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ROD MCCREA, ROBERT STIMSON and JOHN WESTERN

TESTING A MODERATED MODEL OF SATISFACTION WITH URBAN LIVING USING DATA FOR BRISBANE-SOUTH EAST QUEENSLAND, AUSTRALIA

ABSTRACT. Using survey data collected from households living in the Brisbane-South East Queensland region, a rapidly growing metropolis in Australia, path analysis is used to test links between urban residents' assessment of various urban attributes and their level of satisfaction in three urban domains-housing, neighbourhood or local area, and the wider metropolitan region – moderated by selected demographic characteristics of respondents. The analysis also shows the relative contribution of those urban domains to overall life satisfaction. Neighbourhood satisfaction is shown to be much less important in predicting overall life satisfaction than is satisfaction with housing and the region. However, neighbourhood satisfaction impacts indirectly on overall life satisfaction, mediated by regional satisfaction and housing satisfaction. In predicting regional satisfaction, the cost of living and government service provision are shown to be most important, with pollution important for younger people and parents, while improvements to transport systems are more important for the baby boomer generation. Neighbourhood satisfaction is best predicted by neighbourhood interaction and perceived crime, with neighbourhood interaction being more important for older people, while perceived crime is more important for younger and single people. Access to facilities is a poor predictor of neighbourhood satisfaction, except for parents. Satisfaction with housing is shown to be best predicted by housing age, temperature and home ownership. However, larger homes are important for parents, while young people prefer smaller homes. The importance of various urban attributes does not vary between genders. While material concerns like the cost of living and the provision of services are shown to be primary factors underlying overall satisfaction with urban living, the importance of environmental issues and demand for smaller homes might be expected to increase over time.

KEY WORDS: community satisfaction, housing satisfaction, life satisfaction, neighbourhood satisfaction, path analysis, perception, quality of life, regional satisfaction, survey research

INTRODUCTION

This study investigates the relative importance of different urban attributes in contributing to people's *satisfaction with urban living*. In particular, it assesses how the importance of those attributes varies between different demographic groups of residents. The paper also focuses on the relative importance of satisfaction with respect to three urban domains at different levels of scale – *housing*, the *neighbourhood*, and the wider metropolitan *region* – in predicting the overall life satisfaction of residents in a large, rapidly growing metropolis.

The paper addresses two gaps in the *quality of life* (QOL) literature on satisfaction with urban living. First, while most existing studies measure satisfaction with housing, the neighbourhood and the local community (e.g. Bruin and Cook, 1997; Campbell et al., 1976; Lu, 1999; Parkes et al., 2002; Sirgy and Cornwell, 2002; Sirgy et al., 2000), few studies include a consideration of satisfaction with the wider metropolitan regional setting in which people live (e.g. Turksever and Atalik, 2001). Such consideration is important as large metropolitan regions incorporate a large number of diverse neighbourhoods or local communities. Second, while many studies have examined the direct and mediated effects of demographic, socio-economic and personality variables on satisfaction with urban living (e.g. Bruin and Cook, 1997; Campbell et al., 1976; Lu, 1999), few have examined the moderating effects of those variables (e.g. Campbell et al., 1976). This study begins to address such gaps in the literature by testing a model of satisfaction with urban living that includes a *regional satisfaction* measure. It also tests for *moderating effects* of selected demographic characteristics of urban residents.

The paper begins with a discussion of the context for investigating QOL considerations in urban settings. This is done at two levels: on *regions* in terms of considering phenomena such as migration, economic viability and environmental sustainability; and on *individuals* in terms of considering people's perceived level of satisfaction with the urban environment and overall QOL. That discussion is then placed within the context of a bottom-up meta-theory which combines a number of perspectives. The segment of the meta-theory model tested relates to satisfaction with three urban domains at different levels of scale – satisfaction with housing,

neighbourhood, and the region. As well, the moderating effects of selected demographic characteristics of residents are tested. The paper concludes with a discussion of the limitations and implications of the study.

THE CONTEXT

Urban QOL has been defined in two broad ways according to two measurement traditions. In the *objective measurement* tradition, urban QOL has been conceptualised as a weighted average of various objective measures of the urban environment like actual crime rates, pollution levels, and housing costs (e.g. Boyer and Savageau, 1981; Pierce, 1985). In this paper, such objective measures are not used. In the *subjective measurement* tradition, urban QOL has been conceptualised as satisfaction in a number of urban domains (e.g. housing and neighbourhood satisfaction), which in turn contribute to overall life satisfaction along with satisfaction in other life domains (e.g. Marans and Rodgers, 1976; Sirgy et al., 2000). This paper adopts that approach, with most of the analysis and discussion referring to measures of satisfaction in different urban domains. The term 'urban QOL' is used in a general sense which includes both objective and subjective assessments of urban living.

Urban Quality of Life and Broader Implications

The importance of urban QOL extends beyond individual perceptions of satisfaction. It has broader implications for migration patterns, economic growth, and environmental sustainability of communities and regions. Migration patterns are often attributed in part to QOL differences in different urban environments (e.g. Ley, 1996; Liaw et al., 2002; Keeble, 1990). In a study conducted for the United States Department of Housing and Urban Development, Glaeser et al. (2000) claim that urban growth is driven by a variety of QOL issues that relate to urban consumption experiences. That research identifies seven urban consumption areas, which are said to predispose a region to rapid urban growth, namely:

(a) A rich variety of high quality public services (especially in health, education and public safety).

(b) Aesthetic and attractive physical settings in the form of architecture, urban design, and natural endowments like a favourable climate.

(c) Easy movement around the city, with resident location now having more to do with easy access to consumption opportunities and less to do with access to work.

(d) A housing stock that is architecturally distinctive, affordable and varied.

(e) Neighbourhoods that are safe and ethnically diverse, that offer transport choices, that have a mix of compatible uses (e.g. retail, residential and commercial), and that contain parks and open spaces.

(f) Civic spaces and civic activities that provide opportunities for social interaction among residents.

(g) A reasonable cost of living.

Favourable QOL considerations not only attract migration to a region, but also may influence intra-regional migration. For example, the in-migration of many higher-income households into the inner areas of some metropolitan regions – through the 'gentrification' process, for example – has been tied to perceived QOL issues, specifically through the consumption opportunities thus offered (Ley, 1996). Conversely, concerns about urban decline have encouraged out-migration from some areas of cities to the outer suburbs and rural urban fringe areas where residential environments are perceived to be more agreeable (Keeble, 1990).

Not only does population flow to places affording higher QOL, but so too does economic capital. In conditions where globalisation enables the free and easy movement of capital around the world, the flow of investment capital may be influenced by the QOL afforded by a city or region, and this in turn may affect its competitiveness and even its economic survival (Sirgy et al., 2002). This view is supported by evidence from studies in Europe and North America showing that QOL considerations influence decisions on where to locate businesses and industries (Brotchie et al., 1985; Grayson and Young, 1994; Rogerson, 1999). Economic growth is also promoted to the extent that skilled labour is attracted to and retained in places offering a high QOL.

