

SUBJECTIVE WELLBEING AND THE CITY

Philip S. Morrison¹

Professor of Human Geography
School of Geography, Environment and Earth Sciences
Victoria University of Wellington

Abstract

The Quality of Life surveys administered biennially in New Zealand provide an opportunity to estimate the contribution different places make to our happiness, satisfaction and quality of life. While the greater part of the variance in our responses to *subjective* wellbeing questions is typically due to our health, age, employment status, income, family and household relationships, the particular city in which we live may also contribute to our wellbeing. How we measure that contribution, its magnitude and its source, is of considerable interest both conceptually and to local authorities seeking to improve the social wellbeing of their residents. This paper presents the results of an ordered probit regression model of the distribution of respondents over levels of happiness, satisfaction and quality of life in 2004. Even after controlling for characteristics of individuals known to influence their ratings of their own wellbeing, there remain marked place effects, which suggest characteristics of cities may also have an independent influence on wellbeing. Discerning the reasons for these *place* differences requires further work both conceptually and empirically. In the meantime, these initial results do raise important questions about why we choose to live where we do, the scope of that choice and its consequences for our wellbeing.

1 Acknowledgements

I would like to thank the Quality of Life Team project sponsor, Jim Harland, Chief Executive, Dunedin City Council and Kath Jamieson of the Christchurch City Council for supplying the 2004 survey data. Facilitating the project were members of the MSD team in Wellington: Peter Salter, Conal Smith and Julia Cronin. Tania Boyer and Phaik See of Gavitas were also very willing to assist in correspondence. Several people made valuable comments following the presentation of this paper at the Social Policy, Research and Evaluation Conference held in Wellington in April 2007: David Thorns and Les Oxley (Canterbury University), and Jonathan Wood, Conal Smith and John Jensen (Ministry of Social Development). Jacques Poot (Waikato University) later made a number of especially helpful comments and suggestions, a number of which appear in this paper. Although received after completing this paper, I am indebted to Geoff Barnes, Senior Policy Analyst, Public Health National Health Committee, for drawing my attention to the U.K. Sustainability Development Commission site which carries and reviews much of the wellbeing and related sustainable development literature: www.sd-commission.org.uk/pages/wellbeingcommonapproach.html. The responsibility for any errors in the paper are mine.

Correspondence

Philip S. Morrison, School of Geography, Environment and Earth Sciences, Victoria University of Wellington, PO Box 600, Wellington. Email: Philip.morrison@vuw.ac.nz

INTRODUCTION

One of the distinct changes in the way we think about economic and social policy in New Zealand is our greater contemporary awareness of our geography, of the fact that we each live our lives in often quite different spatial contexts, and that these characteristics of place can shape and condition the way we conduct and feel about our lives. Not only are we now more aware of the uniqueness of place, but ensuring that the settlements in which we live contribute positively to our wellbeing is now mandated in legislation through the Local Government Act (2002) and bolstered by the recent introduction of the health impact assessment framework (HIA).

Our attention to local wellbeing comes on the heels of a range of indicator-monitoring reports covering other social, economic, environmental and cultural conditions in New Zealand. These include *Monitoring Progress towards a Sustainable New Zealand* (Statistics New Zealand 2002)² produced by the Sustainable Development Indicators Working Group, the ongoing Living Standards indicator work undertaken by the Centre for Social Research and Evaluation in the Ministry of Social Development,³ notably the *New Zealand Living Standards 2004* (Jensen et al. 2006), and the *Social Report* (Ministry of Social Development 2006). Associated with this body of work on our social wellbeing are a variety of protocols and frameworks.⁴

The Quality of Life project, whose 2004 data we use here, provides complementary information on a range of conditions in a number of individual cities.⁵ The 1999 National Indicators project was initiated by the councils of the six largest cities in New Zealand – Auckland, Waitakere, North Shore, Manukau, Wellington and Christchurch. Their aim was to measure quality of life in each of these council jurisdictions through the use of key indicators. These included health, the built environment, sense of belonging, community cohesion, community safety, housing, education, employment and the economy, democracy, and participation in community affairs. Along with responses on these topics, the survey also collected data on the demographics and socio-economic characteristics of respondents, as well as recording their suburban residential location.

2 See www.stats.govt.nz/analytical-reports/monitoring-progress/default.htm. Also see the review of this report www.stats.govt.nz/NR/rdonlyres/5F36E628-CF68-4DEF-A310-913B897925D6/0/SustainableDevelopmentReportReview.pdf.

3 www.msd.govt.nz/work-areas/social-research/.

4 For a list of urban design protocols see www.mfe.govt.nz/publications/urban/index.html. For a range of other urban initiatives see www.mfe.govt.nz/issues/urban/initiatives/index.html.

5 The Quality of Life project also collects and reports on secondary data from a wide range of sources including central government agencies and councils. The survey is therefore just one source of data for indicators in the wider project.

The number of settlements was expanded to 12 in 2004 to include the districts of Rodney, Tauranga, and the cities of Hamilton, Porirua, Lower Hutt and Dunedin. To meet the needs of the Ministry of Social Development with respect to their Social Report, a further sample of 1,500 interviews were conducted with those living outside the 12 cities/districts, and are referred to as the Rest of New Zealand.⁶

The focus of the Quality of Life survey on the role of place in *wellbeing* is an overdue complement to the extensive work undertaken on the *economic* contributions made by different regions.⁷ While we have long considered the contribution of particular regions to our national growth, we have paid only scant attention to measuring the contribution these same places might make to our wellbeing as we choose to represent it. The implicit assumption of course is that the two go hand in hand. The fact that they simply do not (as the time series analysis for several countries including Japan and the United States show) has been one of the primary motivators for the rapid expansion of international work on subjective wellbeing over the last three decades (the seminal papers here are Easterlin 1973, Easterlin 1974).⁸

This study tests an implicit assumption in the dominant aspatial thinking about wellbeing, namely that once we control for personal characteristics, places all yield the same level of subjective wellbeing to their residents. We question this assumption empirically by estimating a multivariate model of subjective wellbeing in which responses to three different quality of life questions – on happiness, satisfaction and quality of life – are regressed on the fixed effects of cities after controlling for a range of characteristics of the respondents known to affect subjects' wellbeing.⁹ The purpose is not only to identify the presence of settlement effects, but also to see if we can estimate the magnitude of their relative influence.¹⁰

6 See www.bigcities.govt.nz. This URL contains links to the PDFs of the 2001 and 2003 Quality of Life Reports. The first report in 2001 included key urban issues and findings from monitoring quality of life in Auckland, Christchurch, Manukau, North Shore, Waitakere and Wellington – the cities of New Zealand with a population size of over 150,000. Results of the 2003, 2004 and 2006 surveys may be found on www.bigcities.govt.nz/surveys.htm. The 2001 report is on www.bigcities.govt.nz/2001report.htm.

7 See for example the review of statistical needs of local government and in particular the Regional Economic Indicator series, www2.stats.govt.nz/domino/external/web/prod_serv.nsf/092edeb76ed5aa6bcc256afe0081d84e/a159380550cf599ecc256c8a006e6d09?OpenDocument#REI.

8 For an overview of the central thesis and its wider implications see Lane (2000).

9 The subjective wellbeing measures used here are distinct from the *social* wellbeing measures constructed from a range of sources for the *Social Report* (Ministry of Social Development 2006), which are distinct again from the living standards index (ELSI) created by the Ministry's Centre for Social Research and Evaluation (Jensen et al. 2006). Combinations of these different measures have been used for specific surveys, such as those constructed to measure the living standards of older people (Fergusson et al. 2001) or adapted for specific applications such as Cunningham et al. (2002).

10 We use the term settlement and city interchangeably in recognition that not all places now covered by the survey are actually cities, notwithstanding the history of the survey as a "Big Cities" project.

The paper begins with a general background to subjective wellbeing, its relationship to place and the possible implications such measures might have for the planning and management of our primary settlements. We also refer to the growing international interest in the way in which subjective wellbeing varies geographically. The survey instrument is described and the variables used in the regression are identified. The results are presented graphically and this is followed by a discussion of the next steps we want to take.

SUBJECTIVE WELLBEING AND PLACE

The policy potential of measures of subjective wellbeing has been highlighted by the recent work on the economics of happiness (Easterlin 2002, Easterlin 2006, Frey and Stutzer 2002a, Layard 2005, Bruni and Porta 2006, Lane 2000). Building on several decades of earlier work by psychologists (e.g. Kahneman et al. 1999) and epidemiologists (e.g. Wilkinson 2005), the major contribution by these economists has been to demonstrate the connection between external events (or shocks, in economic parlance), individuals and changes in subjective wellbeing.¹¹ Their work has opened the door for the consideration of a wide range of “external” events on wellbeing including the impact of and changes to the local physical and social environments of cities.¹²

Much of the early research on subjective wellbeing involved comparing the quality of life of countries using available development indicators such as GDP (Veenhoven 1993). As countries develop their own measures of subjective wellbeing, we are seeing a further application of these surveys to sub-national areas, from regions through cities to neighbourhoods (Veenhoven 2002). At the same time, while we now have an extensive corpus of data research on subjective wellbeing within and between countries, we still know little about how and why subjective measures of wellbeing vary *within* countries either conceptually or empirically. The big gap lies within understanding of the relationship between subjective wellbeing and *place* within countries. At present, we lack an understanding of the *geography* of our subjective wellbeing.

