

RESEARCH ARTICLE

Examining future park recreation activities and barriers relative to societal trends

Authors

Dino Zanon, dzanon@iinet.net.au, Department of Marketing, Deakin University, Melbourne Australia.

Jim Curtis, james.curtis@monash.edu, BehaviourWorks Australia, Monash Sustainable Development Institute, Monash University, Melbourne, Australia.

Leonie Lockstone-Binney, leonie.lockstone-binney@angliss.edu.au, William Angliss Institute, Melbourne Australia.

John Hall, john.hall@deakin.edu.au, Department of Marketing, Deakin University, Melbourne Australia.

Abstract

This study empirically examines how future park recreation is related to enduring societal trends. An online panel of 927 participants was surveyed regarding anticipated park recreation participation in ten years' time in terms of intended park activities and expected barriers, adapted from the Theory of Planned Behaviour, the Recreation Experience Preference scales and Leisure Constraints theory. Anticipated changes were then linked by participants to the particular societal trends impacting them. The results suggest increased activities are expected from the 'health awareness' and 'independence and convenience' societal trends, while increased barriers are expected from 'climate change', 'perceived safety' and 'population and urban growth'. Overall, the percentage of participants reporting future increased activities at parks is equal to those reporting

future barriers; which suggests potentially that there will be no net participation change over time. The management implications, limitations and potential future research agenda stemming from the study are discussed.

Keywords: Future outdoor recreation; park recreation; activities; barriers or constraints; societal trends

Introduction

Personal benefits obtained from park visitation are a key element in society's acceptance and approval of protected areas and reserves (Eagles, 2007). With globally increasing and diversifying populations, outdoor recreation opportunities face corresponding changes to community expectations to remain socially relevant. Kareiva (2008) explains that human attitudes and recreation are fundamentally important to conservation science and preserving biodiversity in parks. Monitoring and understanding population and recreation changes should therefore be a key input into adaptive management plans and policies associated with any system of protected areas and reserves. In the absence of such knowledge, there is risk of a disconnect occurring between communities and their natural environment. If people no longer see relevance in parks, they cannot be expected to care or exert political support for their existence (Balmford et al. 2009).

Much has been studied over time regarding recreation trends in parks (Cordell, Betz and Green 2008a; Cordell, Betz, Green and Mou 2008b; Pitas, Barrett & Mowen 2017; White et al. 2014). Many of these studies are based on retrospective analyses of recreation behaviour and forecast broad growth trends in outdoor recreation and tourism. They typically report increased visitation to specific park types (e.g., wilderness parks) or changes in outdoor activities in specific countries (Cole 1996; Cordell et al. 2008a; Leopold 2013) and the global growth in visitation to protected areas (Balmford et al. 2009; Eagles 2002). To date, few studies have examined future park use activity intentions and expected barriers relative to observed societal trends. This study proposes that major recreation changes occur as a consequence of contemporary societal trends. For example, how will the ageing population influence future variations in park use?

In reference to conserving nature for future generations, Kareiva (2008, 2758) posed a critical scientific question: ‘What type of recreational experience with nature is needed?’ Curry (2004) argued that consumerism will be the most significant influence on future recreation experiences, involving more mechanised activities such as snowmobiling, four-wheel driving and trail bike riding. While these activities have grown, they remain modest compared to more popular park experiences such as sightseeing, social gatherings and walking (Cordell et al. 2008b; Leopold 2013; Zanon, Hall, Lockstone-Binney and Weber 2014). It is uncertain which trends will have the greatest influence on future park visitation.

The Theory of Reasoned Action [TRA] (Ajzen and Fishbein, 1980), the Theory of Planned Behaviour [TPB] (Ajzen, 1991), and the Reasoned Action Approach [RAA] (Fishbein and Ajzen, 2011) were developed to predict the influences on behaviour based

on an understanding of the antecedent beliefs that inform people's attitudes, social norms, perceived behavioural control and intentions to perform these behaviours. It should be acknowledged that the relative importance of these determinants in predicting intentions varies according to types of behaviour and situations studied (Ajzen, 1991). These models have been used successfully to predict future behaviours independent of past trends, overcoming the issues of retrospective analyses. A meta-analysis by Sutton (1998) of nine studies conducted over 18 years showed that the TRA and TPB models accounted for just under half of the variance in intentions and a quarter of the variance in behaviour. Another meta-review by Armitage and Conner (2001) of 185 studies up to 1997, similarly found that the TPB model accounted for 27% and 39% of the variance in behaviour and intentions respectively. While these are modest figures, the models are one of the very few ways to predict future intentions independent of past trends.

Surveys, using the TPB with measures of intention, have been particularly useful when future outcomes are uncertain, such as in the case of long-haul tourism (Van Cranenburgh, Chorus and Van Wee 2014) and election outcomes in democracies (Crespi 1988; Lewis-Beck 2005). Haider (2002) put forward several advantages of using stated preference/choice surveys (e.g., respondents consider recreation options holistically and with trade-offs). Haider also argued that the model is underutilised in outdoor recreation research. The current study partially adopts the TPB model to examine park use activity intentions and expected barriers to visitation relative to ongoing societal trends. The activities and barriers under investigation are respectively informed by the Recreation Experience Preference (REP) scales in benefits theory (Driver 1977) and Leisure Constraints [LC] theory (Godbey 1987).

Literature Review

Researchers and park agencies have studied a number of key population and recreation trends that they expect parks will need to adapt to in order to provide socially relevant outdoor recreational experiences. For example, two articles by Eagles (2007, 2014) proposed research agendas for park tourism based on global trends. In each article, Eagles referred to several political, socio-demographic, and technological trends such as park funding, higher education levels, improved technology, ageing population, alternative travel expectations and demands, new funding structures, and climate change that he contended would require future research leading to improved managerial responses over the medium term. While many of the trends Eagles referred to are common across both studies, importantly, there are also distinct trends noted. For example, Asian economic growth was an addition to the latter study (Eagles 2017) and the trend towards increased park visitation globally (Eagles 2014) was revised in the 2014 study due to observed declines in North American park visitation. This variety of trends has also been reported elsewhere (e.g., California State Parks 2005).

Among trends studied, there are both opportunities and challenges. Opportunities in terms of new and growing markets and addressing important social issues, and challenges in terms of making parks more accessible, inclusive and safe. What studies highlight is that relying on the past will not necessarily predict the future, as park visitors represent an increasingly diverse range of age groups, lifestyle choices, family groups, skill levels, economic means and ethnic backgrounds (Ho et al. 2005; Schultz and Nickerson 2015; Stidham et al. 2014). This study provides empirical evidence to

link recent societal trends occurring over the last decade to anticipated park use in terms of activity intentions and expected barriers.

Population, societal and recreation trends research

A number of sources were reviewed to shortlist population and societal trends that might influence future park use. This included government data, studies and reports commissioned by park management agencies (nationally and internationally), as well as academic sources. Articles were found using search terms including ‘population/society/community’ and ‘trends/change’, with subsequent filtering using ‘park/nature based/outdoor’ and ‘activity/leisure/recreation/tourism’. While a range of possible trends were identified, this study focuses on ten core societal trends observed over the last ten years. These are numbered and briefly described with their various sources noted in Table 1. These were deemed sufficiently important by the research team following a collective assessment of how the trends might influence park use in the future.

TABLE 1 HERE

Most of these trends are typically social (e.g., ‘changing household types’ or ‘changing work patterns’) or demographic (e.g., ‘ageing population’ or ‘increased cultural diversity’). Other societal trends reflect factors that may influence people’s choice of leisure options such ‘independence and convenience’ or ‘health awareness’. One trend reflects the global environmental phenomena of ‘climate change’, which is

likely to significantly affect outdoor recreation (Eagles 2007, Fisichelli et al. 2015, Wilkins et al. 2017).

It should be noted that there are overlaps among the trends and localised factors might affect specific cultures and communities. Additionally, in the current study, which seeks to understand which of the trends will have the most influence on park activities and barriers in the future, each population or attitudinal change may affect various activities differentially. For example, ‘ageing population’, an observed population change, is likely to affect park physical activity (e.g., walks) as well as certain barriers, such as lack of partner, fear and poor health, mirroring findings studying age effects on park activities (Burns and Graefe 2007; Jackson and Henderson 1995). In contrast, ‘health awareness’, a growing awareness and community attitude, is likely to stimulate physical park activities. Establishing which of the trends is likely to have the more prevalent population effect and its direction will be the contribution of this research.

Benefits research and associated activities

People seek diverse benefits and experiences associated with activities undertaken in parks (Driver 1977). REP scales were developed to assess the benefits and related experiences associated with various park activities. Driver’s seminal study constructed an extensive inventory of items to measure the relative importance of ‘reasons in deciding to participate in designated activities’ (1977, 1). The inventory items were categorised into 19 benefit domains, representing the central themes to the preference items. Researchers have subsequently refined the content of the REP scales and included

psycho-physiological, social or cultural, environmental and economic benefits (De Kort et al. 2006; Manfredi, Driver and Tarrant 1996; Moore and Driver 2005).

Benefits have been used to describe what motivates various segments of park visitors (Backlund and Stewart 2012; Bichis-Lupas and Moisey 2001; Fix and Taylor 2011). A study by Zanon et al. (2014), based on over 11,000 visitors surveyed from 33 diverse metropolitan and protected area parks in Victoria, Australia, used 70 coded reasons for visiting parks. These were categorised into several of Driver's benefit domains using Hendricks, Schneider and Burdrum's (2004) classification method as a prototype. The more common activities from that study, namely, sightseeing, walking, swimming, attending a social event, resting, and relaxing, and their associated common benefit domains, will be used in the current research to examine park activity intentions.

Constraints and barriers research

In contemplating visitation to a park, it must be acknowledged that a variety of barriers and constraints are major inhibiting factors affecting future visits. Conceptualised by Crawford and Godbey (1987) as intrapersonal, interpersonal and structural, leisure constraints were later arranged in hierarchical order of importance from 'most proximal/intrapersonal' to 'most distal/structural' (Crawford, Jackson and Godbey 1991, 314).