Environmental sustainability is integrally tied to population and economic growth, and becomes a focal concern in rapidly growing regions such as the case study region for the analysis reported in this paper – the Brisbane-South East Queensland region (SEQ) in Australia. Environmental, population and economic considerations are tied together with urban issues such as air, water and noise pollution; water and energy consumption; waste generation and disposal; land supply and use; conservation and open space provision; and public infrastructure provision like freeways (Kemp et al., 1997).

Urban Environments and Individual Satisfaction

Urban QOL issues are not only important because they affect population growth, economic growth and environmental sustainability, but also because they affect individual satisfaction with urban living.

Findings in research investigating people's satisfaction with urban living can be organised into satisfaction with different urban domains which relate to different levels of scale within an urban environment (i.e. house, neighbourhood, community, and region). Three commonly studied urban domains are housing satisfaction, neighbourhood satisfaction, and community satisfaction (e.g. Bruin and Cook, 1997; Campbell et al., 1976; Lu, 1999; Parkes et al., 2002; Sirgy and Cornwell, 2002). However, regional satisfaction is not often studied (e.g. Turksever and Atalik, 2001). There is now an international program of research underway, including this study, which incorporates regional satisfaction in urban QOL studies (Marans and Couper, 2000; see also www.tcaup.umich.edu/workfolio/DAS2001).

Large metropolitan regions consist of a number of communities linked together by a shared geography (e.g. a shared water catchment area), by shared organisations (e.g. regional development organisations), and by shared major service centres (e.g. Brisbane City at the centre of the SEQ region).

Studies on housing satisfaction have found – not surprisingly – that features of the home are important predictors; for example, dwelling age, size, structure and tenure (Campbell et al., 1976; Lu, 1999). However, housing satisfaction can also be influenced by surrounding features such as one's neighbours, characteristics

of housing in the local area, and community size (Campbell et al., 1976; Lu, 1999; Parkes et al., 2002). Housing satisfaction can also be predicted by community satisfaction (Campbell et al., 1976) and even by regional characteristics such as geographic location within the metropolitan region (Lu, 1999). Thus housing satisfaction is linked with other urban domains at various levels of scale.

Turning to findings on neighbourhood satisfaction, Sirgy and Cornwell (2002) conducted a literature review of various neighbourhood attributes affecting neighbourhood satisfaction. Those features are grouped into physical features (e.g. upkeep of homes and yards, neighbourhood landscaping and street lighting, crowding and noise levels, access to facilities, and quality of the environment); social features (e.g. interactions with neighbours and community ties, outdoor play space, crime, and a sense of privacy at home); and economic features (e.g. home value in neighbourhood, cost of living in community, socio-economic status of neighbourhood, and neighbourhood improvements).

Neighbourhood satisfaction is also linked to satisfaction in other urban domains, such as housing satisfaction and community satisfaction. Sirgy and Cornwell (2002) found that satisfaction with neighbourhood economic features was a good predictor of housing satisfaction, and that satisfaction with neighbourhood social features was a good predictor of community satisfaction.

Community satisfaction is often predicted by attributes relating to local governance; for example, education provision, police relations, local taxes, cost of living, public transport, noise levels, parks and green areas (e.g. Campbell et al., 1976, Turksever and Atakik, 2000). A study by Turksever and Atakik (2000) also shows some attributes predicting community satisfaction that are less related to local governance (e.g. climate, leisure opportunities, and shopping), and that the importance of different community attributes varies considerably between communities.

Once again, community satisfaction, neighbourhood satisfaction and housing satisfaction all seem to be related. For example, relationships with neighbours predicts each of these three urban domains (Campbell et al., 1976; Lu, 1999; Turksever and Atakik, 2000). However, community satisfaction is related more to neigh-

bourhood satisfaction than housing satisfaction (Campbell et al., 1976).

As already mentioned, regional satisfaction is not a commonly studied domain of urban QOL, and relatively little is known about the attributes that affect regional satisfaction. In a study conducted by Turksever and Atakik (2000) in Istanbul, important factors predicting regional satisfaction are shown to be health, climate, crowding, sporting, housing conditions, travel to work, and environmental pollution. Travelling to work, and crowding are significant predictors of regional satisfaction only, while the rest of the predictors were also important in predicting community satisfaction (i.e. satisfaction in various districts within Istanbul). Thus, regional satisfaction is also associated with satisfaction in other urban domains. For example, climate has been found to influence housing satisfaction, as well as satisfaction at the regional and community levels (Campbell et al., 1976; Turksever and Atakik, 2000).

While it is convenient to conceptualise the urban environment from existing research findings as different levels of urban living, it is clear that all the levels are related and that many urban features influence satisfaction with more than one level of urban living. Thus, it is possible that regional satisfaction may also be an important urban domain in predicting overall life satisfaction. This study specifically addresses that question.

A Meta-theory of Satisfaction with Urban Living

One of the most comprehensive models of satisfaction with urban living was first proposed by Marans and Rodgers (1975) (see Figure 1). It is useful both because it is comprehensive and because it incorporates a number of theoretical perspectives (i.e. it is a *meta-theory*). As such it is useful for conceptualising the variety of findings on satisfaction with urban living within a broad theoretical framework.

As already mentioned, there are two measurement traditions in urban QOL studies. The far left shaded box in Figure 1 reflects the first tradition of measuring objective indicators of urban attributes relating to urban QOL (e.g. actual crime rates, pollution levels, and housing costs). The other shaded boxes reflect the second measure-
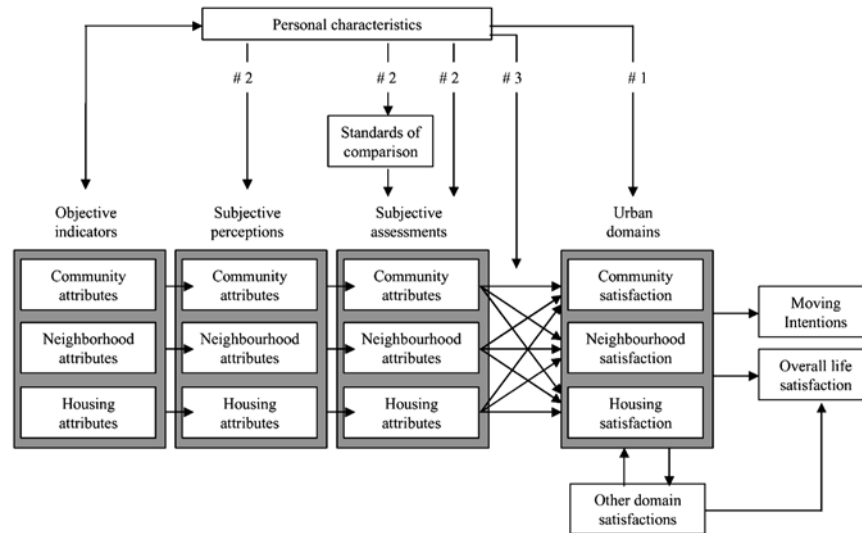
Figure 1. Model of satisfaction with urban living adapted from Marans and Rodgers (1975).

ment tradition of measuring subjective indicators which usually involves predicting satisfaction in different urban domains from perceptions and assessments of various urban attributes. This study follows the second tradition. However, the meta-theory shows that the two traditions are linked.

