Addressing the calls for evidence in arts and health: a quantitative approach to understanding the role of the arts in the wellbeing of the Mid West region of Western Australia

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ABSTRACT

Despite ambitious claims about the role of the arts in health and wellbeing, and the wealth of quantitative data on the nature of wellbeing, there has been little attempt to quantify the benefits or impacts of the arts using available social indicators. As understanding the role of the arts in the wellbeing of communities is a complex task, this research used a regional case-study to determine a statistical understanding of the relationship between wellbeing and arts engagement, contextualised with existing literature, to capture the uniqueness of the arts experience in a local context. The Mid West region of Western Australia was chosen as the case-study region for its economic and cultural diversity, making this research a distinct shift from a single community case study approach. Data were collected through a household survey measuring self-reported wellbeing and extent of arts engagement. Using backward regression, the final model showed a significant effect for performing arts attendees compared with those who did not attend ($V = 0.34$, $F(3,309) = 3.593$, $p = 0.014$) and arts participants compared with those who did not participate in the arts ($V = 0.026$, $F(3,309) = 2.732$, $p = 0.044$). While there are a number of limitations, this type of analysis is possible and lends support to the complex role of the arts in the wellbeing of the case-study region. The benefits from arts engagement are vast and varied and are both accumulative and a perishable commodity. While further research is required to refine research methods, this research provides some groundwork to further understand the complexity and harness the benefits of the arts for the health and wellbeing of individuals and communities at large.

KEYWORDS

The arts, health, wellbeing, community, rural, Australia

INTRODUCTION

There has been much interest in the role of the arts in health and wellbeing and an abundance of literature on the benefits of the arts in clinical settings and arts therapy, to economic, community development, and individual outcomes (Sobels, Curtis and Lockie 2001; McCarthy et al. 2004; Cocklin and Dibden 2005; Macnaughton, White and Stacy 2005). While there is a wealth of quantitative data on the nature of wellbeing, life satisfaction, and happiness, research on the arts and wellbeing in community settings is typically qualitative, based on individual project evaluations, and published largely in grey literature. There is a substantial body of literature that demonstrates the links between wellbeing and sport and recreation (Taylor, Sallis and Needle 1985), volunteering (Thoits and Hewitt 2001), and cultural attendance (Bygren, Konlaan and Johansson 1996), among other activities. Yet, the arts are often singled out from other forms of engagement due to their unique ability to express emotion, meaning, and values (Matarasso 1997), and for their role in innovation and creativity (Dieleman 2008; Sacco and Segre 2009). The broad appeal of the arts, along with their flexibility in terms of the context in which they take place, is another defining feature when compared to other forms of engagement (Anwar McHenry 2009b; Anwar McHenry 2011b). For many, the arts provide challenge, amusement, fun, and relaxation (Bunting 2007). While others suggest more urgently that the arts are integral to healing and resilience (Green and Sonn 2008). However, these benefits are a perishable commodity and, therefore, engagement cannot be one-off and needs to be maintained over time (Johansson, Konlaan and Bygren 2001).

Data evaluating the social and economic contribution of the arts to society are not easy to obtain, and the methods of data collection of some studies, including the choice of samples and the purpose, intention, and bias of the researchers have been criticised for their lack of rigour (Anwar 2005). Overall, there is a lack of robust data and evidence, and this has been attributed to the difficulty in quantifying the impacts, particularly in developing indicators and identifying outcomes, as well as various problems with economic impact measurement (Jermyn 2001; Reeves 2002; McQueen-Thomson, James and Ziguras 2004). Concerns have also been voiced when subjecting artistic integrity to the scrutiny of research, as it has been argued that 'too much concentration on impacts and outcomes downplays the role of artists and curators in favour of audiences and non-attendees' (Holden 2004: 25). Furthermore,

in terms of artistic expression, the raw emotional experience is a defining factor in building a case for the arts that is unique to or different from other forms of engagement. Yet, the intangible nature of these benefits makes it difficult to communicate and comprehend individual impact in any other way than through the first person experience (Wood, Duffy and Smith 2007).

Contention surrounding the primacy of instrumental outcomes over intrinsic experience is complicated by difficulties in defining both the arts and engagement in the arts (Davies et al. 2012). A distinction is often made between "active engagement", such as creating, making, organising, producing, or facilitating the arts and "passive engagement", which consists of receiving or consuming an event or product, such as watching a performance, viewing an exhibition, or purchasing an art product (Trewin 2001). This distinction is important because cultural and artistic activity is often viewed 'as something for performance by professional elites for the passive consumption of the majority' (Ife and Tesoriero 2006: 240) which perhaps has given impetus to the view espoused in some community arts and community cultural development scholarship that benefits will only accrue through active engagement in the arts (Hawkes 2001; Ife and Tesoriero 2006). Although studies have shown links between mortality and passive arts engagement (Bygren, Konlaan and Johansson 1996) and, more specifically, passive arts engagement is used in health care settings to improve aesthetics, influence mood, and manage stress levels, and as a social marketing and educational tool in health promotion (Staricoff 2004; Macnaughton, White and Stacy 2005; Donovan et al. 2006; Mills et al. 2011). The following section describes the research methods used. The results are then presented and discussed along with the limitations of this approach and the statistical model used.