Zanon et al. (2013) meta-analysed ten common park use barriers across North American studies spanning 1978-2012. The research found the key barriers to be lack of time, high cost, lack of knowledge, fear, poor health, park location and lack of transportation, partner, facilities or interest, with structural barriers (lack of time, cost,

lack of facilities, knowledge, transport and location or lack of proximity to a park) having the greatest effects in curbing park visitation. The resulting barriers from that study will be examined here to assess barriers to intended park use at the individual level and also aligned to the hierarchical solution. Additionally, the most potent barrier suggested by Zanon et al.'s (2013) study, 'lack of time', will be expanded to include several suggested competing priorities. Additional barriers, including 'crowding', 'recreational conflicts', 'language', and the emerging barrier of 'unpredictable or extreme weather conditions', have been added based on the reported societal trends 'population and urban growth', 'increasing cultural diversity' and 'climate change'.

Aims

This study addresses one primary and two ancillary aims:

- 1) How will future park use visitation be influenced by contemporary societal trends?
 - a) How will particular activity intentions and expected barriers be influenced by societal trends?
 - b) How will motivational benefits and hierarchies of barriers be influenced by societal trends?

Study Hypotheses

This study seeks a comprehensive understanding of the connections between ten core societal trends with 21 common park activities and 19 typical barriers or constraints

(referred to as barriers hereafter). Note that a catchall or omnibus tenth trend was added for participants to identify other trends. The following hypotheses are investigated:

H1: Anticipated increases in park activities will have a significant interaction with societal trends.

H1a: Specific park activity increases will be associated with particular societal trends.

H1b: Particular motivational benefits for visiting parks will be associated with particular societal trends.

H2: Expected barriers will have a significant interaction with societal trends.

H2a: Specific barriers will be associated with particular societal trends.

H2b: Particular hierarchies of barriers to visiting parks will be associated with particular societal trends.

Methods

The study adheres to a positivist (Grix, 2013) epistemological philosophy concerned with common facts and observable phenomena that can be verified. Flowing from this perspective, a quantitative survey was developed to test the proposed hypotheses. It contained questions relating to demographics and park use and further explored the expected occurrence of future park activities and expected barriers to park use over a future timeframe. A short timeframe (e.g., 2-3 years) was likely to yield more accurate predictions but could limit the influence of societal trends. A longer timeframe of 10 years was selected to encourage respondents to think beyond their current park use. This period was deemed appropriate as several researchers have studied similar or

longer timeframes to determine park recreational trends (Balmford et al. 2009; Eagles 2007; Pergams and Zaradic 2008).

Participants were asked to select from the pre-identified list of societal trends detailed in Table 1 those that were likely to contribute to or impact their future use of parks. That is, ‘What park activities do you think you will be undertaking more frequently in 10 years time?’ and ‘What barriers to visiting parks do you think will become more likely for you in 10 years time?’ A dichotomous response was required to these queries. The 21 common park activities tested are listed in Table 2. These cover 84% of the activity-cases noted in Zanon et al.’s (2014) study together with the associated REP benefit domains (Driver, 1977). The barriers assessed are listed in Table 3, with corresponding barrier classifications according to LC theory (Crawford and Godbey 1987; Crawford et al. 1991).

TABLE 2 HERE

TABLE 3 HERE

To ensure that participants clearly understood the societal trend descriptions and could link them to future park use activities and barriers, the instrument was initially pre-tested online. A separate sample of 203 participants was obtained during November December 2008 via an open invitation to complete the survey through a link on the website of the State park agency for Victoria, Australia, Parks Victoria. Open-ended

questions were included in the pilot study, allowing people to add further comments and suggest additional activities and barriers not captured in the questionnaire. The pilot study results revealed that participants understood the nature and implications of the societal trends, and could link them to their intended future use of parks, although some participants suggested minor edits to the wording of the activity and barrier items. Additionally, a link was added on each page of the survey for participants to easily refer back to the societal trends at any time. Of the 203 pre-test participants, just over 50% completed the questionnaire in full. The approximate completion time was 15 minutes.

Sample

In light of the lengthy completion time evidenced in the pilot, an online panel of people living in Victoria, Australia was sourced through a large accredited market research organisation to ensure respondents completed the questionnaire in its entirety (Callegaro et al. 2014; Goritz 2004; Sue and Ritter 2012). The online panelists were randomly selected from a large group of volunteers that had previously agreed to participate in general internet based market research for that agency. The selected panellists received a reward point incentive for completing the online survey. The instrument was initially administered to a sample of 806 participants. To ensure the sample captured participants from non-English speaking backgrounds, an additional 121 participants from that sociodemographic group were included, resulting in an overall sample size of 927. The data was subsequently transferred into IBM SPSS Statistics V23. A breakdown of the full sample was compared to the Victorian Census data (ABS 2006) using 'age', 'gender', 'highest education' and 'country of birth'. All demographic

categories were well represented with the least favourable representation being the 50 to 59 age group, which was lower in the sample compared to the general population by 9%, but had an adequate returned sample for analysis of 68 cases. The final survey was administered in February 2009.

Data analysis

Given the categorical nature of the data collected, chi-square (χ^2) tests for independence were used to identify any statistically significant associations between the variables. Two variables are deemed as 'independent' when there is no consistent or predictable relationship between them (Gravetter and Wallnau, 2009). When the chi-square test for independence produces a small significance value then the variables are likely to be related; the hypothesis that the variables are independent is rejected and confidence is instead gained that they are in some way related (Gravetter and Wallnau 2009). A low significance level, 0.0001, was chosen to avoid Type II errors. In other words, the pattern of responses between the variables is significantly different (Field 2009; Gravetter and Wallnau 2009).

Chi-square tests for independence that produced statistically significant results were then further examined using Adjusted Standardised Residuals [ASR] normally distributed (Haberman 1978) to test the significance of each cell. The same critical probability level, 0.0001, was used to avoid Type II errors, particularly as many tests were to be undertaken. ASRs test the difference in the observed and expected frequencies in each cell of a cross-tabulation to determine which interactions make the

greatest contribution and are themselves statistically significant (Haberman 1978). The nominal variables cross-tabulated in this study are detailed in Tables 1, 2 and 3.

Results

Key tables

Four key tables, Tables 4, 5, 6, and 7, contain the percentage of participants (n=927) that related ‘intend to increase an activity’ or ‘expect a barrier’ associated with the ten societal changes. Tables 4 and 5 have percentages for detailed ‘activity’ and ‘barriers’ respectively. Table 6 groups activities from Table 4 into the various REP motivational benefit domains (see Table 2). Similarly, Table 7 groups barriers from Table 5 into the barrier types (see Table 3). All four tables contain statistically significant results in many cells indicating associations between the variables (as indicated by the unshaded cells in the tables). Significance is based on the absolute ASR, a standardised z score, value exceeding the critical value of 3.89 ($p = 0.0001$, 2 tailed; Haberman , 1978) in a normal distribution. Significantly higher than expected cells are bolded. For example, in Table 4, significantly more participants (33.9%) (ASR=6.33, $p<0.0001$, two tailed) associated the increased activity ‘sightseeing and/ or scenic driving’ with the societal trend of ‘ageing population’.

TABLE 4, 5, 6, 7 HERE

Activities related to park use

Detailed in order in Table 4, the top three activities participants intended to increase were: ‘enjoyment of being outdoors’ (78.2%), ‘relaxation and rest’ (78.2%) and ‘sightseeing and/or scenic driving’ (77.0%). Seven other activities had percentages exceeding half the sample.

While Table 4 provides an insight into future park usage, the study was concerned with exploring whether certain societal trends were associated with particular activity changes. The chi-square test for independence across all activities revealed a statistically significant interaction between societal trends and activities ($p < 0.0001$, $\chi^2 = 2,341.0$; $df = 200$). This finding supports hypothesis H1. Between particular activity increases and specific societal trends, there were 24 interactions for which associations were significantly higher than expected given the overall responses in the row, column and cell counts ($|ASRs| > 3.89$, $p < 0.0001$; Haberman, 1978). Similarly, there were 13 interactions with significantly lower associations than expected. Both sets of findings can be informative. For example, significantly fewer participants associated the activity of ‘camping’ with the societal trend ‘health awareness’. However, the more salient interactions are those with significantly higher observed values, indicating much higher intentions to undertake future activities in parks. Only significantly higher associations are discussed below.

All six activities in the ‘physical fitness’ benefit domain had significantly more participants (>15%) associate it with the societal trend of ‘health awareness’. The most notable activities associated were a ‘short walk’ (39.8%) and ‘fitness activity (e.g., jogging)’ (21.5%). Other notable associations in Table 4 were: between the trend ‘ageing population’ and the activity ‘sightseeing or scenic driving’ (33.9%); the trend

'health awareness' and the activity 'enjoyment of being outdoors' (29.3%); the trend 'changing household types' with both 'picnics and barbecues' (20.5%) and 'outdoor activity with children' (19.8%); and finally the trend of 'changing work patterns' and the activity 'holiday (i.e., vacation, or short break)' (19.4%). There were several other higher associations that were within the range of 3.3% to 16.5% of participants (e.g. 'four wheel driving or trail bike riding' and 'attending a special or social event') see Table 4. The above findings support hypothesis H1a.

Table 6 provides a summary analysis of societal trends associated with activities within the REP motivational benefit domains (see Table 2). The chi-square test for independence across benefit domains shows a statistically significant interaction with societal trends ($p < 0.0001$, $\chi^2 = 455.8$; $df = 30$), mirroring the test for activities. Between particular benefit domains and specific societal trends, there were six interactions with significantly higher associations than expected ($|ASRs| > 3.89$). Similarly, there were four interactions with associations significantly lower than expected. All benefit domains had at least one higher association with a societal trend ($> 15\%$): the 'physical fitness' domain had the majority of participants associating it with the 'health awareness' trend (55%); the 'physical rest or escape personal, social or physical pressure and miscellaneous' domain had the next largest association with the 'ageing population' trend (41.7%); the 'family togetherness or similar people' and 'increasing cultural diversity' domains had moderate associations with the 'changing households' trend (37.2% and 26.1% respectively); finally, the 'enjoy nature or learning' domain was moderately associated with the 'climate change' trend (15.7%). These findings support hypothesis H1b.

Barriers related to park use

The top three barriers that participants expected to increase, as shown in Table 5, were in order: ‘unpredictable or extreme weather conditions’ (59.1%), ‘crowding’ (53.1%) and ‘physical or health constraints’ (50.1%). No other barriers had percentages exceeding half the sample.

