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## The Impact of air quality on the selection of a home

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# **The Impact of Air Quality on the Selection of a Home \***

A Thesis submitted in partial satisfaction  
of the requirement for the degree of

Bachelor of Arts

In

Environmental Studies Program  
University of Nevada, Las Vegas

by

Carol Lane

May 2002

Department Advisor: Helen Neill, Associate Professor  
Environmental Studies Program, University of Nevada - Las Vegas

## **Abstract**

Hedonic price method studies have assumed that individuals consider air quality as a characteristic of their homes. The purpose of this study is to determine if air quality is a significant characteristic considered when an individual decides where to live. This study uses a survey to determine where air quality ranks amongst the different characteristics of a home. My results show that air quality is significant but ranks below structural and neighborhood characteristics.

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## **Introduction**

Environmental goods are difficult to evaluate in traditional market analysis. The hedonic price method is a tool used to assess the value of environmental goods, which are difficult to evaluate, and determines their contribution to the overall price of a good (Palmquist, 1999). This method assumes that when individuals purchase a good, they are implicitly buying an environmental good (Bolye and Kiel, 2001). The hedonic method is used to isolate the characteristics of a home and determine the influence it has on the overall price. The hedonic price method has been used to determine the impact that air quality has on the price of a home.

However, hedonic price method studies have assumed that air quality is considered a characteristic of a home by using it as one of the variables it accounts for. This assumption infers air quality is both marketable in homes and has a willingness to pay associated with it but this has never been addressed in the studies. This implies that individuals consider air quality as a characteristic of a home when they select a home. Since this has never been addressed, the question remains, is air quality a characteristic that individuals look for when selecting a home?

The purpose of this thesis is to determine whether air quality is considered as a characteristic of a home. This study conducted a survey to determine if air quality is identified as a characteristic that individuals consider when selecting a home and how it ranks amongst other characteristics.

This report will be divided into the following sections: literature review, methods, results, and finally a discussion of the findings. The literature review will look at various studies regarding the hedonic price method and air quality studies. The methods section will outline the procedures for this study. The results section will analyze the results from the survey. Finally there will be a discussion and conclusion regarding the findings of this paper.

## **Literature Review**

Determining a price for air quality is difficult because air quality is not traditionally marketable. Any price perceived value from air quality is compiled into the overall price of a good (Palmquist, 1999). Finding a relationship between the price of a good and environmental quality has been the center of many studies. The hedonic price method (HPM) is used to determine the value of environmental goods that are difficult to evaluate. It is a tool that is often used in determining the effects of air quality on property value. Housing markets most often use the HPM to determine the values of different qualities found in a home (Palmquist, 1999). Air quality has been one of the qualities looked at, specifically to determine the relationship between air quality and property value (Palmquist, 1999). It is utilized based on the notion that environmental quality can be traded in the housing market because it is assumed that air quality is one of the qualities that people look at when selecting a home (Palmquist, 1999). HPM determines how each quality of a good affects the price of that good assuming that people place different values on characteristics of a good. The hedonic method seeks to extract information on the value of environmental characteristics (Palmquist, 1999). The hedonic price provides an estimate of the buyer's marginal willingness to pay (MWTP) for changes in an attribute of a home (Smith and Huang, 1995). This is based on the notion that the price of a house responds to a change in a given attribute (Smith and Huang, 1995).

The characteristics used in the hedonic studies when evaluating housing markets are broken down by neighborhood, structural, and accessibility characteristics (Garrod, 1999.) Neighborhood characteristics include unemployment rate, racial composition, and quality of schools (Garrod, 1999.) Structural characteristics include attributes such as plot size, number of

rooms, garage space, and structural integrity (Garrod, 1999.) Accessibility characteristics comprise of environmental quality, location from work and school (Garrod, 1999.) Each characteristic is assigned a value based on its contribution to the price of a home.