In Figure 1, three levels of urban living are reflected within each shaded box – housing, neighbourhood and community. However, there is no reason why a regional level can not be incorporated as an additional layer. Satisfaction in the three urban domains in Figure 1 is predicted by assessments of urban attributes associated with that domain, and also by urban attributes associated with other urban domains (i.e. cross paths are hypothesised). This is supported by the evidence reviewed earlier, although the meta-theory does not specify which cross-paths are important.

Personal characteristics in the meta-theory are hypothesised to have three types of effects on satisfaction in the urban domains: *direct*, *mediated* and *moderating effects*. *Direct effects* (see #1 in Figure 1) and *mediated effects* (see #2) are more commonly studied (e.g. Bruin and Cook, 1997; Campbell et al., 1976; Lu, 1999). Those personal characteristics mediated by standards of comparison reflect a number of psychological processes involved in satisfaction judge-

ments (e.g. Kahenman, 1999; Michalos, 1985; Schwarz and Strack; 1999). However, the less commonly studied *moderating effects* of personal characteristics (see #3) are the focus of this study; that is, the varying importance of urban attributes for different groups of people.

In the meta-theory, satisfactions in the different urban domains have implications for both overall life satisfaction and intentions of people to move. Overall life satisfaction relates more to individual outcomes, while intentions to move have broader regional implications for population growth, economic growth and environmental sustainability.

The meta-theory is based on a *bottom-up* model (i.e. satisfaction in urban and other life domains predicts overall life satisfaction). The following analyses uses a bottom-up model which is common with urban quality of life studies (e.g. Marans and Rodger, 1975; Campbell et al., 1976; Sirgy and Cornwell, 2002). Top-down models also exist where satisfaction with overall life predicts satisfaction in different life domains (e.g. Jeffres and Dobos, 1995; Lance et al., 1995) as a result of global personality influences (Diener, 1984). However, the model tested in this study of SEQ, only considers bottom paths for simplicity in interpreting the moderated analyses and because the study focuses on the bottom-up effects of urban domain satisfactions on overall life satisfaction, and especially with regional satisfaction.

The Model Tested

The study conducted in SEQ focuses on examining the importance of regional satisfaction in predicting overall life satisfaction in comparison with other urban domains; and on examining the moderating effects of selected demographic characteristics on the importance of various urban attributes. As such, the model tested here relates to those parts of the meta-theory where *overall life satisfaction* is predicted from *satisfaction in urban domains* (including regional satisfaction), which in turn are predicted from subjective assessments of urban attributes (see later in Figure 2). The model is then tested for moderating effects of gender, age and family status using *multi-group path analysis*.
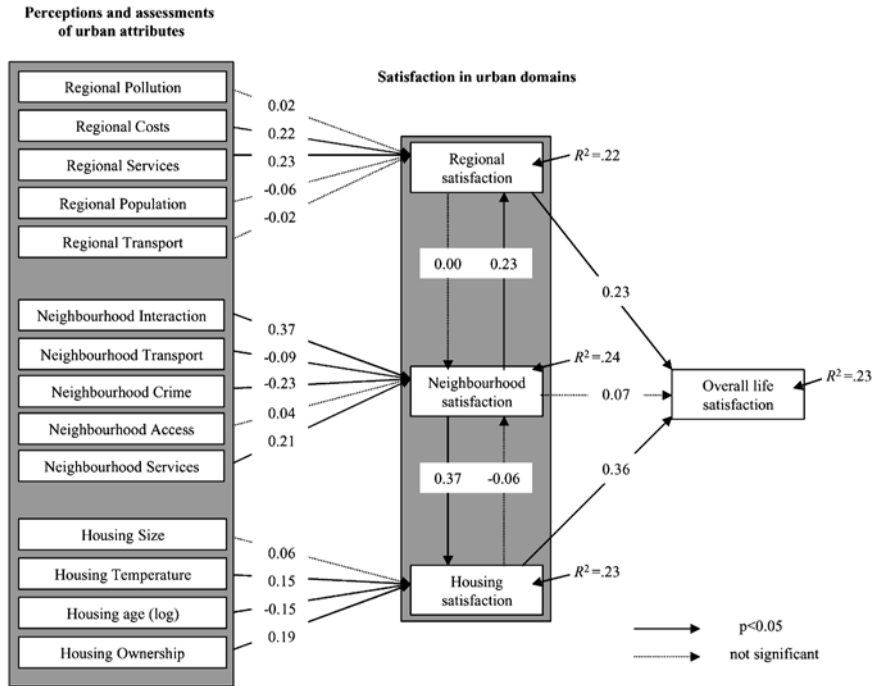
Figure 2. Model of satisfaction with urban living.

In the model tested, assessments of urban attributes predict the urban domain which was referenced in the relevant question asked of survey respondents. For example, questions on air, water and noise pollution related to the region as a whole and therefore are used to predict regional satisfaction. No cross-paths are initially specified in order to minimise model complexity, although cross-paths are later added using the criteria that they significantly improve the fit of the model.

METHOD

The Study Region

The SEQ region has a contemporary urban economy dominated by the services sector and has a multi-centred urban form. Brisbane City (the state capital) is at the centre of the region, which has two large growth corridors to the south and north linking Brisbane City to the tourism areas of the Gold Coast and the Sunshine

Coast. As well there is a western corridor incorporating the old coal mining and industrial city of Ipswich. The SEQ region also incorporates a variety of rural-urban shires around the fringe of the urbanised areas which include a number of small towns, farming and hobby-farming areas, and acreage living areas. The SEQ region is growing rapidly. Its population increased from 1.8 to 2.35 million between 1991 and 2001, and it is projected to grow to about 3.2 million over the decade to 2011. SEQ is a sprawling low-density, multi-centred metropolitan region encompassing the Brisbane and Moreton Statistical Divisions.

Sample Procedures and Survey Participants

The data used in this study were collected in a 1997 survey of QOL in the SEQ region. Information was collected from a random sample of 1 347 residents spread across the region using a telephone interview mode. The survey participants were generally representative of the study population and were selected through a random digit dialling process, with the sampling method ensuring distribution of residents across the region roughly in proportion to the distribution of population. A random selection procedure was used to select a person aged 18 and over in each contacted household. The sample comprised 606 males and 741 females; the mean age being 42.3 years (SD = 15.8). Most participants were employed (46.3 percent wage and salary earners and 13.5 percent employed in their own business); 15.7 percent were retired; 5.4 percent unemployed; 5.4 percent were undertaking full time education; and 2.2 percent were living on pensions. Most respondents were either married or in defacto relationships (63.1 percent), while 21.4 percent were single, 10.2 percent were divorced or separated, and 5.2 percent were widowed. No incentives were given for participation in the survey and the response rate was approximately 30 percent. Responses were entered directly onto a computer assisted telephone interviewing (CATI) system at the University of Queensland.

