

Is the Easy Life Always the Happiest? Examining the Association of Convenience and Well-Being in Taiwan

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Abstract Social scientists have under-examined neighborhood stores and other “resources” and their relationships to community welfare and personal happiness. Because the presence of neighborhood conveniences may signify that a neighborhood caters to residents’ needs and smoothes out the hassles of their daily lives, it could be hypothesized that commercial amenities and services enhance individuals’ satisfaction with their neighborhoods, with their health, and even with their lives as a whole. This study used a national probability sample from Taiwan, a densely populated society in East Asia, to test if service-oriented commercial and religious enterprises in neighborhoods are associated with positive estimations of well-being by those who occupy these spaces. We empirically examine whether proximity to main roads, night markets and temples or proximity to smoky food stands and other shops that produce pungent products affects well-being. Our findings from multivariate analyses suggest that if nearby conveniences are conceived as annoyances, they tend to lower satisfaction with neighborhood, but they do not lower life satisfaction in general. In contrast, air quality, along with “peace and quietness” is reported by respondents to be key in enhancing general well-being. We discuss the policy implications in the concluding session.

Keywords City · Housing · Neighborhood · Residential satisfaction · Happiness

1 Introduction

Neighborhood service-oriented commercial amenities have been conceived as a fundamental element in assessing the livability of the community in which individuals inhabit.

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Local “conveniences” can have so much appeal that people dwelling in crowded cities or communities celebrate their increased capacity for discretionary spending as a result of saving money by avoiding traffic and gas expenses. They also save time on casual errands, urgent shopping, or necessary visits to public service agencies (Amérigo and Aragónés 1997; Sirgy et al. 2000, 2008). Conveniences can come, however, with “negative externalities”—they may appear like a random gathering of commercial activities, summing haphazard whims of self-centered motivations to mere profits; and they bring undesirable congestion, noises, waste, or pollution into residential areas. These negative effects may heavily counter-balance the benefits of neighborhood convenience enterprises. Resultantly, welfare dwindles as the surrounding environments degrade despite the concentration of “desirable” facilities (Welsch 2007).

Presumably, proximity to certain infrastructures or resources caters to special needs for certain groups so that it is welcomed rather than disagreeable. Such proximity, as an objective condition that might incur satisfaction consequently, should be distinguished from individuals’ cognitive evaluation of it (Ferrer-i-Carbonell and Gowdy 2007), as it is suggested that negative externalities may derive. A research question thus emerges: to what extent does the proximity of a convenience enterprise affect dwelling satisfaction and quality of life (QoL) in general? And to what extent does it impact QoL when it is subjectively identified as an annoyance?

Taiwan, one of the extremely densely populated countries in the world (641 people per km²), is our research site. A total population of approximately 23 million continues to amass in major cities and/or urban areas on this island society in East Asia. As of 2011, more than 95 % of the population inhabited localities of 20,000 people or more; and 72 % of the population inhabited cities with 150,000 residents or more. The Taipei-Keelung-Taoyuan metropolitan area in northern Taiwan accounts for almost 40 % of the national population, with a population density of 2,437 per km². Taipei City, the Capitol City of Taiwan, has an even higher density (9,761 per km² as of 2012). The urban concentration of the population necessarily has led to a great concentration of infrastructure and services in urban areas, and these provide inhabitants numerous consumer outlets, such as department stores, convenience shops, and supermarkets, as well as numerous food stands or other small businesses, on which urban comfort and ease much depend. As is observed in other countries, the attractiveness of inner cities is reflected in housing prices. The mean rent for a one-bedroom apartment in the city center is US\$501 per month in early 2013 (source: www.numbeo.com).

Because of the dramatic increase of urban population in the past decades, most large cities, particularly Taipei City, featured, in the first place, extremely crowded settlements, along with skyscrapers constructed one after another for commercial and/or residential uses. On the other hand, urban sprawl is happening, as suburban areas surrounding a metropolis are expanding to accommodate a large number of residents who had been crowded out of inner cities owing to expensive housing. New Taipei City that surrounds Taipei best exemplifies this trend of “decentralization”, and has accumulated to 16.9 % of the total population in 2013, in contrast to 11.4 % in Taipei. Most central or suburban cities were not well planned, however. From the social space perspective (Jacobs 1961; Whyte 1980) that emphasizes the importance of viable daily culture for successful cities, cities in Taiwan largely lack or fail to keep the essence of a neighborhood—casual public contacts, trust, and sense of togetherness have decreased substantially. As Glaeser and Gottlieb (2006) suggest, cities in fact can offer ample opportunities for enhancing social interaction and building social capital. Sidewalks can also function as a place for sociable activities for local residents who develop intricate, unconscious networks in inner cities. These features

have been appraised that they made some big cities “successful” (Jacobs 1961; Whyte 1988a). Yet the idea of organizing cities in ways as such seems to be utopian, if not *foreign*, to urbanites in Taiwan.