Hedonic studies on air quality's effects on property values began in the 1960's (Boyle and Kiel, 2001). The Ridker and Henning study was the first study to estimate the effects of air pollution on property values (Boyle and Kiel, 2001). The hedonic price method was used in that study to help find the influence that air pollution had on property values. The study looked at different qualities that made up the total value of a house and isolated the contribution that air quality had on the price. The goal was to show the impact that air quality had on the property value. The study showed a negative relationship between air pollution and property values. Similar studies were conducted over the next 25 years in the same manner in order to prove the validity of the findings.

In a study conducted by Jon Nelson (1976), it sought to estimate the supply and demand equations for urban air quality. He generated the hedonic price values for air quality by looking at residential property values in Washington D.C. This study was able to determine market prices for air quality by looking at the covariation between the residential property values and air pollution. Nelson's results supported the previous studies results in showing an existence of a market for air quality in the market for homes.

Harrison and Rubinfeld (1978) investigated the problems with using housing market data to denote the willingness to pay for clean air. Their study was motivated by the difficulties associated with putting the benefits of clean air into monetary terms. One method of determining willingness to pay is from an analysis of housing markets. The authors noted that this method is based on a presumption that individuals will pay different prices for homes located in different

air quality areas. They also note that little attention has been paid to the assumptions implanted in this method. In their study, they assume that households consider air quality as characteristic of neighborhood characteristics in determining their housing choices (Harrison and Rubinfeld 1978). The results the Harrison and Rubinfeld study concluded that marginal air pollution damages (reduced property values) resulted from increased air pollution.

In a study by V. Kerry Smith and Ju Chin Huang, they sought to determine the effectiveness of the hedonic price method and found that air pollution does influence property values (Smith and Huang, 1996). Specifically, the study set to find support for the negative relationship between air pollution and property values found in the Ridker and Henning study and other studies that followed. They were measuring using criteria that supported a consistent and statistically significant relationship between air pollution and air quality (Smith and Huang, 1996). This study analyzed 37 studies that used the hedonic price method and dealt with at least one measure of air pollution. From the analysis and organization of the data, the study set up a model to find the significance of the negative relationship between air pollution and property values. The variables included data used, model specification features and city characteristics.

The study found that there was a “systematic relationship between the modeling decisions, the descriptions used to characterize air pollution, the condition of the local housing markets, and the conclusions reached about the relationship between air pollution and housing prices (Smith and Huang, 1996).” Still, the studies have not been able to establish more than a mere connection between the two and do not account for air quality being mistaken for another characteristic that would distort the relationship between air pollution and property values (Boyle and Kiel, 2001).

This study made some unusual observations. They noticed that the significance of the relationship between air quality and property values decrease when exact property amounts are used (Smith and Huang, 1996). They also noted that when more air pollution measures are given, the model decreases in finding a significant relationship. Overall, the study found that the hedonic price method has been successful in establishing a relationship between air quality and housing prices. The hedonic price method has established the direction of change in property values but has not showed enough support to determine more specific information (Smith and Huang, 1996). Smith and Deyak (1975) found in their study of eighty five cities, that both owner and renter markets that air quality did not have a statically significant impact on property values or rent prices. Their study took into account the structural and neighborhood characteristics. Murdoch and Thayer (1988) noted in their study that traditional models are likely to be biased and that the accuracy of the hedonic models should consider better measurements of environmental qualities.

These studies suggest that although there is a relationship between air pollution and property values, the results were not able to estimate a precise change and are dependant upon the variables used. This may be caused by several reasons; one being that air quality does not have a significant impact on the price of a home. In the following study some of the potential reasons why the variables could have affected the outcome of the study are addressed.

In another study, a review of the prevalent hedonic price studies for environmental externalities was conducted. This review included many different environmental qualities including one on air quality and property values. In this report the authors, Boyle and Kiel (2001), sought to answer several unanswered questions. They looked for the consistency of the results in the studies, the dynamics that were important to the study, price change over time, how

changes in information affect consumer behavior, what variables were used, what environmental factors were used, and how many environmental factors were used (Boyle and Kiel, 2001).