Measures

The *satisfaction measures* used in the study are single item measures with a 5 point scale where 1 represents 'very dissatisfied' and 5 represents 'very satisfied' (i.e. satisfaction of respondents with their

housing, neighbourhood, employment situation, money available to them personally, time to do things, relationship with partner, relationship with children, independence or freedom, and life as a whole). A satisfaction measure was not available directly for *regional satisfaction*; thus a proxy satisfaction measure has been derived by using responses to the question 'In general, how would you rate the overall quality of life in the Brisbane-South East Queensland region?' where 1 represents 'very poor' and 5 represents 'very good' on a 5 point scale.

Assessments of *regional attributes* are all *multi-item measures*. Many of the items come from the question 'Thinking about things in general in Brisbane and the SEQ region, we want to know the degree to which you think something is good or bad'. A 5 point scale was used where 1 represents 'very bad' and 5 represents 'very good'. The 'regional pollution' measure is the average of air pollution, water pollution in rivers and the level of noise pollution; 'regional costs' is the average of the cost of housing and the current cost of living; and 'regional services' is the average of the provision of educational services and the provision of health services. 'Regional population' is the average of three items from two questions. One item came from the question above and was on the level of population growth (reverse coded). The two other items came from the question '. . . consider some general issues about things in Brisbane and the SEQ region as a whole. How strongly do you agree or disagree with each of the following statements'. A 5 point scale was used where 1 represents 'strongly disagree' and 5 represents 'strongly agree'. The statements were 'there are too many people in South East Queensland' and 'urban sprawl is a problem in the South East Queensland region'. The 'regional transport' measure is the average of responses from three items to the previous question: 'I think that traffic congestion is a problem'; 'more roads and bridges are needed to enable people to travel around the Brisbane region in general'; and 'we need better public transport in the South East Queensland region'.

Assessments of *neighbourhood attributes* are also multi-item measures. Three of the measures are based on a question asking respondents how much they agreed or disagreed with various statements about their neighbourhood using a 5 point scale where 1

represents 'strongly disagree' and 5 represents 'strongly agree'. The 'neighbourhood interaction' measure is the average of two items: 'I have little to do with people in this neighbourhood' (reverse coded) and 'people in this neighbourhood are willing to help each other out'. 'Neighbourhood transport' is also the average of two items: 'living in this area would be difficult without a car' (reverse coded) and 'public transport in this area is adequate for my needs'. 'Neighbourhood crime' is the average of three items 'vandalism is a problem in this neighbourhood'; 'breaking and entering is a problem in this neighbourhood'; and 'I feel safe walking around this neighbourhood after dark' (reverse coded). 'Neighbourhood access' is measured using the question 'How satisfied or dissatisfied are you with your access to the following facilities' where 1 was 'very dissatisfied and 5 was 'very satisfied'. This measure is the average of 17 items such as shops, post offices, banks, health practitioners, hospitals, child care, schools, sporting facilities and religious facilities. 'Neighbourhood services' was measured on the same scale with the question 'How satisfied are you with the following services provided by your local council'. The items used were public parks and gardens, swimming pools, libraries, community centres, street cleaning, street lighting, road maintenance, bus services, water and sewerage services, garbage collection, and recycling services.

Assessments of *housing attributes* use *single item measures*. 'Housing size' was the number of bedrooms in the resident's dwelling. 'Housing temperature' is based on whether the home was insulated or had air conditioning. If it had either, then it was coded as having temperature control. 'Housing age' is the log of the estimated age of the resident's dwelling. The log was taken to normalise the distribution of sample scores. Finally, 'housing ownership' has three levels of housing ownership: renting, purchasing and fully owned.

RESULTS

Descriptive Statistics

Most people in the SEQ region report being either 'satisfied' or 'very satisfied' in each of the three urban domains, and only a small percentage of residents are 'dissatisfied' in any urban domain (see Table I). This phenomena is common for measures of satis-

TABLE I

Percentage of residents satisfied with each urban domain and overall life

	Housing	Neighbourhood	Region	Overall life
Very dissatisfied	1.0	1.3	1.2	0.4
Dissatisfied	6.5	6.5	4.5	2.3
Neither satisfied nor dissatisfied	4.2	3.4	9.0	4.7
Satisfied	63.7	57.3	51.3	60.1
Very satisfied	24.6	31.4	34.0	32.5
Mean	4.0	4.1	4.1	4.2

$N = 1347$.

faction with urban domains (see, for example, Marans, 2002) and also with overall life satisfaction measures. The average assessments of urban attributes varies (see Table II). The most favourably evaluated attribute of urban living is neighbourhood access to facilities (like shops, schools, health services and recreational facilities), followed by publicly provided neighbourhood services (like parks and gardens, libraries etc.). The least favourably evaluated attribute of urban living is regional transport, followed by neighbourhood crime.

There were a large number of missing values for housing age as many respondents (95) indicated they did not know the age of their home. Therefore, the model has been run including and excluding this variable to see the impact of its exclusion. It has been found to be a relatively important indicator of satisfaction with housing, and so has been retained in the model. The only notable change in other parameter estimates when home age is excluded is that home temperature then becomes the most important predictor of housing satisfaction rather than home ownership.

Testing the Model

The model tested is shown in Figure 2. As mentioned previously, assessments of urban attributes predict satisfaction in relevant urban domains. No cross-paths are initially tested; however, cross-paths are later added to the model which significantly improves model

TABLE II

Descriptive statistics for urban attributes

Variable	Missing	Mean	SD	Skewness	Scale
Regional pollution	4	2.9	0.8	0.1	5 point
Regional costs	5	3.2	0.9	−0.5	5 point
Regional services	16	3.4	0.9	−0.5	5 point
Regional population*	7	2.9	0.8	0.3	5 point
Regional transport*	12	3.6	0.7	−0.4	5 point
Neighbourhood interaction	3	3.3	0.9	−0.3	5 point
Neighbourhood transport	9	2.9	1.2	−0.2	5 point
Neighbourhood crime*	7	2.7	1.0	0.5	5 point
Neighbourhood access	5	3.9	0.5	−0.8	5 point
Neighbourhood services	5	3.6	0.5	−0.5	5 point
Housing size	14	3.2	0.9	−0.1	Interval
Housing temperature	0	0.5	0.5	0.1	Dichotomous
Housing age (prior to log)	117	22.9	22.8	1.7	Ratio
Housing ownership	48	2.1	0.8	−0.1	3 point

* Higher values indicate less favourable assessments for those measures with an asterisk. On other 5 point scales, higher values indicate more favourable assessments.

fit, and this model is then moderated by demographic variables. The inter-relationships between urban domains are reflected by bi-directional paths between the urban domains. Finally, satisfaction in different urban domains is used to predict overall life satisfaction, which has been done to establish the relative importance of the three urban domains rather than predicting overall life satisfaction per se.

Using the LISREL statistical package (version 8) (Joreskog and Sorbom, 1996), the model has been tested by *path analysis* because of the ability of that analytical technique to test:

(a) both *mediated* and *moderated* relationships;
(b) *two way relationships*;
(c) *model fit.*

Path analysis is a convenient way to test a complex model. After specifying the model, the actual covariance or correlation matrix is compared to that expected from the model. If they match closely, then the data are said to fit the model.