11 See for example Oswald (2003).

12 There is no suggestion here that inquiry into the impact of place on the natural or built environment on wellbeing begins here. There is a whole history of environmental sociology, environmental psychology and economics not to mention urban design which deals with these issues. Rather, what the “happiness economists” have done is open up for wider application the recent data that is becoming available world wide on subjective wellbeing which, together with new or at least more accessible statistical methodologies, is allowing many classic issues such as the impact of place on wellbeing to be revisited and reviewed through a different lens within a contemporary policy setting that assigns greater local responsibility for its monitoring. In terms of contemporary policy thinking there is a consensus developing that, “the subjective wellbeing account offers a promising way of conceptualising wellbeing in public policy generally and sustainable development in particular” (Dolan et al. 2006a:4).

Subjective Wellbeing

Subjective wellbeing refers to those measures that tap the feelings of the subjects involved. Subjective wellbeing is not a single unitary construct; people can have high levels of wellbeing if they feel satisfied with the conditions of their lives (*cognitive* wellbeing), and/or if they experience frequent pleasant emotions (*affective* wellbeing) (Andrews and Withey 1976, Lucas et al. 1996), and if they feel they are improving their quality of life (what I am calling here *achievement* wellbeing).¹³

The cognitive, affective and achievement dimensions of wellbeing are embodied in the following three questions asked in the 2004 Quality of Life survey, and it is the responses to these three questions which we analyse in the pages to follow.¹⁴

Q13. In general, how happy or unhappy would you say you are?

Very happy, happy, neutral, unhappy, very unhappy [Don't know]

Q14. Taking everything into account, how satisfied or dissatisfied are you with your life in general these days?

Very satisfied, satisfied, neutral, dissatisfied, very dissatisfied [Don't know]

Q34. Would you say that overall your quality of life is:

Extremely good, good, neutral, poor, extremely poor [Don't know]

Questions on subjective wellbeing have been collected since the end of the second world war in the United States and since the early 1990s in Europe (Frey and Stutzer 2002b). Only in recent years, however, have academics had the confidence in the robustness of these responses to use them widely as dependent variables in multivariate modelling contexts.¹⁵

In its simplest form the argument is that, "Happiness is feeling good, and misery is feeling bad", as Layard put it, for "at every moment we feel somewhere between wonderful and half-dead, and that feeling can now be measured by asking people or by monitoring their brains" (Layard 2005). Indeed, the two forms of measurement yield very similar results as do third-party assessments of happiness levels.¹⁶ After many

13 Several reports to DEFRA now invoke the fourfold classification of personal wellbeing measures: preference satisfaction (based on fulfilling our desires), flourishing accounts (based on the satisfaction of certain psychological needs), hedonic accounts (based on how we feel), and evaluative accounts (based on how we think and feel) (Dolan et al. et al. 2006b).

14 Level of stress and its persistence are an additional quality of life measures included in the survey. However we have taken the view that stress is sufficiently different to be treated separately from the three being used here. Support for this approach may be found in Headey et al. (2006:88–90).

15 For a valuable overview see Diener et al. (1999). DEFRA's own commissioned reviews cover over 150 papers, www.sd-commission.org.uk/pages/wellbeingacommonapproach.html.

16 Introductions to this literature may be found in Layard (2005:Chapter 2) and Frey and Stutzer (2002a:Chapter 1).

years of debate, it is now generally accepted that responses to questions on subjective wellbeing are reliable and relatively robust.¹⁷ If modelled appropriately responses to these questions *can* not only identify consistent correlations with respondent attributes like gender, age, income, education etc, but also yield additional information on external as well as induced conditions such as unemployment (Winkelmann and Winkelmann 1998).¹⁸ What has yet to be embraced is the possibility that subjective wellbeing may also be used to measure the effects of the local context in which people live their lives, in other words, of place.

IS THERE A GEOGRAPHY TO SUBJECTIVE WELLBEING?

I approach the variation in subjective wellbeing as a human geographer rather than psychologist or economist. Like other social sciences, *human* geography is also concerned with social wellbeing but in the context of place, and that is the uniqueness of our discipline. Ironically, and despite our focus on place, very few human geographers have actually explored the possibility that *subjective* wellbeing might also have its own geography.¹⁹ As geographers, we have yet to write the geography of happiness.

When geographers have studied social wellbeing they have, for the most part, used external indicators rather than people's own subjective take on their condition. Threads in the use of external measures can be traced through the early work of the British geographer David Smith (Smith 1973) and the American geographer Paul Knox (Knox 1975). Many of the contemporary geographically based studies of poverty were inspired by these early pioneers and most of the policy issues identified from the spatial variations in these external measures of wellbeing continue to be debated today (e.g. Partridge and Rickman 2006, Dorling et al. 2000, Pacione 1997).

17 A recent confirmation of these general points as they relate to Australian data may be found as chapter 4 under the heading "Wellbeing: life satisfaction and stress – can they be measured in surveys" in Headey et al. (2006).

18 A slightly different take on this, focusing on the wellbeing consequences of living in households with jobless members has recently been undertaken using the first three waves from the Household, Income and Labour Dynamics in Australia (HILDA) survey (Scutella and Wooden 2006).

19 There are however a growing body of cultural geographers who are exploring the role of emotion and its relationship to place. Precursors include Relph (1976). For a useful introduction to the broad ways in which place is interpreted within the discipline see Cresswell (2004). The only modelling work being carried out by geographers that I am aware of is at Leeds (Ballas and Dorling 2006). For a recent analysis of place attachment in New Zealand however see Schroder (2005). There has also been a geographic application of the first wave of the HILDA survey to the possible geographic variation in mental health (Butterworth et al. 2006). These applications remain rather isolated and little systematic knowledge has been built up in a way that is as yet useful for policy.

The quest to link social wellbeing to place is not new of course and nor is it confined to the work of geographers. One can trace connections from Booth's celebrated work on poverty in London in the early 1900s (Booth 1903, Dorling et al. 2000) through to contemporary work now being undertaken by epidemiologists within the relatively new field of social epidemiology (Berkman and Kawachi 2000).²⁰

In summary, we are exploring the convergence of two perspectives here. On one hand, we are including subjective measures (asking people themselves how they feel) in overall evaluations of wellbeing rather than relying solely on objective or external indicators. At the same time, we are also suggesting that the people's own evaluation of their subjective wellbeing might reflect the characteristics of the local settlements in which they live. The instrument we use to explore these questions is the Quality of Life survey.

THE QUALITY OF LIFE SURVEYS

Under the 2002 Local Government Act, local councils are responsible for identifying *and* addressing social wellbeing in their communities. Territorial Local Authorities (TLAs) have a statutory responsibility to measure and monitor community reaction to local body expenditure. Although the origins of the Quality of Life project go back to 1999, the explicit responsibilities set out in 2002 have encouraged local councils to devote additional resources to the design of instruments that can measure quality of life in their locality.

The two most recent surveys were undertaken in 2004 and 2006.²¹ In each case, survey questions were administered by phone to a random sample of individuals.²² For the 2004 survey we use here, the Quality of Life Team contracted Gravitas Research and Strategy and Consumer Link in Auckland to undertake the telephone interviews using the Computer-Assisted Telephone Interviewing (CATI).²³ Following a pilot study of 40 interviews, a random sample was drawn from Telecom New Zealand's directory of current phone numbers resulting in a population confined to those listed on live, non-confidentialised, residential telephone numbers.

20 The authors define social epidemiology as, "the branch of epidemiology that considers how social interactions and collective human activities affect health. In other words, social epidemiology is about how a society's innumerable social arrangements, past and present, yield differential exposures and thus differences in health outcomes among the persons who comprise the population" (Berkman and Kawachi 2000).

21 The 2006 survey is currently being analysed and will appear later this year (Morrison forthcoming).

22 Each city undertook its own survey in 1999 and 2000 but different methodologies, sample sizes and questionnaires made comparisons of results rather difficult and it was decided in 2002 to administer a single instrument to each of the participating urban areas. The survey was repeated again in 2004 and 2006 with only minor changes to the questions and coding.

