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Lessons learned from pilot testing an experimental communication intervention: Generation Y and park benefits

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Abstract

This paper reports a series of lessons learned from pilot testing an experimental intervention that aimed to shift Gen Y's perceptions of the cultural and heritage benefits of parks. Designed in collaboration with the Office of Environment and Heritage in NSW and delivered via the OEH website, the intervention took respondents on a controlled virtual tour of two national parks, Ku-ring-gai Chase in the Sydney metropolitan area and Mutawintji in outback NSW, both rich in Australian culture and heritage. Overall, the intervention was viewed as successful in impacting respondents' perceptions of the benefits of parks, and will be used in a subsequent on-line study on a broader sample of NSW respondents. The series of methodological decisions and associated consequences for the interpretation of findings presented in this paper are designed to help foster best practice experimental design in fieldbased tourism research.

Keywords

park, y, generation, intervention:, communication, experimental, testing, pilot, lessons, learned, benefits

Disciplines

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Lessons Learned from Pilot Testing an Experimental Intervention: Generation Y and Park Benefits

Introduction

This paper presents the underpinning theory, methods and findings of a communication intervention-based study designed to influence the perceptions of a sample of young people (Generation Y) about the benefits of visiting national parks. The aim of the paper is to explain methodological decisions and their consequences for interpretation of findings, as a basis for fostering best-practice experimental design in field-based tourism research.

The study reported in this paper is a small component of a three-year project titled '*Promoting and Managing National Parks into the 21st Century*' which was funded by the Australian Research Council (ARC). The project was undertaken by Murdoch, Southern Cross, Curtin and Deakin universities in partnership with Parks Victoria, WA's Department of Environment and Conservation, and NSW's Office of Environment and Heritage (OEH). The overall project consisted of two programs of research, each with multiple stages; this paper relates to just one stage of Program 1, which sought to identify and shift the market position occupied by national park management agencies of the states of NSW, Victoria and WA. To achieve this, the first stage of Program 1 used semi-structured interviews to elicit the salient benefits that park managers seek to project to their constituent publics about protecting and providing visitor experiences in national parks. The second stage surveyed senior/executive park managers and a representative sample of residents in each of the three states with respect to these benefits, and identified where there are significant gaps between what managers' desire to project and the benefits of visitor experiences in parks and the conservation of parks perceived by community residents. The third stage administered a series of trial experimental interventions designed to shift the perceptions of target segments of the community in each state with respect to selected park benefits.

This paper reports on the findings of one part of stage three: a pilot test of one experimental intervention conducted in NSW. Gaps between senior/executive managers' and NSW residents' perceptions of the benefits of visiting parks underpinned the selection of both the target segment (sample of respondents) and the benefits that were targeted in the pilot communication intervention reported in this paper.

By way of background, the paper first provides a few highlights from the literature reviewed for the broader study ascertaining and shifting the market position of national parks. It then presents selected findings from previous stages of the research that provided the rationale for the pilot study. The paper then moves on to outline the design, methods and results of a pilot study designed to inform a state-wide trial communication intervention. Finally, some lessons learned from the pilot study are discussed, along with a series of implications for implementing state-wide communication interventions.

The benefits of leisure and recreation have been a key area of scholarly attention since the 1970s and have been examined extensively, especially within the context of parks (Manning, 2011). As a result of the increased recognition of the importance of benefits as a marketing and management tool, a movement known as Benefits Based Management (BBM) emerged (Driver, Brown & Peterson, 1991). BBM suggests that if visitors participate in particular activities in appropriate settings they will not only achieve their desired recreation experience, but also accrue a series of higher-order benefits, on-site and off-site as well as short-term and long-term (Weber & Anderson, 2010). The articulation

of BBM is not captured in a single document, but rather in at least two books and a series of papers published over three decades (Veal & Darcy, 2013).