The authors of this study concluded that in their study of the air quality reports, “coefficients of air pollutants are often statistically insignificant and that the signs of estimated coefficients are sensitive to other included variables (Boyle and Kiel, 2001).” The study contributes the results to different factors. One being the measures of air quality looked for may not be important to homeowners.

These two studies differ in their outcomes. The first study supported Ridker and Henning’s finding of a negative relationship between air pollution and property values. Yet, in the Boyle and Kiel study, they report that the results are significantly insignificant. They contribute their results to many factors including that air quality is correlated with another variable or that the measures of air quality are not relevant to homeowners (Boyle and Kiel, 2001). The studies have not been able to establish a stronger connection between air quality and property values due to a possibility that the relationship is correlated to another quality that influences the change and air quality is not a characteristic of a home.

## **Methods**

### *Subject and Design*

This project based a survey on a traditional hedonic model. This project conducted a survey to determine if people consider air quality as a characteristic of their home. This study questioned 75 UNLV students about qualities they looked for in their homes. The survey was designed to find which attribute the respondents considered in their homes and where air quality was ranked amongst the different variables. These qualities were derived from variables used in the hedonic price method studies. The students were given a series of attributes found in a home

and were asked identify what characteristics they considered when moving or planning to move. The questionnaire also included socio-economic questions. (See Appendix A for copy of the survey.) The surveys will be stored in a locked drawer for three years.

### *Procedure*

UNLV students were recruited from classrooms and the student union. They were asked to participate in the survey. Participation was strictly voluntary. The survey took approximately 15 minutes to complete. The surveys were distributed to Political Science course 310: Constitutional Law on April 4<sup>th</sup>, 2002, Political Science course 311: The Presidency on April 3<sup>rd</sup>, 2002, and randomly distributed to students near the MSU during the week of April 8<sup>th</sup>-12<sup>th</sup>, 2002.