23 Full details of the method are documented in Gravitas Research and Strategy Limited (2005).

In order to ensure a dataset of sufficient size for regional and city analysis, 500 interviews were conducted in each of the 12 cities/districts.²⁴ Households were telephoned at random from the live numbers provided but the interview was only advanced where the person in the household was 15 years or over at their next birthday.²⁵

In order that the sample reflect the relative population size and composition of the 12 settlements, population quotas were set by gender, age (15–24, 25–49, 50–64 and 65 and over), ethnicity (New Zealand European, Māori, Pacific Peoples, Asian/Indian, Other) within each city/district and within the rest of New Zealand.²⁶ The setting of these quotas was based on population data from the 2001 census. It is these city weights that are used to weight the responses in this paper.²⁷

Despite the care and attention paid to the delivery of this instrument, the final response rate for the 2004 survey was only 22.4% and it is acknowledged that the sample under-represents those living alone and slightly over-represents those living in a household with four or more people. Renters are also under-represented as are those in the lowest personal income brackets (\$30,000 or less) and those with the lowest household incomes. By contrast those in households reporting income of \$70,000 or more are over-represented (Gravitas Research and Strategy Limited 2005).²⁸

Subjective Wellbeing Responses

Respondents to the 2004 Quality of Life survey were asked to locate themselves on a five-point scale for each of the three subjective wellbeing dimensions given above: Happiness, Satisfaction with life and Quality of life.²⁹ When applied in countries like New Zealand the distribution of answers to such questions typically bunch up near the “happy” end of the scale as shown in Figure 1.

24 The maximum margin of error on a sample size of 500 is $\pm 4.4\%$ at the 95% confidence level.

25 If that person was not available, a suitable time was made to re-contact each household up to a maximum of 12 times over the course of the fieldwork period. Only after the 12th unsuccessful call was the household replaced with another. No substitution or re-selection was made within the household. Only one interview was conducted per household. Details of refusals and reasons why are reported in appendix five of the Team Report.

26 Not all respondents know what ward they are in and therefore street address (also accessed from Telecom) was used to construct GIS positions from which the ward was then identified. These GIS coordinates were not made available for use in the analysis.

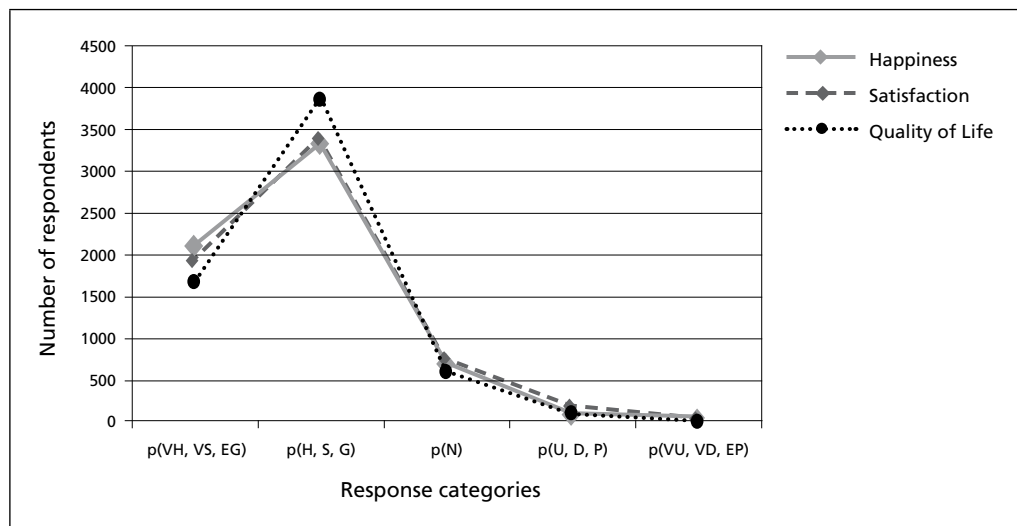
27 Christchurch City Council commissioned an additional 300 interviews with Māori, Pacific and Asian residents. This gave a total (post-weighted) sample size for the 12 cities/districts of 6,300 and is referred to as the Total Twelve Cities in the report (Gravitas Research and Strategy Limited 2005).

28 No incomplete interviews are present in the final data set and all respondent identifiers have been removed. However “don’t knows” are still present in the file.

29 Although the responses are coded in consecutive integers, 1 through 5, there is no suggestion here that the distance between each response is the same, that the “gap” between say Very Unhappy and Unhappy is the same as between Happy and Very Happy. It is only the ordering that matters and the ordered probit regression models are designed to be applied under these assumptions. There are a range of scales used in quality of life surveys, although there appears to be some international convergence on the 5-point or 7-point scale (Andrews and Withey 1976).

In the 2004 survey, over a third of those responding to the first question declared they were “Very” Happy (VH) and a further half that they were simply “Happy” (H). The remaining 12% or so were either Neutral (N), Unhappy (U) or Very Unhappy (VU). In a scale from 1–5 (1 being Very Happy) the mean score was 1.82.³⁰ The New Zealand responses to this question are almost exactly the same as those reported for the United States and Britain (Layard 2005).

Figure 1 Responses to Happiness, Satisfaction and Quality of Life Questions by Category



Source: New Zealand Quality of Life Survey 2004

In this 2004 Quality of Life survey the responses to each of the questions follow a similar distribution, however in bivariate terms they are not highly correlated; a “positive” score on one measure does not necessarily correlate with a positive score on another as Table 1 shows. Apparently some people can be very “happy” emotionally but very dissatisfied with their “quality of life”.³¹ A similar covariation is apparent in

30 To illustrate the application of the city weights, we replicated Figure 6.1 of the Team report, “Emotional Wellbeing – by location”. The unweighted results for the successive categories of Happiness including the “don’t knows” were as follows: 2,250, 3,428, 667, 96, 58 and 18 for a total of 6,517. By contrast the weighted frequencies were: 2,106.6, 3,328.3, 699.4, 94.7, 57.5, and 13.1 “don’t knows”, for a total of 6,300. Although there is a close relationship between the weighted and unweighted series in this illustration, there is greater instability among those ‘cities’ which are more highly weighted.

31 Another way of assessing the association between these three quality of life variables is via the Pearson correlation coefficient. The correlation between Happiness and Satisfaction is 0.55, the correlation between Satisfaction and Overall Quality of Life and Happiness is lower at 0.47 and the correlation between Happiness and Overall Quality of Life are even weaker at 0.39. This ordering is consistent with the difference in the chi-square statistics in the three possible cross-tabulations.

the other two possible cross tabulations, reinforcing the observation that each of these questions is tapping a different dimension of subjective wellbeing: cognitive, affective and achievement.³²

Table 1 Pairwise Cross-Tabulation of Responses to the Happiness and Satisfaction with Life Variables.

Happiness	Satisfaction with life				
	VS	S	N	D	VD
VH	1389	659	45	6.6	6
H	485	2438	322	67	6
N	20	256	350	69	4
U	5	16	27	39	8
VU	24	12	7	3.8	10

Source: New Zealand Quality of Life Survey 2004

To summarise, the data set for this study are the responses from the 2004 Quality of Life survey as administered to sampled respondents in 12 settlements throughout New Zealand.³³ Responses to the three subjective wellbeing questions constitute the dependent variables in the model below and while they share similar univariate distributions (Figure 1), they covary to a limited degree only (Table 1). Our wish is to account for their individual distributions and we do so by employing an ordered probit regression model.

The Model

The subjective wellbeing measures described above are ordinal variables meaning they can be rank ordered without implying specific distances between categories. In the case of Question 13 for example the implicit ordering is: Very Happy > Happy > Neutral > Unhappy > Very Unhappy, but we have no basis for inferring that the distance between say Very Happy and Happy is the same as between Unhappy and Very Unhappy.

In this particular study these categories have been coded in the survey as 1 (VH) through 5 (VU) so the “positive” relationship which typically occurs between happiness

³² The fact that these responses are linked in some degree opens up additional possibilities however. In this paper we estimate models for each of these responses independently, but because the answers are linked for individuals there may be efficiency gains in estimating these equations jointly, especially if there are differences in explanatory variables across equations. Such joint estimation of ordered probit models has yet to be investigated, but I am indebted to Jacques Poot (Waikato University) for drawing my attention to this possibility.

³³ Responses by subjects living outside these 12 settlements will be reported elsewhere in due course.

and say income is actually *estimated* as a negative relationship, a feature which needs to be born in mind in reading the regression results below.³⁴

There have been several statistical models proposed to deal with ordered dependent variables (see for example the discussion in Hosmer and Lemeshow 1989). We have invoked the latent variable approach (McKelvey and Zovoina 1975).³⁵ In the applications to follow, we focus on the significance and magnitude of the fitted coefficients but present the results in terms of the estimated *probabilities* (of different levels of Happiness for example) which we post-estimated from the fitted model. Our first application to the Quality of Life data is designed to allow us to explore the role of place indicators alone.

Place Effects

As geographers our primary interest in the 2004 Quality of Life survey has been in the role that place might have played in respondents' evaluation of their own subjective wellbeing. The question is whether people feel differently about their lives depending on *where* they live (other things being equal). At a personal level, the answer may seem obvious – of course place is important and even if the ideal location cannot be settled immediately, over time internal migration will remove the most persistent differences as we move to those places we think will maximise our wellbeing.

What we do not yet know is how *much* an effect place has on respondents subjective wellbeing either absolutely or relative to the internal or personal factors (such as age, health etc). Nor as yet do we know which aspects of place are important. Our first task is simply to ascertain whether *place effects* we can uncover statistically could have occurred simply by chance.