The data fitted the model in Figure 2 very well (normed $\chi^2 = 2.32$, GFI = 0.99, AGFI = 0.98, RMSEA = 0.03, CFI = 0.99). Asymptotic covariance matrices have been used as recommended by Joreskog and Sorbom (1996) when variables are skewed and the sample size large (see Joreskog and Sorbom, 1996). The total effective sample size for the model is 1 165 using listwise deletion. The R^2 statistics in Figure 2 show that the variation in satisfaction measures explained by the model are 23 percent for *housing satisfaction*, 24 percent for *neighbourhood satisfaction*, 22 percent for *regional satisfaction*, and 23 percent for *overall life satisfaction*.

Path Coefficients

Predictors of overall life satisfaction. Housing satisfaction ($\beta = 0.36$) is found to be a better predictor of overall life satisfaction than regional satisfaction ($\beta = 0.23$), while neighbourhood satisfaction ($\beta = 0.07$) is not a significant predictor of overall life satisfaction. However, other life domains are also important in predicting overall life satisfaction, as reflected by only 23 percent of the variation in overall life satisfaction being explained by satisfaction in the three urban domains. Therefore, an additional regression analysis was conducted to see whether there is a change in the relative importance (or path coefficients) of the three urban domains, after

TABLE III

Descriptive statistics for urban characteristics

Satisfaction measure (Predictor)	Beta coefficient
Housing	0.15*
Neighbourhood	−0.003
Region	0.13*
Employment situation	0.14*
Money available personally	0.08*
Time to do things	−0.03
Relationship with partner	0.17*
Relationship with children	0.12*
Independence or freedom	0.32*

Note: * denotes $p < 0.001$.

adding in other life satisfaction domains (i.e. employment situation, money available personally, time to do things, relationship with partner, relationship with children, independence or freedom). The variation in overall life satisfaction explained when including these other life domains was 38 percent. In this analysis, the housing satisfaction coefficient reduces to approximately the same importance as regional satisfaction (see Table III). The reduction in the coefficient for housing satisfaction is due to housing satisfaction being moderately correlated with satisfaction with the amount of money available personally ($r = 0.30, p < 0.001$) and satisfaction with independence or freedom ($r = 0.28, p < 0.001$). Neighbourhood satisfaction is still non-significant.

Although neighbourhood satisfaction is not an important 'direct' predictor of overall life satisfaction in the model, it does appear to have an 'indirect' effect via housing satisfaction and regional satisfaction (see Figure 2). The relationship between neighbourhood satisfaction and overall life satisfaction is mediated by housing satisfaction and regional satisfaction. Note also that the paths from housing satisfaction and regional satisfaction to neighbourhood satisfaction are both insignificant. This suggests that the relationships between satisfaction in different urban domains are essentially uni directional, which turns out to be an unexpected finding.

Predictors of satisfaction in urban domains. With regard to predicting *regional satisfaction*, environmental considerations are found to be less important than provision of services and cost of living. Regional pollution, regional population and regional transport are not significant predictors of regional satisfaction, while regional costs and regional services (that is, education and health services) are significant (see Figure 2).

The most important predictor of *neighbourhood satisfaction* is neighbourhood interaction. The next most important is neighbourhood crime, followed by neighbourhood services provided by local government. The path coefficient between neighbourhood transport and neighbourhood satisfaction is negative. It may seem counter intuitive that better public transport is associated with lower neighbourhood satisfaction; however, the small negative coefficient may have arisen if better public transport is associated with less desirable neighbourhood characteristics not included in the model, such as higher housing densities. Even if this is the case, any positive effects of good public transport on neighbourhood satisfaction are likely to be small for most residents. Surprisingly, it has also been found that access to facilities such as shops, banks and health practitioners is not a significant predictor of neighbourhood satisfaction.

As already mentioned, *housing satisfaction* is the most important urban domain for predicting overall life satisfaction of people living in the SEQ region, although this importance decreases to about the same level as regional satisfaction when controlling for other life domains. In turn, housing satisfaction is predicted by housing ownership, housing age, and housing temperature. Housing size, as measured by the number of bedrooms, is not a significant predictor of housing satisfaction, although later moderated analysis shows that this depends on lifecycle and lifestyle considerations.

The percentage of variation explained in each of the urban domains is 23 percent for *housing satisfaction*, 24 percent for *neighbourhood satisfaction*, and 22 percent for *regional satisfaction* (see R^2 statistics in Figure 2). The moderate levels of explained variance in the urban domains indicate that other urban attributes not included in the model also contribute to satisfaction with urban living. This of course is consistent with the conclusions that emerged in the literature review. However, the focus in this paper is not on maximising

the prediction of satisfaction in different urban domains, but rather on the possible moderating effects of demographic characteristics on particular urban attributes.

Re-specifying the model. Modification indexes have been used to detect whether the model can be improved by specifying cross paths between urban attributes and different urban domains. Modification indexes suggested that the model can be improved by adding a cross path from regional services to neighbourhood satisfaction ($\beta =$ 0.09, $p < 0.01$) and another from neighbourhood services to regional satisfaction ($\beta = 0.19$, $p < 0.001$). The addition of these two paths significantly improves the fit of the model ($\chi^2(2) = 2.32$, $p < 0.001$).

To improve the stability of the model, two paths have been removed from the initial model. These are the insignificant paths from regional satisfaction and housing satisfaction to neighbourhood satisfaction. It has been found in subsequent moderated analyses that the path coefficients for those paths have high standard errors and are fairly volatile.

The Moderated Analysis

Three personal characteristics have been selected as potential moderators in the model. They are age, gender, and family status. Rather than hypothesising that particular paths are moderated by personal characteristics, this study takes an exploratory approach by using an omnibus test for finding moderated paths in the model. As such, any findings will need to be confirmed with follow-up studies (one of which is being undertaken by the authors using data from the 2003 QOL survey in SEQ). The 'multi-group moderated path analysis' technique is used which involves dividing the sample into groups and comparing the 'free model' with the 'constrained model'. In the free model, the path coefficients are free to vary between the groups, while in the constrained model the paths are constrained to be equal for all groups. If the free model fits the data significantly better than the constrained model, then one or more of the paths in the model are moderated by the grouping variable. Using this approach to testing for moderating effects does require that variables be grouped into categories; thus age was grouped into three categories rather than being considered as a continuous

variable, while gender and family status are categorical variables by nature.

Age and family status are significant moderators with one or more paths in the model being significantly moderated by these variables. However, gender is not found to significantly moderate the model, ($\chi^2(128) = 138.75$, ns). This means – perhaps surprisingly – that none of the many paths in the model are moderated by gender. In other words, the importance of various urban attributes in predicting satisfaction with urban living does not vary significantly between males and females. It also means that the importance of different urban domains in predicting overall life satisfaction does not vary significantly between males and females. It would appear that both males and females place the same importance on various aspects of the urban environment in contributing to satisfaction with urban living and overall life.

Age moderation. The age of residents based on three broad generational age groups (*generation X* aged 18 to 32 years; *baby boomers* aged 33 to 51 years; and *older people* aged 52 years and over) does significantly moderate the model ($\chi^2(260) = 323.85$, $p < 0.01$). Some of paths between urban attributes and urban domains are moderated by age (see Table IV), however none of the paths between the urban domains and overall life satisfaction are significantly moderated by age.