Outcomes Focussed Management (OFM) is the most recent incarnation of BBM. Using the OFM framework, a range of benefits have been identified as arising from a leisure or recreation experience in parks, including physical, psychological, social/cultural environment and economic benefits (Driver, 2008). The benefits of leisure and recreation in parks have been identified by previous studies to accrue at a personal (experiential) level, at a personal (higher-order) level, and at a broader societal (community-wide) level (Manning, 2011). The public's perceptions of these benefits play an important role in the market position held by national park management agencies, including the public's propensity to visit national parks and to support park management agencies and associated conservation activities (Crompton, 2009).

The literature on persuasive communication, that is, communication "designed to bring about a willing change in the attitudes, beliefs, opinions or behaviour of others" (Davies, Kreis, Nutting & Tronc, 1981: 298) also informed this study. While it is generally acknowledged that change seldom comes about instantaneously (Robbins, Bergman, Stagg & Coulter, 2003), strategic marketing communication is aimed to do just that, i.e., to persuade audiences to think, feel or do something new or different (De Janasz, Wood, Gottschalk, Dowd & Schneider, 2006). To achieve that, print and electronic media such as websites often harness tools such as credibility and emotion together with framing (establishing a common ground) and reinforcement. In the case of the overarching research study of which this paper is a part, the focus is on the use of persuasive communication to shift public perceptions of the benefits of parks.

Relevant Findings from Earlier Stages of the Project

Earlier stages of the research identified a pool of benefits relevant to Australian park management agencies, and then measured the gaps between what the public perceives as the benefits of parks and what senior/executive managers' desire to project about those benefits. A brief synopsis of the findings of these stages is presented here, as they are the basis for the content of persuasive communication-based interventions designed to close these gaps.

In Stage 1 of the research, semi-structured interviews were conducted with 27 executive/senior managers from three park management agencies and, after marrying the findings with the literature, a pool of 39 benefits was produced falling into three categories: personal experiential benefits (12 items), personal higher-order benefits (12 items) and societal benefits (15 items) (see column 1, Table 1). In Stage 2, ratings of the perceived desirability of projecting each of these benefits (managers) and the perceived likelihood of national parks providing each of these benefits in each of the three states were measured via an on-line survey with 21 executive/senior managers and 1,584 Australian residents (a quota sample of 500 in each state).

The findings from the NSW components of this stage in particular were used to determine the selection of benefits for the current study, which is focused on NSW residents' perceptions of national parks managed by OEH. This included an on-line survey of nine OEH executive/senior managers and 524 residents of NSW, the latter weighted by place of residence (Sydney and regional NSW), age and gender. Mean responses on the 7-point rating scales revealed that OEH managers' ratings of desired projected benefits were in most instances higher than the public's perceptions of benefits.

While detailed methods and findings can be found in Moyle & Weiler (2013), the findings most relevant to the present study were that there were large gaps between Gen Y respondents (18-30 year olds) and senior/executive managers' perceptions of the benefits of visiting parks. In all these

instances Gen Y perceptions were less favourable than those of the OEH executive/managers. This suggests that targeted interventions could be useful to shift Gen Y's perceptions of benefits, reduce the gaps on these benefit items, and thus improve OEH's market position as a provider of recreational experiences. Specific benefit items where significant gaps occurred included a number of items surrounding the theme of 'culture and heritage'. As a result the decision was made in consultation with the NSW Office of Environment and Heritage to draw on their recently redeveloped website to develop an intervention specifically designed to shift Gen-Y perceptions of the cultural and heritage benefits of visiting parks.

Study Design and Methods

Based on the findings from Stage 2 of the project, it was decided to deliver a communication intervention that was *targeted at Gen Y*, and that primarily targeted (i.e. aimed to improve) perceptions that national parks offer opportunities to *learn about, connect with, and protect/conserv*e heritage and culture (five benefit items), and secondarily that national parks offer opportunities to *enjoy, learn about, connect with and protect natural experiences and green spaces* (three benefit items plus one that overlaps with heritage/culture). The specific wording of these eight benefit items is presented in the results section of this paper.