There are 12 locations identified in this study. In terms of population, they are dominated by the four large cities in the Auckland region, including the largest, Auckland City (approximately 386,196 at the time of the 2004 survey), Manukau City (306,082), North Shore City (195,213) and Waitakere City (177,597), together with Rodney District (82,870).³⁶

34 Two adjustments to this scale have been made in the 2006 survey. The “neutral” label has been replaced by “neither happy nor unhappy” etc, and the coding has been reversed so Very Happy is coded 5 and Very Unhappy coded 1. The original 2004 codings have been retained for this paper but will be made consistent with 2006 in a forthcoming paper comparing the results from the two surveys (Morrison 2007).

35 The application of the ordered probit has numerous precedents the literature, e.g. Scutella and Wooden (2006). As others have found however, rerunning the models as ordered logistic regression produces essentially the same results. The coefficients differ by a scalar but the post-estimated probabilities are the same.

36 The 2004 survey was administered over the last six months of 2004, midway between the March 2001 and March 2006 census therefore we have simply reported the average of the two census populations here.

The next largest clustering are the three cities in the Wellington urban area, Wellington City (171,646), Lower Hutt (96,588) and the smallest in the set, Porirua City (47,958). The only two other places in the North Island are Hamilton City (122,085) and Tauranga District (97,269). The South Island cities of Christchurch City (332,329) and Dunedin City (116,512) make up the 12 currently covered by the survey.

Our modelling of the survey responses begins with the creation of 11 indicators, (or dummy) variables from which to estimate the fixed effects of place. The 12th, Auckland City, as the largest is set as the base. Within each regression the resulting coefficients express the degree to which the latent variable pertaining to the sampled residents of a given place will differ from respondents living in Auckland City.³⁷ If the local authority in which subjects reside affects their wellbeing to the same degree in all places, then none of the estimated coefficients would be statistically different from zero and there would be a basis for concluding that place of residence is related to declared happiness, satisfaction or quality of life. Such is our null hypothesis; our alternative hypothesis, is that collectively the coefficients will *exceed* zero and their variation from Auckland City will constitute our starting point for inferring geographic influences on subjective wellbeing.

The range of probabilities for these estimated place effects is considerable, from a probability of being Very Happy of 0.29 and 0.30 in the case of Auckland and Manukau City respectively through to 0.44 and 0.39 for Rodney and Tauranga. A probability difference of 0.15 therefore separates the estimates for the cities with the highest and lowest place effects. Putting it another way, if all cities had a population of 100,000 people (over 15 years old), the one ordered last in terms of the probability of respondents being Very Happy will have 15,140 fewer people indicating they were Very Happy ($0.1514 \times 100,000$), an additional 1,150 responding as Unhappy and an additional 840 indicating they were Very Unhappy. By any measure of wellbeing, these differences are substantial.

Such differences in Happiness levels are driven primarily by the propensity of respondents to indicate they are either Very Happy or simply Happy, (recall Figure 1). The use of Very Happy as an overall guide to happiness levels is supported by the fact that all four of the Happiness categories rise as the probability of being Very Happy falls. Given the pejorative way in which unhappiness is often interpreted in western societies – as an indication of personal or individual failure – it is likely that respondents will overstate their level of happiness much as respondents do with other status

37 A formal treatment of the equation and estimates together with technical issues surrounding the model and its application to this 2004 survey are covered in the working paper Morrison (2007), available from the author's website www.vuw.ac.nz/geo/people/philip-morrison/index.html and from the Economic Geography and Social Inequality research cluster site, www.vuw.ac.nz/geo/research/economic-geography-and-social-inequality/; see the project, Social Wellbeing and the City.

related scales (see Marmot 2005, Suh 2000, Zamagni 2005). It is for this reason that the difference between Very Happy and Happy is likely to take on greater significance as a general discriminator among the population.³⁸

In summary, in the simplest of models, in which subjective wellbeing is regressed on place indicators only, Happiness appears to invoke stronger place effects than Satisfaction or Quality of Life. The two districts, Rodney and Tauranga, rank first and second on all three dimensions and together with Wellington City are the local authorities most different from their Auckland City counterparts. Manukau remains the closest to Auckland throughout.³⁹

What we have established so far is that, statistically speaking, subjective wellbeing is sensitive to the place of residence. What we do not know however is how *much* of this sensitivity is actually reflecting the differences between places and how much it is merely transferring to place the different attributes of the respondents who live there: their age, income and health for example, all of which are known to have quite strong and predictable correlations with subjective wellbeing. It is to assessing the effect of such controls on place effects that we now turn.

Controls on Place Effects

Table 2 lists the independent variables selected as controls. The leftmost column indicates the number of the question in the administered questionnaire (D refers to demographic), followed by the variable name, the question itself and the categories present in the questionnaire. The category set up as the base for each variable is given in the last column.⁴⁰

38 In the technical report we remodel the happiness function as a logistic regression in which Very Happy = 1 vs Other categories = 0 which also gives us access to a wider range of diagnostics, see Morrison (2007).

39 With the exception of Quality of Life where Hamilton most closely approximates Auckland's position.

40 The number of "don't knows" and "refused" were relatively few and tests with and without them present in the base yielded no important differences. Therefore in order to preserve numbers in the multivariate model these "non responses" were included in the base in each case.

Table 2 Explanatory Variables from the Quality of Life Survey, 2004

Question number	Variable name	Question	#: Categories and labels [excluding don't knows, refused, etc.]	Base
Q2	Gender	Sex	2: (0) Male (1) Female	1: Male
Q3	Age	Age category	4: (1) 15-24 years (2) 25-49 years (3) 50-64 years (4) 65+	2: 25-49 years
Q4	Ethnicity	Ethnicity	5: (1) NZ European, (2) Māori, (3) Pacific Islander, (4) Asian/Indian, (5) Other	1: NZ European
Q5	Health	In general would you say that your health was:	5: (1) Excellent, (2) Very Good, (3) Good, (4) Fair, (5) Poor	3: Good
D4	Personal income	Annual personal income before tax	7: (1) <\$10k, (2) \$10-20, (3) \$20-30, (4) \$30-50, (5) \$50-70, (6) \$70-100, (7) \$100+	2: \$10-20
D6a	Employment status	Which of the following best describes your highest educational qualification	7: (1) In paid employment, (2) student, (3) retired, (4) unemployed and looking for work, (5) unemployed and not looking for work, (6) home responsibilities/full-time parent, (7) disability/sickness beneficiary	1: Paid employment
D10	Highest education	Which of the following best describes your highest educational qualification	8: (1) Postgraduate degree, (2) university degree, (3) other post-school qualifications, (4) university bursary or 7th form, (5) sixth form/UE/NCEA level 2, (6) NCEA level 1 or school certificate, (7) no formal school qualification	7: No formal qualifications
D2	Household type	Which of the following best describes your household?	8: (1) Single person, (2) couple only (no children/none at home), (3) two-parent family (one or two children at home), (4) two-parent family (three or more children at home), (5) one-parent family (one or two children at home), (6) one-parent family (three or more children at home), (7) flatting or boarding (not a family home), (8) extended family.	3+4: Two-parent family
D3	Tenure	Is the home where you live owned by someone who lives in the household or is it rented?	6: (1) Own (includes with mortgage), (2) renting (includes boarders), (3) private trust, (4) other (specify), (5) accommodation supplied by employer/included in employment, (6) government housing.	1: Own
	Place		12: Auckland, North Shore, Waitakere, Manukau, Rodney, Hamilton, Tauranga, Porirua, Wellington, Lower Hutt, Christchurch, Dunedin.	Auckland

Source: New Zealand Quality of Life Survey 2004

Table 3 Selected Counts and Percentages by Variable Value from the Quality of Life Survey, 2004

Variable name	1	2	3	4	5	6	7	8	9	10	11	12
Happiness	2,107 (33.5)	3,329 (52.9)	699 (11.1)	95 (1.5)	57 (0.9)							
Satisfaction	1,922 (30.6)	3,382 (53.9)	754 (12)	186 (3.0)	43 (0.5)							
Quality of Life	1,685 (26.7)	3,865 (61.4)	612 (9.7)	118 (1.9)	18 (0.3)							
Gender	2,992 (47.5)	3,308 (52.5)										
Age	1,218 (19.3)	3,032 (48.1)	1,169 (18.6)	881 (14)								
Ethnicity	1,548 (24.5)	573 (9.1)	485 (7.7)	621 (9.8)								
Health	1,325 (20.1)	2,277 (36.2)	1,959 (31)	601 (9.5)	139 (2.2)							
Personal income	961 (17)	869 (15.4)	796 (14.1)	1,472 (26.1)	812 (14.4)	421 (7.5)	316 (5.6)					
Employment status	3,980 (64)	816 (12.9)	910 (14.5)	258 (4.1)	341 (5.4)							
Highest education	759 (12)	1,310 (20.8)	1,350 (21.4)	549 (8.7)	659 (10.5)	793 (12.6)	878 (13.9)					
Household type	887 (14)	1,481 (23.5)	2,534 (40.2)	572 (9.1)	469 (7.5)	357 (5.7)						
Tenure	1,677 (26.6)	4,623 (73.4)										
Place	1,199 (19.0)	576 (9.1)	495 (7.9)	810 (12.9)	232 (3.7)	352 (5.6)	282 (4.5)	133 (2.1)	535 (8.5)	282 (4.5)	1,026 (16.3)	378 (6.0)

Source: New Zealand Quality of Life Survey 2004

Table 3 shows how the combined population sampled from the 12 cities was distributed over the categories of each variable including the three subjective wellbeing dependent variables. The number of weighted observations in each of the categories is recorded together with their proportion of the total. In the case of age for example, we learn that there were 1,218 counts of people between 15 and 24 years and that they made up 19.3% of the weighted sample population. There were 3,032 or 48.1% in the next, 25–49 age group, and so on.