Positive assessments of pollution levels are a significant predictor of increased regional satisfaction for the younger generation X group only. It seems that regional pollution is less important for older people in predicting regional satisfaction. However, it might be expected that regional pollution could become an important factor for the wider population as the younger cohort ages and the older cohort dies. The path coefficients for transport systems are not significantly different from zero; however, the path coefficient for generation X is significantly different from and in the opposite direction to the path coefficient for baby boomers. This means that unfavourable assessments of the transportation system were more likely to lead to lower regional dissatisfaction for baby boomers than for generation Xers.

Table IV also shows that neighbourhood interaction is significantly more important for older people, while neighbourhood crime

TABLE IV

Regression coefficients in path model by age group

Criterion/predictors	Generation X	Baby boomers	Older people
Regional satisfaction			
Regional pollution	0.13* a	0.05	0.02 a
Regional transport	0.09 a	−0.07 a	0.01
Neighbourhood satisfaction			
Neighbourhood interaction	0.30* a	0.30* b	0.43* ab
Neighbourhood crime	−0.28* a	−0.18* a	−0.19*
Housing satisfaction			
Housing size	−0.14* ab	0.11* a	0.09 b

* Significantly different from zero ($p < 0.05$).
Note: Estimates with the same letter are significantly different from each other ($p < 0.05$). For example, the estimate for housing size for generation X is significantly different from baby boomers and older people, though the latter two are not significantly different from each other.

is more important for generation X. The lower regression coefficient for neighbourhood crime for older persons is despite a small positive correlation existing between age and neighbourhood crime ($r = 0.07$, $p < 0.05$). The latter indicates that older people tend to rate perceive neighbourhood crime at a higher level, though the lower regression coefficient for older people means that despite this fact, variations in crime perceptions are not as important in explaining neighbourhood satisfaction among older people as it is for generation X. Neither neighbourhood transport nor neighbourhood access to facilities are significant predictors of neighbourhood satisfaction.

In predicting housing satisfaction, the path coefficient for home size is negative for generation X while it is positive for baby boomers and older people. It seems that younger people prefer smaller homes while baby boomers and older people prefer larger homes.

Family status moderation. Family status categories can be derived from determining whether or not a respondent is in a couple relationship, and whether or not they have children living at home.

Couples have been classified as those married or in a defacto relationship (conversely, singles are unmarried, separated, divorced or widowed), while parents have been classified as those residents with children living at home. The four family status categories are: singles; couples; single parents; and couple parents. The first two categories have no children living at home. Each of the categories has more than 400 survey respondents except single parents. The single parents category is considered to be too small for modelling purposes, so the moderated model has been run excluding this category as well as combining it with couple parents. The pattern of results are the same in both cases, and the analyses presented below are for the combined group which is called 'parents'.

The family status of residents significantly moderates the model ($\chi^2(260) = 421.37$, $p < 0.001$). The model explains about double the variation in overall life satisfaction for singles compared to couples and parents (36 percent, 19 percent and 18 percent respectively). This may be due to the fact that couples and parents with children have an extra source of satisfaction in their lives (that is, their partners and children). As such, these relationships may displace urban living environments as sources of life satisfaction. Such a perspective is supported by ANOVA (analysis of variance) which shows that single people with no children at home have a significantly lower overall life satisfaction ($M = 4.07$) than is the case for the other two categories ($M = 4.29$, $t(1344) = 5.62$, $p < 0.001$). In other words, close relationships generally add to QOL. This relationship also holds when controlling for age ($F(2, 1343) = 13.78$, $p < 0.001$).

Before analysing the moderated path coefficients, it is useful to note the general relationship between family status and age groupings (see Table V). Singles are much more likely to be younger, couples are likely to be somewhat older, and parents are likely to be baby boomers. Understanding those general relationships can assist in interpreting the moderated analysis for family status.

In the model moderated by family status, the predictors of overall life satisfaction generally follow the same pattern as in previous analyses. The most important predictor of overall life satisfaction is housing satisfaction, followed by regional satisfaction, and then neighbourhood satisfaction. Unlike previous analyses, neighbour-

TABLE V

Percentage in each age grouping by family status

	Singles	Couples	Parents	Total
Generation X	51	23	22	31
Baby boomers	23	36	68	44
Older people	26	41	11	25

$N = 1347$.

hood satisfaction is a significant predictor of overall life satisfaction, but only for parents (see Table VI). In contrast, singles derive little overall life satisfaction from their neighbourhood satisfaction, and have a significantly higher path coefficient for regional satisfaction. Those single people are also likely to be relatively young (that is, aged between their late teens and early 30s).

The importance of regional pollution in predicting regional satisfaction is generally low. However, pollution is a significant predictor of regional satisfaction for parents (with children living at home). Negative assessments of population levels, growth, and urban sprawl are significantly associated with reduced regional satisfaction for couples (with no children living at home). This result is not explained by age differences in the three groups (see the age moderation analysis). It seems that couples contain a substantial proportion of people who are concerned about population issues.

As with the unmoderated model, neighbourhood interaction and neighbourhood crime are the most important indicators of neighbourhood satisfaction for family groups. Although neighbourhood interaction is important for all family types, it is more important for couples. This may be due to the fact that couples are more likely to be older people (see Table V) and, as such, they may spend more time in their neighbourhood. Perceived neighbourhood crime is more important to single people, and this is significantly higher than for couples, and also parents. These results are consistent with those for age since about half of the single people without children living with them are relatively young (between 18 and 32 years of age). However, a quarter of that group are baby boomers, and another quarter are older people, so that the importance of perceived crime probably also relates to living alone.

TABLE VI

Regression coefficients in path model by family status

Criterion/predictors	Singles	Couples	Parents
Overall life satisfaction			
Regional satisfaction	0.34* ab	0.20* a	0.17* b
Neighbourhood satisfaction	0.003 a	0.06	0.11* a
Regional satisfaction			
Regional pollution	0.07	−0.01 a	0.11* a
Regional population	−0.03 a	−0.16* ab	0.01 b
Neighbourhood satisfaction			
Neighbourhood interaction	0.28* a	0.44* ab	0.34* b
Neighbourhood transportation	0.02 a	−0.05	−0.09* a
Neighbourhood crime	−0.29* ab	−0.14* a	−0.18* b
Neighbourhood access	0.07	−0.10 a	0.9* a
Housing satisfaction			
Housing size	−0.06 a	0.06 b	0.15* ab
Housing temperature	0.07 a	0.15*	0.22* a
Housing age	−0.14* a	−0.18* b	−0.10 ab
Housing ownership	0.17* a	0.35* a	0.06 a

* Significantly different from zero ($p < 005$).

Note: Estimates with the same letter are significantly different from each other ($p < 0.05$). For example, the estimates for housing ownership are all significantly different from each other.