The remainder of this paper reports on a pilot study which trialled a persuasive communication intervention designed to influence the perceptions of a sample of 88 Gen Y Australians (Southern Cross University students aged 18-30) about these eight benefits. The focus of the paper is on the methodological decisions and their consequences for interpretation of findings, to fostering best practice experimental design in field-based tourism research.

There is a wide variety of media and communication channels that might be used to communicate and thereby attempt to shift the perceptions of Gen Y about the benefits of visitor experiences in national parks. This ranges from face-to-face persuasion to print media to electronic media, via individual devices such as mobile phone apps and personal computers, to the use of mass media such as advertisements on radio, television and in movie theatres.

A decision was made in consultation with OEH to use their new visitor-focused website (<http://www.nationalparks.nsw.gov.au/>) for several reasons. Firstly, from OEH's perspective, the website is one of the agency's key communication tools for marketing the benefits of and encouraging visitation to national parks. The agency was just developing this tourism-oriented website that is separate to OEH's main site, with a simpler structure/navigation, inspirational images of parks and reserves of NSW and social media integration. The development of a contemporary and interactive website was driven by the vision to harness new social media opportunities to present a new and exciting way to engage with visitors and the community. OEH saw this study as an opportunity to gain feedback from one target audience. Secondly, it was rationalised that Gen Y are heavy internet users, savvy with browsers and thus likely to find and use a national park agency website when seeking information, but very unlikely to have been exposed to the new website. Thirdly, there were resource efficiencies in using an existing marketing tool, as designing and developing a customised intervention was not part of the funding or remit of this project.

For the purposes of the pilot study, an intervention was prepared by first selecting webpages based on their content, that is, designed to convey heritage and cultural benefits of visitor experiences, initially via the home page and then via webpages that conveyed visitor experiences and opportunities at two specific OEH-managed national parks.

Two contrasting parks were selected, one very close to Sydney and one in remote “outback” NSW, both being strong in providing opportunities to experience different aspects of heritage and culture. The first national park, Ku-ring-gai Chase National Park, is located in the Sydney metropolitan area and is Australia’s second-oldest national park. A heritage-listed park, it combines important history with scenic beauty. Mutawintji National Park was the second park selected, located in the NSW outback. Dominated by the Byngano Ranges this outback park is home to the famous hand stencil art of local Aboriginal communities as well as many other important cultural and historic sites.

The intervention was set up using screen captures in MS PowerPoint and was designed to take participants through selected webpages for a predetermined period of time. The communication was administered via data projection in a classroom setting, which provided an opportunity for discussion and feedback about the intervention before the full trial intervention was developed and administered in field. Administering the intervention by means of a PowerPoint presentation also prevented respondents looking at other websites or engaging in other activities on their laptop while the experiment was being conducted. In other words, it controlled the nature of the intervention and eliminated “noise” in the experiment.

After an initial trial of the intervention, narration of the text presented on the webpages was added to the presentation, to compensate for the somewhat sterile nature of viewing the 6.5-minute presentation of 21 slides in a classroom setting in complete silence. The narration allowed a short time during each PowerPoint slide for personal reading and reflection on that slide, and this was foreshadowed to respondents at the outset. This allowed some naturalness to the experiment while providing control over the particular text that respondents were exposed to, for the purposes of measuring the impact of the intervention.

The experiment was conducted on pre-existing groups of students in a first-year university subject called Communication in Organisations, a core unit within the Tourism and Hospitality degrees as well as more generic business and management degrees. The intervention was administered as part of the unit’s topic focus for the week, which was ‘persuasive communication’. The students involved included undergraduate first-year domestic and international students, as well as senior high-school students enrolled in a fast-track ‘head start to university’ program. Respondents were randomly assigned to two groups: an experimental (pre/post-test) group and a post-test only group, the latter as a way of controlling for priming (discussed in the results section). Those in the experimental group were administered a pre-intervention questionnaire which required them to rate the 39 benefit items (see Table 1) on a 1 to 7 rating scale (identical to the stage 2 instrument administered to NSW residents).