Exploring whether certain societal trends were associated with particular barriers, the chi-square test for independence showed a statistically significant interaction ($p < 0.0001$, $\chi^2 = 5,494.6$; $df = 180$). This finding supports hypothesis H2. Between particular barrier increases and specific societal trends, 24 interactions had significantly higher associations than expected ($|ASRs| > 3.89$). Interestingly, unlike activities, there were many cells, 35, with observed associations significantly lower than expected. The ‘changing work patterns’ trend had four higher associations with particular barriers that were all structural; including ‘not having enough time’ (22.9%), ‘work priorities’ (19.8%), ‘restricted opening hours’ (10.2%), and ‘not having enough money’ (9.5%). There were four trends, ‘ageing population’, ‘increasing cultural diversity’, ‘changing household types’, and ‘population and urban growth’ that each had three barriers with higher than expected associations across two or more barrier types, see Table 5.

Other notable associations in Table 5 were: the ‘unpredictable or extreme weather conditions’ barrier and the trend ‘climate change’ (34.4%); the ‘physical or health constraints’ barrier and the trend of ‘ageing population’ (32.7%); the ‘crowding’ barrier with the trend of ‘population and urban growth’ (25.2%); the ‘personal safety concerns’ barrier with the trend of ‘perceived safety’ (18.7%); and finally, the ‘family priorities’

barrier with the trend of ‘changing household types’ (18.1%). There were several other higher associations that were less notable within the range of 2.5% to 16.0% of participants, see Table 5. These findings support hypothesis H2a.

Table 7 provides a summary analysis of the ten societal trends associated with expected barriers within the hierarchical barrier types (Table 3). The chi-square test for independence across barrier types shows a statistically significant interaction with the societal trends ($p < 0.0001$, $\chi^2 = 717.8$; $df = 20$). Between particular barrier types and specific societal trends, there were eight interactions with significantly higher associations than expected ($|ASRs| > 3.89$). There were ten interactions with significantly lower associations than expected. All barrier types had multiple associations with a societal trend ($>20\%$): the ‘most proximal/intrapersonal’ barrier type had three strong to moderate associations with the societal trends ‘ageing population’ (44.7%), ‘perceived safety’ (22.3%), and ‘health awareness’ (22.2%); the ‘mid interpersonal’ barrier type had one stronger and one moderate association with the societal trends ‘population and urban growth’ (28.2%) and ‘increasing cultural diversity’ (15.2%); the ‘most distal structural’ barrier type had three strong associations with the societal trends ‘changing work patterns’ (40.3%), ‘climate change’ (37.6%) and ‘changing household types’ (32.9%). These findings support hypothesis H2b.

FIGURE 1 HERE

Overall societal trend effects

The diagonal line in Figure 1 represents where the participants' percentages are equal between nominated activities and barriers. Overall, there was no significant difference (ASR=1.03, $p=0.85$, 2 tailed) between the participants nominating increased activities (92.8%) and expected barriers (91.5%). However, the chi-square analysis indicated that there were distinct interactions between nominated activities and barriers for specific societal trends (i.e., interactions were not uniform for all activities and barriers) ($p < 0.0001$, $\chi^2 = 5,494.6$; $df = 180$). Examining the societal trends separately, there were two, 'health awareness' and 'independence and convenience', for which participants nominating increased activities significantly exceeded the participants expecting barriers by 33.2% and 17.2% respectively (critical $ASR > +3.89$, $p < 0.0001$, 2 tailed). Conversely, there were three trends, 'climate change', 'perceived safety' and 'population and urban growth', for which participants expecting barriers significantly exceeded the participants intending to increase activities by 17.4%, 16.4% and 12.5% respectively (critical $ASR < -3.89$, $p < 0.0001$, 2 tailed). There were no significant differences for any of the other societal trends tested.

Discussion

This study uses a theory based survey method to establish how park use will be affected by intended increased activities and expected barriers in respect of societal trends in the future. Given the volume of data collected, it is not the intention of this final section to recap all findings. Instead, the discussion will briefly highlight future strategic opportunities and potential challenges as park management implications. The contribution of the study is then discussed in turn with respect to the limitations of the current empirical work and a related agenda for future research is proposed.

Management Implications

Applying TPB (Ajzen 1991), REP motivational benefit domains (Driver 1977) and LC theory (Crawford and Godbey 1987; Crawford et al. 1991), the results in Figure 1 provide park planners with a good indication of what the net effect of societal trends will be to future park visits, with the findings contextualised to the Australian State of Victoria. While longitudinal testing is required to confirm these interpretations, the overall number of participants nominating activities appears to be equal to those nominating barriers, suggesting no change in the population's park recreation participation levels. In other words, future park recreation is likely to increase in line with population growth. This finding is consistent with initial park agency monitoring reports for Victoria which show consistent community participation levels in park recreation (Parks Victoria 2012).

Particular societal trends provide more positive opportunities for promoting park activities, while others will pose challenges, with significantly more barriers to visitation. 'Health awareness' and 'independence and convenience' are examples of the former. 'Health awareness', in particular, offers future opportunities for park managers to promote the health and physical fitness benefits of parks, especially when associated with the convenience of an urban environment, in support of findings by Browne (1992), Hartig et al. (2003) and Ward Thompson (2002). Parks in the future are therefore likely to play an important role in encouraging physical fitness and community exercise and may assist in combating the obesity pandemic (Pink 2009; Beaumont and Thomas 2012; USCB 2012). For the trend 'independence and convenience', more 'meal

or refreshment in a café or restaurant’ activity in the social domains of ‘family togetherness’ and ‘similar people’ may also provide future opportunities for park visitation with, perhaps, a commercial revenue stream for park agencies.

Collectively, the study identified potent barriers associated with all three LC theory barrier types (Crawford and Godbey 1987). The greatest challenges found were those societal trends with potent barriers that had little or no associated increased park activities. These included the societal trend of ‘climate change’ associated with the ‘structural’ barrier of ‘unpredictable or extreme weather conditions’; ‘population and urban growth’ associated with the ‘interpersonal’ barrier of ‘crowding’; and ‘perceived safety’ associated with the ‘intrapersonal’ barrier of ‘recreational conflicts between different user groups’. These three societal trends reinforce the arguments of several authors, for example, on the importance of ‘climate change’ effects on tourism (Eagles 2007; Gössling et al. 2012) and in relation to the perceived park safety issues experienced by certain demographic groups (Gobster 2002; Zanon et al. 2013).

There were several specific societal trends with near equal percentage of participants reporting intended activities or expected barriers. These trends therefore appear to have neutral effects. Two trends: ‘ageing population’ and ‘changing work patterns’, have particularly high percentages of participants reporting both intended activities and expected barriers that were approximately equal for each trend (ASR=0.69 & 0.41, $p's \gg 0.05$, 2 tailed; respectively). For those two trends, there is likely to be a high degree of volatility in park visits dependent on whether the activities and barriers offset the contrary effects in the future. The neutrality assertion may therefore prove ultimately to be incorrect, dependent on how competing forces evolve. For example, for

the 'ageing population' societal trend, the increased activities: 'relaxation and rest' and 'sightseeing and/or scenic driving' (in the 'physical rest and escape' and 'enjoy nature & learning' domains), appear to be offset by the increased barriers: 'physical or health constraints', 'not having access to a car' and 'no one to go with' (in the 'most proximal/intrapersonal', 'most distal/structural', and 'mid/interpersonal' barrier categories). These mirror effects on older people as noted in Zanon et al.'s (2013) constraints meta-analysis. For the 'changing work patterns' societal trend, an apparent opportunity created by increased activity from 'holiday (vacation) or short break' in the 'enjoy nature' domain appears to be offset by several barriers in the 'most distal' or 'structural' category, including 'not having enough money', 'not having enough time', 'work priorities', and 'restricted opening hours'. The counterbalance between intended activities and expected barriers will determine whether societal trends are future opportunities or challenges to park recreation, despite currently appearing to be both.

Limitations

The current examination is not without limitations. Because of the focus on large changes in common park activities and barriers, participants were not asked about comparatively low volume park activities such as 'canoeing' or 'reading' (Zanon et al. 2014), nor less common barriers, such as 'difficulty in mixing with others' (Tsai 2000) or 'too many male visitors' (Hung and Crompton 2006), despite these being prevalent in some parks and locations. Additionally, the study only employs known activities, barriers and social trends since antecedent research can only address what is known at the time.

There were also some obvious connections between certain societal trends and activities and barriers, including: 'health awareness' and several 'physical fitness' activities, 'climate change' and 'unpredictable or extreme weather conditions', and 'personal safety concerns' with the trend 'perceived safety'. Although these may have unduly influenced the associated responses, there were some strong associations with less obvious connections, including: 'restricted opening hours' and 'changing work patterns,' which supports Jacobs and Gerson's (2001) argument that family work patterns have major impacts on leisure trends. The activity of 'enjoyment of being outdoors' was strongly associated with the societal trend 'health awareness', suggesting researchers may have misclassified the activity as 'enjoy nature' whereas participants clearly aligned it with 'physical fitness' activities. Additionally, participants associated every activity and barrier with every societal trend with at least 6 responses in 99% of all possible cell associations. The noted associations above, plus the fact that participants took advantage of the tenth catchall 'other' societal trend, indicates that participants seriously considered the social trend options before selecting their activity or barrier associations.

'Beliefs' in the TPB refer to things that people believe to be true, not objective facts; also 'Intentions' do not necessarily result in behavioural change although they are a reasonable predictor (Armitage and Connor 2001; Bagozzi 1992) and barriers do not necessarily prevent participation in leisure, but may influence participation levels (Crawford et al. 1991; Jackson 1988). Only longitudinal analyses will confirm if the reported trends will ultimately affect future park visitation, as recommended by Haider (2002).

Future Research

There are several lines of enquiry that stem from the results and limitations of this study. Firstly, the findings should be validated by monitoring actual visitation patterns over time. That future study will be dependent on available data. To that end, informed by the TPB, REP scales, LC theory or emergent theories, further development of a reliable survey methodology should be undertaken for use in predicting future park activities (i.e., leisure changes). Such a validated survey methodology may prove to be a more reliable instrument for predicting behavioural changes in leisure than extrapolation of past recreational changes or expert opinion on proposed changes.

Secondly, parallel research should be undertaken in another jurisdiction (preferably where ongoing monitoring of recreational patterns is in place) to comparatively validate their findings (Cordell et al. 2008b). Thirdly, the surprising result in relation to ‘climate change’ (a third of people expected ‘unpredictable or extreme weather conditions’ to personally affect them) was on a par with ‘ageing population’ and ‘physical or health constraints’, already well known and widely researched (e.g., Browne 1992; Kemperman and Timmermans 2006). This suggests the need for focused research attention to investigate this new challenge (Fisichelli et al. 2015; Wilkins et al. 2017). Park agencies in general require an informed understanding of the challenges and opportunities stemming from the societal changes studied to determine the likelihood of these factors affecting park leisure in the future.

