

Social Indicators Research

Are people who participate in cultural activities more satisfied with life?

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Abstract:	<p>The influence of various aspects of life on wellbeing has been extensively researched. However, despite little empirical evidence, participation in leisure activities has been assumed to increase subjective wellbeing. Leisure is important because it is more under personal control than other sources of life satisfaction. This study asked whether people who participate in cultural leisure activities have higher life satisfaction than people who do not, if different types of leisure have the same influence on life satisfaction and if satisfaction is dependent on the frequency of participation or the number of activities undertaken. It used data from UKHLS Survey to establish associations between type, number and frequency of participation in leisure activities and life satisfaction. Results showed an independent and positive association of participation in sport, heritage and active-creative leisure activities and life satisfaction but not for participation in popular entertainment, theatre hobbies and museum/galleries. The association of reading hobbies and sedentary-creative activities and life satisfaction was negative. High life satisfaction was associated with engaging in a number of different activities rather than the frequency of participation in each of them. The results have implications for policy makers and leisure services providers, in particular those associated with heritage recreation. Subjective wellbeing measures, such as life satisfaction, and not economic measures alone should be considered in the evaluation of services. The promotion of leisure activities which are active and promote social interaction should be considered in programmes aimed at improving the quality of life.</p>
Response to Reviewers:	<p>Responses to reviewer's comments:</p> <p>"We recommend to remove the table 2 (ordinal regression...)" R= this table has been removed.</p> <p>"we suggest to combine Appendix 1 and Appendix 2 in a single table with multiple columns" R= since Appendix 2 was included only so the insignificant associations and table 2 could be better understood, this has been deleted altogether and appendix 1 has been left unchanged.</p> <p>"in fact, if the association is not significant should not be commented on" R= we agree in not presenting the specific data for not significant associations (i.e. table 2) but we disagree about not commenting on it. It is our point of view that an insignificant association is worth commenting on if, as in the present case, a significant association is expected. We have come across a recently published paper in Social Indicators Research that reports the same lack of association</p>

(i.e. Agyar, 2014). To explain this we have added a paragraph in page 6 which includes 3 new references (i.e. Agyar, 2014; Russell, 1987 and Ragheb and Griffith, 1982).

“Page 3: delete the sentence “Analyses were completed using SPSS 19”
R= this sentence has been deleted

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1. Introduction

The definition of life satisfaction and other related terms, such as Quality of life (QOL) and Subjective wellbeing (SWB), has been the subject of continuous debate. There are no universal definitions for these terms and a discussion of definitions is beyond the scope of this paper (a good review of definitions is presented in Galloway 2006). We share the view of QOL as a multi-dimensional concept which comprises objective and subjective aspects (Felce 1997; Anderson et al. 1999; Galloway 2005). Within the field of happiness economics SWB is often equated to life satisfaction (Christoph and Noll 2003). Others suggest that SWB should comprise people's longer-term cognitive evaluations of their lives (satisfaction) as well as short-term emotional or affective expressions of mood (happiness) (Helliwell and Putnam 2004; Vittersø 2004; Fleche et al. 2012). In this paper life satisfaction is used as a proxy for SWB and considered as a component of QOL.

The influence of various aspects of life on wellbeing, in particular, household income, employment, health and social connections has been extensively researched (Anderson et al. 2009; Fleche et al. 2012). Other aspects, such as leisure in general, and participation in sports and culture in particular, have been assumed to increase subjective wellbeing despite little empirical evidence to support this view (Bell 2006). Leisure in relation to subjective wellbeing is particularly important because it is more under personal control than other sources of life satisfaction (Hills and Argyle 1998). In a public consultation carried out by Oxfam, access to arts, culture, hobbies and leisure activities emerged unprompted as an important "sub-domain" of wellbeing and indeed seen as a flourishing aspect (Walker et al. 2012). Research on leisure and wellbeing tends to concentrate in the area of physical activity, in general or carried out in outdoor environments, and its association with psychological wellbeing (Dowall et al. 1988; Foong 1992; Bodin and Hartig 2003; Wendel-Vos et al. 2004; Pretty et al. 2005; Pretty et al. 2007; Hug et al. 2009; Thompson Coon et al. 2011; Mitchell 2012). However, not many studies have compared different types of leisure activities, including arts and culture, in relation to their contribution to life satisfaction. Some exceptions include Lloyd and Auld (2002) and, in the UK, Hills and Argyle (1998), Matrix, 2010 and Leadbetter and O'Connor (2013).

