THE ATTRACTIVENESS OF REGIONAL TOWNS: INFERRING QUALITY OF LIFE FROM HIGHER EDUCATION FACILITIES

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ABSTRACT

We examined whether the presence of higher education facilities made regional towns more attractive as potential residences. Metropolitan undergraduate students reported that they were more willing to live in a regional town with (vs. without) a university. Importantly, this applied regardless of whether they intended to work or study at the university. Perceived quality of life - defined as a combination of resident sociability and happiness, and the estimated amount of activities within the town - mediated the effect of university presence on residency likelihood ratings, suggesting that the presence of a university prompted participants to infer a higher quality of life for town residents. These results have implications for policy to counteract out-migration from regional areas, which threatens food security.

INTRODUCTION

More than half of the world's population now resides in urban areas (United Nations, 2009). Out-migration from regional areas has raised concerns about numerous economic and health issues, such as food security (Ehrlich, Ehrlich & Daily, 1993). From this perspective, it is becoming increasingly important for policy makers to understand—and perhaps be able to influence—people's decisions about where to live, particularly with regard to regional areas.

Many models of migration patterns regard economic considerations as the largest—or sole—determinant in migration decisions (e.g., Eggert, Krieger, & Meier, 2010; Hicks, 1932). However, although economic models do well at predicting migration at a macro-level, anomalies in migration data, such as the absence of a relationship between unemployment rates and in-migration in many areas (Greenwood, 1975, 1997), suggest that residency decisions are not solely determined by economic factors. It is possible that psychological factors might explain some of the variance in migration decisions that is unaccounted for by economic variables.

Very little is known about how cognitive processes shape residency decisions. As an initial step toward developing an understanding of this issue, we investigated one possible role played by heuristic judgment processes (e.g., Chaiken & Trope, 1999; Tversky & Kahneman, 1974). Consider a situation in which a judgment must be made without sufficient information to enable an accurate response. In such situations, people often base their judgment on inferences drawn from information that is available but not directly relevant to the judgment. For example, Gigerenzer, Hoffrage, and

Kleinbölting (1996) asked participants which of two foreign towns had the larger population. If participants did not know the answer, they attempted to use the information they did have about the two towns to infer their relative population. For instance, if told that one town had a football team in the national league and the other did not, participants tended to select the town with the football team (such teams are likely to be located in large towns).

We investigated whether this type of heuristic process contributes to residency decisions. When presented with limited information about a town, would people use the available information to make inferences about other aspects of the town relevant to residency decisions? We provided undergraduate students at a metropolitan university with information about fictional towns and asked participants to rate the likelihood that they would be willing to live in each town after they graduated. The towns differed in terms of their higher education facilities: a university campus, a community college, or none. At first glance, it might seem highly intuitive that people would be more willing to live in towns with better facilities of any kind (e.g., educational, recreational) because these would afford opportunities to engage in a wider range of activities. However, we were interested in whether facilities play a more subtle role. Specifically, we hypothesized that participants would be more willing to live in towns with higher education facilities—even if they were not intending to work or study at these—because the presence of such facilities would lead participants to infer a better quality of life for residents.

A metropolitan undergraduate sample is important for understanding the attractiveness of regional towns as potential residences for several reasons. First, university graduates are more likely to migrate than non-college-educated youth (Kodrzycki, 2001). Second, in many countries such as India and the U.S.A., the population of university graduates is projected to increase over the coming years (e.g., National Science Board, 2010; Agarwal, 2009). Third, the high migration rate of youth from regional to metropolitan areas (e.g., Argent & Walmsley, 2008; Carr & Kefalas, 2009) suggests that regional communities would benefit from an increase in metropolitan-to-rural migration among youth. Thus, policies aimed at encouraging metropolitan university students to move to regional areas may be particularly fruitful for addressing the current problems with rural out-migration.