## **Results**

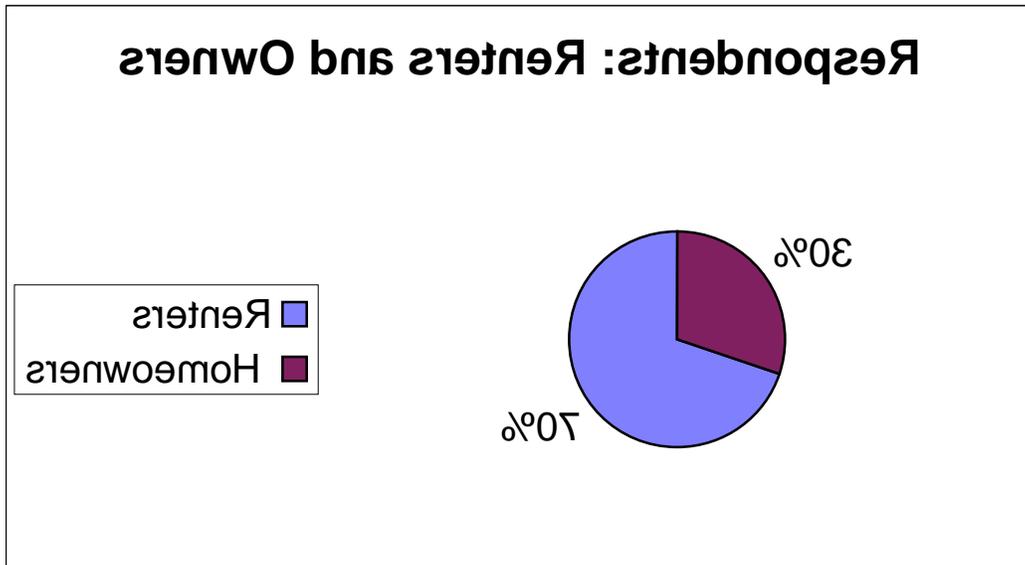
### *Descriptive Statistics*

This section describes the results of the survey. Figure 1 shows the percentage of respondents who rented their homes and who owned their homes. Figure 2 depicts the types of homes the respondents currently lived in while Figure 3 shows the percentage of people who identified environmental factors as important when moving or planning to move. Table 1 describes the variables used in the data analysis. Summary descriptive statistics follow in Table 2. Graph 1 displays the number of respondents who identified each characteristic as a consideration when they move or when they planned to move. Finally, table 3 displays the results from the t-tests.

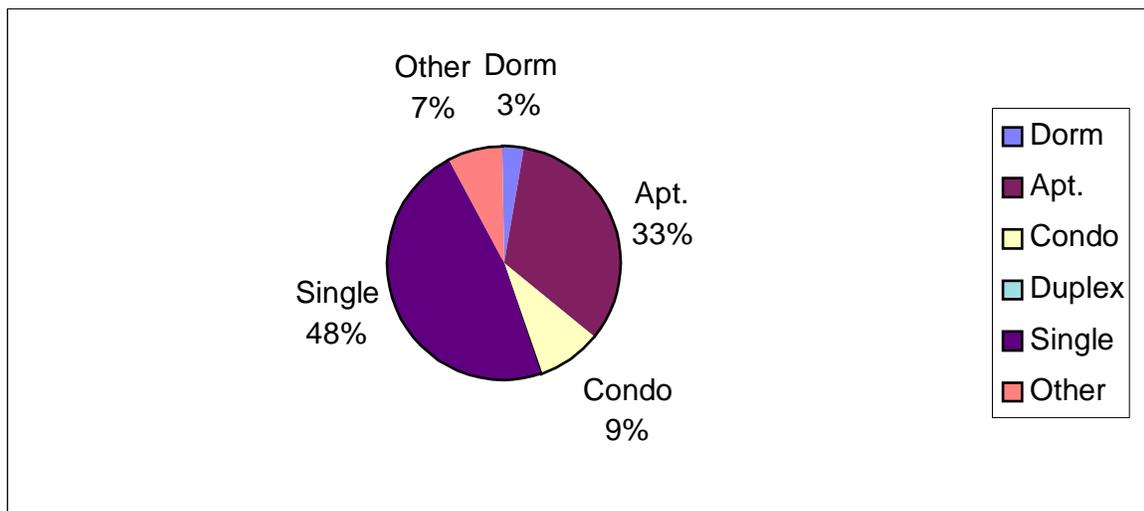
Figures 1 and 2 describe the respondents of the survey. Figure 1 shows that 70% of the respondents rented their homes while 30% owned their own home. This is an important consideration for the analysis. Homeowners may be more thoughtful of their responses as they

are in a permanent situation. While renters may not consider thoroughly their responses since it is easier to change their living situations. Figure 2 shows the types of homes the respondents lived in during the time of the survey. Again, it is important to understand where the respondents live to determine how far the results of this survey reach.

**Figure 1: Composition of Respondents Pie Chart**



**Figure 2: Types of Home Respondents Lived in**



of the home selection process. This is insightful because it serves a check against the other results

of this study. Forty percent of the respondents identified environmental factors as being somewhat important. This suggests that while environmental factors are an important part of the home selection process, they may be secondary to other characteristics. The respondents are almost even between those who do not consider environmental factors important and those who do. While only eight percent were unsure.