Lloyd and Auld (2002) examined the importance of both place and person-centred leisure attributes in predicting QOL. They found that frequency of engagement in social leisure activities and satisfaction with the psychological benefits derived from the experience were stronger correlates of QOL than place-centred attributes, such as use and satisfaction with leisure resources. Hills and Argyle (1998) made a comparative examination of four leisure activities in terms of the positive states arising from participation, their relationship with happiness and the influence of personality traits in the selection of activities. Matrix (2010) looked at the impacts of participation in the arts and sport on wellbeing and reported a positive impact on life satisfaction. Leadbetter and O'Connor (2013) examined the relationship between health and life satisfaction with participation in culture and sport. They reported an independent and significant association between good health and high life satisfaction with participation.

Some of the limitations of these studies relate to the restricted number of leisure activities considered. For example, Hills and Argyle (1998) used four leisure activities; Matrix (2010) considered only three, sports in general, going to the cinema and going to concerts. Also, the small number and selection process of participants make the results in Hills and Argyle and in Lloyd and Auld not generalizable. The only study at the population

level which considers a wide number of leisure activities is that by Leadbetter and O'Connor. However, although they recognize in their study that employment is related to wellbeing, they did not include it as a control variable. Furthermore, they did not take into account the frequency of leisure participation or the number of activities engaged with in relation to life satisfaction.

Our study aims to address the limitations described above by using a large survey dataset to provide generalizable answers to the following research questions: do people who participate in sports and cultural leisure activities have higher life satisfaction than people who do not participate in these activities? And if this is true, do different types of activity have the same influence on life satisfaction? Does satisfaction depend on the frequency of participation or the number of activities engaged in?

2. Methods

The data used in this study come from Wave 2 of the Understanding Society Survey, also known as the United Kingdom Household Longitudinal Study (UKHLS) (University of Essex). The UKHLS captures important information every year about the social and economic circumstances and attitudes of approximately 40,000 people living in UK households (McFall 2012). The survey began with a representative probability sample of households, details of sampling design can be found in Lynn (2009). Most of the data collection was conducted face-to-face, via Computer Aided Personal Interview (CAPI), by trained interviewers. There were additional self-completion instruments for youth and adults. For the purpose of this study the analysis consisted of a cross-sectional study of adults (respondents aged over 16) who completed the individual questionnaire of Wave 2, collected between January 2010 and January 2012. Only Wave 2 was used because Wave 1 did not carry the relevant items. The sample size for statistical analysis was of 32,707 individuals after the appropriate weight and filters were applied. Data were weighted to adjust for unequal selection probabilities, differential non-response and potential sampling error. In line with previous research using UKHLS data, negative household income values, those equal to 0 and those on the top and bottom 1% of positive income values were excluded from the analysis (Berthoud 2011).

The survey asks about participation in 78 leisure activities (39 cultural and 39 sports activities). To simplify the analysis, cultural activities were grouped into seven themed categories (Appendix 1). Sports are already grouped in the survey as moderate and mild intensity. Frequency of participation is also captured for art activities, art events, heritage and museum activities, and mild and moderate intensity sports. The adult self-completion questionnaire of the UKHLS asks respondents to report their level of satisfaction with life overall using a 7-point Likert scale (from completely dissatisfied to completely satisfied). This life satisfaction variable was not normally distributed and cannot be treated as linear in a regression analysis. We therefore propose using an ordinal regression initially to assess the independent relationship between participation in each of the leisure group of activities and life satisfaction score. The link function used in the model was complementary log-log, as it is recommended when higher categories of the dependent variable are more probable and when the test of proportional odds or "parallel lines" is not met (ReStore 2013). The assumption of proportional odds states that the effects of any explanatory variables are consistent or proportional across the threshold categories and is the key assumption in ordinal regression analysis. However, the ordinal regression did not meet the assumption even after the complementary log-log function was used. A simple approach to analyse ordinal data with non-

proportional odds is to dichotomize the ordinal response variable by means of several cut-off points and use separate binary logistic regression models for each dichotomized response (Bender and Grouven 1998). For subsequent analysis, therefore, the life satisfaction dependent variable was dichotomised into two cut-off points: level 7 and level 6 or above. This allows the comparison of respondents who said they are completely satisfied with life and the rest of respondents, and the combination of this group with those who are mostly satisfied against the rest of respondents.