Neighbourhood access to facilities and the adequacy of neighbourhood transport are generally of low importance in predicting neighbourhood satisfaction for the family status groups. However, both these predictors are significant for parents with children living at home. Neighbourhood access is significantly higher for parents than that for couples with no children living at home. This may be because parents use more local facilities associated with their children (e.g. schools, childcare and recreation facilities). Adequacy of public transport is also significant for parents with children living at home, such that better public transport is associated with lower neighbourhood satisfaction. This result is not intuitive and is perhaps due to good public transport being associated with other

less desirable neighbourhood characteristics, though we need to see if this result is replicated when analysing the 2003 dataset.

Parents with children living with them prefer larger homes than couples and singles. It is interesting to note that the path coefficient for singles is not significantly different from zero; however in the earlier age moderation analysis, generation X preferred smaller housing sizes. This means that the preference for smaller homes by generation X cannot be explained by the fact that they are more likely to be single (see Table V) and therefore implies a generational shift toward smaller housing. Housing temperature is significant for couples with no children living at home and parents with children living at home, but not for single persons.

The pattern of path coefficients for home ownership is unexpected. The relative importance of home ownership for couples with no children living at home is large in comparison to the other family types, and home ownership is not a significant predictor of housing satisfaction for parents with children living at home. This pattern is the same even when single parents are excluded from the analysis and when ownership is simplified to two levels (renting and purchasing/fully owned housing). It may be that parents with children attach less importance to home ownership than the policy makers would have us believe.

DISCUSSION

Summary of Results

This study of SEQ has tested a model of satisfaction with urban living with a focus on regional satisfaction and the moderating effects of selected demographic characteristics. Regional satisfaction is less commonly studied than satisfaction with other urban domains; however, regional satisfaction is an important urban domain in predicting overall life satisfaction. It has been found to be more important than neighbourhood satisfaction, although not as important has housing satisfaction. However, regional satisfaction becomes as important as housing satisfaction when other non-urban life domains are controlled.

Generally speaking, *neighbourhood satisfaction* is *not* an important indicator of *overall life satisfaction*. The exception is for

parents where satisfaction with their neighbourhood is significantly associated with overall life satisfaction. However, neighbourhood satisfaction also contributes *indirectly* to overall life satisfaction through housing and regional satisfaction. The mediated effects of neighbourhood satisfaction on overall life satisfaction by other urban domains are also supported by recent findings from Sirgy and Cornwell (2002).

The most important *predictors of regional satisfaction* in the SEQ region are assessments of regional services (education and health services) and the cost of living. This finding aligns with Rogerson's (1999) view that consumption experiences are important determinants of the QOL of people living in cities. Generally speaking, aspects of urban living relating to sustainability issues (for example, pollution, population levels and transport systems) are found to be less important in predicting regional satisfaction. However, negative assessments of those aspects of urban living do impact on the level of regional satisfaction for the generation X group more than is the case for those from older generational groups. In fact, the model path coefficients suggest expanding transport systems is viewed positively by the baby boomers and negatively by generation X respondents. This suggests planners might be advised to focus on devising new ways of using existing infrastructure more effectively rather than expanding infrastructure when considering the transportation needs of future generations. Couples without children are the only group significantly concerned with problems relating to population growth to the extent that it is significantly associated with their level of regional satisfaction.

Neighbourhood satisfaction is best predicted by assessments of neighbourhood interactions and neighbourhood crime. Other studies have also found perceptions of crime and neighbourhood interaction to be important predictors of neighbourhood satisfaction (see, for example, Bruin and Cook, 1997; Campbell et al., 1976; Greenberg et al., 1994; Taylor, 1995). In this study of SEQ, the moderated analysis also found that neighbourhood interaction is more important for older people, while neighbourhood crime is more important for single people and for younger people in predicting levels of neighbourhood satisfaction.

It seems unlikely that the negative path coefficient between neighbourhood transport and neighbourhood satisfaction means that good public transport is viewed negatively. Notwithstanding this, any positive effects of good public transport on neighbourhood satisfaction are likely to be small for most residents.

Like regional satisfaction, the provision of neighbourhood services (such as, for example, parks, pools and libraries) is an important predictor of neighbourhood satisfaction, and this was not moderated by any of the selected demographic characteristics. Neighbourhood transport also does not seem to play an important role in neighbourhood satisfaction, although in this study only public transport is evaluated for neighbourhoods.

Somewhat surprisingly, it has been found that access to facilities (such as, for example, shops, post offices, banks, and health practitioners) does not predict neighbourhood satisfaction very well. This could be because the survey data showed most people to be very happy with their access to those services, although it does raise the question about whether satisfaction with urban areas is more associated with the provision of public services than it is with the provision of private services. Notwithstanding this generalisation, access to facilities is a significant predictor of neighbourhood satisfaction for parents with children.

Housing satisfaction is predicted by level of housing ownership, housing age, and housing temperature. The size of the home is not an important indicator in the unmoderated model despite the fact that other studies show many people prefer to live in low-density environments (Audirac et al., 1990). However, this study shows that larger homes are highly valued by some, while smaller homes are highly valued by others living in the SEQ region. In the moderated analysis, the baby boomers, couples, parents and older people valued larger homes more, while singles and those from generation X value smaller homes more. That finding emphasises the importance for planners and developers of matching demographic information with housing stock characteristics to enhance overall life satisfaction of residents of cities.

Study Limitations and Future Directions

There are a number of limitations to the study reported here:

(a) *The survey data are correlational*, and thus causation from the objective attributes of urban environments through to overall life satisfaction is only assumed (bottom-up causation). But some of the relationships may be accounted for by top-down causation. For example, there may be individual personality traits that result in positive QOL assessments and positive assessments of the urban environment generally.

(b) *The model did not include community satisfaction*, and including this may have reduced the relative importance of regional satisfaction. It is recommended that future studies examining satisfaction with urban living include four levels of urban living or domains (housing, neighbourhood, community and region) to confirm the relative importance of regional satisfaction.

(c) *The moderated analysis is exploratory rather than being based on a priori hypotheses.* Given that, the findings need to be replicated in later studies to ensure that some of the results are not due to chance. Despite this, the approach using multi-group moderated path analysis appears to be a useful tool to explore the ways in which relationships in complex models may vary with personal characteristics.

(d) *These results also need to be replicated with other populations.* Important features of the urban environment may vary between different regions and cultures, while some remain in common. Equally important, youths and children may have different perspectives on the urban environment, and those groups were not included in the sample for this study.

As mentioned earlier, further analysis is planned by the authors using the 2003 QOL in SEQ dataset to confirm the importance of regional satisfaction in contributing to overall life satisfaction and the moderating effects of selected demographic characteristics.

Main Implications of Findings

The study reported here has found that regional satisfaction and housing satisfaction are important urban domains in predicting

overall life satisfaction compared to neighbourhood satisfaction. This suggests that planners and policy makers might avoid focussing on neighbourhood projects at the expense of housing issues and broader urban issues.

As mentioned, the urban attributes relating to sustainability issues are more important to generation X, although couples are also concerned with population growth. As older cohorts die and more couples decide not to have children, there is likely to be increasing pressure to design environmentally friendly, sustainable and liveable urban environments with less focus on growth. Continuing urban growth has even been associated with a reduction in perceived quality of life (Baldassare and Wilson, 1995), and planners in the 21st century will need to shift to emphasising sustainability issues, as well as considering optimal sizes for urban centres and optimum centrality. Optimal centrality relates to the optimal size of a city such that the net benefits of centralisation are maximised taking into account any loss in livability due to that centralisation (Cicerchia, 1999).