RESEARCH METHODS

The definition and theoretical understanding of the construct of wellbeing is an important determinant of how it is measured (Wearing and Headey 1998). For example, there is growing evidence to support the relative independence between positive and negative wellbeing, often termed ill-being. Mortality is predicted more strongly by the absence of positive wellbeing than by the presence of psychological symptoms (Huppert and Whittington 2003). Similarly, while self-esteem and personal competence influence both wellbeing and ill-being, socio-economic status has a greater influence on ill-being than wellbeing. Well developed social networks enhance wellbeing rather than relieve ill-being, and poor health is more closely associated with ill-being (Headey, Holmstron and Wearing 1985). There has been a tendency to focus on personality or attitudes, as only a small proportion of variance is accounted for by demographic variables. No single trait accounts for much of the variance in behaviour, instead it is influenced by an immense number of variables (Diener 2009). Satisfaction, wellbeing, and social capital indicators can be easily adapted to demonstrate significant relationships between different types and amount of engagement, including in the arts (Anwar McHenry 2011a). The wellbeing index utilised in this research attempts to capture the depth of wellbeing including satisfaction, quality of life, positive and negative affect, personality traits, and social capital.

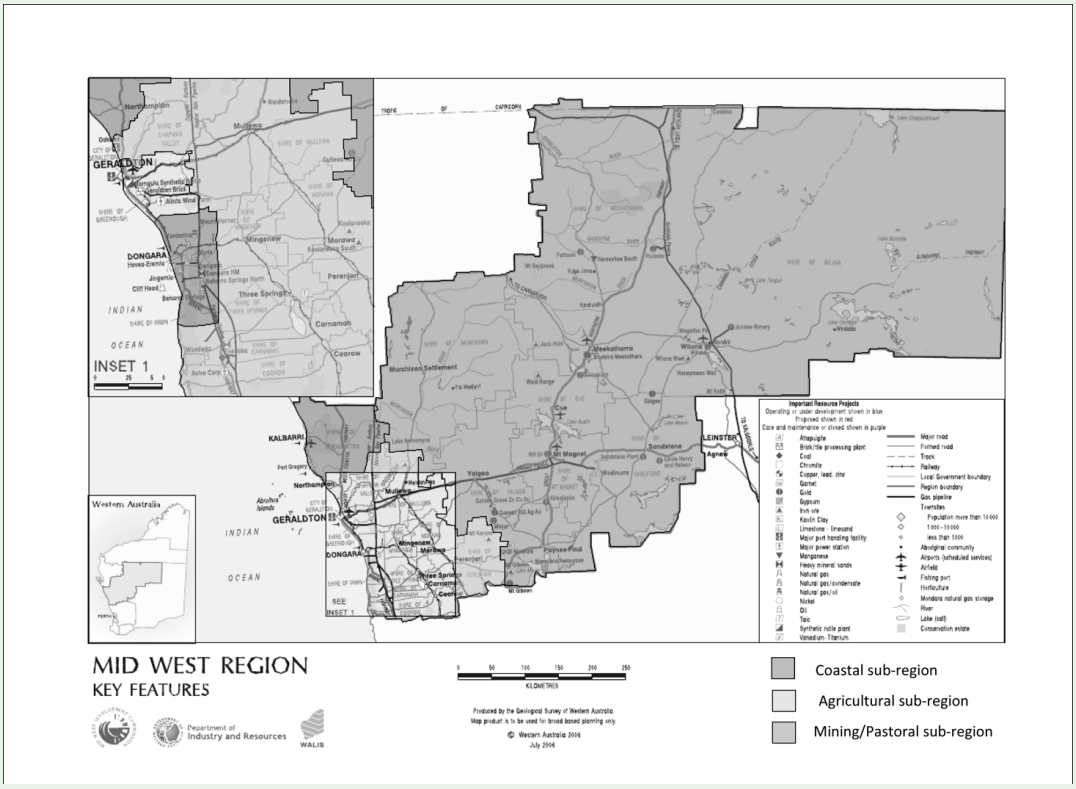
Understanding the role of the arts in the wellbeing of communities is a complex task and calls for approaches that capture both the breadth and depth of this developing research area. Using a regional case-study approach this research attempted to capture both the uniqueness of the arts experience in a local context and provide tangible outcomes that could be subject to statistical scrutiny. Data were collected using a self-complete household survey enabling a statistical model of the relationship between wellbeing and engagement to be built. The discussion compares these results to the literature to provide a context for examining the role of the arts in wellbeing.

THE CASE STUDY REGION

The case study area for this research was the Mid West region of Western Australia (WA) chosen for its economic and cultural diversity enabling comparisons over a range of spatial contexts and distinct regional communities (Anwar McHenry 2013). The diverse economy of the Mid West, to some extent, shapes population structure through employment opportunities offered by mining, agriculture and pastorialism, and tourism. Therefore, for this analysis the local government authorities (LGAs) within the region were grouped into sub-regions representing coastal, agricultural, and mining/pastoral (Figure I).

Figure I: Sub–regions of the Mid West of Western Australia

Image courtesy of the Geological Survey of Western Australia, Department of Mines and Petroleum.



Varying levels of geographic isolation and remoteness determine access to goods, services, and facilities such as health, education, housing, and infrastructure. The remote areas of the agricultural and mining/pastoral sub-regions represent more specialised economies with restricted access to services and facilities. More remote regions are typically transient with seasonal employment in primary and tourism industries. Unemployment, therefore, results in outmigration to the diverse economic base of the more accessible coastal sub-region and parts of the agricultural sub-region

(Maude and Hugo 1992; Alston 2004). Remoteness also limits opportunities for social interaction, known to be a key influence on mental health and community wellbeing (Rajkumar and Hoolahan 2004; Donovan et al. 2007). However, rural amenity and sense of belonging to the community and the land enhances mental health and wellbeing and further influences spatial variability in population demographics across the region (Hugo and Bell 1998; Bloom, Canning and Sevilla 2003).