Four covariates were controlled for in the regressions: gender, age, equivalised household income and occupation. These variables were selected based on both a literature review of factors influencing life satisfaction (e.g. Lucas et al. 2004; Boyce et al. 2012; Daraei and Mohajery 2013) and exploratory bi-variate analysis of the data which confirmed their association with life satisfaction in the UKHLS dataset. The modelling aimed to identify the unique (net) contribution of each group of leisure activities to overall life satisfaction after control for the covariates. Since all leisure activities were entered into the model simultaneously, the association between participating in a specific group of leisure activities and life satisfaction was adjusted for participation in all other activities as well.

The influence of frequency of participation in leisure activities on life satisfaction was explored by repeating the ordinal regression with the frequency variables in place of the “yes/no” participation variables. The influence of the number of leisure activities practiced in a year and life satisfaction was explored through linear regressions. The variable for the number of leisure activities carried out was obtained by adding all the leisure categories in which the respondents answered “yes”.

3. Results

The mean number of leisure activities carried out by respondents in the 12 months previous to the interview was 9, with a standard deviation of 6.9. Figure 1 shows the popularity of each leisure category based on the percentage of respondents reporting having practiced at least one activity within the group in the 12 months previous to the interview. Reading hobbies was the most popular leisure group of activities with 74% of respondents reporting having participated in at least one activity from this group in the 12 months previous to the interview. The second most popular group of activities was moderate intensity sports, reported by 64% of respondents. Within this group, swimming/diving was the most practiced sport, reported by 34% of all respondents. Activities grouped under the themes “heritage visits” and “popular entertainment” were both reported by 63% of respondents. However, the most practiced activities within these groups, going to the cinema and visiting a city or town with historic interest, were reported by more people than swimming/diving (54% and 44%, respectively).

Fig. 1 Reported participation in categories of leisure activity in the 12 months previous to interview

Figure 2 shows the distribution of responses to the overall life satisfaction question. The mode for life satisfaction as a whole was 6, which means the most reported answer from the 7-point Likert scale was “mostly satisfied”. About 15% of respondents reported a dissatisfaction category (completely, mostly or somewhat) and 76% stated they were satisfied (completely, mostly or somewhat).

Fig. 2 Frequency of response of life satisfaction categories

Table 1 summarizes the results of the ordinal regression aimed at assessing the independent association between various leisure categories and life satisfaction. The cumulative odds ratio (OR) shows that participants of the leisure categories Moderate intensity sports, Heritage hobbies, Mild intensity sports and Active-creative were more likely to report high life satisfaction levels compared to non-participants of these activities. Participants of Reading and Sedentary creative hobbies were less likely to report high life satisfaction scores than non-participants of these activities. The association of the categories Popular entertainment, Theatre hobbies and Museum/galleries with life satisfaction was not statistically significant.

The results of the binary logistic regressions show that the cumulative OR for reading (0.92) underestimates the reduction in likelihood of reporting level 7 of life satisfaction associated with reading hobbies. However, when level 6 and 7 are combined the association between reading hobbies and life satisfaction is not significant. Participation in moderate intensity sports and heritage hobbies was not associated with the highest level of life satisfaction. The cumulative OR for moderate intensity sports (1.09) in this case underestimates the representation of participants in higher levels of life satisfaction. For example, the odds for participants of moderate intensity sports being mostly satisfied or above (level 6+) are 1.23 times greater than the odds for non-participants, or in other words, people who participated in moderate intensity sports were 23% more likely to report high life satisfaction than non-participants. Similarly the odds for participants of heritage hobbies being mostly satisfied or above are 1.25 times greater than the odds of non-participants. The odds of mild intensity sports are very similar at this level at 1.21. Active-creative activities follow in general the same pattern, although the influence on life satisfaction is less marked than for sports and heritage hobbies. The odds for participants of active-creative activities being in level 7 are 1.17 times that of non-participants.