EXPERIMENT 1

Method

Participants. Forty undergraduate students (19 female; aged 18 to 25 years, M = 22 years; SD = 2 years) participated for payment. Flinders University's Social and Behavioural Research Ethics Committee (SBREC) approved the research, and participants gave informed consent to participate in written form.

Design and Procedure. Participants received all instructions and made their responses via computer while alone in a quiet cubicle. We used a judgment analysis approach (Cooksey, 1996; Houston, 1974). Participants viewed 12 descriptions of fictional towns, representing a 3 (higher education facilities: university; vocational college; none) × 4 (population size: 5,000; 10,000; 20,000; 50,000) within-subjects design. Descriptions were identical in all other aspects and were presented in a random order. Appendix A contains the descriptions.

For each description, participants indicated the likelihood they would live in the town for longer than 1 year (a) as a percentage rating and (b) with a "yes/no" response. For the latter decision, the computer recorded response latency, which reflects decision difficulty (easy decisions are made quicker than hard ones; e.g., Geller & Pitz, 1968). Latency was used to compute an implicit measure of residency intentions as follows. First, raw latency was subtracted from zero for "no" responses and added to zero for "yes" responses. Then, the inverse of each latency value was calculated. Thus, larger positive values represented faster (easier) "yes" responses and larger negative values represented faster (easier) "no" responses.

For towns with education facilities, participants were also asked whether they would seek to work or study at the facilities, assuming that they lived in that town after graduation. This allowed us to rule

out the possibility that any effect of facilities was simply due to participants who planned to continue their academic pursuits.

RESULTS AND DISCUSSION

Explicit measure. As hypothesized, residency judgments (% ratings) were influenced by the presence of education facilities. The main effect of facilities was significant, F (2, 78) = 50.74, $p < .001$, and qualified by a facilities × population interaction, F (6, 234) = 2.26, $p = .038$. We explored the interaction via planned comparisons. At each population level, the town with no university was compared to each of the towns with education facilities (see Figure 1).
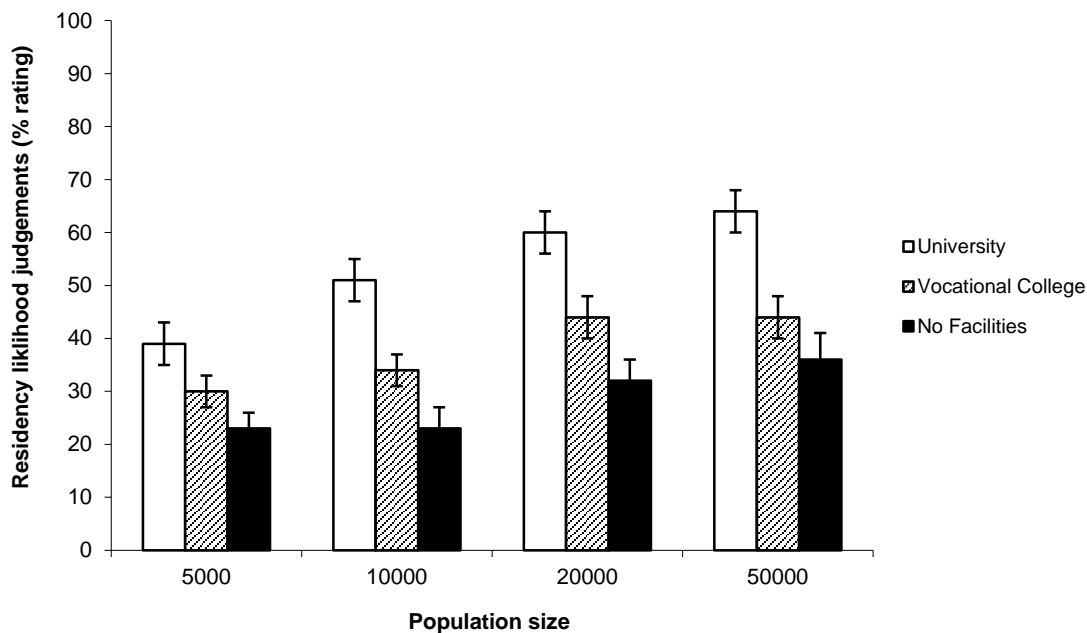

Figure 1. The effect of education facilities on residency likelihood judgments (% ratings) for towns of different population size. Error bars denote standard errors.