The dependent variables were regressed on each of the independent variables separately. Although place effects did vary as successive controls were introduced, at the end of the day, when all the controls were included in the model, they made relatively little difference to the pre-control effects of place. Estimates for the full model on the first of the wellbeing measures, Happiness, are given in Table 4.⁴¹

All the estimated coefficients on the non-place controls are consistent with the findings from similar surveys reported in the international literature. Age displays its conventional U shape with happiness, being higher among the young and older age groups (see Lucas and Gohm 2000, Argyle 1999). Happiness levels are higher for females which is also a feature documented internationally (Nolen-Hoeksema and Rusting 1999). In the New Zealand context, Happiness levels are highest among Europeans and are noticeably lower among the Asian/Indian population but here there are sufficiently well documented cross-cultural differences in responses to subjective wellbeing questions to make us cautious of reading too much into this particular result (see Diener and Suh 2000). Wellbeing is positively associated with self-evaluated health (Argyle 1999) as well as income (see summaries in Frey and Stutzer 2002a).⁴² Wealth as distinct from income is not an included variable in the survey but has been shown to have important additional influence on subjective wellbeing (Headey and Wooden 2004). The retired are happier than the employed, students, those at home or the unemployed (cf. Oswald 2003).

41 Predictions from a logistic analysis of Very Happy vs. other responses, reported in the technical report, successfully classifies over 70% of the responses, which together with the standard diagnostics available for logistic regression (Hosmer and Lemeshow 1989), indicate a reasonable-to-good fit for model.

42 For a detailed discussion of health effects on almost identical dependent variables for Canada see Michalos et al. (2000).

Table 4 The Relative Importance of Place Effects on the Happiness of Respondents after Controlling for their Demographic and Socio-Economic Characteristics

	Coefficient	Standard Error	P>[z] (**< 0.01, *<0.05)
Gender	-0.077	0.031	*
AGE			
Age 15–25	-0.037	0.050	
Age 50–64	-0.097	0.043	*
Age 65 +	-0.154	0.081	
ETHNICITY			
Māori	-0.087	0.052	
Pacific Islander	-0.110	0.060	
Asian/Indian	0.237	0.051	**
HEALTH			
Excellent	-0.296	0.041	**
Good	0.436	0.035	**
Fair	0.787	0.052	**
Poor	0.816	0.097	**
INCOME			
Income < \$10k/an	0.044	0.051	
Income \$20–\$30k/an	0.065	0.051	
Income \$30–\$50k/an	-0.046	0.047	
Income \$50–\$70k/an	-0.194	0.056	**
Income \$70–\$100k/an	-0.155	0.069	**
Income > \$100k/an	-0.228	0.079	**
EMPLOYMENT STATUS			
Student	-0.003	0.062	
Retired	-0.234	0.078	**
Unemployed	-0.049	0.077	
Home Responsibilities	0.045	0.696	
HIGHEST EDUCATION			
Postgraduate	-0.015	0.060	
Graduate	0.030	0.053	
Other Post-School Qualifications	0.006	0.051	
University Bursary	-0.015	0.064	
Sixth Form	0.054	0.059	
School Certificate	-0.026	0.056	

	Coefficient	Standard Error	P>[z] (**< 0.01, *<0.05)
HOUSEHOLD TYPE			
Single person	0.347	0.051	**
Couple with no children	-0.069	0.043	
One-parent family	0.248	0.053	**
Flatting or boarding	0.174	0.060	*
Extended family	0.071	0.066	
TENURE			
Rented	0.032	0.036	
PLACE			
North Shore	-0.110	0.058	
Waitakere City	-0.266	0.062	**
Manukau City	-0.036	0.052	
Rodney District	-0.361	0.084	**
Hamilton City	-0.157	0.069	*
Tauranga District	-0.259	0.077	**
Porirua City	-0.153	0.105	
Wellington City	-0.238	0.060	**
Lower Hutt City	-0.076	0.075	
Christchurch City	-0.202	0.049	**
Dunedin City	-0.189	0.068	**

Note: Number of observations = 6,287, log likelihood -6168, LR chi2(44) is 909, prob> chi = 0. Measures of goodness of fit are more complicated than standard OLS regression (Hosmer and Lemeshow 1989), and we use other criteria such as the classification table to make judgements about fit as discussed in the accompanying technical report (Morrison 2007).

Source: New Zealand Quality of Life Survey 2004

The results of the only other New Zealand multivariate analysis of Happiness we are aware of (from an earlier survey in the Quality of Life series) is consistent with our results, and here too highest education levels are observed to have no additional impact on Happiness (Smith 2005).⁴³

⁴³ The consensus internationally, however, is probably for a small positive effect, but inter-correlations with other variables are important. The following summary from Argyle (1999:355) indicates the complexity involved in interpreting the effect of education. "When income is held constant, the effect of education is reduced but is still present ... the effect of education is stronger for those with low incomes ... but if occupational status is also controlled, the effect of education either becomes very small or disappears completely. However, in some studies education has been found to have a negative effect, if income is held constant, because education creates expectations of higher income, see Clark and Oswald (1996)."

Particularly noticeable in our results is the impact of household type. Those in two-parent relationships with children express noticeably higher levels of Happiness compared to singles, one parent families, and those who are flatting or boarding (see Myers 1999). At the same time, couples *without* children in the home tend to report higher Happiness ratings.⁴⁴ Tenure makes little difference in this Happiness regression although the sign at least suggests renting might lower Happiness levels as it does for Satisfaction and particularly Quality of Life.

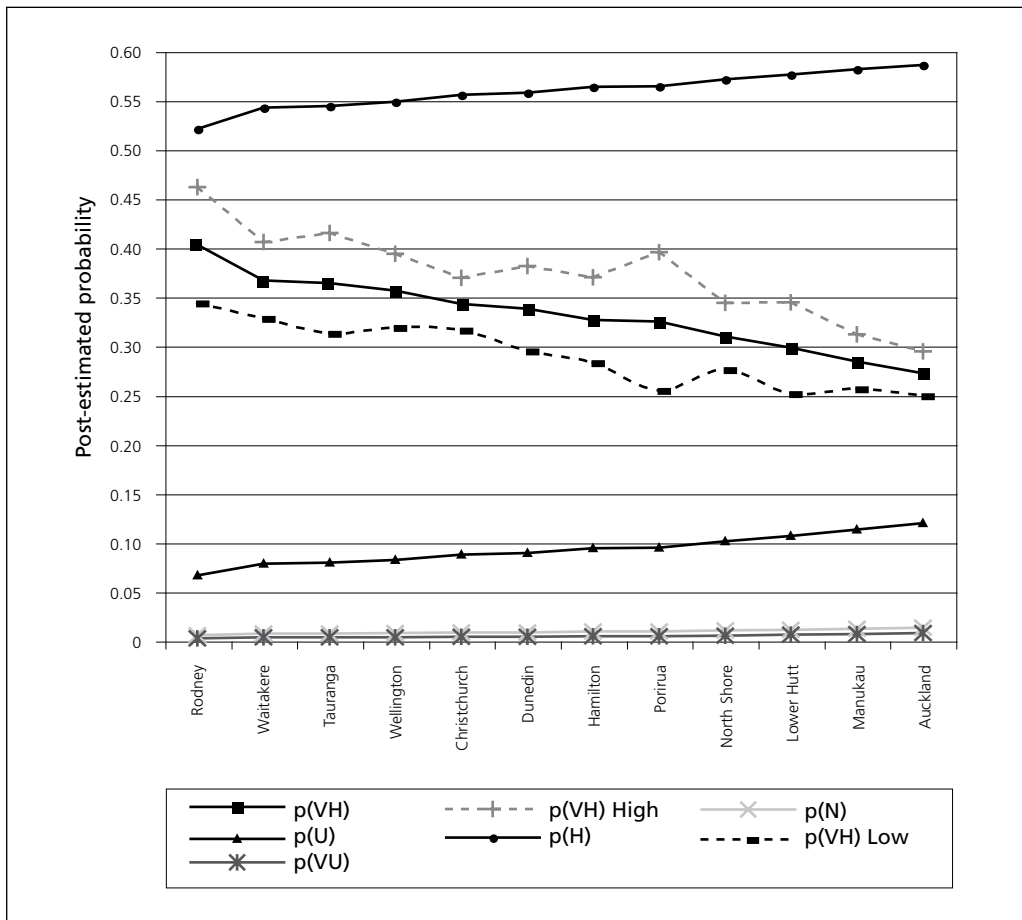
The estimated probability of respondents indicating they are Very Happy, $p(\text{VH})$, is highly variable over the range 0–0.8 and is quite contingent on particular combinations of attributes of respondents including their place of residence. There is considerably less variability in the other four happiness categories (see Morrison 2007).