**Figure 3: Response to Environmental Factors Considered**

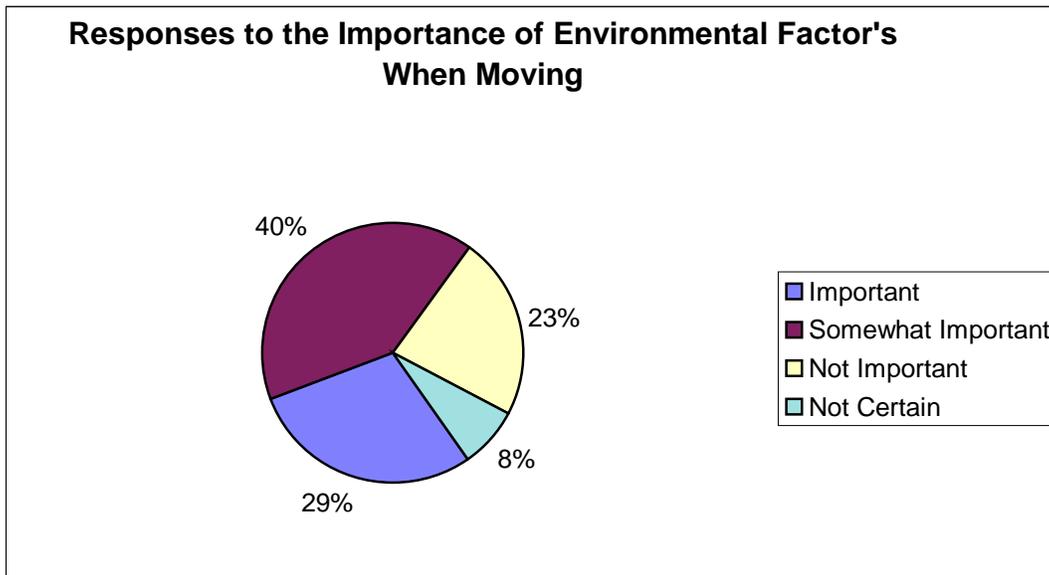


Table 1 describes the characteristics (variables) used in the survey. These variables are commonly used in hedonic price method studies. In this survey, respondents were asked to both identify and rank these variables. Other tables rely upon the scores obtained from the survey for analysis. Table 2 describes the mean and standard deviation of the variables. It is based on the average ranking of each characteristic by the respondents. Notice the mean and standard deviation for air quality. It is ranked thirteenth out of the sixteen variables based on means.