At each population level, participants reported a higher likelihood of living in the town for more than one year if the town had a university versus no higher education facilities (all $ts > 4.26$, $ps < .001$), or a vocational college versus no higher education facilities (all $ts > 2.11$, $ps < .041$). The patterns of Cohen's d effect size estimates associated with these comparisons (see Table 1) suggested that the presence of a university had a smaller effect on residency judgments for towns of population 5,000 than for larger towns. In contrast, the presence of a vocational college had a consistent (albeit weaker) effect on residency judgments across the different town populations.

Importantly, the main effect of education facilities on residency judgments did not disappear when we considered only participants who indicated that they did not intend to work or study at the facilities ($n = 13$), F (2, 24) = 7.45, $p = .003$. These participants reported being more willing to live in towns with a university (M = 45%, SD = 19%) than those with no education facilities (M = 33%, SD = 23%), $t(12) = 3.04$, $p = .010$, $d = 0.86$. However, residency likelihood did not differ between towns with a vocational college (M = 35%, SD = 23%) and those with no education facilities, $t < 1$, $p = .343$.

Implicit measure. The results for the implicit measure of residency intentions also yielded a significant main effect of facilities, $F(2, 78) = 28.47$, $p < .001$, but no facilities × population interaction, $F(6, 234) = 1.30$, $p = .258$. Scores on the implicit measure were higher (indicating faster, more positive responses) for towns with a university (M = .023, SD = 0.41) versus no education facilities (M = -0.21,

SD = 0.30), *t*(39) = 3.51, *p* = .001, *d* = 0.52. Likewise, scores were higher for towns with a vocational college (*M* = -0.06, *SD* = 0.35) versus no education facilities, *t*(39) = 3.51, *p* = .001, *d* = 0.52. This general pattern maintained for participants who indicated that they did not intend to work or study at the facilities described, although the effect was non-significant, *F* (2, 24) = 1.53, *p* = .237.

To ensure that these effects were not due simply to the proportion of "yes/no" judgments inherent in this measure, we also conducted separate linear mixed model analyses of response latencies for positive residency judgments ("yes" responses) nested within participants. The results were consistent with the notion that the education facilities manipulation affected decision ease. "Yes" responses were faster for towns with a university (*M* = 2883ms, *SD* = 2212ms) than those without educational facilities (*M* = 3967ms *SD* = 3223ms), *F*(1, 220) = 5.90, *p* = .016, *d* = 0.39. There was also a nonsignificant trend toward faster "yes" responses for towns with vocational colleges (*M* = 3345ms, *SD* = 2573ms) than those with no higher education facilities, *F*(1, 220) = 1.59, *p* = .208.

The results of Experiment 1 provided evidence from explicit and implicit measures that information about higher education facilities influences residency judgments. It is important that towns with a university were rated as more likely residences even among participants who did not intend to work or study at the university. This finding indicates that the results were not driven by participants' desire to continue their academic pursuits, and is consistent with the notion that people draw inferences about quality of life a town from the presence of a university. We tested this idea directly in Experiment 2 by examining whether the presence of a university affected residency judgments via perceptions of residents' quality of life. We also included a description of a metropolitan town for comparison.

EXPERIMENT 2

Method

Participants. One-hundred and ninety-five undergraduate students (99 female, 86 male, 10 non-responses) aged 17 to 48 years (*M* = 20 years; *SD* = 4 years) participated for payment. Flinders University's Social and Behavioural Research Ethics Committee (SBREC) approved the research, and participants gave informed consent to participate in written form.