Conclusions

Future recreation is shaped by past trends. However, future changes in recreation are, by definition, created relative to the status quo. Future sociological changes will be created by ‘waves’ or multitudes of like-minded people adopting new behavioural patterns, such as the invention and adoption of the ‘smart’ phone with the consequential rise of social media and navigation use. This study was exploratory in identifying new park recreational ‘waves’.

The impact of future changes in park recreation may have far reaching effects both nationally and internationally. While, to date, the necessary longitudinal data has not been available to validate this study contextualised to Victoria, Australia, there is supportive evidence of consistent major phenomena appearing across Australia and other jurisdictions with similar social trends. The major study observation regarding ageing population and a future increase in sightseeing, scenic driving or touring have appeared, for example, in reports of booms of production and sales of caravans in Australia (Allen, 2016) and similarly with Recreation Vehicles [RVs] in the USA (Davis, 2018). Both reports attribute the rapid market expansion to retiring post-war baby-boomers (i.e., ageing population). While validation of this study should be the focus of future research; the authors felt that it was important not to hold back the initial data so that park managers could be informed by the findings. These observations may be useful in planning for parks in the future or preparedness for potent phenomenological changes. Changes, such as in the caravan and RV examples above, that may require extensive planning or supporting infrastructure (e.g., parking bays) to facilitate the visitation of these large cohorts.

The study provides a quantitative sample based predictive complement to existing methods to examine leisure trends. All hypotheses were supported. Finally, the research, informed by the TPB (Ajzen 1991), REP motivational benefit domains (Driver 1977) and LC theory, has the potential to provide many interesting insights as to how expected park use will evolve in respect of enduring population and societal trends. Importantly, the study links leisure change with broader social trends that can be validated using scientific and quantitative methods. It is also independent of extrapolation of past recreation trends and opinion. Therefore, it may provide leisure academics and park professionals with a superior method for determining insights into future park recreation.

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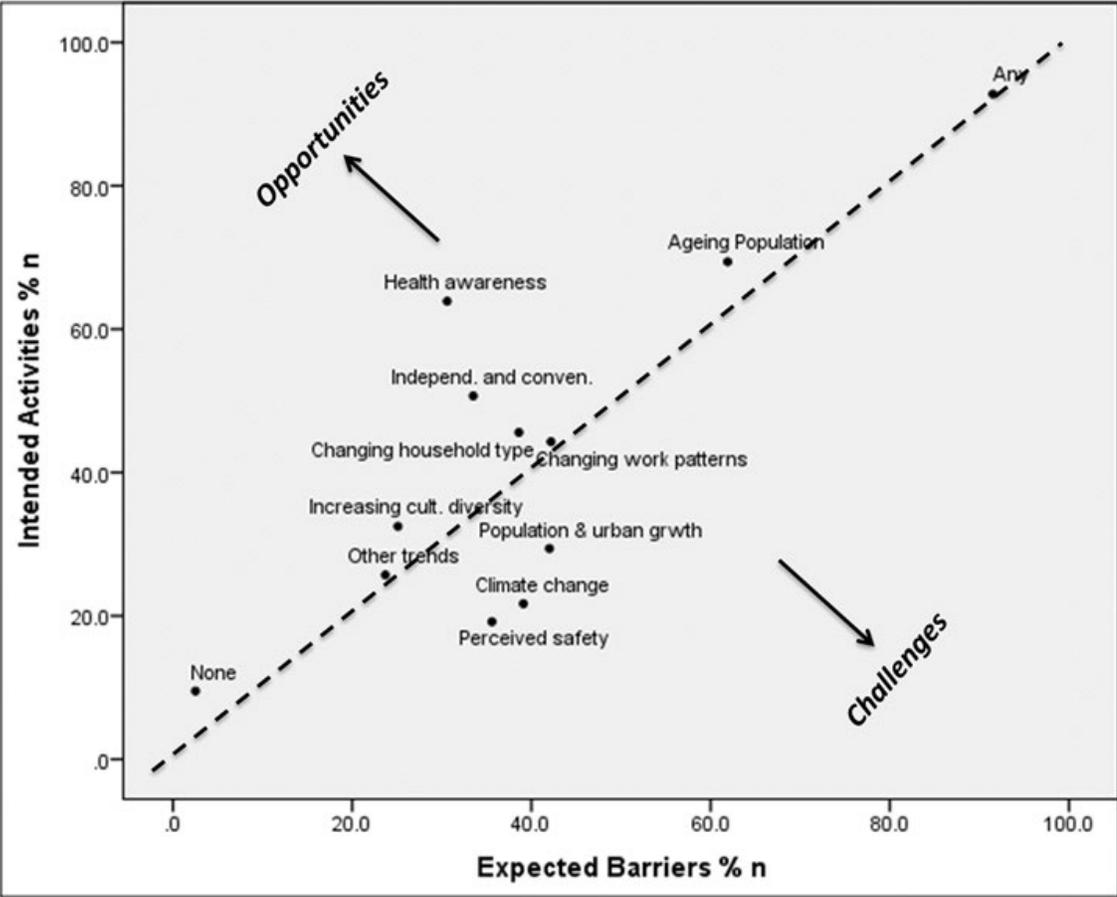


Figure 1. Participant percentage reporting increased future activity or barriers for each societal trend

Table 1. Description of societal trends

Societal Trend	Description	References	
		Populations	Effects on Recreation
1. Ageing population	The average age of the population is increasing. As people get older, their levels of activity may change, as well as the types of activities and facilities they want in parks.	Australian Bureau of Statistics [ABS] (2013b, 2016a), <i>Office for National Statistics [ONS] (2012a, 2017)</i> , <i>Vincent & Velkoff (2010)</i>	CSP (2005), Eagles (2007), Loukaitou-Sideris (2016), Pigram & Jenkins (1999), Whitelaw et al. (2007)
2. Increasing cultural diversity	The population is becoming more culturally diverse. However, not all cultural groups use parks in the same way. To cater for these differences, activities and facilities may be required that are sensitive to the needs of different cultural groups.	ABS (2013a, 2017), <i>Statistics Canada (2011, 2017)</i> , <i>US Census Bureau [USCB] (2011)</i>	ABS (2007), CSP (2005), Ching-hua et al. (2005), Fleming (1994), Gobster (2002), Zanon et al. (2013)
3. Changing work patterns	More women are entering or returning to the workforce, people are working longer hours, and there have been increases in part-time and casual employment. These changing work patterns may influence how people will use parks and the amount of time they are able to allocate to outdoor recreation.	ABS (2007), <i>CSP (2005, 2006)</i> , Cassidy & Parsons (2017), <i>Moyser (2017)</i> , (SRQ-SEQW (2008)	Jackson & Henderson (1995), Jacobs & Gerson (2001), Wang, Norman & McGuire (2005)
4. Changing household types	'Couples with children' is currently the most common household type in Australia. This will change in the future, as single parent families, couples without children and lone person households become more common. While some of these emerging households will consist of young singles/couples choosing not to have children or delaying having a family, many will be middle-aged or older couples where the children have left home, or where a person has lost a partner through either death or divorce.	ABS (2010), <i>Jacobsen, Mather & Dupuis (2012)</i> , ID (2016), <i>Keilman (1988)</i>	ABS (2009), Carroll, Witten & Kearns (2011), Chan, Tang & Wong (2002)
5. Population & urban growth	Future population and urban growth will occur mainly in the city's inner and outer suburbs. However, inequities may exist in the availability of accessible parks. In the inner suburbs, population growth may result in higher density living and a focus on public open space. In contrast, a relative under supply of parks and recreational opportunities in some newly urbanised areas in the outer suburbs may promote a focus on private open space.	ABS (2013), <i>United Nations (2001)</i> , <i>Khan, Arshad & Mohsin (2014)</i>	Balmford et al. (2009), Buckley (2009), Koppen, Sang, & Tveit (2014)
6. Independence & convenience	As lifestyles change and leisure options become increasingly diverse, people may choose more independent and convenient leisure options, such as staying at home and using a home gym or enjoying their home entertainment system. Alternatively, people may choose to go to a park, but pursue individual recreational goals (e.g. personal fitness) rather than participating in group or social activities.	ABS (2007), <i>CSP (2006)</i> , ID (2016)	Zanon, Doucouliagos, Hall & Lockstone-Binney (2013), Department of Victorian Communities [DVC] (2004)

7. Health awareness	People are becoming more aware of the health and wellbeing benefits of recreation. As concerns grow regarding the rising levels of obesity, physical inactivity and stress in society, parks may play an increasingly important role for people in providing opportunities for recreation, as well as space for social interaction, inclusion and wellbeing.	ABS (2009), <i>Beaumont & Thomas (2012)</i> , <i>CSP (2005)</i> , <i>DVC (2004)</i> , <i>Pink (2009)</i> , <i>USCB (2012)</i>	Browne (1992), Countryside Recreation Network (2016), Hartig, Evans, Jamner, Davis & Gärling (2003), Ward Thompson (2002)
8. Perceived safety	An increasing focus on personal safety may influence how people use parks and open space (especially among women or parents with children). Perceptions of personal safety may also extend to certain natural hazards in parks (e.g., lakes, rivers, snakes).	ABS (2016b), <i>CSP (2005)</i> , <i>SRQ-SEQW (2008)</i>	Ching-hua et al. (2005), Pigram & Jenkins (1999)
9. Climate change	The appeal and landscapes of parks, their ability to cater for users' needs, and how people recreate in the outdoors may be affected by climate change. Warmer temperatures may influence the type, timing and duration of outdoor activities, while park facilities that are able to withstand more extreme and unpredictable weather conditions may be required. Ongoing drought conditions and declining water levels in lakes and rivers may affect certain outdoor activities.		Ceron & Dubois (2012), Eagles (2007), Fisichelli et al. (2015), Gössling, Scott, Hall, Woosnam & Kim (2014), Wilkins et al. (2017)
10. Other trends	Other trends that may influence people's recreational choices and their use of parks include the rising costs of living, low cost airlines, advances in technology, increasing education levels, business or festive events in parks, commercial hospitality in parks, participation in friends groups.		

Note: Population reference in italics are for countries other than Australia.