What is distinct in the Taiwan case is that most urban residents live in “mixed-use” housing areas. That is, the ground floors of the residential buildings along the main roads are, in general, dedicated to commercial activities. In this sense, real estates have been priced according to its closeness to markets, stores, restaurants, clinics, and public service facilities. Despite these conveniences, might these next-door commercial enterprises represent “stressors” that lower residential QoL? Previous literature indeed argued for a negative correlation. Considering this question from a physical environment perspective, Moser and Robin (2006) maintained that “big cities are environments of bad quality, and city dwellers should feel more threatened in their quality of life than inhabitants of rural areas ... It seems that the stressors to which city dwellers are exposed are numerous and concern more or less the majority of the residents.” (Moser and Robin 2006: 36) The counter-argument is that the surrounding annoyances would not generate negative impacts unless the idea that these enterprises are nuisances becomes salient to dwellers—that is, when they raise a grave concern and are so identified by community members. Cognitive mediation seems to play a role herein (Evans and Cohen 1991).

2 Neighborhood Conveniences, Residential Satisfaction and Perceived Well-Being

Neighborhood convenience in the present study refers to the amenities of the community that fulfill the needs of residents in daily life. These amenities, expectantly, can offer near-at-hand services with time efficiency, and therefore enhance level of comfort and life satisfaction. This correlation between convenience and satisfaction, however, can be much too straightforward and overly optimistic. In a densely populated society, particularly in urban areas where crowdedness, noises and pollution have impacted life quality, these “conveniences” might not add more easiness but operate as stressors. Therefore, they may not generate expected favorable well-beings. Previous research suggested that personal attributes, compared to the environmental factors, show less influence on the domain of residential satisfaction. Residential satisfaction refers primarily to (1) the community dwellers’ satisfaction with housing products and (2) their affective and cognitive responses to their residential environment (Fang 2006). Our study will focus on the second dimension of residential satisfaction. Parkes et al. (2002) presented a typical viewpoint from a British national sample in which background variables or accommodation types were of limited importance in predicting “area satisfaction,” whereas neighborhood characteristics exerted substantial influence (Campbell et al. 1976; Lee and Guest 1983; Spain 1988; Helburn 1982; Rogerson 1999; Welsch 2006, 2007).

As a result, there has been an increased effort to specify the environmental mechanisms and link them to residential satisfaction as well as QoL in broad sense. For instance, Pacione (2003) categorized environmental factors into four groups: cataclysmic events, ambient stressors, stressful life events, and daily hassles. Ambient stressors and daily hassles include air pollution, odors, and noises. MacKerron and Mourato’s (2009) London study illustrated that air pollution levels are negatively associated with life satisfaction. Kroesen et al. (2010) indicated that aircraft noise exposure lowers residential satisfaction of dwellers around Schiphol Airport. Welsch (2006, 2007) identified the impact of

pollution on life satisfaction and happiness by way of a cross-country research design using aggregated data.

Besides the pollution factor, other physical environmental features are identified to impact subjective well-being (SWB hereafter) as well. Brereton et al. (2008) showed that proximity to landfill and major roads reduces residential satisfaction. However, they demonstrated that closeness to a coast can be a blessing. Living nearby airports creates mixed outcomes: proximity to the regional or international airports facilitates QoL, but a local airport does not clearly enhance it. Nooraie and Tabibian (2012) found from their study of Iran that in historic areas, the QoL of residents is hampered due to physical decay and policy regulations in the surrounding environments. In addition to noise and pollution, Uzzell and Moser (2006) highlighted inadequate facilities and transportation systems as a threat to QoL. They additionally noted that in Europe and the US a great number of citizens reported a willingness to pay more taxes to improve the quality of their neighborhood environments (Uzzell and Moser 2006). Smyth et al. (2008) reported findings from China in which, besides pollution, environmental disasters and traffic congestion damaged the subjective well-being of citizens across 30 cities. Barcus (2004) gathered evidence to show that domestic migration from urban to rural regions in the US is partially attributed to searching for better residential environments.