Table 1

The association between life satisfaction and the frequency of participation in leisure activities was not significant. However, the results of a linear regression point to higher life satisfaction levels when the number of activities practised increases. The standardised Beta coefficient for the number of activities indicates that for every increase in the number of leisure activities practised life satisfaction increases by 0.144 ($\beta= 0.144$, $p<0.001$).

4. Discussion

Our analyses show an independent positive association of participation in sport (moderate and mild intensity), heritage and active-creative leisure activities and life satisfaction and a negative association between participation in reading hobbies and sedentary-creative activities and life satisfaction. The leisure categories popular entertainment, theatre hobbies and museum/galleries were not statistically significant in their association with life satisfaction.

Two arguments can be given to explain the association between the types of leisure activities and life satisfaction and they are: *i*) the positive association of the categories sport, heritage and active-creative might reflect positive effects on health related to the physical activity involved in these leisure categories, and *ii*) the increase in life satisfaction reflects the social interactions generally involved in these activities.

Physical activity has been reported to have a positive effect on health, both physical (Hills and Argyle 1998; Brown et al. 2000; Wendel-Vos et al. 2004) and mental (Dowall et al. 1988; Foong 1992; Bodin and Hartig 2003; Wendel-Vos et al. 2004). Of the activities positively associated with higher life satisfaction, sports and active-creative (dancing being the main activity in this group) are obviously associated with physical activity. Heritage activities may compare with mild intensity sports in the amount of physical activity involved since these activities usually involve walking. Additionally, some of the heritage activities included in the category involve the outdoors which might act in combination with physical activity to improve mental health and, indirectly, life satisfaction (Bodin and Hartig 2003; Pretty et al. 2005; Pretty et al. 2007; Thompson Coe et al. 2011; Mitchell 2012).

Social interaction in itself has been recognised as an important contributor to happiness and wellbeing (Foong 1992; Auld and Case 1997; Diener and Seligman 2002; Fleche 2012). Many leisure activities have been reported to stimulate or promote social interaction, in particular sport activities (Foong 1992; Hills and Argyle 1998). Reading and activities included in the sedentary-creative category such as playing music and painting are generally done in isolation. Other activities which were not significant such as going to the cinema and the theatre, may involve carrying out the activity in company but this does not necessarily involve interaction. Other explanations for the association of sports, heritage and active-creative activities with higher life satisfaction may be a sense of achievement in doing these activities and, in the case of heritage, a sense of place and identity and their influence in increasing self-esteem (Campbell 1981; Diener and Diener 1995; Diener et al. 1985; Uchida et al. 2004).

Although popular entertainment, theatre hobbies and museum/galleries were not significantly associated with increased life satisfaction, this does not necessarily mean that they do not contribute to wellbeing. These activities, together with the reading and sedentary-creative groups, might have a positive effect in the affective aspect of SWB (mood, happiness) which was not taken into account in this analysis. There is more than one positive emotion associated with leisure and different types of leisure can produce different positive effects (Hills and Argyle 1998). For example, in other studies museums have been suggested to have a restorative effect and promote relaxation (Packer 2008), reduce anxiety (Binnie 2010), increase attention focus, promote a sense of community (Thompson et al. 2011) and to be associated with increased happiness and self-reported health

(Fujiwara 2013; Leadbetter and O'Connor 2013). In contrast to our results, Leadbetter and O'Connor (2013) report a positive and significant association of attending museums, the cinema and dance performances with high life satisfaction. However, the results are not comparable to ours due to differences in the geographical area studied, scale of measurements and methods used.

A surprising outcome in the results is the lack of a significant association between life satisfaction and frequency of participation in leisure activities, as is often reported (e.g. Ragheb and Griffith 1982; Lloyd and Auld 2002). To our knowledge only two studies have reported this outcome before (Russell 1987; Agyar 2014). Russell (1987) suggested that the value of an activity may be determined more by the enjoyment derived from it than by the frequency of engagement. This and other hypotheses related to the levels of enjoyment derived by different leisure activities are suggested as areas to explore in future research.