**Table 1: Variable Description and Sources**

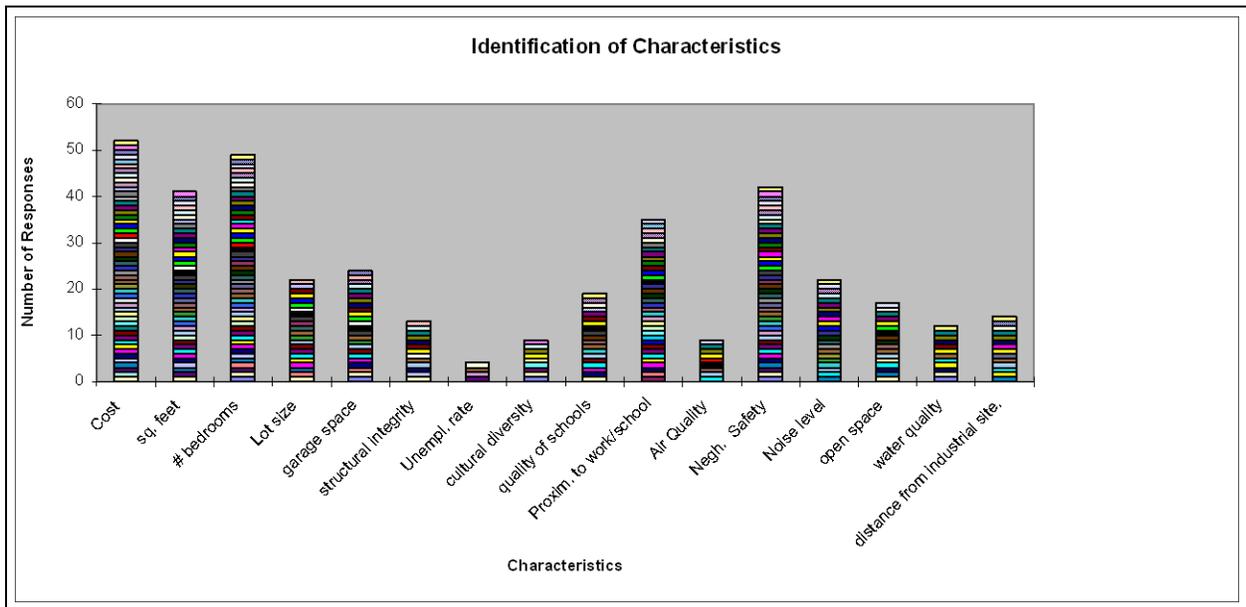
<b>Variables</b>	<b>Definition</b>	<b>Units</b>	<b>Source</b>
<b>COST</b>	Cost of Home	Rank Score	Survey
<b>SQFT</b>	Size of Home	Rank Score	Survey
<b>BEDS</b>	Number of Bedrooms in Home	Rank Score	Survey
<b>LTSIZE</b>	Size of Lot	Rank Score	Survey
<b>GARAGE</b>	Garage	Rank Score	Survey
<b>STRUCT.</b>	Structural Integrity	Rank Score	Survey
<b>UNEM.</b>	Unemployment rate of area	Rank Score	Survey
<b>DIVERS.</b>	Cultural Diversity	Rank Score	Survey
<b>SCHOOL</b>	Quality of Schools	Rank Score	Survey
<b>PROX.</b>	Proximity to Work/School	Rank Score	Survey
<b>AIR</b>	Air Quality	Rank Score	Survey
<b>SAFETY</b>	Neighborhood Safety (Low Crime Rate)	Rank Score	Survey
<b>NOISE</b>	Low Noise Levels	Rank Score	Survey
<b>SPACE</b>	Open Space (Parks)	Rank Score	Survey
<b>WATER</b>	Water Quality	Rank Score	Survey
<b>WASTE</b>	Distance from Industrial Waste Site	Rank Score	Survey

**Table 2: Summary Statistics for Full Data Set, Renters, and Homeowners**  
Mean  
(Standard Deviation)

<b>Variables</b>	<b>Full Data Set</b>	<b>Renters</b>	<b>Homeowners</b>
<b>COST</b>	2.2 (2.7)	2.3 (2.5)	2.1 (3.4)
<b>SQFT</b>	3.4 (2.7)	3.5 (2.5)	3.1 (3.3)
<b>BEDS</b>	3.9 (3.2)	4 (3.1)	3.7 (3.4)
<b>LTSIZE</b>	7.4 (4.1)	7.7 (3.6)	6.8 (5.1)
<b>GARAGE</b>	7.7 (4)	8.2 (3.5)	6.3 (4.8)
<b>STRUCT.</b>	8.6 (4.8)	9.3 (4.6)	6.7 (4.9)
<b>UNEM.</b>	11.3 (4)	10.6 (3.7)	13 (4.2)
<b>DIVERS.</b>	10.9 (4.1)	11.1 (3.7)	9.8 (5)
<b>SCHOOL</b>	9 (4.5)	9.5 (4.4)	7.9 (4.7)
<b>PROX.</b>	6.4 (4.2)	6.4 (4.2)	6.6 (4.5)
<b>AIR</b>	10 (4.6)	10.1 (4.7)	9.7 (4.4)
<b>SAFETY</b>	5.3 (3.3)	5.2 (3.5)	5.6 (3.1)
<b>NOISE</b>	8 (4.4)	8.4 (4.3)	6.9 (4.4)
<b>SPACE</b>	8.7 (4.1)	9.2 (4)	7.5 (4.5)
<b>WATER</b>	9.3 (4.8)	9.7 (4.8)	8.2 (4.8)
<b>WASTE</b>	11.4 (5.2)	11.7 (4.8)	10.5 (6.1)
<b>Sample Size</b>	58	41	17

Graph 1 shows the number of respondents who selected each characteristic as an item they considered when moving or when planning to move. The Y-axis is the number of responses and the X-axis is the characteristic. It is interesting to note that here, air quality was the fifteenth characteristic out of sixteen versus thirteen out of the sixteen as in table 2. There is some discrepancy between the two results. This may be accounted for because they were only asked to identify the characteristics here versus Table 2 where they were asked to rank the characteristics. When having to decide between the characteristics, although it is important, it may not be more important than other characteristics identified.