Table 2. Park activities provided to study participants with benefit domains

Benefits Domains	Park Activities
Enjoy Nature Learning	Appreciation or study of natural and cultural features
	Camping
	Enjoyment of being outdoors (e.g., green space, fresh air)
	Sightseeing and or scenic driving
	Four wheel driving or trail bike riding
	Holiday or short break
Family Togetherness Similar People	Guided walks
	Attending a special or social event
	Meal or refreshment in a cafe or restaurant
	Organised group activities (e.g., walking groups, team sports)
	Outdoor activity with children
	Picnics or barbecues
Physical Fitness (trail based)	Socialising with friends and family
	Bike riding
	Fitness activities (e.g. jogging)
	Individual activities (e.g. jogging by yourself)
	Long walk or day walk (more than 4 hours)
Physical Fitness (non-trail based)	Short walk (up to 1 hour)
	Walking the dog
Physical Rest	Swimming
Escape Personal or Social Pressures Escape Physical	Relaxation and rest

Table 3. Barriers to park visits provided to study participants with distance and type

Distance ¹	Type ²	Barriers ³
Most proximal	Intrapersonal Barriers	Lack of interest or meaningfulness in visiting parks
		Language barriers (i.e., not being able to speak / read English very well)
		Personal safety concerns
		Physical / health constraints
		Prefer to spend leisure time doing other things (e.g., going to the movies, watching television)
Mid	Interpersonal Barriers	Crowding
		No one to go with
		Recreational conflicts between different user groups
Most distal	Structural Barriers	Education priorities
		Family priorities
		Lack of accessible parks
		Lack of awareness and information about parks
		Not having access to a car
		Not having access to public transport
		Not having enough money
		Not having enough time
		Restricted opening hours
Work priorities		
Climate Change		

Notes.

1. Derived from Crawford et al. (1991).
2. Derived from Crawford and Godbey (1987).
3. Categories in Croy & Glover (2009).

Table 4. Increased activities versus societal trends

Benefit Domains	Intended Activity (n=927)	Associated Societal Trend											Activity Increase	
		Ageing pop.	Increase cultural diversity	Change work patterns	Change house holds	Pop. & urban growth	Independ. & conven.	Health aware	Perceived safety	Climate change	Other trends	No social trend identified		
I: Enjoy Nature H: Learning	Apprec. or study of natural and cultural features	% n	16.0%	8.4%	6.8%	5.3%	4.7%	9.0%	6.0%	1.1%	5.5%	3.9%	3.1%	44.3%
		ASR	1.43	6.52	-1.04	-3.55	2.06	0.60	-5.68	-2.33	6.46	-0.08	0.39	
	Camping	% n	9.3%	3.3%	6.1%	11.3%	3.9%	9.3%	4.1%	2.3%	2.5%	5.5%	3.7%	40.1%
		ASR	-3.30	-0.61	-0.74	4.83	1.42	2.28	-6.58	0.83	0.89	3.52	2.18	
	Enjoyment of being outdoors	% n	32.6%	6.7%	14.2%	13.4%	8.7%	15.4%	29.3%	3.9%	7.9%	5.1%	4.4%	78.2%
		ASR	2.19	-2.12	-1.13	-2.99	1.92	-1.38	3.92	-0.78	4.55	-3.36	-2.00	
	Sightseeing and \ or scenic driving	% n	33.9%	6.0%	15.2%	13.2%	6.6%	17.9%	7.8%	3.7%	4.3%	7.2%	5.1%	77.0%
		ASR	6.33	-1.54	1.77	-1.20	0.61	2.92	-9.65	-0.13	0.36	0.53	0.02	
Four wheel driving or trail bike riding	% n	3.9%	0.8%	3.0%	4.5%	2.0%	4.9%	2.7%	1.0%	0.8%	3.3%	2.3%	22.0%	
	ASR	-3.00	-2.41	-0.33	1.80	1.50	2.33	-3.36	0.22	-0.73	4.21	2.97		
Holiday, short break	% n	23.7%	5.0%	19.4%	15.3%	5.0%	17.6%	11.9%	3.5%	2.4%	7.1%	4.6%	70.8%	
	ASR	-0.08	-2.50	6.31	1.30	-1.17	3.28	-5.93	-0.22	-2.49	0.79	-0.28		
Guided walks	% n	8.1%	2.3%	3.3%	2.8%	1.5%	4.3%	8.3%	2.2%	1.9%	2.6%	2.3%	26.2%	
	ASR	-0.10	-0.28	-1.58	-2.94	-1.10	-0.70	2.15	2.62	1.63	0.76	1.49		
E: Family Togetherness F: Similar People	Attending a special or social event	% n	16.8%	11.3%	8.8%	13.4%	4.3%	8.8%	4.4%	1.9%	2.7%	7.9%	4.1%	54.9%
		ASR	-0.53	8.82	-0.49	3.35	0.06	-1.43	-8.90	-1.33	-0.31	4.58	0.95	
	Meal or refreshment in a cafe/restaurant	% n	22.8%	9.2%	14.0%	12.2%	4.9%	16.5%	4.3%	1.8%	1.7%	6.5%	5.9%	67.6%
		ASR	1.67	4.10	3.07	0.19	-0.28	4.29	-10.47	-2.28	-2.87	1.16	2.75	
	Organised group activities	% n	6.7%	5.0%	4.3%	5.1%	2.9%	5.0%	10.5%	1.8%	1.3%	3.0%	2.2%	29.9%
		ASR	-3.49	3.88	-1.32	-0.91	1.02	-1.09	2.91	0.92	-0.79	0.65	0.36	
Outdoor activity with children	% n	15.1%	5.5%	8.0%	19.8%	5.9%	7.4%	13.7%	4.5%	2.9%	4.1%	2.8%	52.3%	
	ASR	-2.81	0.08	-2.00	9.18	2.09	-3.45	-1.26	3.32	-0.23	-1.37	-1.57		
Picnics or barbecues	% n	21.7%	12.9%	11.3%	20.5%	6.9%	14.2%	7.6%	3.8%	4.0%	8.0%	6.3%	75.6%	
	ASR	-1.81	7.13	-1.44	5.75	1.30	0.08	-9.47	0.24	0.04	1.75	1.97		
Socialising with friends and family	% n	29.2%	13.7%	16.6%	19.6%	7.3%	13.2%	9.3%	4.2%	3.0%	7.9%	3.9%	74.4%	
	ASR	1.94	6.97	2.28	3.66	1.10	-1.97	-9.16	0.39	-2.02	0.81	-2.05		
M: Physical Fitness Trail Based	Bike riding	% n	5.8%	1.4%	5.3%	6.6%	2.8%	7.3%	19.5%	2.5%	2.8%	2.9%	3.1%	37.4%
		ASR	-6.50	-3.75	-1.68	-0.79	-0.43	0.09	10.05	1.42	1.70	-0.82	1.23	
	Fitness activities (e.g., jogging)	% n	10.4%	1.6%	5.7%	5.1%	2.2%	4.7%	21.5%	1.3%	1.9%	2.0%	2.7%	36.5%
		ASR	-1.84	-3.32	-1.00	-2.52	-1.53	-2.96	12.40	-1.25	-0.13	-2.24	0.45	
	Individual activities (e.g., jogging by yourself)	% n	8.6%	1.8%	5.9%	3.9%	2.0%	7.0%	18.1%	1.4%	1.8%	2.3%	2.0%	34.2%
		ASR	-2.81	-2.62	-0.15	-3.50	-1.40	0.47	9.88	-0.73	-0.07	-1.51	-0.53	
	Long walk or day walk (4+ hours)	% n	9.2%	1.6%	5.7%	4.5%	3.2%	5.9%	18.1%	1.5%	1.2%	3.0%	2.4%	34.4%
	ASR	-2.53	-3.11	-0.64	-2.85	0.72	-1.12	9.50	-0.57	-1.65	-0.28	0.03		
Short walk (up to 1 hour)	% n	29.3%	2.7%	10.8%	9.1%	4.1%	14.5%	39.8%	3.9%	3.0%	4.4%	4.1%	76.2%	
	ASR	2.36	-5.81	-2.73	-5.24	-2.90	-0.63	14.05	-0.02	-1.92	-3.24	-1.63		
Walking the dog	% n	11.1%	1.5%	6.0%	8.0%	2.5%	7.6%	17.5%	2.6%	2.3%	3.2%	1.9%	39.4%	
	ASR	-2.05	-3.86	-1.25	0.32	-1.35	-0.24	6.90	1.34	0.20	-0.63	-1.44		
N: Phys Rest O: Esc Pers/ Soc or P: Esc Phys Press & Misc	Swimming	% n	6.1%	1.2%	4.5%	5.7%	1.8%	5.5%	16.7%	1.5%	2.9%	3.5%	3.0%	35.2%
		ASR	-4.95	-3.57	-1.70	-0.78	-1.60	-1.11	8.98	-0.29	2.68	0.91	1.75	
	Relaxation and rest	% n	41.7%	4.3%	17.4%	11.4%	5.3%	15.7%	23.9%	4.1%	2.5%	5.3%	3.5%	78.2%
		ASR	9.31	-4.43	2.19	-4.03	-1.93	-0.48	0.87	-0.15	-3.16	-2.75	-3.00	
Any activity increase		% n	69.4%	32.5%	44.3%	45.6%	29.4%	50.7%	63.9%	19.2%	21.7%	25.7%	4.6%	92.8%

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 5. Increased barriers versus societal trends