Prior to viewing the PowerPoint presentation, all participants were given the scenario that they were to imagine that they were visiting the website in order to “research” relative benefits of particular parks/experiences as a member of a planning team for a university field trip. All participants were then administered the intervention. Following the intervention, all participants were asked to complete the post-intervention questionnaire which included the same 39 benefit items.

Results and Discussion

Notwithstanding the limitations in study design stated later in this paper, there were important findings and four key lessons learned both with respect to the intervention and concerning experimental research more generally.

Firstly, the study tested for priming, that is, to what extent are differences between a respondents' pre-intervention and post-intervention ratings simply a reaction to their exposure to and own recollection of how they responded in the pre-intervention questionnaire? Some researchers are critical of pre-post survey designs with insufficient time between administration of the two questionnaires, because the act of having completed the questionnaire prior to viewing the intervention can predispose the respondent to what is being measured and therefore makes it more likely that he/she will respond differently on the post-test questionnaire. Priming was tested by comparing the mean post-intervention ratings of the experimental group (those who also completed the pre-intervention questionnaire) to the post-test only group (those who completed only the post-intervention questionnaire) on all 39 benefit items. Of the 39 benefit items, only three items were statistically significant, and none of these were the target benefits (i.e. none of these related to heritage, culture, and nature). To take a conservative line, the three items that may be subject to priming - Appreciate biodiversity, Protection of drinking water, and Protection of clean air – have been removed from the analysis.

The results strongly support the notion that any differences between pre- and post-test responses are due to the persuasiveness of the intervention and not priming. Thus, the *first lesson learned* from the pilot study was that concerns were removed about priming from both the interpretation of the pilot study results and the use of this study design in communication interventions with a wider population. It was decided that, for the main study that was to follow this pilot study, a pre-intervention, intervention and post-intervention questionnaire could be administered sequentially without a time gap between them or without the need for any other control or testing for priming in the main study.

Paired-sample t-tests were conducted to test for differences between the pre- and post-intervention benefit ratings. In addition, the post-test-only group responses were merged with the experimental group to increase the sample size and thus the robustness of the results and independent sample t-tests were conducted. Even for the more conservative of the two sets of results (Table 1), the analysis reveals that a number of benefits that were significantly improved following the experimental intervention.

TABLE 1 HERE

Before interpreting these results, it is worth restating that there were eight benefit items that were targeted with the intervention, i.e. that the communication was designed to shift. This included five heritage/cultural benefit items – the primary focus of the intervention – and three nature benefit items – the secondary focus of the intervention (see Figure 1). One might argue that the experiment could have been done by measuring only these eight benefit items rather than all 39 benefit items. However, measuring all 39 benefit items rather than just the target items served as a kind of control measure, in that we were able to compare the pre-post differences of the targeted benefits to the other benefit items not being targeted with the intervention. Of the five heritage/cultural benefit items that were primarily targeted, four were shifted by the intervention (see Figure 1). These include *learn about nature, culture and heritage* (experiential benefit), *connect with heritage* and *connect with culture* (higher-order benefit), and *conservation of culture* (societal benefit). Only one, *conservation of heritage*, was not shifted by the intervention. Of the three nature benefit items that were secondarily targeted, one was shifted (*access natural experiences*) and two, *connect with nature* and *provision of green spaces*, were not shifted by the intervention. Thus the mean ratings of four out of five primary

target benefit items and one out of three secondary target benefit items significantly improved following the intervention, suggesting that the communication was indeed persuasive.