Procedure. Participants completed Experiment 2 as a pencil-and-paper task while alone in a quiet cubicle. Participants read three descriptions of fictional towns presented in counterbalanced order: a metropolitan town, a regional town with a university, and a regional town without a university. Population size for the regional towns was also manipulated between-subjects (5,000 or 10,000 people) but had no effect on any results and is not discussed further.

For each description, participants indicated the likelihood that they would move to the town and live for longer than one year after graduation (percentage rating) and completed a 3-item measure of perceived quality of life in the town. The items were derived from the results of Bowling's (1995) large survey of adults, which identified happiness and social life/leisure activities as two important, non-economic aspects of quality of life. Thus, we defined quality of life as a combination of resident happiness and sociability, and the potential activities available within the town. Participants were asked to indicate on 7-point scales the extent to which each town's residents were likely to be (a) happy and (b) sociable, and the extent to which each town was likely to have a lot of potential activities.

For towns with a university, participants also indicated whether they or their partner would intend to work or study at the university, assuming they lived in the town after graduating.

RESULTS AND DISCUSSION

We report results only for the subset of participants who reported that neither they nor their partner would intend to work or study at the university (*n* = 108). Analysis of the entire data set produced virtually identical results.

The manipulation of town description affected residency judgments, F (2, 212) = 37.05, p < .001. Pairwise comparisons were conducted using Bonferroni-corrected alpha levels of .017. As expected, participants reported a greater likelihood of living in the regional town with a university (M = 63%, SD = 24%) than the regional town without a university (M = 53%, SD = 27%), t(107) = 6.76, p < .001, d = 0.88. Participants also reported being more willing to living in the metropolitan town (M = 74%, SD = 21%) than the regional town with a university, t(107) = 4.28, p < .001, d = 0.51, or the regional town without a university, t(107) = 6.96, p < .001, d = 1.11.

Perceived quality of life scores were affected by the description manipulation and followed the same pattern as residency judgments, F (2, 212) = 25.94, p < .001. Perceived quality of life was higher for the regional town with a university (M = 14.5, SD = 2.8) than the regional town without a university (M = 13.6, SD = 2.9), t(107) = 4.25, p < .001, d = 0.47. Perceived quality of life was also higher for the metropolitan town (M = 15.5, SD = 2.9) than the regional towns with a university, t(107) = 3.74, p < .001, d = 0.45, or without a university, t(107) = 4.25, p < .001, d = 0.79.

To assess whether the effect of town description on residency judgments was mediated by perceived quality of life, we followed a method recommended by Judd, Kenny, and McClelland (2001) for testing mediation hypotheses involving a categorical, within-subjects independent variable. Separate analyses were conducted for pairwise comparisons of the levels of the independent variable. The comparison of greatest interest was between the two regional towns, which reflected the effect of the presence of a university on residency judgments.

The mean difference in residency judgments between regional towns with a university and regional towns without a university was significantly predicted by the mean difference in quality of life judgments, suggesting that the effect of university presence on residency judgments was mediated by perceived quality of life, B = 3.05, t = 4.80, p < .001. The associated intercept differed significantly from zero, indicating partial rather than full mediation, B = -7.89, t = -5.04, p < .001.

We conducted a similar mediation analysis for the comparison between towns without a university and metropolitan towns. Again, the effect of the description on residency judgments was mediated by perceived quality of life, as the mean difference in residency judgments was predicted by the mean difference in quality of life judgments, B = 4.76, t = 5.24, p < .001. The associated intercept was significantly different from zero, indicating partial mediation, B = 12.86, t = 3.90, p < .001.

The results of Experiment 2 align with and extend those of Experiment 1, offering further support for the idea that, when considering whether to live in a town, people make use of limited available information to draw inferences about likely quality of life in the town.