THE HOUSEHOLD SURVEY WELLBEING INDEX

The household survey was a preferred method for quantitative data collection for convenience, enabling respondents to complete and return the survey in their own time. Given the remoteness of the region and the dispersed nature of the small population, interviewing individuals in person would have been impractical. Furthermore, obtaining a statistically representative sample for the household survey, particularly in the mining/pastoral sub-region, would have been difficult (Hoggart, Lees and Davies 2002). Thus, for convenience, two surveys were distributed by unaddressed mail to all 4,000 households within the region outside of the City of Geraldton-Greenough, a total of 8,000 surveys. As such, reminder letters were not sent.

There were four sections to the survey: section one consisted of demographic information; section two focused on participation in arts activities and events over the past 12 months; section three examined perceptions of wellbeing, and; section four considered the importance of the arts in community. The wording and activities in section two of the household survey are developed and adapted from the *Survey of public participation in the arts* from the United States based, National Endowment for the Arts (2004). The wellbeing index is an adaptation of the Australian Unity Wellbeing Index (Cummins et al. 2007), established social indicators measuring life satisfaction and affect (Andrews and McKennell 1980), the World Health Organisation's Quality of Life instrument (WHO 1997), and the World Bank's Social Capital Index (Grootaert et al. 2004). Each item on the wellbeing index was measured on an 11-point Likert scale. Because wellbeing is multi-dimensional, the household survey index reflects different dimensions of wellbeing (see Table I). The index included direct cognitive measures of wellbeing that related to life satisfaction (Q18) and community satisfaction (Q19). Individual wellbeing was gauged through questions relating specifically to personal attitudes and traits (Q21, Q26, and Q31) and positive and negative affect (Q24, Q28, Q32, and Q34). Questions concerning social capital were used to determine groups and networks (Q20), trust and solidarity (Q22, Q30, and Q33), information and communication (Q25, and Q27), social cohesion and inclusion (Q29), and empowerment and political action (Q23). To avoid bias on the part of the respondent, questions 21, 24, 25, 28, and 29 were negatively worded, with the scores reversed during data analysis to make them consistent with the rest of the data.

Table I Dimensions of wellbeing and their related questions in the household survey wellbeing index

Direct cognitive measures of wellbeing (11pt scale)	
General	18. Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?
Specific	19. How satisfied are you with feeling part of your community?
Individual factors contributing to wellbeing	
Personal attitudes and traits	21. On occasion, I have doubts about my ability to succeed in life (–) 26. Things have really gone my way over the past few weeks 31. I always go out of my way to help someone in trouble
Positive & Negative Affect	24. I often feel bored (–) 28. During the past few weeks I have felt depressed or very unhappy (–) 32. During the past few weeks I have felt particularly excited or interested in something 34. During the past few weeks I have felt pleased about having accomplished something
Community factors that influence wellbeing (i.e. Social Capital)	
Groups and Networks	20. I have friends I can turn to when times are tough
Trust and Solidarity	22. Most people who live in my community are willing to help you if you need it 30. I feel connected with my community 33. My community is a safe place to live
Empowerment and Political Action	23. I feel I can make an impact in making my community a better place to live
Information and Communication	25. I have difficulty communicating my ideas to others (–) 27. I have a strong understanding of the issues that affect my community
Social Cohesion and inclusion	29. I feel very lonely or remote from other people (–)

NB (-) denotes questions which were negatively worded and therefore recoded prior to analysis

QUANTITATIVE DATA ANALYSIS

Data from the household survey were analysed using Predictive Analytics SoftWare (PASW), formerly known as the Statistical Package for the Social Sciences (SPSS), to provide descriptive statistics, a principal components analysis to construct the wellbeing index, and a multivariate analysis of variance (MANOVA) using backward regression to examine the relationship between arts engagement and wellbeing. An analysis of variance (ANOVA), which is a form of a general linear model (GLM), was conducted in the same way as a multiple regression by manually entering or

removing variables, based on the regression method chosen, to determine the final model for the prediction of the dependent variable. With several dependent variables, the risk of Type I error is reduced by using MANOVA instead of a series of ANOVAs (Tabachnick and Fidell 1996). By considering the dependent variables in combination, a MANOVA can sometimes be more powerful than ANOVA, however, it is also substantially more complicated with respect to assumptions made about normality, linearity, and the homogeneity of variance-covariance matrices (Coakes and Steed 1999). There is also considerable ambiguity in the interpretation of the results, especially for the main effects of an independent variable on a particular dependent variable, in the presence of a significant interaction effect (Tabachnick and Fidell 1996).

Standard multiple regression involves the inclusion of all predictor variables initially within the model. Individual items may then be removed through the process of backward regression. Other methods of regression involve entering variables into the model separately in a manner either predetermined on theoretical grounds, as in hierarchical regression, or based on statistical criteria, as with step-wise regression (Gaur and Gaur 2009). There were no theoretical grounds for assuming that any one variable would be a greater predictor of wellbeing than any other. Instead it was more likely that all the variables would interact in complex ways to influence wellbeing. Similarly, the entering of variables based purely on statistical grounds has been subject to much criticism and is rarely used in social science research (Gaur and Gaur 2009). Thus, backward regression was used over other methods for the selection and elimination of variables from the final model. No causal association had been assumed as causality can not be attributed when conducting non-experimental survey research (Tabachnick and Fidell 1996).