Barrier Distance or Type of Barrier	Expected Barrier (n=927)	Associated Societal Trend											Barrier Increase	
		Ageing Pop.	Increase cultural diversity	Change work patterns	Change house holds	Pop. & urban growth	Independ. & conven.	Health aware	Perceived safety	Climate change	Other trends	No social trend identified		
Most proximal Intrapersonal Barriers	Lack of interest in visiting parks	% n	9.1%	1.9%	2.7%	2.7%	2.7%	3.5%	1.2%	1.7%	1.7%	3.3%	4.4%	26.1%
		ASR	0.59	0.41	-1.54	-1.08	-1.16	1.39	-2.08	-2.17	-1.01	1.82	5.53	
	Language barriers	% n	1.9%	2.5%	0.3%	1.2%	1.6%	1.0%	0.8%	0.3%	0.8%	0.9%	1.6%	10.6%
		ASR	-2.40	7.13	-2.80	-0.07	1.13	-0.11	-0.11	-2.27	-0.18	-0.13	3.29	
	Personal safety concerns	% n	22.0%	3.8%	2.4%	3.6%	6.0%	2.8%	8.1%	18.7%	2.7%	3.1%	2.0%	45.6%
	ASR	3.02	-0.06	-6.42	-4.41	-1.44	-4.19	5.31	16.65	-3.04	-3.07	-3.49		
Physical \ health constraints	% n	32.7%	0.9%	1.3%	2.0%	2.8%	3.7%	16.0%	5.8%	2.0%	2.7%	1.9%	50.1%	
	ASR	13.04	-4.72	-7.46	-6.03	-5.16	-2.72	17.97	-0.07	-3.78	-3.43	-3.43		
Prefer to spend leisure time doing other things	% n	16.0%	2.4%	5.2%	7.1%	3.0%	6.5%	3.1%	2.0%	1.6%	4.0%	3.3%	37.3%	
	ASR	2.62	-0.73	-0.55	2.91	-3.14	3.51	-0.34	-3.70	-3.13	0.30	0.49		
Mid Interpersonal Barriers	Crowding	% n	16.5%	6.7%	3.5%	4.2%	25.2%	4.5%	4.4%	9.5%	1.7%	3.6%	3.3%	53.1%
		ASR	-3.15	3.92	-5.83	-4.34	20.44	-2.57	-0.97	3.41	-5.02	-3.11	-2.07	
	No one to go with	% n	13.9%	1.9%	2.8%	4.4%	1.9%	3.6%	1.9%	3.8%	1.1%	3.2%	2.7%	30.7%
	ASR	4.25	-0.34	-2.29	0.87	-3.31	0.58	-1.19	0.70	-3.02	0.63	0.74		
Recreational conflicts between different user groups	% n	8.7%	10.2%	2.6%	3.9%	8.4%	2.9%	2.0%	6.6%	1.7%	3.6%	3.1%	34.8%	
	ASR	-4.43	14.61	-4.13	-1.74	4.72	-2.07	-2.22	3.38	-2.91	-0.37	0.14		
Most distal Structural Barriers	Education priorities	% n	3.1%	2.0%	2.8%	5.1%	2.4%	1.6%	1.1%	1.4%	0.9%	2.2%	2.6%	20.2%
		ASR	-4.34	2.17	0.45	5.68	-0.07	-0.80	-1.18	-1.47	-1.81	0.94	3.09	
	Family priorities	% n	14.8%	2.5%	8.2%	18.1%	3.5%	5.3%	1.7%	1.8%	0.4%	3.1%	2.7%	43.8%
		ASR	-0.43	-1.22	2.39	16.71	-3.39	0.62	-3.45	-4.73	-5.70	-1.93	-1.42	
	Lack of accessible parks	% n	15.2%	2.8%	2.4%	3.8%	12.7%	6.0%	2.4%	4.6%	5.6%	5.3%	4.4%	45.8%
		ASR	-0.72	-0.89	-5.55	-3.17	8.57	1.34	-2.64	-1.00	2.43	1.07	1.22	
	Lack of awareness and information about parks	% n	8.3%	4.1%	2.3%	3.0%	5.1%	4.5%	1.5%	3.7%	1.7%	7.2%	6.0%	36.4%
		ASR	-3.51	3.49	-3.89	-2.26	0.80	1.37	-2.63	-0.36	-2.34	6.89	6.56	
	Not having access to a car	% n	16.0%	0.8%	2.0%	2.3%	1.3%	5.3%	2.7%	3.5%	1.6%	4.4%	2.8%	32.1%
		ASR	6.10	-3.05	-3.65	-2.86	-4.51	3.45	0.18	-0.06	-2.08	2.66	0.80	
	Not having access to public transport	% n	13.5%	1.6%	2.3%	2.6%	5.2%	7.1%	2.0%	4.2%	1.5%	4.0%	2.9%	34.4%
		ASR	2.09	-1.58	-3.83	-2.86	1.05	5.83	-1.56	0.61	-2.69	1.24	0.50	
	Not having enough money	% n	16.2%	1.5%	9.5%	5.0%	2.3%	4.5%	1.7%	1.5%	0.9%	5.4%	2.5%	37.5%
	ASR	3.76	-2.14	6.15	0.24	-3.89	0.88	-2.54	-4.24	-4.21	3.11	-0.77		
Not having enough time	% n	9.5%	1.2%	22.9%	12.5%	4.1%	4.5%	1.6%	1.3%	0.8%	3.7%	2.3%	43.5%	
	ASR	-5.72	-3.71	21.02	8.65	-2.75	-0.74	-3.79	-5.68	-5.31	-1.30	-2.34		
Work priorities	% n	7.3%	1.3%	19.8%	6.1%	1.9%	3.7%	1.3%	0.6%	0.6%	4.3%	2.6%	37.8%	
	ASR	-5.00	-2.48	21.50	2.21	-4.25	-0.38	-3.23	-5.53	-4.52	1.42	-0.44		
Restricted opening hours	% n	10.2%	2.0%	10.2%	5.4%	5.1%	6.7%	2.0%	3.3%	2.6%	5.1%	4.6%	41.4%	
	ASR	-3.68	-1.62	5.94	-0.03	-0.60	3.37	-2.53	-2.04	-1.73	1.68	2.48		
Unpredictable or extreme weather conditions	% n	16.6%	1.8%	2.2%	3.8%	3.0%	2.7%	7.1%	9.5%	34.4%	3.0%	2.2%	59.1%	
	ASR	-3.63	-3.97	-7.56	-5.12	-6.11	-5.18	2.62	3.04	40.93	-4.08	-4.05		
Any barrier increase	% n	61.9%	25.1%	42.2%	38.6%	42.0%	33.5%	30.6%	35.6%	39.1%	23.7%	2.2%	91.5%	

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 6. Summary - benefit domains versus societal trends

Social Trend (n=927)	Intended Activity within Benefit Domains							
	I: Enjoy Nature H: Learning		E: Family Togetherness F: Similar People		M: Physical Fitness		N: Physical Rest O: Escape Personal/ Social Pressure P: Escape Physical Pressure & Misc.	
	% n	ASR	% n	ASR	% n	ASR	% n	ASR
Ageing population	53.1%	-2.06	48.0%	-3.64	39.9%	-2.16	41.7%	9.86
Increasing cultural diversity	19.0%	1.36	26.1%	8.54	6.8%	-6.50	4.3%	-4.93
Changing work patterns	32.8%	0.70	31.6%	0.76	20.4%	-2.97	17.4%	1.66
Changing household types	29.6%	-1.02	37.2%	5.26	21.5%	-1.74	11.4%	-3.33
Pop. & urban growth	18.8%	1.97	19.2%	3.02	10.2%	-2.52	5.3%	-3.39
Independ. & conven.	37.3%	1.65	32.4%	-0.73	26.5%	-0.11	15.7%	-1.07
Health aware	40.5%	-3.50	29.7%	-8.88	55.0%	12.50	23.9%	1.00
Perceived safety	10.9%	-0.09	10.8%	0.28	9.5%	1.33	4.1%	-1.83
Climate change	15.7%	4.94	9.3%	-1.78	8.8%	0.22	2.5%	-4.36
Other trends	16.3%	0.75	18.0%	3.03	10.2%	-1.70	5.3%	-2.82
No social trend identified	3.1%	-1.98	3.8%	-0.52	3.2%	-0.01	3.5%	3.22

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 7. Summary - barrier types versus societal trends

Social Trend (n=927)	Expected Barriers within Barrier Type					
	Most proximal		Mid		Most distal	
	Intrapersonal % n	ASR	Interpersonal % n	ASR	Structural % n	ASR
Ageing population	47.7%	8.50	27.3%	-0.66	47.7%	-7.14
Increasing cultural diversity	9.4%	-1.46	15.2%	8.20	12.5%	-5.59
Changing work patterns	9.2%	-6.66	7.0%	-6.06	40.3%	11.13
Changing household types	12.5%	-3.38	10.6%	-2.34	32.9%	5.03
Pop. & urban growth	12.1%	-6.15	28.2%	12.14	26.2%	-4.66
Independ. & conven.	13.5%	-0.37	8.8%	-2.44	25.9%	2.39
Health aware	22.2%	9.67	7.6%	-3.16	15.3%	-6.10
Perceived safety	22.3%	5.36	15.1%	1.84	20.3%	-6.41
Climate change	6.5%	-7.35	3.6%	-8.09	37.6%	13.47
Other trends	9.6%	-1.11	7.1%	-1.65	20.1%	2.39
No social trend identified	2.9%	0.07	3.9%	3.63	3.2%	-3.12

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 2. Park activities provided to study participants with benefit domains

Benefits Domains	Park Activities
Enjoy Nature Learning	Appreciation or study of natural and cultural features
	Camping
	Enjoyment of being outdoors (e.g., green space, fresh air)
	Sightseeing and or scenic driving
	Four wheel driving or trail bike riding
	Holiday or short break
	Guided walks
Family Togetherness Similar People	Attending a special or social event
	Meal or refreshment in a cafe or restaurant
	Organised group activities (e.g., walking groups, team sports)
	Outdoor activity with children
	Picnics or barbecues
	Socialising with friends and family
Physical Fitness (trail based)	Bike riding
	Fitness activities (e.g. jogging)
	Individual activities (e.g. jogging by yourself)
	Long walk or day walk (more than 4 hours)
	Short walk (up to 1 hour)
	Walking the dog
Physical Fitness (non-trail based)	Swimming
Physical Rest Escape Personal or Social Pressures Escape Physical Pressures & Miscellaneous	Relaxation and rest

Table 3. Barriers to park visits provided to study participants with distance and type

Distance ¹	Type ²	Barriers ³
Most proximal	Intrapersonal Barriers	Lack of interest or meaningfulness in visiting parks
		Language barriers (i.e., not being able to speak / read English very well)
		Personal safety concerns
		Physical / health constraints
		Prefer to spend leisure time doing other things (e.g., going to the movies, watching television)
Mid	Interpersonal Barriers	Crowding
		No one to go with
		Recreational conflicts between different user groups
Most distal	Structural Barriers	Education priorities
		Family priorities
		Lack of accessible parks
		Lack of awareness and information about parks
		Not having access to a car
		Not having access to public transport
		Not having enough money
		Not having enough time
		Restricted opening hours
Work priorities		
Climate Change		

Notes.

1. Derived from Crawford et al. (1991).
2. Derived from Crawford and Godbey (1987).
3. Categories in Croy & Glover (2009).