A focus on the physical environment of the neighborhood directs policy attention to the provision of various amenities such as infrastructure, facilities, safety, support networks, and even regional growth dynamics (Parkes et al. 2002). However, the objective indicators of neighborhood environment may not effectively predict SWB (Lee 2008). As Evans and Cohen (1991) nicely stated: "People vary greatly in their reactions to the same configurations of physical demands... The distinction between sound and noise or between density and crowding points to the importance of individual *evaluations* (emphasis ours) of environmental demands" (Evans and Cohen 1991:596). The cognitive element has played a significant role in several studies attempting to understand the interplay between the environment, adaptation, and positive psychology. Empirically, individual perception of the physical surroundings serves as a mediating factor that explains the linkage between the habitat and perceived well-being (Glaster and Hesser 1981). Van Kamp et al. (2003), Pacione (2003), and Sirgy et al. (2000) hold that neighborhood environmental quality is a function of the interaction of objective environmental characteristics *and* subjective evaluation. Adequate evaluation of neighborhood environment should include measures indicating individuals' attitudes and feelings toward their communities (Sirgy et al. 2008). Proximity cannot replace individual assessment of the environmental influences or externalities. Research from this approach shows that subjective assessments of environment can be more important than objective indicators in explaining subjective well-being. For instance, Widgery (1992) showed that objective indicators of neighborhood environment are *less* strongly correlated with residential satisfaction than with a person's conceived outcomes.

In sum, the literature suggests (1) that in predicting residential satisfaction as well as personal well-being, both objective and subjective factors concerning the habitat should be evaluated simultaneously; and (2) as there are vast variations in individual perceptions of environmental stressors (Evans and Cohen 1991), it is necessary to identify if some facilities and conveniences may therefore become "externalities" that incite a negative affective feeling. The first suggestion refers to some "obvious" annoyances such as noise and air pollution, while the second draws attention to cognitive responses to local neighborhood conveniences and their impact on QoL.

3 Hypotheses

Our general research question is: in a densely populated society, how do local conveniences and annoyances affect personal well-being? This study is particularly characterized by investigating proximity to facilities including night markets and temples that are conceived to cater to the daily needs of local inhabitants in Taiwan context. The explanatory factors include two distinctive groups. First, physical neighborhood features are considered, as were suggested in the literature (Brereton et al. 2008; Ferrer-i-Carbonell and Gowdy 2007; Galster 1987). Specifically, this group of factors includes urbanization, housing style and road width. The second group pertains to cognitive perception of neighborhood features. Respondents' perception of air quality and quietness in a neighborhood is also considered herein.

We specify two types of perception of neighborhood features for our hypothesis testing. First, it is hypothesized that cognitive perception of environmental features, such as that of air quality or quietness in neighborhood, increases residential satisfaction. Second, we hypothesize that neighborhood convenience is positively associated with personal well-being. Proximity to main roads, night markets, and temples seems to make life easier by catering to daily needs, such as serving as centers for information exchanges, social contacts and mutual support. However, these amenities might be perceived to produce unwanted noises and/or odor, and can thus become annoyances that lead to lower QoL. Proximity to food stands, shops and factories that emit significant odors should lower residential satisfaction and well-being, as they might produce more liabilities than amenities.

Sirgy et al. (2008) have suggested that lower-order satisfaction may expand into higher-order satisfaction in what they termed a bottom-up spillover theory. In light of this argument, we expect the conceived neighborhood amenities to correlate positively with oft-used measures of well-being, such as life satisfaction and happiness.

Other major cities in Asia, such as Seoul, Beijing, and Bangkok, have similar facilities scattered within the residential areas. Yet the distinctive neighborhood features in these societies that can become annoyances was not been fully explored in past research. On the basis of Taiwan case, this study contributes to investigate the two elements simultaneously and to examine their association with QoL. Our empirical findings should offer useful information for scholars interested in cross-cultural comparative studies.

4 Data

The present research drew data from Taiwan Social Change survey (TSCS). This is a Taiwan version of the General Social Survey (GSS). TSCS follows the standard survey procedures of the GSS set by the National Opinion Research Center at the University of Chicago (Smith et al. 2006). The TSCS has conducted surveys annually since 1985. Each year it collected information on various aspects of personal attitudes and behaviors regarding family, religion, education, leisure, political participation, and so on. The data collection was directed by experienced social scientists following standard protocols. The survey data we used were collected in 2010 by a team from the Institute of Sociology, Academia Sinica. The main theme was the environment and living conditions. Face-to-face interviews were carried out using multistage random sampling techniques across approximately 60 cities and towns in Taiwan.

4.1 Participants

The sample used in current analysis includes only respondents who inhabited in urban/sub-urban areas and towns, whereas the rural respondents were excluded, as our hypothesizing focused on urban dwellers. The preliminary analysis reveals that the sample consisted of 1,680 respondents including 833 males (49.6 %) and 847 females (50.4 %) (see Table 1). The average age is 44.2 years ($SD = 16.5$). Roughly, 22.7 % of respondents were less than 30 years old, 40.2 % between 30 and 49, 24.9 % between 50 and 64, and 12.2 % of subjects were 65 years old or over. In terms of marital status, 31.8 % of respondents were single, 58.3 % were married or in co-habitation, and 9.9 % were widowed, separated, or divorced.