It is important to highlight that the significant associations observed are not indicative of causation. Given the wide variety of leisure activities available, which ones are selected are determined by personal choice. People with higher levels of life satisfaction might tend to choose leisure pursuits that are more active and involve social interaction. Choices and the degree of happiness and satisfaction experienced with particular leisure activities and life in general might be influenced more by individual personality differences than by objective conditions (Felce and Perry 1995; Hills and Argyle 1998) and by personal values and aspirations (Felce and Perry 1996; Schalock 1996; Bell 2006).

In our study, the socio-economic and leisure variables included in the analysis explain a low proportion of the variability in the outcome (pseudo R^2 4.5% for the cumulative model). Personality has been considered a stronger and more consistent predictor of high life satisfaction (Wood et al. 2008; Boyce et al. 2013). Despite the low between-person variance in life satisfaction explained by socio-economic factors compared to personality, these are typically the focus of SWB research due to the belief that they change whereas personality does not. This view has been recently challenged by Boyce et al. (2013) based on a longitudinal study on personality change and life satisfaction. Regardless of whether personality changes over time or not, if it is a strong predictor of life satisfaction it should be included in wellbeing studies as a control variable. However, the major population surveys in the UK do not include personality measures. The availability of personality measurements would serve not only to control for this factor but also to understand the influence of personality in lifestyle choices such as leisure pursuits.

Large surveys, such as Understanding Society, provide the opportunity of establishing associations of various aspects of life with life satisfaction that can be generalizable at the population level. The main limitation of our study is that is cross-sectional due to the unavailability of leisure participation information in previous waves of the survey. Longitudinal studies are needed to identify possible causal relationships and the direction of the relation between specific leisure activities and life satisfaction, and to establish if long term participation is required. The nature of the associations can further be explored by including the types of positive emotions associated with individual leisure activities and personality aspects.

The importance of sports on wellbeing has long been recognized and it is high in the policy agenda, whereas other leisure activities such as heritage recreation have not been given the same importance. The results of this

study show that the association of heritage leisure with life satisfaction is comparable to that of sports, and that these associations are independent of income and occupation, two strong correlates to life satisfaction (Anderson et al. 2009). In the face of economic change it would seem that an important way of improving social wellbeing and quality of life would be to create opportunities for engaging in a number of leisure activities, specifically those that are active and promote social interaction. Heritage recreation can provide these opportunities while being an alternative for people who do not like or cannot participate in sports. Policy makers and institutions in charge of providing heritage recreation should consider subjective wellbeing measures, such as life satisfaction, in the evaluation of their services.

5. Conclusions

In this paper we have used data from Wave 2 of the Understanding Society Survey to estimate the association of type, number and frequency of participation in leisure activities and life satisfaction, a component of quality of life. Our study demonstrates an independent and positive association of participation in sport (moderate and mild intensity), heritage and active-creative leisure activities and life satisfaction and a negative association between participation in reading hobbies and sedentary-creative activities and life satisfaction. The leisure categories popular entertainment, theatre hobbies and museum/galleries were not statistically significant in their association with life satisfaction.

The results showed that the association of heritage leisure with life satisfaction is comparable to that of sports, and that these associations are independent of gender, age, income and occupation. Two arguments were proposed to explain the association between the types of leisure activities and life satisfaction: *i*) the positive association of the categories sport, heritage and active-creative on health related to the physical activity involved in these leisure categories, and *ii*) the social interaction generally involved in these activities. Other aspects such as sense of achievement, sense of place and self-esteem may also explain these associations.

The results of this study have implications for policy makers and leisure services providers, in particular those associated with heritage recreation. Subjective wellbeing measures, such as life satisfaction and not economic measures alone should be considered in the evaluation of services. The promotion of heritage recreation and other activities which are active and promote social interaction should be considered in programmes aimed at improving the quality of life.