**Graph 1: Identified Characteristics Considered When Moving**



*Inferential Statistics*

This section conducted t-tests to determine if 1) there was a significant difference between the average air quality score and zero, 2) if there was a significant difference between

the number of respondents who noted that environmental factors were an important consideration when moving or planning to move and those who indicated that environmental factor were not important and 3) if there was a significant difference in the air quality mean between homeowners and renters.

The first t-test rendered a value of 0.004 showing a significant difference between zero and the average score of air quality. The second t-test had a value of 0.001 depicting a significant difference between those who identified environmental factors as being important when moving and those who did not. The third t-test had value of 0.8 yielding no significant difference between renters and homeowners in their assessments of air quality (See Table 3.)

**Table 3: Summary of t-tests**

<b>Description of H0:</b>	<b>Results</b>
No difference between air quality score and 0	Reject
No difference between environmental factors score and 0.	Reject
No difference between renters and owners mean score for air quality	Accept

## **Discussion**

Air quality is considered less important than the other characteristics such as cost, square feet, and lot size. They show that environmental qualities have less impact than other characteristics of a home but are still have an impact. However, air quality was identified less than other environmental qualities as a factor considered when moving or when planning to move. In addition, when asked to rank the characteristics, air quality was ranked one of the least considered environmental characteristics and of the characteristics in general. However, where as air quality was identified the least amongst the other environmental factors as a characteristic

considered when moving it ranked above distance from waste site. These results were also consistent to the response to the question how important environmental factors are when moving or planning to move. The majority of the responses stated environmental factors somewhat important. Although the environmental characteristics were identified the least, they were identified and not ignored as characteristics considered when moving or planning to move.

The design of this survey implied that respondents did consider air quality and other environmental qualities when they moved or when they plan to move. However, in some instances, respondents did not rank environmental qualities as a characteristic that they considered and did not rank every characteristic given. There are many other characteristics that could have been used in this survey but for this study, the basic characteristics were used due to the limited sample size. This may have given air quality and the other environmental factors a distorted relationship between the other characteristics. They may have been ranked superficially high due to the limited characteristics used in this survey and they may have been ranked even less in the presence of more characteristics of a home. Increasing the sample size, gearing it more towards homeowners themselves, and adding more characteristics can address these issues..

The limited sample size inhibits the use of this data to represent the larger population. The respondents in this survey all had at least some college education, which is not an accurate portrayal of the larger population. Nor did the sample size represent a broad range of homeowners who may consider more deeply the characteristics of a home.

The validity of the respondents' answers must also be addressed. When conducting surveys, the results are based on responses but it cannot be determined if the responses

accurately depict the true meaning. Several factors could alter the results for example, fatigue, lack of interest, or by simple evasiveness.

### **Conclusion**

Hedonic price method studies that have found a negative correlation between air quality and the price of a home have assumed that people actually consider air quality as a characteristic of a home. This paper set out to find if people actually do considered air quality, as a characteristic of a home, when they moved or when they planned to move. This study designed a study to show how air quality ranked amongst other characteristics and if it was even considered when moving or planning to move. The results of the study show that air quality, as well as other environmental factors, is considered low (14<sup>th</sup> out of 16) amongst the given characteristics of a home. Air quality was factored in at a low rate and may be even less regarding in the presence of other factors not included in this survey. Hedonic price studies that do incorporate air quality into a study need to be careful in addressing the value of air quality. Areas for future studies include expanding the sample size and including more characteristics of a home in the survey.