The respondents with a junior high school education or less accounted for 25.2 % of the sample, while 29.2 % were high-school graduates, 39.3 % were college or university graduates, and 6.3 % held a post-graduate degree. Approximately half of respondents (47.9 %) reported a family monthly income of NT\$55,000 (US\$1,833) or less. The mean family monthly income is NT\$78,453 ($SD = NT\$71,391$). Meanwhile, 9.8 % of respondents were currently unemployed. Most respondents were infrequently involved in religious activities. Approximately two-thirds (64.7 %) of respondents never or seldom participated in religious activities, while only 11.3 % participated on a monthly basis, and 24.0 % reported having religious activities a few times per year. Meanwhile, 30.7 % of respondents lived in metropolises, 30.9 % lived in sub-urban areas close to metropolises, and 38.4 % in town.

Table 1 Characteristics of the sample

	%		%
<i>Sex</i>		<i>Marital status</i>	
Male	49.6	Single	31.8
Female	50.4	Married	58.3
		Widowed/separated/divorced	9.9
<i>Age</i>		<i>Education</i>	
19–29	22.7	Junior high school or less	25.2
30–49	40.2	Senior high school	29.2
50–64	24.9	College or university	39.3
65 and over	12.2	Post-graduate	6.3
Mean = 44.2; SD = 16.5 years old			
<i>Participation in religious activities</i>		<i>Urbanization of residence</i>	
Frequently (at least once/per month)	11.3	Metropolis	30.7
Casually (at least once/per year)	24.0	Sub-urban	30.9
Seldom or never	64.7	Town	38.4
<i>Family income</i>			
NT\$25,000 (US\$833) or less			18.6
NT\$25,001 to 55,000 (US\$1,833)			29.3
NT\$55,001 to 75,000 (US\$2,500)			15.3
NT\$75,001 to 100,500 (US\$3,500)			16.8
NT\$100,501 and more			20.0
Mean = NT\$78,453 (US\$2,615); SD = NT\$71,391 (US\$2,380)			

4.2 Predictors: Perceptions of Neighborhood Features

Neighborhood features are measured as dummies representing the existence of the following: “busy main roads”, “smoky food stands” (located within a distance of 15 meters), “night markets”, “temples”, and “smelly factories” (within 50 meters), according to the design of TSCS. In addition to these “presence” factors, respondents were further asked to evaluate if they conceived these neighborhood features to be “annoyances” (also binary responses). It is by this way we evaluate the cognitive factor with regard to neighborhood features. We understand that neighborhood amenities should have a larger scope to include hospitals, schools, universities, public libraries, parks, green space, etc. Unfortunately, the TSCS’s original design was not able to provide information as such. Yet we would expect that these amenities hardly become annoyances, and thus can be safely set aside by this study. Note that the TSCS did not solicit information about the numbers of shops in the neighborhoods, so that we are not able to differentiate density from crowding in the current design.

Both quality of air and noisiness of neighborhood are also included to reflect the conceived environmental quality. The two measures are based on the respondent’s evaluation of neighborhood (on five-point scale). Road width facing one’s house is considered an additional predictor.

4.3 Dependent Variables: Measures of Residential Satisfaction and Well-Being

We applied several popular measures of SWB. SWB is a broad concept that sums up a person’s overall sense of worthiness and joy derived from one’s living conditions (Veenhoven 2007). “Living conditions” refers to various elements such as physical health, psychological states, social relationships and the environment, in broad sense. This study was not able to cover all aspects of subjective evaluations of one’s conditions as our dependent variables. However, the four measures this study used respond adequately to the demands of major theories of well-being (Diener 2000; Diener et al. 2003; Kahneman and Krueger 2006). The first one is residential satisfaction, which sums up an individual’s overall satisfaction with one’s own housing and neighborhood (Fang 2006; Iben and Amole 2012). Respondents are asked to rate themselves on a Likert scale: “All in all, are you satisfied with the community/neighborhood you are living in?” [from “very satisfied” to “very unsatisfied”]. On the basis of Sirgy et al. (2008) bottom-up spillover theory we previously discussed, we further explore if certain general measures of well-being are related to the neighborhood conveniences. Thus, the second measure we use concerns health: “how satisfied are you with your health?” This self-rated health indicator was also measured on a Likert scale [from “very well” to “not very well”]. Additionally, two general measures of SWB we use are satisfaction with life and level of happiness: (1) “In general, are you satisfied with your current quality of life?” and (2) “In general, do you feel happy throughout your day?” The TSCS originally applied a four-point scale for one half of the sample and a five-point scale for another half for these satisfaction measures. To obtain consistency over all the respondents, we decided to recode them into binary variables, with 1 indicating “very satisfied (well/happy) and “satisfied,” and 0 = otherwise.