RESULTS

A total of 758 useable responses were returned (response rate 9.5%). Surveys were grouped by sub-region, with the breakdown of the distribution shown in Table II. A total of 758 people responded to the survey, which included respondents between 17 and 90 years of age. The mean age was 54.1 years with a standard deviation (SD) of 15 (n = 741). There was a female majority (64%) and the sample was not representative of the Aboriginal population within the region, with only 14 respondents (1.8%) of Aboriginal or Torres Strait Islander decent. The majority of respondents resided in the coastal sub-region (57%), followed by the agricultural (29%) and mining/pastoral (14%) sub-regions, which was fairly consistent with the sampling frame of the Mid West with the majority of households in the coastal sub-region (48%), one-third in the agricultural sub-region (33%), and the remaining in the pastoral/mining sub-region (19%). Respondents of the household survey had lived in their resident shire for an average of 18.7 years (SD = 17.7, n = 753), within a range of zero to 90 years. Almost half of the respondents (45%) who had spent less than 10 years in their current place of residence had previously lived in another non-metropolitan region of WA, 26 per cent had previously lived in Perth, and 15 per cent were from another shire within the Mid West region.

Table II Number of returned household surveys by sub–region of residence

Shire of residence	Frequency	%
Coastal	*434*	*57.3*
Northampton	176	23.2
Irwin	258	34.0
Agricultural	*215*	*28.4*
Carnamah	52	6.9
Chapman Valley	4	0.5
Coorow	6	0.8
Mingenew	38	5.0
Morawa	53	7.0
Perenjori	32	4.2
Three Springs	30	4.0
Mining/Pastoral	*106*	*14.0*
Cue	13	1.7
Meekatharra	39	5.1
Mt Magnet	23	3.0
Murchison	15	2.0
Sandstone	11	1.5
Wiluna	1	0.1
Yalgoo	4	0.5
Not Stated	*3*	*0.0*
Total	**758**	**100.0**

A MODEL FOR RURAL WELLBEING

A Principal Components Analysis (PCA) was conducted on the 17 items of the wellbeing index in the household survey using orthogonal rotation (Varimax). The correlation matrix revealed a considerable number of correlations over 0.3, which indicates that the matrix is suitable for PCA. This is confirmed through Bartlett's test of sphericity, $\chi 2(136) = 4388.752$, $p = 0.000$ and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, KMO = 0.903, which is well above the acceptable limit of 0.6 (Coakes and Steed 1999). The KMO values for individual items were greater than 0.867, which is above the acceptable limit of 0.5 (Field 2009). An initial analysis was run to obtain eigenvalues for each component in the data. Three components had eigenvalues over Kaiser's criterion of one and they combined to explain 52.8 per cent of the variance, as shown in Table III. Therefore these components were retained in the final analysis.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	%of Variance	Cumulative %	Total	%of Variance	Cumulative %	Total	%of Variance	Cumulative %
1	6.024	35.433	35.433	6.024	35.433	35.433	3.826	22.503	22.503
2	1.688	9.931	45.365	1.688	9.931	45.365	2.810	16.530	39.033
3	1.268	7.456	52.821	1.268	7.456	52.821	2.344	13.788	52.821
4	.970	5.706	58.527						
5	.921	5.421	63.948						
6	.757	4.453	68.401						
7	.720	4.236	72.637						
8	.645	3.794	76.430						
9	.595	3.499	79.929						
10	.584	3.435	83.364						
11	.518	3.047	86.411						
12	.493	2.897	89.308						
13	.450	2.646	91.954						
14	.417	2.452	94.406						
15	.368	2.164	96.570						
16	.355	2.087	98.657						
17	.228	1.343	100.000						

Table III Total variance explained by the components of the wellbeing index

Table IV shows the factor loadings after rotation. Component one shows higher factor loadings on six of the eight items on the wellbeing index that were derived from a social capital index, as a measure of community wellbeing, as well as the direct cognitive measure of wellbeing concerned with community satisfaction, and one item that represents individual wellbeing, which related to helping others. Component two showed high factor loadings for personal life satisfaction with all the negatively worded items for both individual and community wellbeing. Thus demonstrating the relative independence of positive and negative wellbeing, or wellbeing and ill-being. Component three had high loadings for personal satisfaction, as well as three of the seven items concerning individual wellbeing. These three items did not include any of the items that loaded highly on the other two components. Thus, the items that cluster on the same components suggest that component one encompassed the social aspects of wellbeing (social wellbeing), component two comprised negative aspects of wellbeing (ill-being), despite these variables being recoded to be consistent with the positively worded questions, and component three represented individual factors contributing to wellbeing (individual wellbeing).