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Figure 1
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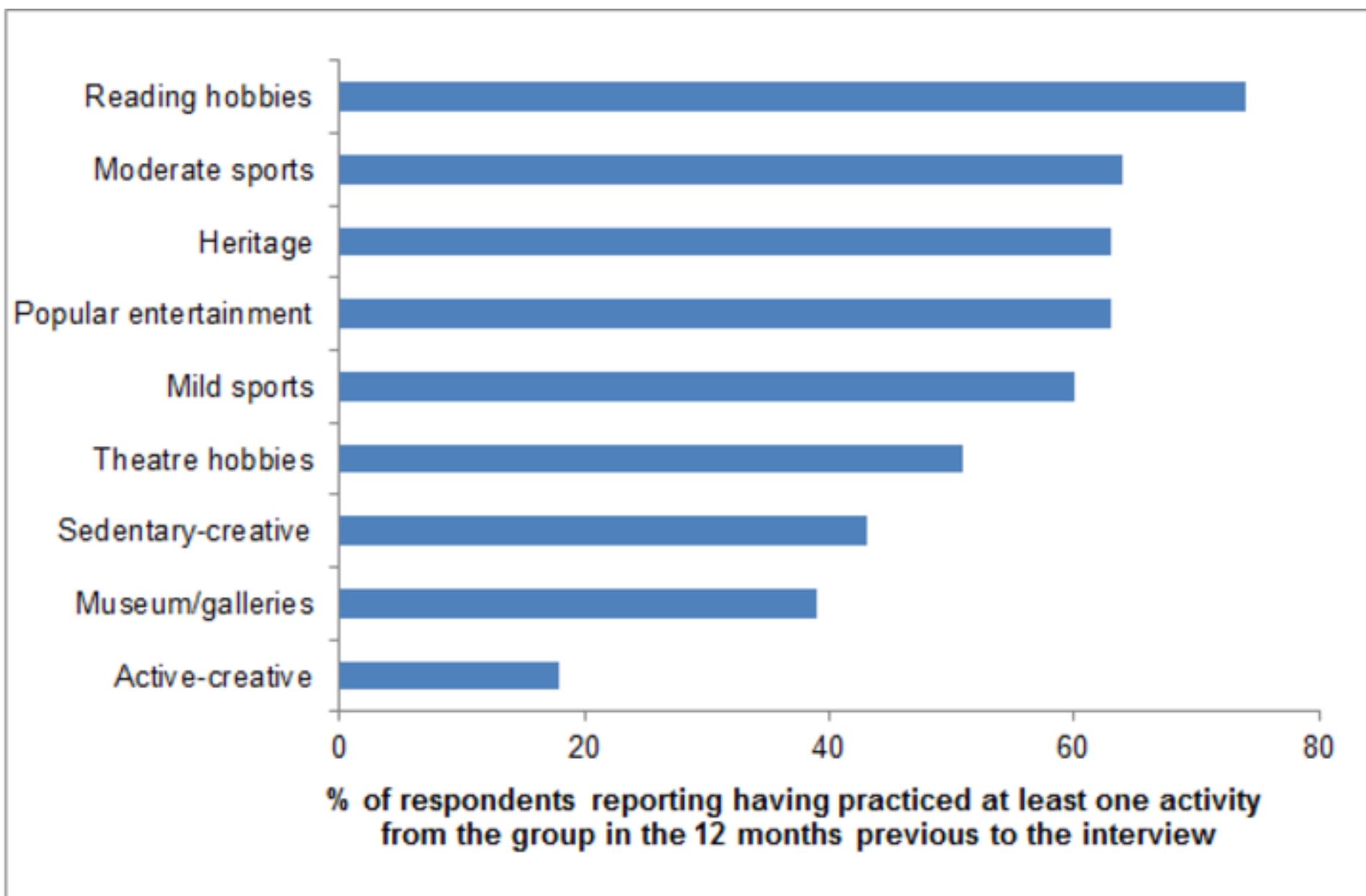