4.4 Control Variables

In evaluating the influences of non-residential neighborhood enterprises, we consider several control factors as suggested by current well-being researches (Chang 2013; Diener et al. 1999; Veenhoven 2007). They are personal attributes including age, education, marital status, family

income, employment status, and participation to religious activities. We grouped housing styles into four groups: apartment (without elevators); high-rise apartment building (with elevators); single-story house or enclosed courtyard house; and terraced townhouse. We used the last group as reference, as it arguably is the most “wanted” housing in Taiwan. The personal attributes mentioned above are used as our basic control variables.

Additionally, population density at town level (or at district level if in metropolises) is calculated and incorporated as a control variable, as those areas with high population density are more likely to incur discomforts with residence, and even diminish level of QoL such as health or affective moods (Galea et al. 2005; Fassio et al. 2013; compare Walton et al. 2008). We simultaneously consider personal and environmental factors to capture the potential influence of the covariates on SWB.

5 Results

Among the five neighborhood characteristics this study examined, the temples are most frequently reported to appear in the communities (42.1 %) (see Table 2). Note that despite their general appeal, temples also can be a source of annoyance, as 5.4 % of respondents conceived it this way. Some Taoist or Buddhist temples, for example, set off firecrackers and broadcasted high-pitched voices through loud speakers when using outdoor altars during ceremonies.

Having a main road nearby ranks second in our list of proximities. As night markets generally occupied not more than a few spots in each town or city district, only 15.6 % of the respondents reported that a bazaar as such is within walking distance. Interestingly, not all respondents considered being annoyed by smoky food-stands close to their houses. Despite their frequent occurrences (28.8 %) in the neighborhood, only 4.9 % said that these bothered them. It appears that smelly shops or factories were more annoying, given that 11.3 % of respondents reported distaste for them.

We assess the association of each neighborhood feature with SWB indicators by way of computing their gamma coefficients, a measure of association that reflects the difference between the probability that the rank ordering of the two variables (1 and 0 in our case) agree and the probability that they disagree. We choose this technique because it is easy to interpret, as the coefficient ranges between 1 and -1 (Agresti and Finlay 1997). Taking residential satisfaction, for instance, the five neighborhood features are negatively correlated with this aspect of well-being ($p < 0.05$ or better). When these features are conceived as annoyances, not surprisingly, they also register negative signs. These neighborhood features, however, dwindle in their correlation with other well-being proxies, as most gamma coefficients fail to reach significance. Our preliminary regression analysis similarly shows their limited influence. Therefore, we decide not to further model their effects in the following sessions. Both air quality and low noise level are correlated positively with the well-being measures; they are included in the analyses.¹

¹ As we conducted quite a number of statistical tests on Table 2, some statisticians suggest that adjustment of α down to a lower level than conventional 5 % or 1 % might be necessary to avoid an inflated Type I error (Aickin and Gensler 1996). However, an adjustment such as the Bonferroni correction is not a necessity herein. This is so not because it tend to incur conservative statistical tests, but because our research design is not the repeated tests of the same hypothesis over many subsamples (e.g., sex, age or income groups), in which such adjustments are most suitable. In a research design that aims to assess distinctive predictors' effects on different dependent variables, like ours, a p level too strict can be deleterious to sound statistical inference (Perneger 1998).

Table 2 Neighborhood characteristics and their correlation coefficients (gamma) with SWB

	Percentage	Residential satisfaction	Health satisfaction	Life satisfaction	Happiness
1. Busy main roads	34.6	-0.22**	-0.07	-0.08	-0.06
When considered an annoyance	8.6	-0.14	-0.04	-0.26	-0.22
2. Night market	15.6	-0.20	0.06	0.03	0.21
When considered an annoyance	1.0	-0.50	0.01	0.32	0.24
3. Temple	42.1	-0.14	-0.10	0.02	0.10
When considered an annoyance	5.4	-0.41*	0.00	-0.08	0.18
4. Smoky food-stands	28.8	-0.32***	-0.11	-0.16	-0.10
When considered an annoyance	4.9	-0.46*	-0.14	-0.36*	-0.04
5. Smelly shop/factory	24.6	-0.47***	-0.16*	-0.34***	-0.18
When considered an annoyance	11.3	-0.44***	-0.12	-0.27*	-0.12
6. Air quality	16.0 ^a	0.50***	0.10	0.39***	0.20**
7. Quietness	18.7 ^a	0.51***	0.08	0.32***	0.18**