Item	Rotated Component Loadings		
	1	2	3
18. Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole? (direct cognitive, general)	.342	**.409**	**.475**
19. How satisfied are you with feeling part of your community? (direct cognitive, specific)	**.750**	.293	.172
21. On occasion, I have doubts about my ability to succeed in life (individual, personal attitudes and traits)	.020	**.643**	.134
24. I often feel bored (individual, positive and negative affect)	.168	**.702**	.056
26. Things have really gone my way over the past few weeks (individual, personal attitudes and traits)	.185	.122	**.718**
28. During the past few weeks I have felt depressed or very unhappy (individual, positive and negative affect)	.090	**.697**	.358
31. I always go out of my way to help someone in trouble (individual, personal attitudes and traits)	**.471**	.036	.212
32. During the past few weeks I have felt particularly excited or interested in something (individual, positive and negative affect)	.222	.129	**.768**
34. During the past few weeks I have felt pleased about having accomplished something (individual, positive and negative affect)	.294	.167	**.756**
20. I have friends I can turn to when times are tough (community, groups and networks)	**.609**	.275	.125
22. Most people who live in my community are willing to help you if you need it (community, trust and solidarity)	**.748**	.164	.023
23. I feel I can make an impact in making my community a better place to live (community, empowerment and political action)	**.624**	.111	.262
25. I have difficulty communicating my ideas to others (community, information and communication)	.154	**.659**	−.033
27. I have a strong understanding of the issues that affect my community (community, information and communication)	**.611**	.040	.208
29. I feel very lonely or remote from other people (community, social cohesion and inclusion)	.271	**.706**	.204
30. I feel connected with my community (community, trust and solidarity)	**.796**	.233	.164
33. My community is a safe place to live (community, trust and solidarity)	**.543**	.029	.140
Eigenvalues	3.826	2.810	2.344
% of variance	22.503	16.530	13.788
a	.835	.762	.777

Note: Component loadings over 0.4 appear in bold

Table IV Summary of PCA results for items on the wellbeing index

It is important to note in the interpretation of these results that the ill-being component represents a clustering of negatively worded items on the wellbeing index. The items were recoded before the analysis to make them consistent with the direction of the other items on the scale. Subsequent to the PCA analysis, all components were recoded to produce a mean of zero and a SD of one. Thus, a negative ill-being score indicates that the respondent agreed more strongly with the negatively worded items on the wellbeing index, suggesting that these "lower" ill-being scores indicate the presence of ill-being, or negative wellbeing.

The resulting component scores were used as the dependent variables in an initial regression analysis model to account for possible covariates before running a second regression model to determine the relationship between wellbeing and arts engagement. The covariates were selected based on theories of how wellbeing is obtained and maintained. For example, wellbeing is viewed as a final outcome measure of social background, personality, social networks, and satisfaction (Wearing and Headey 1998; Diener 2009). Wellbeing is also influenced by the relationship of individuals to those around them, such as their geographical community, reflected through identity, cohesion, and belonging, as well as the positive aspects of social capital (Jermyn 2001; McQueen-Thomson and Ziguras 2002; Mills and Brown 2004).

The predictor variables entered into the model were gender (male; female), age in years (15 to 24; 25 to 54; 55 to 64; 65 and over), sub-region of residence (coastal; agricultural; mining/pastoral), and number of years resident in current shire (less than 2; 2 to 4; 5 to 9; 10 or more), and all the possible combinations of interaction effects between them. Relationships that were not significant were manually removed from the model using backward regression. Using Pillai's trace, selected for its robustness with uneven categories of data (Field, 2009), the model shows a significant effect on wellbeing for age, $V = 0.073$, $F(9,861) = 2.401$, $p = 0.011$, a significant two way interaction for gender and age, $V = 0.061$, $F(9,861) = 1.996$, $p = 0.037$, and a significant three-way interaction for gender, region of residence, and number of years resident in the current shire, $V = 0.074$, $F(12,861) = 1.819$, $p = 0.041$. Therefore, there was a significant difference in the wellbeing profile as measured by this survey for respondents across gender, age, region, and number of years in the present shire.

A MODEL FOR THE RELATIONSHIP BETWEEN WELLBEING AND ARTS ENGAGEMENT

Using the model for rural wellbeing to control for covariance, a second full factorial MANOVA was conducted using backward regression to examine the effect of passive engagement at visual arts and/or design venues and events, performing arts events, the reading of literature, and attendance at other non arts events, as well as active engagement in the form of participation in the arts, and other non-arts activities, as detailed in Table V. The final model output for the MANOVA, including the model design and multivariate tests, is shown in Table VI.

Table V Construction of the independent variables as per the survey tool.

Independent Variables	Participation in the last 12 months (yes/no)
Other non arts events	Movie cinema Amateur or professional sports event Racing event (e.g. horses, dogs or cars) Agricultural show, expo, trade fair or similar event
Visual arts and/or design venues/events	Art museum or gallery Art fair or festival Craft fair or festival Park, monument, buildings or neighbourhoods for their historic or design value
Performing Arts events	Jazz music Classical music (e.g. symphony, chamber or choral music) Musical stage play or operetta Nonmusical stage play Ballet Dance other than ballet
Read Literature	Plays Poetry Novels or short stories
Non–arts participation	Jogging, lift weights, walk, or other exercise program Sports activity, such as football, cricket, netball, basketball, tennis, etc. Camping, hiking, or canoeing Volunteer or charity work Gardening
Arts Participation	Visual art (e.g. sculpture, painting, drawing, etc.) Craft or handiwork (e.g. pottery, knitting, quilting, etc.) Manual arts (e.g. woodwork, metalwork, etc.) Photography or cinematography (i.e. making movies or videos) Creative writing such as stories, poems, or plays Music performance, rehearsal or composition (including singing) Theatre or drama performance/rehearsal Ballet performance, or rehearsal Dance other than ballet (e.g. folk, bellydance, contemporary, etc.)