We plot the post-estimated probabilities from the predicted levels of Happiness for each of the cities in Figure 2 using the coefficients reported in Table 4. Places are arranged in descending order from left to right according to their estimated $p(\text{VH})$. They range from Rodney, 40% of whose residents indicated they were Very Happy, down to Auckland City where only 27.2% were prepared to say they were Very Happy. The confidence limits on this prediction (the dashed lines, Figure 2) continue to vary with the size of the place.⁴⁵

44 Evans and Kelley (2004) provide a useful insight into the role played by family (cf. household) structure on life satisfaction in Australia.

45 The post-estimated probabilities from the uncontrolled and controlled models are very similar, however adding controls had the effect of reducing the distance between Rodney and Auckland, flattening the $p(\text{VH})$ curve as drawn. While Rodney, Tauranga, Waitakere and Wellington remain most distant from Auckland and Manukau in terms of the willingness of their subjects to respond as Very Happy, a number of the intermediate ranked cities found their rankings changed once explicit account was taken of the compositions of their particular populations. The primary effect of the controls therefore has been to rearrange the middle distance cities: Christchurch and Hamilton rose two places in the ranking and Porirua dropped three.

Figure 2 Post-Estimated Probabilities of Different Levels of Happiness by Place Ranked by p(VH) after Controlling for the Characteristics of Respondents



Source: New Zealand Quality of Life Survey 2004

The less likely respondents were to return a Very Happy response, the more likely they were to respond as simply being Happy or Neutral. Both probabilities rise from left to right across the ranked cities in Figure 2. The likelihood that residents will say they are Unhappy or Very Unhappy rises in this controlled model as we move from Rodney, Waitakere and Tauranga to the right through to Lower Hutt, Manukau City and Auckland City.

Satisfaction and Quality of Life

Elsewhere we report on the same model applied to the two other subjective wellbeing variables (Morrison 2007). We find that respondents' sensitivity to place *in general* is not as high for Satisfaction as it is for Happiness – the line representing the probability of being Very Satisfied, $p(VS)$, is noticeably flatter than the $p(VH)$ line, and fewer place indicators differ significantly from Auckland. While the rank order of the place indicators under the two measures differs slightly, almost all the controls take the same signs and have very similar magnitudes in both the Satisfaction and Happiness regressions.

The distinctiveness of the Quality of Life dependent variable is apparent in the altered sign and strength of some of the controls. Age is more distinctly U shaped on this dimension (judging from the greater strength of both the coefficients and the smaller standard errors). The young and more particularly the older residents both judge their quality of life higher than the 25–49 age group base. And, in a telling statistic, the unemployed emerge for the first time with a distinctly lower response than the employed and renters too feel more disadvantaged on the Quality of Life dimension.

Of particular interest is the *unambiguous* role played by education in accounting for the way people judge their Quality of Life. Ratings rise distinctly with levels of post-school education, most notably among postgraduates whose salary returns to education would certainly be higher. Couple-based households again feature, reflecting, we suggest, the effect of combined incomes (bearing in mind that only individual incomes are in the model).⁴⁶

The predicted influence of place for the Extremely Good category of Quality of Life, fit more narrowly in the 0.2 to 0.3 range, implying that there is less internal variation among the cities than we observed with respect to the upper end of the other two dimensions. In a challenging result, only two places now carry coefficients that denote significantly higher Quality of Life than in Auckland. The variance absorbed by the demographic and socio-economic attributes of the respondents is much greater with respect to this Quality of Life dimension suggesting that the population mix rather than “place” itself plays a more important influence when it comes to reflecting “achievement”.

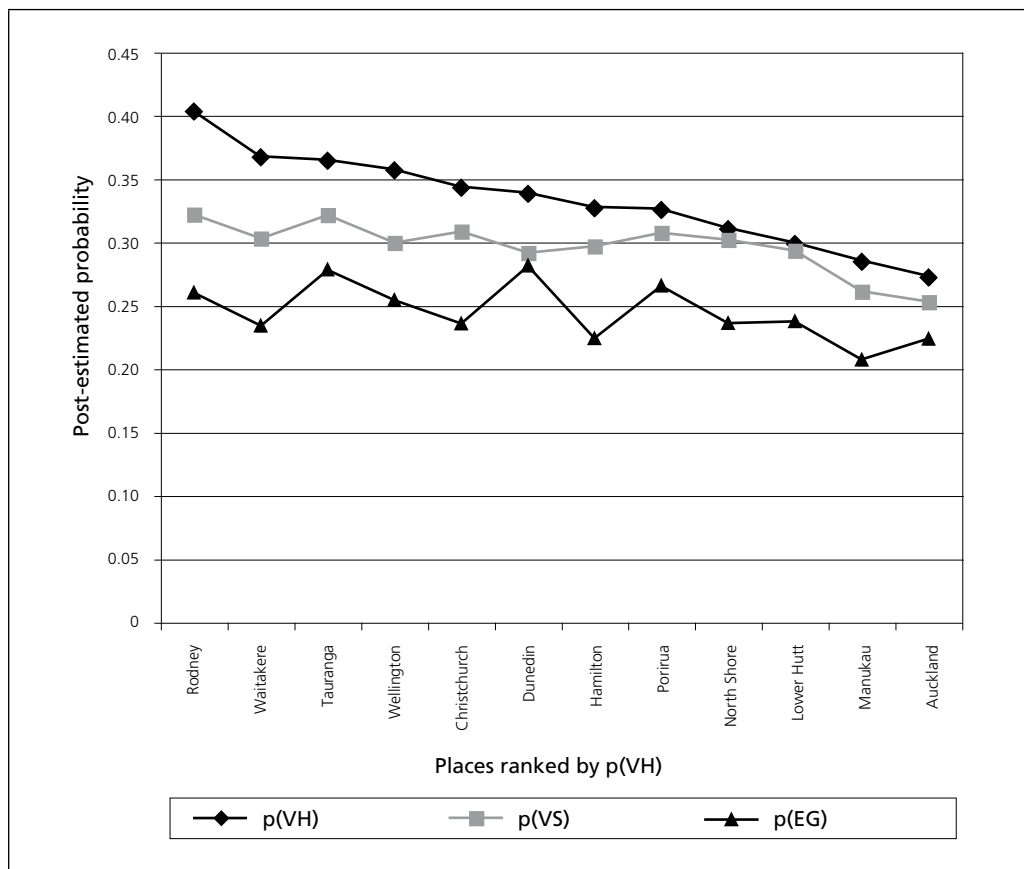
Some place effects persist nevertheless. Even though Quality of Life generates quite different responses in many of the controls, we find that the same three places: Rodney, Tauranga and Wellington, continue to feature on the left-hand side of the ranking much as they do in Figure 2. The biggest shift in rank is Dunedin and Porirua, whose place effects appear much more important in terms of their contribution to Quality of

⁴⁶ There is a case for including household rather than individual income in the model particularly given the fact that the respondent can be anyone in the household over 15. This will be addressed in further work.

Life than was the case for Happiness or Satisfaction. Waitakere and North Shore on the other hand exhibit lower place effects on this dimension. The fact that few of these last results would have been predicted “intuitively” suggests there is more work to be done in tracing the inter-correlations between controls and places in order to get closer to the attributes of places that may have generated these results.

One way of summarising the different place effects that result from regressing the three subjective wellbeing measures on the same set of arguments is to plot the post-estimated probability highest category of each wellbeing dimension alongside those of Very Happy (Figure 3).

Figure 3 Estimated Probabilities for p(VH), p(VS) and p(EG) Based on Estimates from the Full Model



Source: New Zealand Quality of Life Survey 2004

It is quite clear from Figure 3 just how much more sensitive place effects are to the Happiness dimension than the other two. The differences are less marked on the Satisfaction dimension even though the rankings are similar. The major departure comes when the places are ordered according to their estimated effect on Quality of Life. Not only were only two settlements significantly different from Auckland, but the rankings show little correspondence to Happiness or Satisfaction. These provocative results will require some time to unravel.

DISCUSSION

How should we interpret the above results? Do they imply, for example, that people living in Auckland City would be happier if they moved to Rodney District? Possibly, but unlikely, because such a relocation would change not only the dynamics of the “place” we call Rodney but also the dynamics of Auckland City. People cannot be moved around without also altering place. People and place are difficult to separate empirically notwithstanding the almost universal tendency to separate the two for modelling purposes (see discussion in Dorling et al. 2001). A priori, we expect happiness ratings to reflect a juxtaposition of compositional and contextual effects which collectively influence responses to questions on subjective wellbeing (see Macintyre et al. 1993).

