveys because it is easy to reach broad geographic areas online and rural uptake is very high (Manfreda et al. 2008; Gosling et al. 2004; Kraut et al. 2004; Couper et al. 2001).

While online surveys are obviously more likely to tap into the online savvy population, Australia is noted as having one of the highest rates of online access and usage in the developed world, and increasingly so. The rate of household access has quadrupled in recent years, from 16% of Australian households in 1998 to 64% in 2006–07 (ABS, 2008). Add to this omnipresent access at many workplaces and it is no surprise the International Telecommunications Union estimated there were 15.3 million internet users in Australia in 2007, accounting for 74.3% of the population. This more than doubled over the relatively short period since 2000, so the pervasiveness of online coverage is arguably yet to be fully appreciated.



This does mean that in some respects the difference between internet users and non users are becoming more distinct as the non users become a progressively more marginalised group (Wells & Chen 1999; Manfreda et al. 2008). However, the importance of this increasingly marginalised non user group to a representative sample of Australian society is becoming increasingly less relevant.

Representativeness of online samples can also be addressed through targeted invitations that utilise quota sampling to reflect standard populations. Weighting of data sets may also be utilised before analysis to better reflect breakdowns in a standard population (Gosling et al. 2004; Gonzalez, 2002). Researchers using non-probability sampling for online data collection need to evaluate statistical estimates with more caution, considering representativeness of the sample and validity of the resulting estimates. (Matsuo et al)

Alternatively however, CATI surveys only represent that section of the population that has telephones in the home – excluding the increasing number who relies on mobile services and who don't have a phone at all at home. Many issues also arise as to when the calls are made – during work hours skews to the unemployed and those employed in home duties. After work hours (usually around dinner time so allowing time to return home from work and before being prohibitively late in the evening) is extremely unpopular with respondents and typically experiences problems with response rates (and thus introduces response bias to those willing to participate) (Kempf & Remington, 2007; Johnson, 2006; Curtin et al. 2005).

Several studies recommend that best practice (where resources permit) is to use mixed modes in survey methodology, incorporating the advantages of various different channels such as online and CATI (Dillman et al. 2001).

Data issues

Measurement error

Several studies have noted issues with calibration of survey tools between different methodologies (Knapp & Kirk, 2003; Dillman & Christian, 2005). For example it has been found that online survey respondents tend to use more of the survey scales than CATI respondents (Taylor, 2000; Dillman et al, 2001)

However, many studies argue that modal effect on measurement error between various methodologies are largely the effect of population differences accessed by these different methods (Oosterveld & Willems 2003). Several studies have found that overall survey responses using online and telephone methods were commensurate once they were weighted to represent the demographic distribution of the Census (Bethell et al 2004; Alison and O'Konis, 2002; Gibson & McAllister, 2002).

While there has been substantial debate around the merits of various survey delivery modes over recent years, our experience at CoreData suggests that differences in results are minimal for most research areas. A case in point is a large study completed by CoreData/Brandmanagement in 2008 for ASIC in which there was particular concern about coverage issues of online VS CATI survey modes because older populations needed to be covered. As is ideal in these situations, multi modes were employed to counter the coverage issue which allowed us to compare survey results replicated in the online and CATI delivery mode. We found that when the samples were weighted to the Australian population to match the samples, there was less than 5% discrepancy in response proportions for close to 90% of the questions asked.

Social desirability and sensitivity of questions

Online surveys hold an advantage over CATI in terms of their ability to moderate the effect of the interviewer on influencing social desirable responses (Kreuter 2008, Holbrook et al. 2003). As for socially desirable responses, the lack of an interviewer means online surveys often serve best for sensitive questions such as personal finances (Kreuter et al. 2008) Other studies have also found online survey administration increased the level of reporting of sensitive information and reporting accuracy relative to conventional CATI (Tourangeau & Yan, 2007)



Interviewer bias

The self administered nature of online surveys also removes the effect of interviewer bias that often threatens CATI surveys i.e. the interviewers ability to influence responses or record them according to personal biases (Poynter & Comely 2003).

Item response rate

Studies comparing methodologies have found that CATI had the highest rate of item missing data and online surveys the lowest (Kreuter et al 2008). Item response rate is generally found to be excellent for online surveys, exceeding that achieved by mail and CATI surveys (Dillman et al. 2001; Vehovar et al. 2002; Kwak & Radler, 2002) Online also provides the advantage of using multimedia to stimulate responses (Johnson, 2006).