FIGURE 1 HERE

This leaves only four non-targeted benefit items (out of 31) that actually shifted (were improved) following the intervention. Put another way, most of the benefits (27 out of 31) that were included as a control, i.e. *not* targeted by the intervention, did *not* significantly improve following the intervention. Thus *the second lesson learned* was that evaluating benefit items that were not targeted by the intervention strengthened our conclusion about the effectiveness of the intervention. Methodologically then, these findings suggest that the OEH website-based intervention was indeed well designed in that it conveyed the key benefits being targeted and that it was suited for the purpose of our main study with just minor modifications to attempt to persuade a wider cross-section of the NSW population about the heritage, culture and nature experiences benefits of visiting parks.

The third lesson learned also relates to the OEH website as a communication intervention. The post-intervention classroom discussion provided feedback on what the respondents liked (and didn't like) about the website, which provided useful feedback to OEH and confirmed the use of the website in the main study. For example, the OEH website was confirmed as having elements consistent with good website design (Lee and Gretzel, 2012) including text which is made up of narrative (not lists of functional attributes), auditory features (in this case, narration) and pictorial features (photographic images from the parks). That said, the agency's website is not targeted at Gen Y NSW residents *per se*, but rather it is designed to appeal to all market segments of all ages and backgrounds, including interstate and overseas visitors. The classroom discussion suggested that more could be done with text and images to make the site appealing to Gen Y. More importantly in relation to the present paper, the discussion alerted the researchers to the fact that the study design and instrument determined *if* the website was successful in shifting perceptions of benefits, but not *why* the website was successful in doing so. This prompted the addition of measures of the persuasive elements of the intervention in the main study. According to Lee and Gretzel (2012), the use of narrative, auditory and pictorial features is hypothesized to enhance mental imagery processing, which in turn enhances persuasiveness. Miller, Hadjimarcou & Miciak (2000) developed a scale for measuring mental imagery that consists of four dimensions: vividness (5 items), valence (5 items), quantity (3 items) and modality (4 items). In order to assess the degree to which respondents perceive the intervention as having each of these qualities, seventeen 7-point rating scale items were added to the main study instrument, which will in turn help determine if any or all of these are factors in the success (or lack of success) in shifting perceptions of benefits (based on Lee and Gretzel, 2012).

Fourthly, conducting the pilot study uncovered a number of logistical challenges of undertaking this research with students in a university setting that were not anticipated. At first glance, they met the criteria for the sample (Gen Y and resident in NSW) and appeared to present a time- and cost-effective sample for a pilot test. Conditions for research in the current environment are not what they were in the 60s, 70s and 80s when research was often conducted on compliant first year university students. It is no longer considered ethical to compel students to participate in research nor to link their participation to grades. In addition to higher levels of student rights and empowerment, there are now much lower levels of on-campus attendance and higher proportions of students enrolled in distance education at universities. Furthermore, there are many more undergraduate students from overseas, limiting their interest and in some cases their capacity to participate in this kind of study. In

fact, while we expected that it would be relatively easy to gain a sample size of at least a few hundred, fewer than 14 % of students enrolled in the unit were both willing and able to participate in the study. Finally, the sample is a biased one, as students enrolled in this unit are not representative of all Gen Y. It would have been useful to have compared the results, for example, to respondents not enrolled in university, and to students living in a large city such as Sydney, but this proved impractical for the pilot study. Largely as a result of these many challenges, the *fourth lesson learned* was that it would be more time- and cost-effective to engage an on-line panel provider to obtain the Gen-Y sample for the main study, and to conduct the study using an on-line pre-post survey with an embedded intervention.

In addition to the sampling biases noted in the previous paragraph, the administration of a pilot study in a university classroom setting does have a number of limitations. One disadvantage is that the logic of the intervention (e.g. selection of webpages and length of time on each page) may not have been apparent to all respondents. A second disadvantage is that, despite best efforts to make the experiment as naturalistic as possible, it lacked this in the sense that respondents were not able to click in order to progress, to go back or to extend their information search. This precluded respondents self-determining the amount of time they could spend on each webpage, and it is not possible to say how this affected the findings. Finally, the font size was small when viewed via data projection, although this was not seen as overly problematic for this particular group of respondents and because much of the text was narrated.