Effect	Pillai's Trace	F	Hypothesis df	Error df	Sig.
Intercept	.006	.653a	3	309	0.582
ShireYrA * Region * Gender	.017	1.802a	3	309	0.147
AgeCat * Gender	.032	3.431a	3	309	0.017
Region * Gender	.018	1.839a	3	309	0.140
ShireYrA * Gender	.016	1.659a	3	309	0.176
AgeCat * Region	.002	.231a	3	309	0.875
ShireYrA * AgeCat	.021	2.174a	3	309	0.091
ShireYrA * Region	.018	1.892a	3	309	0.131
ShireYrA	.020	2.118a	3	309	0.098
AgeCat	.001	.130a	3	309	0.942
Region	.011	1.151a	3	309	0.329
Gender	.013	1.318a	3	309	0.269
A2Total	**.026**	**2.732a**	**3**	**309**	**0.044**
P1Total	**.034**	**3.593a**	**3**	**309**	**0.014**

a. Exact Statistic

Design: Intercept + [gender + region + age + years in present shire + region * years in present shire + gender * years in present shire + age * years in present shire + gender * region + region * age + gender * age + gender * region * years in present shire] + performing arts attendance + arts participation

Table VI Final model for the prediction of the wellbeing components from engagement using backward regression

Using Pillai's trace, selected for its robustness with uneven categories of data (Field, 2009), the model shows a significant effect for performing arts attendance V = 0.34, F(3,309) = 3.593, p = 0.014 and arts participation V = 0.026, F(3,309) = 2.732, p = 0.044 while controlling for the covariates of gender, age in years, sub-region of residence, and number of years resident in current shire. There was no significant interaction effect between any of the engagement variables used in the model, so they were therefore removed. There was also no significant difference between those who did or did not engage in visual arts and design events or venues, other non-arts events, the reading of literature, and non-arts participation, so these were also removed from the model.

The mean wellbeing component scores for those who did and did not attend any performing arts events in the last 12 months are shown in Figure II. Note that the following figures provide an indication and not an accurate representation of the nature of the relationship between the three components of wellbeing and arts engagement. Yet, there is clearly a higher mean score on all three components of wellbeing for attendees versus non-attendees. However, only mean ill-being was shown as significant for the post-hoc ANOVA for performing arts attendance, F(1,311) = 9.206, p = 0.003. For which the mean ill-being of performing arts attendees was higher, $\bar{x}$ = 0.113, SD = 0.979, n = 188, compared with non-attendees, $\bar{x}$ = -0.040, SD = 1.005, n = 526. Pair wise comparisons also reveal a significant difference between the mean ill-being scores for performing arts attendance, mean difference (0.123) = 0.372, p = 0.003.

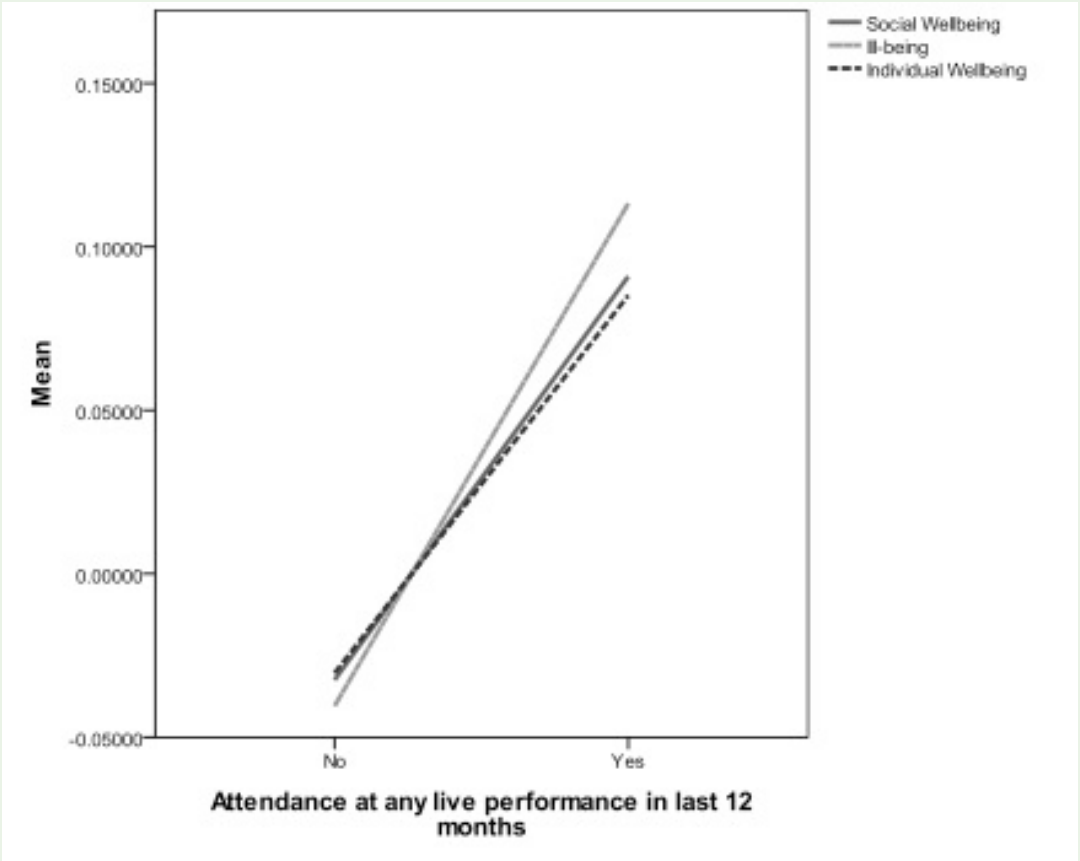


Figure II Mean wellbeing component scores for those who passively engaged in the performing arts in the last 12 months and those who did not.