GENERAL DISCUSSION

Little is presently known about the psychological processes underlying migration decisions. Although economic factors clearly influence migration choices (e.g., Eggert et al., 2010), the present studies suggest that non-economic town characteristics can affect the evaluation of potential residences by leading people to make inferences about the potential quality of life within a town. Thus, the presence of higher education facilities increases the perceived attractiveness of a potential residence even for those who do not intend to directly use the facilities. When evaluating a town as a potential residence, it is highly unlikely that people have access to all relevant information, especially if the town under consideration is far away. From this perspective, it makes sense that people use the information they do have to draw inferences that aid residency decisions. Indeed, this process may facilitate efficient and effective decision making, provided valid inferences are drawn (Gigerenzer et al., 1991).

These data have implications for current policy issues. As noted previously, increased migration from regional to metropolitan areas is a problem faced by many communities, with more than half of the world's population now residing in urban areas (United Nations, 2009). The increasing exodus from regional areas is likely to result in difficulties with education in rural areas (e.g., Drummond, Halsey & van Breda, 2012) and lower levels of food security at a time when the world needs to drastically increase food production (Godfray et al., 2010). Our results suggest that investment in university

facilities in regional areas might help alleviate this problem not only by retaining young people who want to pursue tertiary education (Artz & Yu, 2011; Drummond, Halsey & van Breda, 2011), but also via a novel mechanism: attracting young, university-educated people from metropolitan areas. The idea that a university may help regional towns attract graduates is worthy of close attention, particularly given that government investment in higher education has recently been a contentious political topic (e.g., Altbach, Reisberg, & Rumbley, 2009; Johnstone, 2011).

Finally, this research also indicates some potentially fruitful directions for further investigation. One involves examining factors that determine the extent to which people use limited information to draw valid versus misleading inferences about towns (e.g., Gigerenzer & Todd, 1999; Tversky & Kahneman, 1974). Another relates to the issue of how residency likelihood judgments might translate to migration behavior (i.e., actually relocating to that town). For example, perhaps towns that are more attractive are perceived as closer and, therefore, easier to move to (Alter & Balcetis, 2011). Although migration behaviour has traditionally been studied by researchers in other disciplines (e.g., economists, sociologists, and demographers), psychologists are well placed to contribute to this field.

ACKNOWLEDGEMENTS

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POPULATION SIZE

Comparison	5,000	10,000	20,000	50,000
University vs. no facilities	0.87	1.32	1.48	1.28
Vocational college vs. no facilities	0.42	0.58	0.60	0.48

Table 1. Effect sizes (Cohen's d) for planned comparisons of education facilities conditions for towns of different population size

APPENDIX A: ADDITIONAL METHODOLOGICAL DETAILS

EXPERIMENT 1

Town Descriptions

The following is a description of a town in country Australia. The town is situated in a picturesque area, with good access to roads. The town houses approximately [5,000; 10,000; 20,000; 50,000] local residents who are active within its community. The town has many facilities to support the community, [including a university; including a TAFE; but no university or TAFE]. The town holds many community events, and the residents describe the town as enjoyable, vibrant and peaceful.

Questions

Would you live in the town described for longer than 1 year after you graduated? (Yes/ No)

What is the % chance you would live in the town described for longer than 1 year after you had graduated? (0-100%, in 10% increments)

If you lived in the town after you had graduated, would you be seeking to work in or attend the educational facilities described? (Yes/No)

NB: Technical and Further Education (TAFE) colleges are very common, well-known vocational colleges in Australia

EXPERIMENT 2

Please read the bullet points of the following towns and then answer the questions on the following pages.

Town A

- Australian Metropolitan Centre
- Picturesque Area
- Has many facilities
- Has a university
- Greater than 1 million residents

Town B

- Australian Regional Centre
- Picturesque Area
- Has many facilities
- Has a university
- [10,000 [50,000] residents

Town C

- Australian Regional Centre
- Picturesque Area
- Has many facilities
- Has a university
- 10,000 [50,000] residents

N.B. Towns were counterbalanced between participants such that they each appeared as Town A, Town B or Town C.