Table 4. Increased activities versus societal trends

Benefit Domains	Intended Activity (n=927)	Associated Societal Trend											Activity Increase	
		Ageing pop.	Increase cultural diversity	Change work patterns	Change house holds	Pop. & urban growth	Independ. & conven.	Health aware	Perceived safety	Climate change	Other trends	No social trend identified		
Enjoy Nature Learning	Apprec. or study of natural and cultural features	% n	16.0%	8.4%	6.8%	5.3%	4.7%	9.0%	6.0%	1.1%	5.5%	3.9%	3.1%	44.3%
		ASR	1.43	6.52	-1.04	-3.55	2.06	0.60	-5.68	-2.33	6.46	-0.08	0.39	
	Camping	% n	9.3%	3.3%	6.1%	11.3%	3.9%	9.3%	4.1%	2.3%	2.5%	5.5%	3.7%	40.1%
		ASR	-3.30	-0.61	-0.74	4.83	1.42	2.28	-6.58	0.83	0.89	3.52	2.18	
	Enjoyment of being outdoors	% n	32.6%	6.7%	14.2%	13.4%	8.7%	15.4%	29.3%	3.9%	7.9%	5.1%	4.4%	78.2%
		ASR	2.19	-2.12	-1.13	-2.99	1.92	-1.38	3.92	-0.78	4.55	-3.36	-2.00	
	Sightseeing and \ or scenic driving	% n	33.9%	6.0%	15.2%	13.2%	6.6%	17.9%	7.8%	3.7%	4.3%	7.2%	5.1%	77.0%
		ASR	6.33	-1.54	1.77	-1.20	0.61	2.92	-9.65	-0.13	0.36	0.53	0.02	
Family Togetherness Similar People	Four wheel driving or trail bike riding	% n	3.9%	0.8%	3.0%	4.5%	2.0%	4.9%	2.7%	1.0%	0.8%	3.3%	2.3%	22.0%
		ASR	-3.00	-2.41	-0.33	1.80	1.50	2.33	-3.36	0.22	-0.73	4.21	2.97	
	Holiday, short break	% n	23.7%	5.0%	19.4%	15.3%	5.0%	17.6%	11.9%	3.5%	2.4%	7.1%	4.6%	70.8%
		ASR	-0.08	-2.50	6.31	1.30	-1.17	3.28	-5.93	-0.22	-2.49	0.79	-0.28	
	Guided walks	% n	8.1%	2.3%	3.3%	2.8%	1.5%	4.3%	8.3%	2.2%	1.9%	2.6%	2.3%	26.2%
		ASR	-0.10	-0.28	-1.58	-2.94	-1.10	-0.70	2.15	2.62	1.63	0.76	1.49	
	Attending a special or social event	% n	16.8%	11.3%	8.8%	13.4%	4.3%	8.8%	4.4%	1.9%	2.7%	7.9%	4.1%	54.9%
		ASR	-0.53	8.82	-0.49	3.35	0.06	-1.43	-8.90	-1.33	-0.31	4.58	0.95	
Family Togetherness Similar People	Meal or refreshment in a cafe\restaurant	% n	22.8%	9.2%	14.0%	12.2%	4.9%	16.5%	4.3%	1.8%	1.7%	6.5%	5.9%	67.6%
		ASR	1.67	4.10	3.07	0.19	-0.28	4.29	-10.47	-2.28	-2.87	1.16	2.75	
	Organised group activities	% n	6.7%	5.0%	4.3%	5.1%	2.9%	5.0%	10.5%	1.8%	1.3%	3.0%	2.2%	29.9%
		ASR	-3.49	3.88	-1.32	-0.91	1.02	-1.09	2.91	0.92	-0.79	0.65	0.36	
	Outdoor activity with children	% n	15.1%	5.5%	8.0%	19.8%	5.9%	7.4%	13.7%	4.5%	2.9%	4.1%	2.8%	52.3%
		ASR	-2.81	0.08	-2.00	9.18	2.09	-3.45	-1.26	3.32	-0.23	-1.37	-1.57	
	Picnics or barbecues	% n	21.7%	12.9%	11.3%	20.5%	6.9%	14.2%	7.6%	3.8%	4.0%	8.0%	6.3%	75.6%
	ASR	-1.81	7.13	-1.44	5.75	1.30	0.08	-9.47	0.24	0.04	1.75	1.97		
Socialising with friends and family	% n	29.2%	13.7%	16.6%	19.6%	7.3%	13.2%	9.3%	4.2%	3.0%	7.9%	3.9%	74.4%	
	ASR	1.94	6.97	2.28	3.66	1.10	-1.97	-9.16	0.39	-2.02	0.81	-2.05		

Physical Fitness	Trail Based	Bike riding	% n	5.8%	1.4%	5.3%	6.6%	2.8%	7.3%	19.5%	2.5%	2.8%	2.9%	3.1%	37.4%
			ASR	-6.50	-3.75	-1.68	-0.79	-0.43	0.09	10.05	1.42	1.70	-0.82	1.23	
		Fitness activities (e.g., jogging)	% n	10.4%	1.6%	5.7%	5.1%	2.2%	4.7%	21.5%	1.3%	1.9%	2.0%	2.7%	36.5%
			ASR	-1.84	-3.32	-1.00	-2.52	-1.53	-2.96	12.40	-1.25	-0.13	-2.24	0.45	
		Individual activities (e.g., jogging by yourself)	% n	8.6%	1.8%	5.9%	3.9%	2.0%	7.0%	18.1%	1.4%	1.8%	2.3%	2.0%	34.2%
		ASR	-2.81	-2.62	-0.15	-3.50	-1.40	0.47	9.88	-0.73	-0.07	-1.51	-0.53		
	Long walk or day walk (4+ hours)	% n	9.2%	1.6%	5.7%	4.5%	3.2%	5.9%	18.1%	1.5%	1.2%	3.0%	2.4%	34.4%	
		ASR	-2.53	-3.11	-0.64	-2.85	0.72	-1.12	9.50	-0.57	-1.65	-0.28	0.03		
	Short walk (up to 1 hour)	% n	29.3%	2.7%	10.8%	9.1%	4.1%	14.5%	39.8%	3.9%	3.0%	4.4%	4.1%	76.2%	
		ASR	2.36	-5.81	-2.73	-5.24	-2.90	-0.63	14.05	-0.02	-1.92	-3.24	-1.63		
	Walking the dog	% n	11.1%	1.5%	6.0%	8.0%	2.5%	7.6%	17.5%	2.6%	2.3%	3.2%	1.9%	39.4%	
		ASR	-2.05	-3.86	-1.25	0.32	-1.35	-0.24	6.90	1.34	0.20	-0.63	-1.44		
	Non Trail Based	Swimming	% n	6.1%	1.2%	4.5%	5.7%	1.8%	5.5%	16.7%	1.5%	2.9%	3.5%	3.0%	35.2%
			ASR	-4.95	-3.57	-1.70	-0.78	-1.60	-1.11	8.98	-0.29	2.68	0.91	1.75	
Physical Rest Esc Pers/ Soc or Esc Phys Press & Misc	Relaxation and rest	% n	41.7%	4.3%	17.4%	11.4%	5.3%	15.7%	23.9%	4.1%	2.5%	5.3%	3.5%	78.2%	
		ASR	9.31	-4.43	2.19	-4.03	-1.93	-0.48	0.87	-0.15	-3.16	-2.75	-3.00		
	Any activity increase	% n	69.4%	32.5%	44.3%	45.6%	29.4%	50.7%	63.9%	19.2%	21.7%	25.7%	4.6%	92.8%	

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 5. Increased barriers versus societal trends

Barrier Distance or Type of Barrier	Expected Barrier (n=927)	Associated Societal Trend											
		Ageing pop.	Increase cultural diversity	Change work patterns	Change house holds	Pop. & urban growth	Independ. & conven.	Health aware	Perceived safety	Climate change	Other trends	No social trend identified	
Most proximal Intrapersonal Barriers	Lack of interest in visiting parks	% n	9.1%	1.9%	2.7%	2.7%	2.7%	3.5%	1.2%	1.7%	1.7%	3.3%	4.4%
		ASR	0.59	0.41	-1.54	-1.08	-1.16	1.39	-2.08	-2.17	-1.01	1.82	5.53
	Language barriers	% n	1.9%	2.5%	0.3%	1.2%	1.6%	1.0%	0.8%	0.3%	0.8%	0.9%	1.6%
		ASR	-2.40	7.13	-2.80	-0.07	1.13	-0.11	-0.11	-2.27	-0.18	-0.13	3.29
	Personal safety concerns	% n	22.0%	3.8%	2.4%	3.6%	6.0%	2.8%	8.1%	18.7%	2.7%	3.1%	2.0%
		ASR	3.02	-0.06	-6.42	-4.41	-1.44	-4.19	5.31	16.65	-3.04	-3.07	-3.49
Mid Interpersonal Barriers	Physical \ health constraints	% n	32.7%	0.9%	1.3%	2.0%	2.8%	3.7%	16.0%	5.8%	2.0%	2.7%	1.9%
		ASR	13.04	-4.72	-7.46	-6.03	-5.16	-2.72	17.97	-0.07	-3.78	-3.43	-3.43
	Prefer to spend leisure time doing other things	% n	16.0%	2.4%	5.2%	7.1%	3.0%	6.5%	3.1%	2.0%	1.6%	4.0%	3.3%
		ASR	2.62	-0.73	-0.55	2.91	-3.14	3.51	-0.34	-3.70	-3.13	0.30	0.49
	Crowding	% n	16.5%	6.7%	3.5%	4.2%	25.2%	4.5%	4.4%	9.5%	1.7%	3.6%	3.3%
		ASR	-3.15	3.92	-5.83	-4.34	20.44	-2.57	-0.97	3.41	-5.02	-3.11	-2.07
Most distal Structural Barriers	No one to go with	% n	13.9%	1.9%	2.8%	4.4%	1.9%	3.6%	1.9%	3.8%	1.1%	3.2%	2.7%
		ASR	4.25	-0.34	-2.29	0.87	-3.31	0.58	-1.19	0.70	-3.02	0.63	0.74
	Recreational conflicts between different user groups	% n	8.7%	10.2%	2.6%	3.9%	8.4%	2.9%	2.0%	6.6%	1.7%	3.6%	3.1%
		ASR	-4.43	14.61	-4.13	-1.74	4.72	-2.07	-2.22	3.38	-2.91	-0.37	0.14
	Education priorities	% n	3.1%	2.0%	2.8%	5.1%	2.4%	1.6%	1.1%	1.4%	0.9%	2.2%	2.6%
		ASR	-4.34	2.17	0.45	5.68	-0.07	-0.80	-1.18	-1.47	-1.81	0.94	3.09
Most distal Structural Barriers	Family priorities	% n	14.8%	2.5%	8.2%	18.1%	3.5%	5.3%	1.7%	1.8%	0.4%	3.1%	2.7%
		ASR	-0.43	-1.22	2.39	16.71	-3.39	0.62	-3.45	-4.73	-5.70	-1.93	-1.42
	Lack of accessible parks	% n	15.2%	2.8%	2.4%	3.8%	12.7%	6.0%	2.4%	4.6%	5.6%	5.3%	4.4%
		ASR	-0.72	-0.89	-5.55	-3.17	8.57	1.34	-2.64	-1.00	2.43	1.07	1.22
	Lack of awareness and information about parks	% n	8.3%	4.1%	2.3%	3.0%	5.1%	4.5%	1.5%	3.7%	1.7%	7.2%	6.0%
		ASR	-3.51	3.49	-3.89	-2.26	0.80	1.37	-2.63	-0.36	-2.34	6.89	6.56
Most distal Structural Barriers	Not having access to a car	% n	16.0%	0.8%	2.0%	2.3%	1.3%	5.3%	2.7%	3.5%	1.6%	4.4%	2.8%
		ASR	6.10	-3.05	-3.65	-2.86	-4.51	3.45	0.18	-0.06	-2.08	2.66	0.80
	Not having access to public transport	% n	13.5%	1.6%	2.3%	2.6%	5.2%	7.1%	2.0%	4.2%	1.5%	4.0%	2.9%
	ASR	2.09	-1.58	-3.83	-2.86	1.05	5.83	-1.56	0.61	-2.69	1.24	0.50	