Figure III reveals higher mean wellbeing scores across all three components for those who participated in the arts in the last 12 months and those who did not. Again, however, a post-hoc ANOVA for arts participation was significant only for ill-being, $F(1,311) = 6.376$, $p = 0.012$. With arts participants having higher average ill-being, $\bar{x} = 0.073$, SD = 0.967, n = 418, than non participants, $\bar{x} = -0.104$, SD = 1.037, n = 296. Pairwise comparisons further reveal a significant difference between mean ill-being scores for arts participation, mean difference (0.109) = 0.275, p = 0.012.

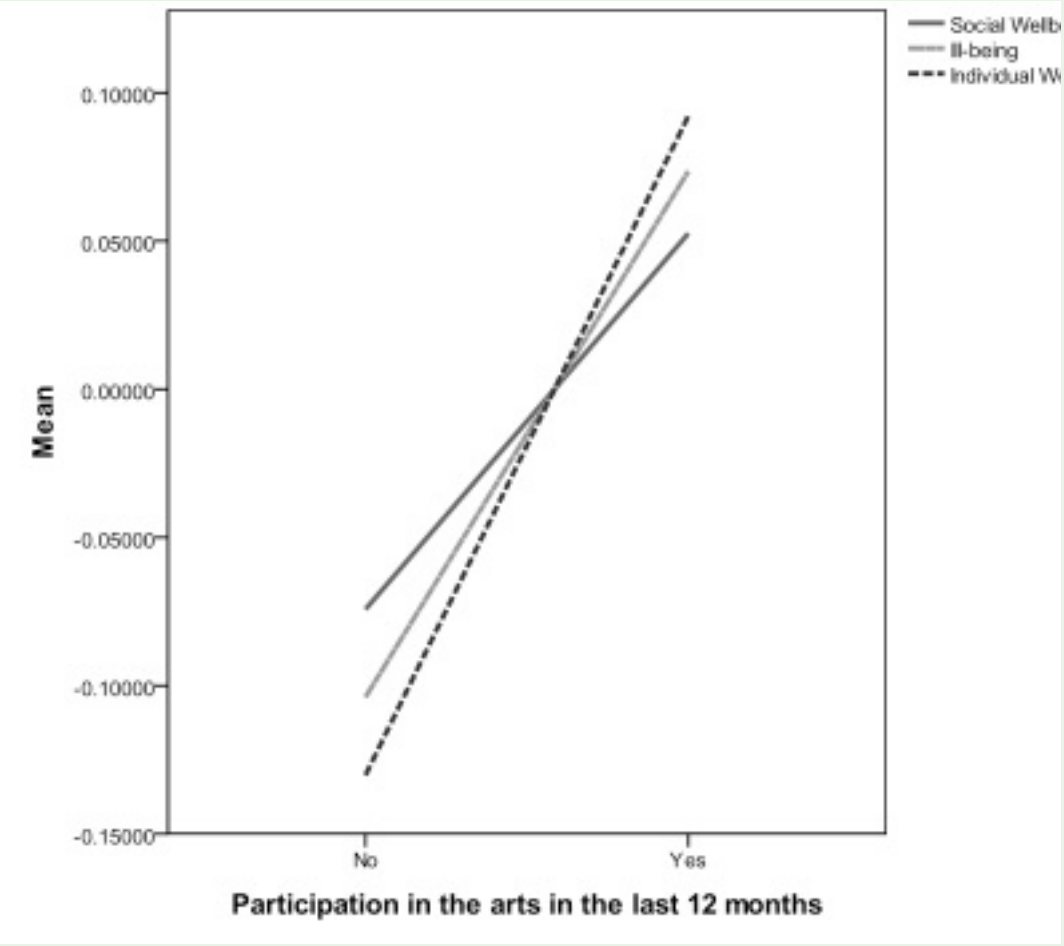


Figure III Mean wellbeing component scores for those who actively engaged in the arts in the last 12 months and those that did not.

Both arts participants and performing arts attendees had lower negative wellbeing than those who did not engage in these activities when the main effects of age, gender, place of residence, and years of residence (and the interaction effect between these variables) were accounted for as covariance. No significant effect on the positive wellbeing items of social wellbeing and individual wellbeing was found, though clearly, there is a trend represented within the figures for the direction of the potential for this relationship. It is also important to note the small scale of the data presented in Figures II and III, where average wellbeing scores range from -0.130 to 0.113, with a SD ranging from 0.869 to 1.094. However, they are still significant statistically, and this is probably due to the large number of cases within each of the groups.

DISCUSSION

The results lend statistical support to the notion that arts engagement has a positive influence on wellbeing. Specifically, that arts participation and performing arts attendance are associated with the absence, or a lower presence, of ill-being. For example, research within the field of arts therapy, including dance, drama, and music therapy, has shown strong evidence for the positive influence of engaging in the arts to assist in recovery, communication and understanding, and in the management of pain, stress, and other symptoms (Staricoff 2004; Argyle and Bolton 2005). The arts have also assisted in opening channels of communication between health professionals and their clients (Staricoff 2004; Macnaughton, White and Stacy 2005), as well as within disparate communities or between feuding families (Anwar McHenry 2009a). Within the Mid West region, engagement in the arts has also been shown to provide an outlet, relaxation and time out from the daily stressors, opportunities to network and make social connections, express and form identity, and develop sense of belonging (Anwar McHenry 2011a).