Figure 2

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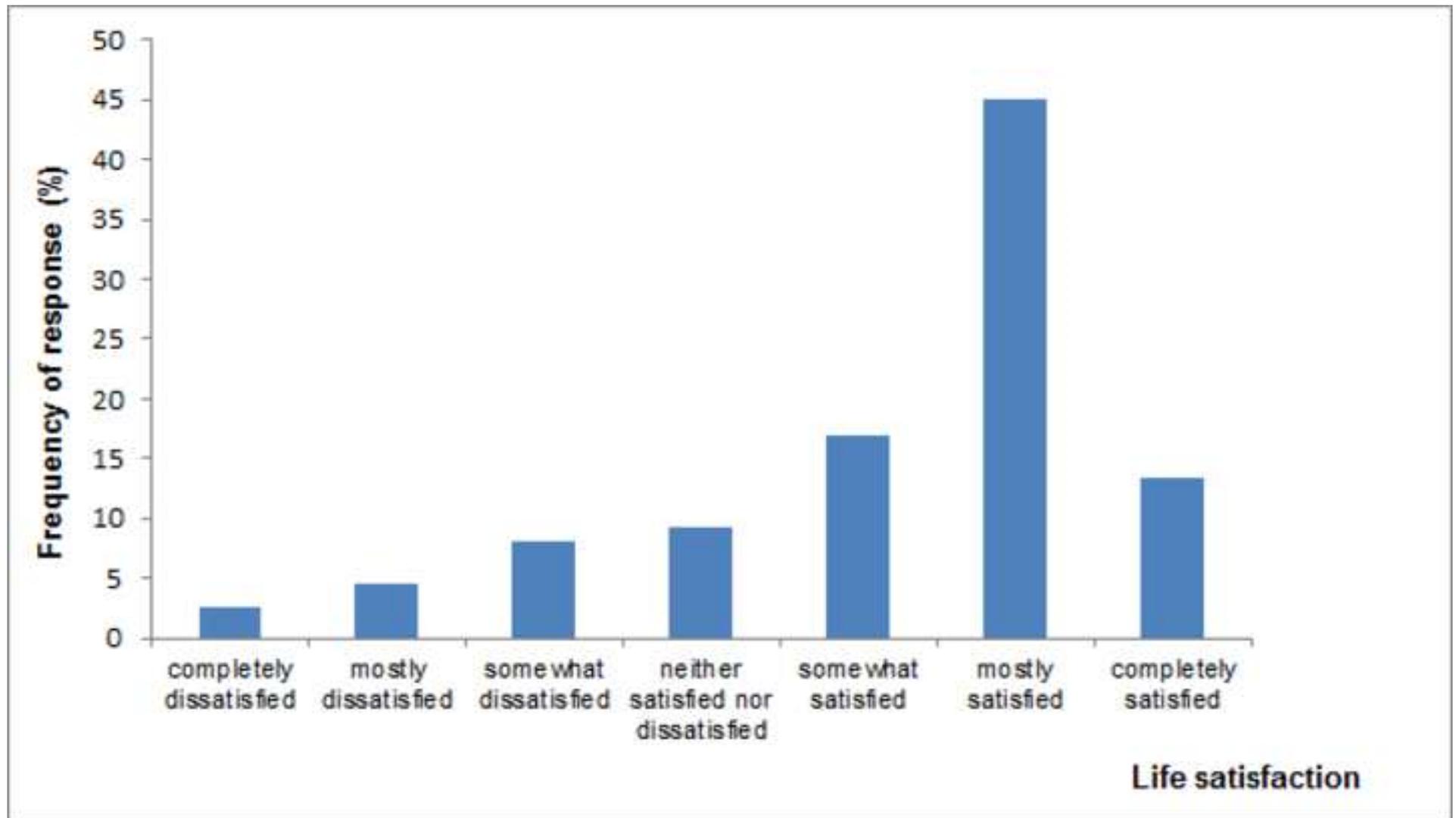


Table 1 Independent association between leisure categories and odds of high life satisfaction score

	Odds ratio				
Leisure category	Cumulative ^a	Level 7+ ^b	Level 6+ ^b	SE ^c	95% CI ^c
Reading hobbies	0.92***	0.79***	0.96	0.017	0.037 to 0.106
Moderate intensity sports	1.09***	1.08	1.23***	0.016	0.056 to 0.119
Heritage hobbies	1.06***	0.99	1.25***	0.016	0.025 to 0.087
Popular entertainment	1.01	-	-	0.016	-0.020 to 0.044
Mild intensity sports	1.08***	1.08*	1.21***	0.015	0.046 to 0.105
Theatre hobbies	0.99	-	-	0.015	-0.039 to 0.020
Sedentary creative	0.97*	0.97	0.93**	0.014	-0.059 to -0.005
Museum/galleries	0.97	-	-	0.015	-0.058 to 0.002
Active creative	1.07***	1.17***	1.11**	0.017	0.037 to 0.106
pseudo R ² (Nagelkerke)	4.5%	4.6%	7.9%		

Appendix 1

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