Not having enough money	% n	16.2%	1.5%	9.5%	5.0%	2.3%	4.5%	1.7%	1.5%	0.9%	5.4%	2.5%
	ASR	3.76	-2.14	6.15	0.24	-3.89	0.88	-2.54	-4.24	-4.21	3.11	-0.77
Not having enough time	% n	9.5%	1.2%	22.9%	12.5%	4.1%	4.5%	1.6%	1.3%	0.8%	3.7%	2.3%
	ASR	-5.72	-3.71	21.02	8.65	-2.75	-0.74	-3.79	-5.68	-5.31	-1.30	-2.34
Work priorities	% n	7.3%	1.3%	19.8%	6.1%	1.9%	3.7%	1.3%	0.6%	0.6%	4.3%	2.6%
	ASR	-5.00	-2.48	21.50	2.21	-4.25	-0.38	-3.23	-5.53	-4.52	1.42	-0.44
Restricted opening hours	% n	10.2%	2.0%	10.2%	5.4%	5.1%	6.7%	2.0%	3.3%	2.6%	5.1%	4.6%
	ASR	-3.68	-1.62	5.94	-0.03	-0.60	3.37	-2.53	-2.04	-1.73	1.68	2.48
Unpredictable or extreme weather conditions	% n	16.6%	1.8%	2.2%	3.8%	3.0%	2.7%	7.1%	9.5%	34.4%	3.0%	2.2%
	ASR	-3.63	-3.97	-7.56	-5.12	-6.11	-5.18	2.62	3.04	40.93	-4.08	-4.05
Any barrier increase	% n	61.9%	25.1%	42.2%	38.6%	42.0%	33.5%	30.6%	35.6%	39.1%	23.7%	2.2%

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 6. Summary - benefit domains versus societal trends

Social Trend (n=927)	Intended Activity within Benefit Domains							
	Enjoy Nature Learning		Family Togetherness Similar People		Physical Fitness		Physical Rest Escape Personal/ Social Pressure Escape Physical Pressure & Misc.	
	% n	ASR	% n	ASR	% n	ASR	% n	ASR
Ageing population	53.1%	-2.06	48.0%	-3.64	39.9%	-2.16	41.7%	9.86
Increasing cultural diversity	19.0%	1.36	26.1%	8.54	6.8%	-6.50	4.3%	-4.93
Changing work patterns	32.8%	0.70	31.6%	0.76	20.4%	-2.97	17.4%	1.66
Changing household types	29.6%	-1.02	37.2%	5.26	21.5%	-1.74	11.4%	-3.33
Pop. & urban growth	18.8%	1.97	19.2%	3.02	10.2%	-2.52	5.3%	-3.39
Independ. & conven.	37.3%	1.65	32.4%	-0.73	26.5%	-0.11	15.7%	-1.07
Health aware	40.5%	-3.50	29.7%	-8.88	55.0%	12.50	23.9%	1.00
Perceived safety	10.9%	-0.09	10.8%	0.28	9.5%	1.33	4.1%	-1.83
Climate change	15.7%	4.94	9.3%	-1.78	8.8%	0.22	2.5%	-4.36
Other trends	16.3%	0.75	18.0%	3.03	10.2%	-1.70	5.3%	-2.82
No social trend identified	3.1%	-1.98	3.8%	-0.52	3.2%	-0.01	3.5%	3.22

Note: Significant cells are unshaded, higher observed than expected are bolded.

Table 7. Summary - barrier types versus societal trends

Social Trend (n=927)	Expected Barriers within Barrier Type					
	Most proximal Intrapersonal Barriers		Mid Interpersonal Barriers		Most distal Structural Barriers	
	% n	ASR	% n	ASR	% n	ASR
Ageing population	47.7%	8.50	27.3%	-0.66	47.7%	-7.14
Increasing cultural diversity	9.4%	-1.46	15.2%	8.20	12.5%	-5.59
Changing work patterns	9.2%	-6.66	7.0%	-6.06	40.3%	11.13
Changing household types	12.5%	-3.38	10.6%	-2.34	32.9%	5.03
Pop. & urban growth	12.1%	-6.15	28.2%	12.14	26.2%	-4.66
Independ. & conven.	13.5%	-0.37	8.8%	-2.44	25.9%	2.39
Health aware	22.2%	9.67	7.6%	-3.16	15.3%	-6.10
Perceived safety	22.3%	5.36	15.1%	1.84	20.3%	-6.41
Climate change	6.5%	-7.35	3.6%	-8.09	37.6%	13.47
Other trends	9.6%	-1.11	7.1%	-1.65	20.1%	2.39
No social trend identified	2.9%	0.07	3.9%	3.63	3.2%	-3.12

Note: Significant cells are unshaded, higher observed than expected are bolded.

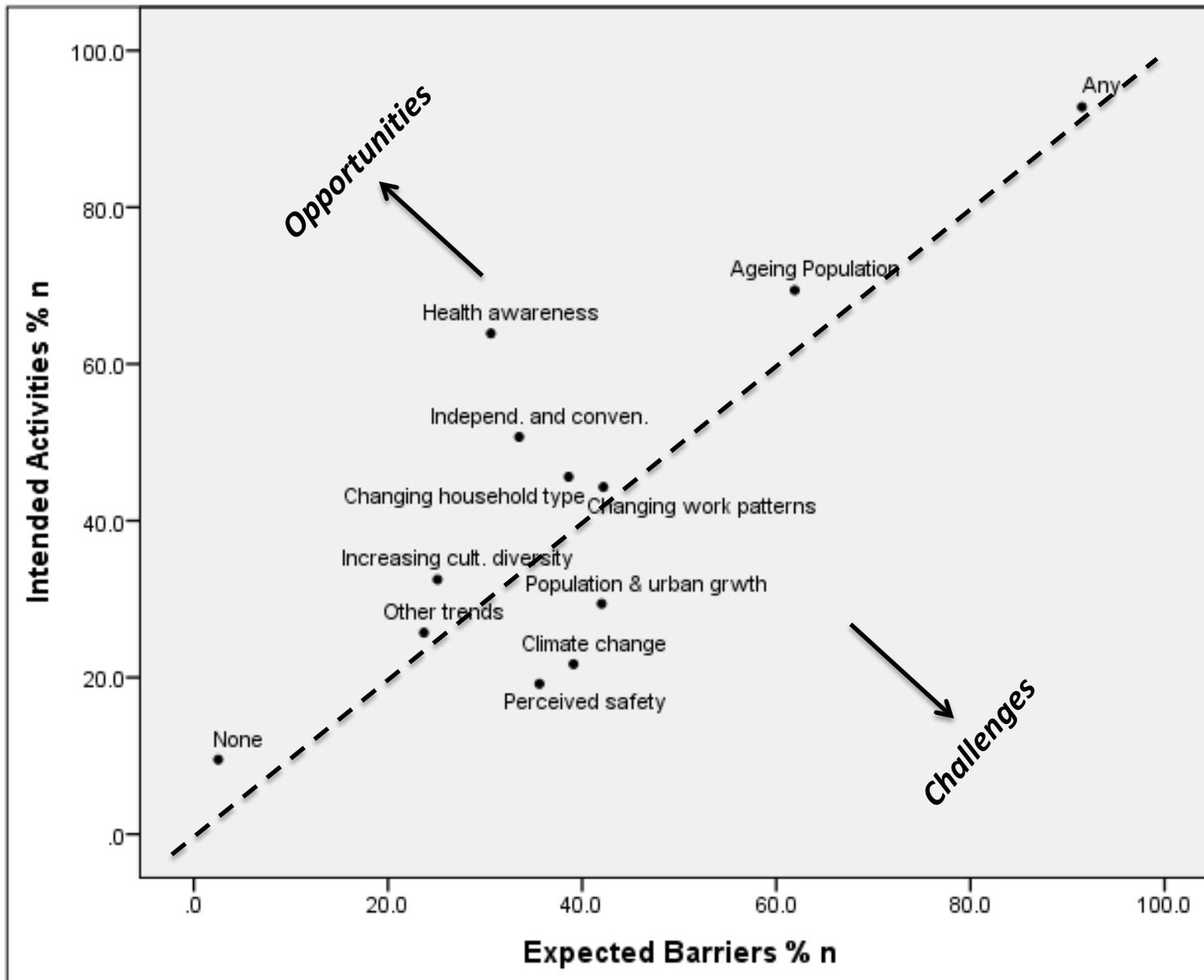


Figure 1. Participant percentage reporting increased future activity or barriers for each societal trend