More usefully, do these results mean that local authorities at the “unhappy” end of the scale should try to make their places more like those at the “happy” end? Possibly but unrealistic, even if the answer was yes. In any case, such an inference would also be inappropriate for the same reasons: people’s responses to wellbeing questions are integrally embedded in context and it is the people x place *mix* that is relevant.

Although these and other questions will have occurred to readers who have reached this point, they remain wildly premature. A more cautious stance is to simply acknowledge the presence of statistical place effects. The next step is to ask why and what *is* it about place that is generating these effects on happiness? We know so little about these influences; whether it is some ambient characteristic of a place, one or two key measurable factors or a complicated set of contingent interactive effects. Nor have we begun to classify, even in the most elementary way, components of a place that might influence subjective wellbeing. How meaningful, for example, would it be to try to measure place according to its social, environmental, economic and physical characteristics and ascertain the influence of these “separate” components on subjective wellbeing? Our own approach over the short term will be simply to explore the possible influence of additional measures we have available from the Quality of Life survey; factors like “community” for example and those social interactions relating to social capital (also see Spellerberg 2001). Meanwhile, there are several other issues worth

noting at this early stage in our research – they have to do with scale, additional arguments, concepts and policy.

One of the questions we would now like to explore more fully is the role of scale. Is the place-varying component of a person's state of wellbeing a reflection of the characteristics of their city "as a whole", or is it primarily confined to the suburb, neighbourhood or even possibly the place of work? With the capacity within the Quality of Life survey to specify the place indicator at ward level, it may even be possible to begin thinking in terms of a possible hierarchy of place effects.

Another complementary step would be to examine the relationship between the three subjective wellbeing measures used here and the several sources of positive and negative wellbeing identified in the questionnaire. Examples include: city specific difficulties in taking part in free time activities (Q11), the presence or absence of a neighbourhood community (Q17) and its perceived importance (Q17, Q18), the potential for making the community a better place to live (Q18a), the presence of tension and (lack of) trust in the "community" (Q20–Q22). There are also a range of questions about crime and other "problems" (Q24–Q25), as well as attitudes to the built environment including a sense of pride in the city (Q26–Q28b).

In addition there are questions on the wellbeing implications of living in places where "different lifestyles and cultures from different countries" are present (Q29a) and the respondents attitude to these (Q29b–Q29c). Then there are a set of questions about access: to shopping, banks, parks, transport and education (Q30a through e) and where relevant, *why* access might be difficult (Q31). There are also questions on the use, affordability, safety and convenience of public transport (Q32–Q33) as well as questions on council decision-making and the public's role and influence (Q34–Q38).

In light of all these additional responses, a useful step would be to set up a statistical model that would measure the respective correlation of these different specifics to the three "global" measures of subjective wellbeing. One area in which distinct place effects might appear for example is in respondents' satisfaction with their work–life balance, (D9), "the balance between work and other aspects of your life such as time with your family or leisure". Another is the relationship between place of residence and stress.

Concepts: Integrating Place into Theory

One thing that unites social scientists is their concern to understand the forces that affect peoples wellbeing (Blanchflower and Oswald 2004). The same is usually expected of governments, the aim being "to improve both the overall level and distribution of wellbeing within the population" (Smith 2005). Axiomatically, this improvement has

to occur in the regions, in the cities and in the hundreds of small communities that make up a country. It is ironical therefore that most texts on social policy continue to be written as if we live in a largely aspatial world, a world in which all citizens of a country live in exactly the same place; a world in which distance, proximity, separation, and above all place, have no place, and by inference no policy relevance.

We have long had theories of regional and local development but they are focused largely on the behaviour of firms, on capital. As such, they say little about social conditions or social wellbeing; at best wellbeing is simply assumed to be positively correlated with regional GDP. While there is little question that the impacts of agglomeration on labour productivity are positive, continued agglomeration may also generate negative consequences for social wellbeing (Charlot et al. 2006). The fact that the high-density urban complex dominated by Auckland City and Manukau City consistently return measures on all three subjective measures of wellbeing that are lower than those returned by people with equivalent characteristics living elsewhere may be quite significant in this context. This is a local expression of the wider debate emerging in the UK and Europe over the relationship between wellbeing and sustainability (Dolan et al. 2006a, Levett-Therivel Sustainability Consultants 2007, Marks et al. 2007, Jackson and Maltby 2007).

Until we unpack what lies behind some of the responses in the Quality of Life surveys by examining answers to more specific questions (such as work-life balance for example) the substantive meaning of results in this exploratory paper must remain conjectural. The biggest challenge however is not that of data or even measurement but of generating a theoretical framework that explains why and how place affects our wellbeing.

At present, there are two loosely competing theoretical frameworks. On the one hand, we have the equilibrium economists who, as a logical extension of their migration model, see people making residential choices in such a way that they will ultimately settle in the location that returns them the highest level of utility. The problem with such a "long run" or full adjustment model is that negative place effects in particular can only be transitory by definition. The fact that adjustment in populations and among individuals can take decades means that an alternative conceptualisation is required for the so-called incomplete adjustment period, or "short run".

Potentially more fruitful is the concept of inter-temporal substitution, the process of maximising utility by allocating resources across time. The advantage of this approach is that it positions place selection within a life course framework.⁴⁷ Such a framework

47 I am indebted to Jacques Poot (Waikato University) for recognising the relevance of inter-temporal substitution to the locational wellbeing question.

recognises that inter-temporal substitution over part or all of the life course is rational and that it is not the immediate or instantaneous level of subjective wellbeing that matters most to the individual but its sum over the life course. So, relatively bad times (and relatively bad places) are weighted against good times (and good places). The higher levels of happiness in youth and old age (perhaps spent in smaller towns) are weighted against the tough times in raising children and forging a career (in the larger cities). According to this framework people choose locations that maximise returns to the life course as a whole. The advantage of this way of thinking is that it does not force the argument into a trade-off between productivity and wellbeing within specific places. It also generates testable hypotheses as long as the subjective wellbeing of individuals can be measured as they move from place to place through the years, controlling for other major events that occur. Rigorous testing would, however, require access to geocoded longitudinal data.⁴⁸

Resolution of these conceptual arguments is of central importance to the academy. They are also important at a local level for quite practical reasons. To a considerable degree local authorities are in competition with one another for residents (and of course employers). From a local planning point of view, what to invest in locally in order to encourage growth is largely about increasing the *relative* attractiveness of a locality. From a national perspective however the question is what to invest in to ensure that the distribution of quality of life between places does not become too unbalanced. How to match *where* we grow with *how* we grow is probably the most challenging of the adjustment issues raised in this paper. The Quality of Life surveys are therefore a valuable input into our collective thinking about how we maximise people's returns to the places in which they live. Now that the content of the Quality of Life instrument has stabilised after several years of testing, there is real potential in paying it greater analytical attention.

REFERENCES

- Andrews, F.M. and S.B. Withey (1976) *Social Indicators of Well-Being: Americans' Perceptions of Life Quality*, New York, Plenum Press.
- Argyle, M. (1999) "Causes and correlates of happiness" in D. Kahneman, E. Diener and N. Schwartz (eds.) *Well-Being: The Foundations of Hedonic Psychology*, Russell Sage Foundation, New York.
- Ballas, D. and D. Dorling (2006) "Societal inequality, health and well-being" *36th Regional Science Association International (British and Irish Section)*, Jersey, Channel Islands.

48 Another approach is to argue that the negative externalities that are apparently lowering subjective wellbeing in dense metropolitan centres are being counterbalanced contemporaneously by compensating differentials in pay – a thesis which is also potentially testable.

- Berkman, L.F. and I. Kawachi (eds.) (2000) *Social Epidemiology*, Oxford University Press, Oxford.
- Blanchflower, D.G. and A.J. Oswald (2004) "Well-being over time in Britain and the USA" *Journal of Public Economics*, 88:1359–1386.
- Booth, C. (1903) *Life and Labour of the People of London*, Macmillan, London.
- Bruni, L. and P.L. Porta (eds.) (2006) *Economics and Happiness: Framing the Analysis*, Oxford University Press, Oxford.
- Butterworth, P., B. Rodgers and A.F. Jorm (2006) "Examining geographical and household variation in mental health in Australia" *Australian and New Zealand Journal of Psychiatry*, 40:491–497.
- Charlot, S., C. Gaigne, F. Robert-Nicoud and J.-F. Thisse (2006) "Agglomeration and welfare: The core-periphery model in light of Bentham, Kaldor, and Rawls" *Journal of Public Economics*, 90:325–347.
- Clark, A.E. and A.J. Oswald (1996) "Satisfaction and Comparison Income" *Journal Of Public Economics*, 61:359–381.
- Cresswell, T. (2004) *Place: A Short Introduction*, Blackwell Publishing, Oxford.
- Cunningham, C., M. Durie, D. Fergusson, E. Fitzgerald, B. Hong, J. Horwood, J. Jensen, M. Rochford and B. Stevenson (2002) *Living Standards of Older Maori*, Ministry of Social Development, Wellington.
- Diener, E., M.S. Eunkook, R.E. Lucas and H.L. Smith (1999) "Subjective well-being: Three decades of progress" *Psychological Bulletin*, 125:276–303.
- Diener, E. and E.M. Suh (eds.) (2000) *Culture and Subjective Well-Being* MIT Press, Cambridge, Massachusetts.
- Dolan, P., T. Peasgood, A. Dixon, M. Knight, D. Phillips, A. Tsuchiya and M. White (2006a) *Research on the Relationship between Well-Being and Sustainable Development: Final Report for DEFRA*, Department of Environment, Food and Rural Affairs, London.
- Dolan, P., T. Peasgood and M. White (2006b) *Review of Research on the Influences on Personal Well-Being and Application to Policy Making*, Report for DEFRA, Department for Environment, Food and Rural Affairs, London.
- Dorling, D., G. Smith, M. Noble, G. Wright, R. Burrows, J. Bradshaw, H. Joshi, C. Pattie, R. Mitchell, A.E. Green and A. McCulloch (2001) "How much does place matter?: Comments on McCulloch and the Place vs People Debate, *Environment and Planning A*, 33:1335–1369.
- Dorling, D., R. Mitchell, M. Shaw, S. Orford and D.G. Smith (2000) "The health effects of poverty in London in 1896 and 1991" *British Medical Journal*, 321:1547–1551.
- Easterlin, R.A. (1973) "Does money buy happiness?" *Public Interest*, 3:3–10.
- Easterlin, R. (1974) "Does economic growth improve the human lot?" in P.A. David and W.B. Melvin (eds.) *Nations and Households in Economic Growth*, Stanford University Press, Palo Alto.