The study also reveals how people can differ in their values, experiences, perceptions and assessments of urban living. In other words, something that is important to one demographic group may not be important to another in contributing to their satisfaction with the urban environment and overall QOL. Changing demographic profiles and population values need to be incorporated into long-term urban planning to match future urban environments with future population needs and values. It seems that over the foreseeable future, the fundamental aspects of urban living – such as service provision and the cost of living – will continue to hold primary importance in contributing to satisfaction with urban living and overall QOL. However, it also seems that the emphasis on providing environmentally friendly and sustainable urban environments will grow in importance, and that there will be an increased demand for smaller homes.

REFERENCES

Audirac, I., A. H. Shermyen and M. T. Smith: 1990, 'Ideal urban form and visions of the good life – Florida growth management dilemma', Journal of the American Planning Association 56(4), pp. 470–482.

Baldassare, M. and G. Wilson: 1995, 'More trouble in paradise – urbanization and the decline in suburban quality-of-life ratings', Urban Affairs Review 30(5), pp. 690–708.

Boyer, R. and D. Savageau: 1981, Places Rated Almanac (Rand McNally, Chicago).

Brotchie, J., P. Newton, P. Hall and P. Nukamp: 1985, The Future of Urban Form (Coom, Helm, and Nichols, London).

Bruin, M. J. and C. C. Cook: 1997, 'Understanding constraints and residential satisfaction among low-income single-parent families', Environment and Behavior 29(4), pp. 532–553.

Campbell, A., P. Converse and W. Rodgers: 1976, The Quality of American Life: Perceptions, Evaluations and Satisfactions (Russell Sage Foundation, New York).

Cicerchia, A.: 1999, 'Measures of optimal centrality: indicators of city effect and urban overloading', Social Indicators Research 46(3), pp. 273–299.

Diener, E.: 1984, 'Subjective well-being', Psychological Bulletin, 95(3), pp. 542–575.

Glaeser, E., J. Kolko and A. Saiz: 2000, 'Consumer city', Working Paper 7790 (National Bureau of Economic Research, Cambridge, MA, USA).

Grayson, L. and K. Young: 1994, Quality of Life in Cities (British Library, London).

Greenberg, M., D. Schneider and D. W. Choi: 1994, 'Neighborhood quality', Geographical Review 84(1), pp. 1–15.

Gyourko, J. and J. Tracy: 1991, 'The structure of local public-finance and the quality-of-life', Journal of Political Economy 99(4), pp. 774–806.

Hsieh, C.: 2003, 'Counting importance: the case of life satisfaction and relative domain importance', Social Indicators Research (61), pp. 227–240.

Jeffres, L. W. and J. Dobos: 1995, 'Separating peoples satisfaction with life and public perceptions of the quality-of-life in the environment', Social Indicators Research 34(2), pp. 181–211.

Joreskog, K. and D. Sorbom: 1996, LISREL8: User's Reference Guide (Scientific Software International, Chicago).

Kahneman, D.: 1999, 'Objective happiness', in D. Kahneman, E. Diener and N. Schawrz (eds.), Well-Being: The Foundations of Hedonic Psychology (Russell Sage Foundation, New York).

Keeble, D.: 1990, 'Small firms, new firms, and uneven regional development in the United Kingdom', Area (22), pp. 234–245.

Lance, C. E., A. G. Mallard and A. C. Michalos: 1995, 'Tests of the causal directions of global life facet satisfaction relationships', Social Indicators Research 34(1), pp. 69–92.

Ley, D.: 1996, The New Middle Class and the Remaking of the Central City (Oxford University Press, Oxford).

Liaw, K. L., W. H. Frey and J. P. Lin: 2002, 'Location of adult children as an attraction for black and white elderly primary migrants in the United States', Environment and Planning A 34(2), pp. 191–216.

Lu, M.: 1999, 'Determinants of residential satisfaction: ordered logit vs. regression models', Growth and Change 30, pp. 264–287.

Marans, R. W.: 2000, 'Measuring the quality of community life: A program for longitudinal and comparative international research', The Second International Conference on Quality of Life in Cities', Singapore.

Marans, R. W.: 2002, 'Detroit area study: presentations and selected findings', http://www.tcaup.umich.edu/workfolio/DAS2001/findings/WebDistributionby Cty.html.

Marans, R. W. and W. Rodgers: 1975, 'Toward an understanding of community satisfaction', in A. Hawley and V. Rock (eds.), Metropolitan America in Contemporary Perspective (Halsted Press, New York).

Michalos, A. C.: 1985, 'Multiple discrepancies theory (MDT)', Social Indicators Research 16(4), pp. 347–413.

Michalos, A. C. and B. D. Zumbo: 1999, 'Public services and the quality of life', Social Indicators Research 48, pp. 125–156.

Parkes, A., A. Kearns and R. Atkinson: 2002, 'What makes people dissatisfied with their neighbourhoods?', Urban Studies 39(13), pp. 2413–2438.

Pierce, R. M.: 1985, 'Rating America's metropolitan areas', American Demographics 7, pp. 20–25.

Rogerson, R.: 1999, 'Quality of life and city competitiveness', Urban Studies 36(5–6), 319–328.

Schwarz, N. and F. Strack: 1999, 'Reports of subjective well-being: judgmental processes and their methodological implications', in D. Kahneman, E. Diener and N. Schawrz (eds.), Well-Being: The Foundations of Hedonic Psychology (Russell Sage Foundation, New York).

Schwarz, N., F. Strack, D. Kommer and D. Wagner: 1989, 'Soccer, rooms, and the quality of your life: Mood effects on judgments of satisfaction with life in general and with specific domains', European Journal of Social Psychology 17, pp. 69–79.

Sirgy, M. J. and T. Cornwell: 2001, 'Further validation of the Sirgy et al.'s measure of community quality of life', Social Indicators Research 56, pp. 125–143.

Sirgy, M. J. and T. Cornwell: 2002, 'How neighborhood features affect quality of life', Social Indicators Research 59, pp. 79–114.

Sirgy, M. J., D. Rahtz, M. Cicic and R. Underwood: 2000, 'A method for assessing residents' satisfaction with community-based services: A quality-of-life perspective', Social Indicators Research 49, pp. 279–316.

Taylor, R. B.: 1995, 'The impact of crime on communities', Annals of the American Academy of Political and Social Science 539, pp. 28–45.

Turksever, A. N. E. and G. Atalik: 2001, 'Possibilities and limitations for the measurement of the quality of life in urban areas', Social Indicators Research 53, pp. 163–197.

Warr, P. B.: 1987, Work, Unemployment, and Mental Health (Oxford University Press, Oxford).

Warr, P. B.: 1999, 'Well-being and the workplace', in D. Kahneman, E. Diener and N. Schawrz (eds.), Well-Being: The Foundations of Hedonic Psychology (Russell Sage Foundation, New York).

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