Conclusion and Implications

The stated aim of this paper was to explain methodological decisions and their consequences for interpretation of findings, as a basis for fostering best-practice experimental design in field-based tourism research. The pilot study proved invaluable in informing the main study on a number of fronts, including decisions to (a) administer the pre-intervention questionnaire, the communication intervention and the post-intervention questionnaire elements sequentially without a time gap between them, (b) retain all 39 benefit items and the overall survey design, (c) add items to the post-intervention survey instrument to measure mental imagery processing, and (d) engage an on-line panel provider and conduct the main study using an on-line pre-post survey with an embedded intervention.

Overall, the intervention was viewed as successful in impacting respondents' perceptions in many respects, and will be used in a subsequent on-line study on a broader sample of NSW respondents. In reality, administration of the main study via an on-line survey may well present new logistical and conceptual and methodological challenges. Nonetheless, pilot studies such as the one reported in this paper provide important lessons for future studies. It is hoped that this paper has helped to share these lessons with researchers interested in engaging experimental design in the studies they undertake.

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Table 1: Comparison of Pre- and Post-Test Perceptions of Benefits of Protecting and Providing Visitor Experiences in National Parks

Personal Experiential, Personal Higher-order and Societal/Community-wide Benefit Items	Pre-Test (n=56)	Post-Test (n=88)	T-test
Mean level of agreement (1-7 scale)	Mean	Mean	Sig. (p=0.05)
Access natural experiences	5.36	5.72	0.03
Be in a comfortable and safe place	5.18	5.33	0.44
Challenge yourself	4.84	5.04	0.30
Escape the urban environment	5.67	5.64	0.91
Experience something new and different	5.48	5.87	0.03
Find peace and solitude	5.36	5.38	0.91
Learn about nature, culture and heritage	5.60	6.00	0.03
Participate in outdoor recreation activities	5.69	5.78	0.59
Reflect on personal values	5.09	5.13	0.84
Relax and unwind	5.49	5.49	0.99
Have fun	5.75	5.78	0.86
Socialise with friends and family	5.78	5.57	0.25
Appreciate biodiversity	5.40	5.55	n/a*
Appreciate scenic beauty	5.80	6.07	0.06
Connect with heritage	5.22	5.65	0.02
Connect with culture	5.09	5.81	0.00
Connect with nature	5.84	6.06	0.14
Connect with spiritual side	4.80	5.13	0.09
Strengthen social networks	4.53	4.53	0.99
Strengthen family ties	4.93	4.99	0.77
Improve quality of life	5.00	5.23	0.27
Increase self confidence	4.55	4.67	0.57
Achieve mental health benefits	5.29	5.31	0.90
Achieve physical health benefits	5.47	5.52	0.80
Conservation of culture	5.31	5.65	0.05
Conservation of heritage	5.38	5.59	0.23
Generation of employment	4.87	4.92	0.79
Improved flood management	4.80	4.69	0.55
Improved fire management	4.76	4.81	0.80
Increased business investment	4.29	4.60	0.11
Increased tourism	5.29	5.84	0.00
Increased community wellbeing	4.87	5.28	0.02
Increased community pride	4.85	5.26	0.03
Protection of biological diversity	5.65	5.69	n/a*
Protection of drinking water	5.20	5.09	n/a*
*Provision of clean air	5.82	5.72	0.56
Provision of green spaces	5.87	5.83	0.78
Reduction in the cost of healthcare	4.51	4.19	0.17
Reduction in the effects of climate change	5.13	4.97	0.49

*These 3 benefit items were removed from analysis due to priming.

Pale shading indicates items that were targeted but did not shift with the intervention.

Darker shading indicates items (both targeted and not targeted) that shifted significantly with the intervention.

Note: There was little variability in standard error – it ranged from 0.9 to 0.18.

Figure 1: Mean Ratings of Pre- and Post-Test Benefit Items with Statistically Significant Differences