^a Percentage of respondents holding negative perception of air quality or quietness in their neighborhoods
 *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

The first two columns on Table 3 report the estimation outcomes from modeling residential satisfaction with logistic regression techniques, as the dependent variable is measured as binary. The aim of this modeling is to see whether the annoyances in the neighborhood perform well as predictors when socio-demographic differences are held constant. The outcomes reveal that personal attributes account for few variations, consistent with previous findings (Parkes et al. 2002). A notable effect is that of education, which indicates a *lower* level of residential satisfaction among the *higher*-educated. This result speculatively reflects the increasing housing price of middle class communities, which had generated widespread discontent. In general, urbanites show relatively *higher* residential satisfaction, perhaps because major cities in Taiwan had benefited from better infrastructures and public services. In contrast, suburban residents are 40 % (exp (-0.51) - 1) *less* likely to register residential satisfaction, perhaps because of increasing crowdedness often seen in their communities. Moreover, we did not observe notable influences of population density, a contrast to the literature that density diminishes QoL (Fassio et al. 2013). Neither housing style nor the width of road in front of own house correlates with residential satisfaction.

As is expected, neighborhood annoyance is a critical factor in residential satisfaction. When “conveniences” are considered as annoyances, they tend to lower residential satisfaction substantially. However, traffic annoyance from the nearby main roads is found to have a minimal influence, which fails to reach significance. Unsurprisingly, air quality and low noise levels, two proxies of the environmental amenities, enhance satisfaction.

Do neighborhood annoyances associate with health? The second equation on Table 3 (columns 3–4) displays the estimation results. Age appears to show a curve-shaped effect as its square term reaches significance. Our results also confirm previous research that the

higher-educated tend to report better health conditions (Chen 2012; Marmot 2002). Specifically, respondents who have a college or university degree enjoy better health than those who only finished junior high school or less. Yet self-rated health is not related to family income, unemployment, religious activity. City-town difference and population density are largely irrelevant to self-rated health.

The neighborhood annoyances do not impact health. Other research has drawn attention to air quality and noise (Rehdanz and Maddison 2008). Our findings show that air quality and noise fail to reach significance, despite a positive sign for their coefficients.

Our investigation now turns to modeling two general indicators of SWB, to explore if neighborhood annoyances impact overall assessment of life conditions. We begin with an estimation of life satisfaction, which represents a *cognitive* assessment, and afterward we report the outcome for happiness, which reflects an *affective* or *emotional* assessment of life conditions. Columns 5 and 6 on Table 3 report the estimation result for life satisfaction. The finding about the influence of education is worth noting. Respondents who have a high-school diploma or a college degree report a higher life satisfaction. Interestingly, it is casual, rather than regular, attending to religious activities that contribute to better satisfaction in life. In terms of causality, it is likely that a decrease in life satisfaction leads to frequent religious participation. Unfortunately, we do not have panel data for testing this possibility. Other personal attributes analyzed herein such as gender, income or housing style are not significant predictors of life satisfaction.

We find that respondents who were annoyed by smoky food stands reported a lower level of life satisfaction. Other annoyances seem to have only trivial influences. Additionally, quiet neighborhood and air quality both enhance life satisfaction.

Previous researchers (Helburn 1982; Rogerson 1999; Welsch 2006, 2007) gathered evidence that personal happiness is much affected by the environment people inhabit. Welsch (2006, 2007) especially identified the impact of pollution on happiness. Our findings show that those who reside in neighborhoods with better air quality (presumably, less pollution) are happier (Columns 7 and 8). Yet all annoyance factors fail in predicting happiness. Quietness does not correlate with happiness, either. Thus, the surrounding environment has at best a weak relation with happiness in this study. The limited impact of neighborhood annoyances stands in contrast to the substantial influence incurred from a number of demographic variables, such as family income, employment status, and religious behavior. We note that residents in high-rise apartments more frequently report *unhappiness* (compared to the townhouse dwellers).

We further explored a number of potential interaction effects, particularly those of population density with various annoyances, anticipating that it is in extremely densely populated areas that these annoyances most likely diminish life quality as we measured it. However, the obtained effects are trivial. We also tested the interaction terms with urbanization (that is, city \times various annoyances), but did not arrive at substantial results. The additive modeling we reported herein appears to offer reliable estimates.