- Easterlin, R. (ed.) (2002) *Happiness in Economics*, Edward Elgar Publishing Inc, United Kingdom.
- Easterlin, R. (2006) "Building a better theory of well-being" in L. Bruni and P.L. Porta (eds.) *Economics and Happiness: Framing the Analysis*, Oxford University Press, Oxford.
- Evans, M.D.R. and J. Kelley (2004) "Effect of family structure on life satisfaction: Australian evidence" *Social Indicators Research*, 69:303–349.
- Fergusson, D., B. Hong, J. Horwood, J. Jensen and P. Travers (2001) *Living Standards of Older New Zealanders: A Summary*, Ministry of Social Policy, Wellington.
- Frey, B.S. and A. Stutzer (2002a) *Happiness and Economics: How the Economy and Institutions Affect Human Well Being* Princeton University Press, Princeton, New Jersey.
- Frey, B.S. and A. Stutzer (2002b) "What can economists learn from happiness research?" *Journal of Economic Literature*, 40:402–435.
- Gravitas Research and Strategy Limited (2005) *Quality of Life in New Zealand's Twelve Largest Cities: Resident's Survey 2004*, Quality of Life Team and Ministry of Social Development, Wellington.
- Headey, B., D. Warren and G. Harding (2006) "Families, Incomes and Jobs: A Statistical Report of the Hilda Survey" Melbourne Institute of Applied Economic and Social Research, University of Melbourne, Melbourne.
- Headey, B. and M. Wooden (2004) "The effects of wealth and income on subjective well-being and ill-being" *The Economic Record*, 80:S24–S33.
- Hosmer, D.W. and S. Lemeshow (1989) *Applied Logistic Regression*, New York, John Wiley and Sons Ltd.
- Jackson, T. and P. Maltby (2007) *Living Well – Within Limits: SDC (Sustainable Development Commission) Discussion Document on Wellbeing Indicators for Sustainable Development*, Sustainable Development Commission, London.
- Jensen, J., V. Krishnan, R. Hodgson, S.G. Sathiyandra, R. Templeton, D. Jones, R. Goldstein-Hawes and P. Beynon (2006) *New Zealand Living Standards 2004*, Centre for Social Research and Evaluation, Ministry of Social Development, Wellington.
- Kahneman, D., E. Diener and N. Schwartz (eds.) (1999) *Well-Being: The Foundations of Hedonic Psychology*, Russell Sage Foundation, New York.
- Knox, P. (1975) *Social Well-Being: A Spatial Perspective*, Oxford University Press, Oxford.
- Lane, R.E. (2000) *The Loss of Happiness in Market Economies*, Yale University Press, New Haven and London.
- Layard, R. (2005) *Happiness: Lessons from a New Science*, Penguin, New York and London.

- Levett-Therivel Sustainability Consultants (2007) *Wellbeing: International Policy Interventions: Report to DEFRA*, UK, Department of Environment, Food and Rural Affairs, London.
- Lucas, R.E., E. Diener and E. Suh (1996) "The discriminant validity of wellbeing measures" *Journal of Personality and Social Psychology*, 71:616–628.
- Lucas, R.E. and C.L. Gohm (2000) "Age and sex differences in subjective well-being across cultures" in E. Diener and E.M. Suh (eds.) *Culture and Subjective Well-Being*, MIT Press, Cambridge, Massachusetts.
- Macintyre, S., S. MacIver and A. Sooman (1993) "Area, class, and health: Should we be focusing on places or people?" *Journal of Social Policy*, 22:213–234.
- Marks, N., S. Thompson, R. Eckersley, T. Jackson and T. Kasser (2007) *Sustainable Development and Well-Being: Relationships, Challenges and Policy Implications: Report for DEFRA*, Department of Environment, Food and Rural Affairs, London.
- Marmot, M. (2005) *The Status Syndrome: How Social Standing Affects Our Health and Longevity*, Owl Books, New York.
- McKelvey, R.D. and W. Zovoina (1975) "A statistical model for the analysis of ordinal level dependent variables" *Journal of Mathematical Sociology*, 4:103–120.
- Michalos, A.C., B.D. Zumbo and A. Hubley (2000) "Health and the quality of life" *Social Indicators Research*, 51:245–286.
- Ministry of Social Development (2006) *2006 The Social Report*, Ministry of Social Development, Wellington.
- Morrison, P.S. (2007) *Subjective Wellbeing and the City: Technical Report*, Working Paper SGEES No 28, Victoria University of Wellington, Wellington.
- Morrison, P.S. (forthcoming) "Subjective wellbeing and the city: Further evidence" *Kotuitui*.
- Myers, D.G. (1999) "Close relationships and the quality of life" in D. Kahneman, E. Deiner and N. Schwartz (eds.) *Well-Being: The Foundations of Hedonic Psychology*, Russell Sage Foundation, New York.
- Nolen-Hoeksema, S. and C.L. Rusting (1999) "Gender differences in well-being" in D. Kahneman, E. Deiner and N. Schwartz (eds.) *Well-Being: The Foundations of Hedonic Psychology*, Russell Sage Foundation, New York.
- Oswald, A.J. (2003) "How much do external factors affect well being?" *The Psychologist*, 16(3):140–141.
- Pacione, M. (ed.) (1997) *Britain's Cities: Geographies of Division in Urban Britain*, Routledge, London.
- Partridge, M.D. and D.S. Rickman (2006) *The Geography of American Poverty: Is There a Need for Place-Based Policies?* Upjohn Institute, Kalamazoo, Michigan.
- Relph, E. (1976) *Place and Placelessness*, Pion, London.
- Schroder, C. (2005) *Place Attachment in New Zealand*, School Of Geography, Environment And Earth Sciences, MSc(Hons) thesis Victoria University of Wellington, Wellington.

- Scutella, R. and M. Wooden (2006) *Effects of Household Joblessness on Subjective Well-Being: Melbourne Institute Working Paper No 10/06*, Melbourne Institute of Applied Economic and Social Research, University of Melbourne, Melbourne.
- Smith, C. (2005) "Social Wellbeing in New Zealand and the Correlates of Life Satisfaction" *Social Policy Research and Evaluation Conference*, Ministry of Social Development, Wellington.
- Smith, D. (1973) *The Geography of Social Well-Being in the United States*, McGraw-Hill, New York.
- Spellerberg, A. (2001) *Framework for the Measurement of Social Capital in New Zealand: Research and Analytical Report 2001 No 14*, Statistics New Zealand, Wellington.
- Statistics New Zealand (2002) *Monitoring Progress Towards a Sustainable New Zealand*, Statistics New Zealand, Wellington.
- Suh, E.M. (2000) "Self, the hyphen between culture and subjective well-being" in E. Diener and E.M. Suh (eds.) *Culture and Subjective Well-Being*, MIT Press, London.
- Veenhoven, R. (1993) *Happiness in Nations: Subjective Appreciation of Life in 56 Nations 1946–1992*, Erasmus University Press, Rotterdam.
- Veenhoven, R. (2002) "Why social policy needs subjective indicators" *Social Indicators Research*, 58:33–45.
- Wilkinson, R. (2005) *The Impact of Inequality: How to Make Sick Societies Healthier*, The New Press, New York.
- Winkelmann, L. and J. Winkelmann (1998) "Why are the unemployed so unhappy? Evidence from panel data" *Economica*, 65:1–15.
- Zamagni, S. (2005) "Happiness and individualism: A very difficult union" in L. Bruni and P.L. Porta (eds.) *Economics and Happiness: Framing the Analysis*, Oxford University Press, Oxford.