Depth of response and data quality

Online surveys are noted by many studies for delivering better verbatim response than CATI surveys. Several studies argue that the quality of data collected through online surveys is generally higher than CATI due to the ability to re-read questions, elimination of time constraints or pressure, and completion at convenient times (Oosterveld & Willems 2003; Dillman et al. 2001; Kwak & Radler, 2002).

Studies using external data verification have found that online surveys have the highest levels of reporting accuracy and CATI the worst (Kreuter et al 2008; Tourangeau & Yan, 2007).



Expense

Online surveys are fundamentally much less expensive to operationalism than CATI surveys, providing a distinct price advantage (Manfreda et al, 2008; Johnson, 2006; Bowling et al. 2006; Aoki, 2006; Knapp & Kirk, 2003; Askew et al. 2000, Taylor, 2000).

Speed

Online surveys provide the best turnover rates and allows faster setup, execution and processing than the CATI method (Manfreda et al, 2008; Kempf & Remington, 2007; Johnson, 2006; Bowling et al. 2006; Aoki, 2006; Dillman et al, 2001; Askew et al. 2000. Taylor, 2000).

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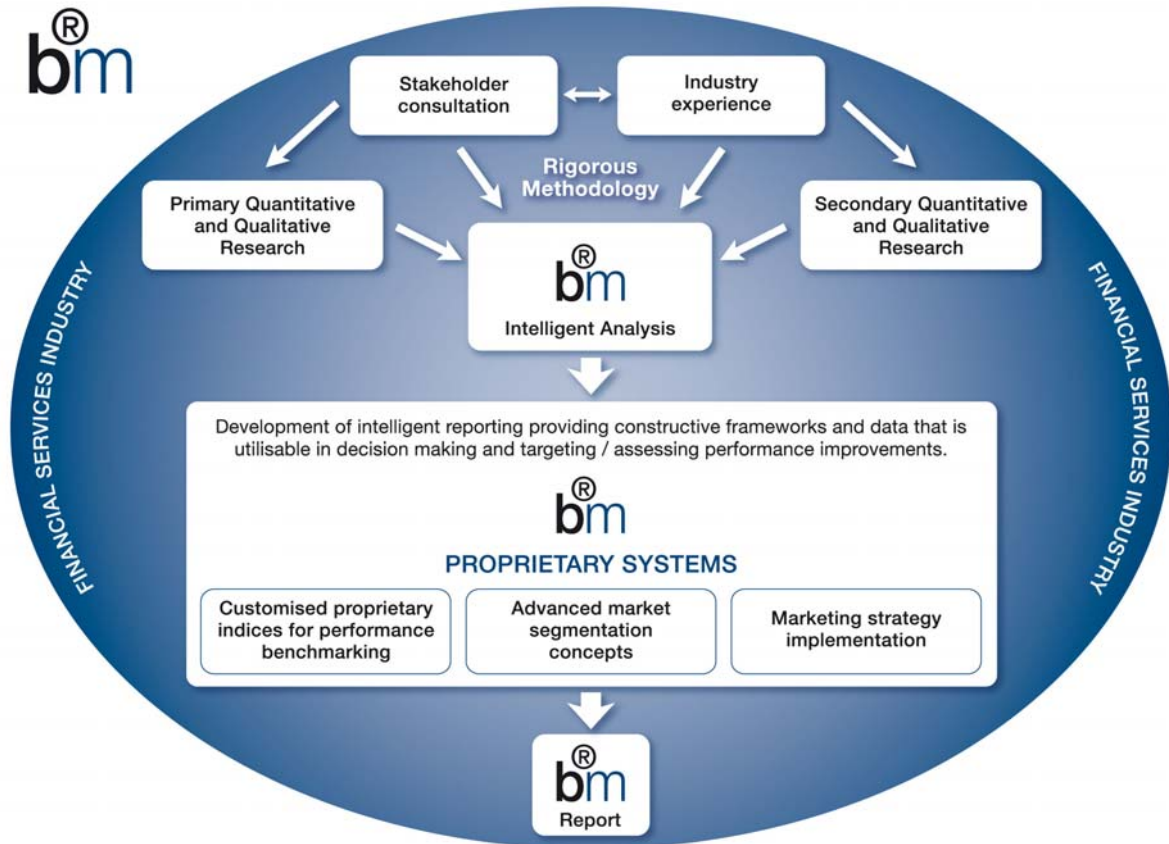
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