6 Discussion and Conclusion

The limitations of this study should be noted before generalizing our empirical findings. One major concern is with the research design of TSCS. TSCS is a Taiwan version of GSS, aiming to collect information of social behaviors and values that represent long-term trends of changes in Taiwan. In order to keep the questionnaire within a certain length, it compromises to adopt single-item measures for certain constructs such as residential

Table 3 Regression analysis of subjective well-being: binary logistic estimates

	Residential satisfaction			Health satisfaction			Life satisfaction			Happiness		
	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.
	Sex (ref: male)	0.09	1.09		0.02	1.02		-0.29	0.75		-0.38	0.68
Age	-0.05	0.95		0.04	1.04		0.02	1.02		0.00	1.00	
Squared age/100	0.06	1.06		-0.05	0.95	*	-0.01	0.99		-0.01	0.99	
Education (ref: junior high school or below)												
High-school	-0.55	0.58		0.40	1.49		0.71	2.04	**	0.29	1.33	
College or university	-1.04	0.36	**	0.46	1.58	*	0.68	1.98	*	0.27	1.30	
Post graduate	-1.06	0.35	*	0.19	1.21		0.74	2.09		0.18	1.19	
Marital status (ref: single)												
Married or co-habited	-0.28	0.76		0.27	1.31		0.20	1.22		0.45	1.57	
Widowed/divorced/separated	-0.31	0.73		-0.45	0.64		-0.10	0.91		0.11	1.11	
Family income	0.01	1.01		0.00	1.00		0.03	1.03		0.05	1.05	*
Unemployed	-0.28	0.75		-0.25	0.78		-0.13	0.88		-1.01	0.36	***
Participation to religious activities (ref: never)												
Participating frequently	-0.15	0.86		0.27	1.31		0.75	2.11	*	0.15	1.16	
Participating casually	-0.03	0.97		0.22	1.25		0.55	1.73	*	0.78	2.18	**
Urbanization of residence (ref: city)												
Sub-urban area	-0.51	0.60	*	-0.38	0.69		-0.27	0.77		-0.34	0.71	
Small town	-0.17	0.84		-0.26	0.77		0.09	1.09		-0.08	0.93	
Population density (log)	0.17	1.18		-0.14	0.87		-0.30	0.74		-0.07	0.94	
Housing style (ref: terraced townhouse)												
Apartment (without elevator)	-0.44	0.65		0.13	1.14		0.22	1.24		0.22	1.24	
High-rise apartment building (with elevator)	-0.36	0.70		-0.23	0.79		-0.23	0.80		-0.69	0.50	**

Table 3 continued

	Residential satisfaction			Health satisfaction			Life satisfaction			Happiness		
	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.
One-floor house or enclosed courtyard house	-1.14	0.32	*	0.60	1.81		-0.62	0.54		0.22	1.24	
Neighborhood annoyance (ref: none)												
Traffic annoyance	-0.45	0.64		-0.12	0.89		-0.25	0.78		-0.40	0.67	
Smoky food-stand annoyance	-0.92	0.40	**	-0.29	0.75		-0.73	0.48	*	0.21	1.23	
Night market annoyance	-1.63	0.20	*	0.18	1.19		0.57	1.76		0.12	1.12	
Temple annoyance	-1.05	0.35	**	-0.11	0.90		-0.28	0.75		0.45	1.56	
Stinky shop/factory annoyance	-0.66	0.52	*	-0.11	0.89		-0.24	0.79		0.04	1.04	
Air quality	0.57	1.76	***	0.09	1.09		0.39	1.48	***	0.27	1.32	*
Quietness	0.06	1.06	*	0.11	1.12		0.22	1.25	*	0.01	1.01	
Road width	0.23	1.26		0.12	1.13		0.10	1.10		0.08	1.08	
Constant	1.86	6.39		0.28	1.33		-0.01	0.99		1.21	3.35	
-2 Log likelihood	807.72			1,288.66			899.63			832.59		
Pseudo R ²	0.07			0.04			0.06			0.05		
N	1,466			1,466			1,466			1,465		