Commentators have often remarked that the benefits and outcomes of the arts are multi-faceted and too complex to be captured by standard means of evaluation (Matarasso 1997; McCarthy et al. 2004). While the nature of these relationships might be difficult to understand and evaluate, this does not prevent artists and artsworkers from taking advantage of this dynamic and complex set of interactions. The arts are often used to achieve community development and capacity building outcomes (Sixsmith and Kagan 2005) with or without the explicit knowledge of the participants involved (Anwar McHenry 2009a). This phenomenon works in a similar manner by which positive externalities are understood in economic theory (Gans et al. 2000) and are based on the same premise as diversionary tactics, which are used to address anti-social behaviour, crime, and other social problems (Masson and Prior 2008). Furthermore, achieving mastery in activities, such as the arts, sport, or vocational skills, while perhaps seemingly unimportant at the time, collectively strengthens resilience and improves self-esteem while exposing those engaged in the activities to role models and mentors (Sawyer and Kosky 1996). The benefits may not always be immediately apparent and will take time to become internalised in the participants (Belliveau 2005). As such, the benefits are not obvious among the myriad of other processes at play, nor are they always explicitly linked to arts engagement. Thus, using the arts in this way can be problematic when attempting to secure funding, governance, and community support for the arts and explains why the design of research and evaluation to support these assumptions has been challenging.

As a means for self-expression, the arts have a crucial role in self-confidence, culture, and identity, and thus, sense of place. This is of particular significance for Australian Indigenous people whose identity, sense of belonging, and culture is intimately linked with an understanding of sense of place (Moreton-Robinson 2003). Culture, and therefore the arts as an exploration and expression of culture, is an important outcome in its own right. As Belfiore (2002) states, 'culture is not a means to an end. It is an end in itself'. Furthermore, McCarthy and colleagues (2004) suggest that the arts are ultimately about the intrinsic value derived from the process of artistic expression and the aesthetic experience derived from that expression. The quality of that expression can instil a sense of achievement and pride, and strengthen

individual identity as an artist (Sixsmith and Kagan 2005). For example, for a group of Aboriginal women in a Mid West agricultural town, a sense of achievement coupled with a new found status and recognition among the broader community as artists preparing for their first exhibition was an unexpected outcome that began as a workshop on domestic violence (Anwar McHenry 2009a). Thus, use of the visual arts developed beyond its initial use as a workshop tool for social change to the production of art for its own sake.

Benefits from arts engagement are not only limited to participation-based activity. Touring theatre productions and music concerts also provided ample social and networking opportunities and were viewed as essential for maintaining the morale of the local community. Public displays and celebrations involving the arts can be used to strengthen community identity and social cohesion, while also providing opportunities for income generation and tourism (Shaw 2003; Mulligan et al. 2006; Brennan-Horley, Connell and Gibson 2007). Collective social identity is important for individual place identity (Pretty, Chipuer and Bramston 2003) and as such, the production of a public art can be considered a public good for the benefits are not restricted only to those involved in its production.

RESEARCH LIMITATIONS

The final model derived within this research is highly complex and susceptible to large error values on account of the great variability among the respondents to the household survey. This could be attributable to a number of factors. For example, despite wider recognition of the connection between engagement in cultural activity and wellbeing (White 2009), researchers remain sceptical about how such impacts can be objectively measured given the multi-dimensional nature of the concept of wellbeing, and the multitude of factors that are thought to influence it (Matarasso 1997; Fisher 2002; McCarthy et al. 2004). Determining a definition of the arts has been contested for centuries (Dissanayake 1988; Davies et al. 2012) and engagement in the arts might not yield measurable benefits immediately following engagement (Belliveau 2005) and yet, engagement must be ongoing to maintain these benefits (Johansson, Konlaan and Bygren 2001). Finally, in any quantitative analysis the difficulty lies in trying to separate the effects of intercorrelated variables and the determination of a direct causal link, which requires an experimental model and longitudinal data (Diener 2009). Nonetheless, quantitative assessment of arts impact is possible, though obvious adjustments to refine results are needed in future research.

CONCLUSION

The arts have long been thought of as a vehicle for building and maintaining individual and social wellbeing, because of their role in providing entertainment, relaxation, social, and economic opportunities, and a sense of belonging, identity, and place (Kong 1995; Gibson 2002; Brennan-Horley, Connell and Gibson 2007; Bunting 2007; Cherbo 2007; Curtis 2010). The arts are viewed as a way of creating space for desired outcomes to be achieved and can be utilised in a number of ways to achieve

a myriad of outcomes for both individuals and society at large. Arts engagement benefits are attributed both to the nature of the art form itself and the processes and context in which that engagement takes place, and while outcomes can accumulate beyond the life of the project, engagement in the arts would need to be maintained for this to occur (Johansson, Konlaan and Bygren 2001; Belliveau 2005).

The regression model lends support to the complexity of the role of the arts in fostering and maintaining the wellbeing of rural communities in the case-study region. Statistical analysis confirmed that those who actively engage in the arts and those who attend performing arts events had higher average wellbeing scores than those who do not. Specifically, when controlling for the covariate effects of length of residence, age, gender, and region of residence, performing arts attendees had higher average wellbeing than those who did not attend, and those who actively engaged in the arts had higher average wellbeing than those who did not actively engage in the arts. This research demonstrated that this analysis is a viable means for assessing the relationship of selected variables with measures of wellbeing. However, further research is required to refine the specific variables, survey tools, and methods of data collection. The more these relationships are understood, the more effective health promotion interventions and regional development policy will be at enabling communities to determine customised solutions for their own health and wellbeing.

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