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

satisfaction as we used in this paper. Ideally, measurement of residential satisfaction should include domains such as housing quality and pricing, home regulation policy, community amenities, and physical environments, against which the impact on SWB is tested (Fang 2006; Ha and Weber 1991). Although this study is able to investigate a number of specific neighborhood features, no exploration is conducted about amenities such as parks and local libraries that can balance out annoyances (Sirgy et al. 2008). The research design of TSCS, thus, may not perfectly fit our research purpose. This first limitation is noted. However, the strength of TSCS is that it was carried out by a professional team led by academics. The quality of data has received appraisals (Smith et al. 2006) and research results have been published in prestigious academic journals (for instance, Chang 2013; Tsai 2011). In our assessment, no other data in Taiwan can better offer the needed information for our research. Other limitations deserve more attention. Second, community-based indexes on air pollutants and noises should be included in future analyses to avoid the problem of “omission of explanatory variables” in estimations (Brereton et al. 2008; Smyth et al. 2008; Welsch 2007). We acknowledge that this is not plausible in the current research design. A third limitation is our lack of a measure of environmental concern. Concern in environmental decay can decrease residential satisfaction and stimulate relevant worries (Ferrer-i-Carbonell and Gowdy 2007), even if it does not affect SWB in general. Because of these issues, we do not claim to have provided with precision the impact of neighborhood annoyances. Finally, the variation explained in our modeling appears to be of a small amount, because we had to use simplified, dichotomous measures that suppressed variation. We suggest future studies to improve data collection and estimation to remedy these shortcomings. With these issues in mind, we summarize our major findings.

Many Taiwanese residents are fond of living in mixed-use housing areas within which nearby shops and stores cater to their needs, therefore smoothing out daily hassles and hurdles. Yet our modeling of next-door conveniences does not lend support to the commonsensical thinking that amenities increase life satisfaction. At the same time, we don't find them to damage well-being. These facilities indeed can become annoyances, and it is when they are conceived this way that they affect adversely residential satisfaction. Thus, the outcome of proximity for SWB largely depends on the perception of the conveniences and annoyances (or, seeing conveniences as annoyances). A general statement is proposed: the closer a facility or infrastructure is to one's residence, the more likely it will become an annoyance. Our finding is therefore congruent with the self-interest theory or the “not in my backyard” thought, in which an individual is presumably keen to protect a pleasant territory by way of keeping public facilities accessible but somewhat distant. This finding also agrees with the literature (Parkes et al. 2002; Rehdanz and Maddison 2008; Smyth et al. 2008) arguing that policy goals to improve residential satisfaction should pay sufficient attention to how neighborhood amenities can in the end paradoxically generate unpleasant or distressing responses for community dwellers.

Overall, the phenomenon in which neighborhood conveniences turn into unpleasant annoyances is only observable for certain people that seem to demand a high standard living environment. Many urban respondents in Taiwan adapt to the urban sprawl that features crowdedness, traffic congestion, lack of public infrastructures, un-genteel-looking buildings, and so on. They might have adjusted their expectations by lowering demands from the environments. These environmental animosities, along with high speculations on realties, are also experienced in large, growing cities in this region, such as in South Korea, China, and Thailand. But cities or metropolises in Taiwan, arguably, are able to provide some critical advantages that might have suppressed the discomforts mentioned above.

Indeed, they are spatial concentrations of sought-after resources, public services, consumer activities, etc., along with better safety from crimes. They are places highly exposed to inspiring ideas, products and people across the globe. The conventional “exploding metropolis” or “urban sprawl” viewpoints that stress over-concentration of the masses in urban or suburban spaces clearly do not offer a satisfactory explanation here. But we also use caution in endorsing the “downtown advantage” theory (Whyte 1988a, b) that tends to downplay the role of suburbia in offering good QoL (including better opportunities of job, career, and social mobility). In Our study does not identify a substantial group of urbanites benefiting from life and social space in inner cities.

There are several policy implications that can be derived from the empirics of this study. First, to increase residential satisfaction in densely populated urban communities, the built environment should be designed or regulated to scatter commercial activities in ways that they provide authentic amenities. This is especially important to urbanites that live in a built environment that features a “mixed use” policy allowing commercial buildings to be just tightly adjacent to residential ones. Commercial centers should be a selective, organized collection rather than mere concentration of businesses and conveniences. Sheer comforts for local dwellers should be prioritized, even when a culture of sidewalk and a sense of community (Jacobs 1961) are less likely to emerge in cities.

We advise to use caution to not overstate the correlation of neighborhood annoyances with SWB. What hurt residential satisfaction does not necessarily hurt satisfaction with health or life quality in general terms. Food-stands, night markets, temples, and shops joint to or inside of a community can sometimes bother local residents, but their impacts are somewhat constricted. Rather, it is clean air and quietness that matter more when it comes to an overall assessment of life conditions. This second policy message cannot be more clear and direct. Our finding provides an important piece of evidence for public policy of QoL for Taiwan as well as other societies which face an increasing difficulty in avoiding residential areas to be encroached upon by ever extending businesses in the name of serving the public.

Finally, we note that other well-beings such as health and happiness are less relevant to the environment, as we do not observe substantial costs derived from the latter. Pursuit of these goals might seek factors other than bettering the environmental surroundings.

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