## References

Boyle, Melissa and Kiel, Katherine, "A Survey of House Price Hedonic Studies of the Impact of Environmental Externalities." *Journal of Real Estate Literature*. Vol. 9 No.2, 2001, pp. 117-144.

Garrod, Guy, "The Hedonic Price Method," Economic Valuation of the Environment: Methods and Case Studies. 1999, pp.87-119

Harrison, David and Rubinfeld, Daniel, "Hedonic Prices and the Demand for Clean Air." *Journal of Environmental Economics and Management*. Vol. 5, 1978, pp. 81-102.

Murdoch, James C and Thayer, Mark A, "Hedonic Price Estimation of Variable Urban Air Quality." *Journal of Environmental Economics and Management*. Vol. 15 No. 2, 1988, pp. 143-146.

Nelson, Jon, "Residential Choice, Hedonic Prices and the Demand for Urban Air Quality." *Journal of Urban Economics*. Vol. 5, 1978, pp. 357-369

Palmquist, Raymond, "Hedonic Models," Handbook of Environmental and Resource Economics. (1999): pp.765-776.

Smith, V. Kerry and Deyak, Timothy A. "Measuring the Impact of Air Pollution on Property Values." *Journal of Regional Science*. Vol. 15, No. 3, 1975, pp. 277-288

Smith, V. Kerry and Huang, Ju-Chin. "Can Markets Value Air Quality? A Meta-Analysis of Hedonic Property Value Models." *The Journal of Political Economy*. Vol. 103, Issue 1, 1995, pp. 209-227

Smith, Kerry V. and Huang, Ju Chin, "Hedonic Models and Air Pollution: twenty-five Years and Counting," Estimating Economic Values for Nature. (1996): 365-378

## Appendix

### Household Information

This information is **confidential** and will only be identified by your ID number. When you have completed this information please return this questionnaire to your packet.

1. Do you own your own home?
  - 01 Yes
  - 02 No
  
2. What kind of home do you live in?
  - 01 Dorm
  - 02 Apartments
  - 03 Condo
  - 04 Duplex
  - 05 Single Family Home
  - 06 Other
  
3. What year did you move to your current home?
  - 01 \_\_\_\_\_
  
4. What aspects did you consider when you moved or (when you move next)?  
Select all that apply.
  - 01 Cost/Rent/Mortgage
  - 02 Square Feet
  - 03 Number of Bedrooms
  - 04 Lot Size
  - 05 Garage Space
  - 06 Structural Integrity
  - 07 Unemployment Rate
  - 08 Cultural Diversity
  - 09 Quality of Schools
  - 10 Proximity of work/school
  - 11 Air Quality
  - 12 Neighborhood Safety (low crime rate)
  - 13 Low Noise Levels
  - 14 Open Space (Parks)
  - 15 Water Quality
  - 16 Distance from Industrial Waste Sites

Rank the following qualities 1 – 16 based on factors that are important to you when moving, with 1 being the most important and 16 being the least important qualities.

- \_\_\_\_\_ Cost/Rent/Mortgage
- \_\_\_\_\_ Square Feet
- \_\_\_\_\_ Number of Bedrooms
- \_\_\_\_\_ Lot Size
- \_\_\_\_\_ Garage Space
- \_\_\_\_\_ Structural Integrity
- \_\_\_\_\_ Unemployment Rate
- \_\_\_\_\_ Cultural Diversity
- \_\_\_\_\_ Quality of Schools
- \_\_\_\_\_ Location from work/school
- \_\_\_\_\_ Air Quality
- \_\_\_\_\_ Neighborhood Safety (low crime rate)
- \_\_\_\_\_ Low Noise Levels
- \_\_\_\_\_ Open Space (Parks)
- \_\_\_\_\_ Water Quality
- \_\_\_\_\_ Distance from Industrial Waste Sites

6. How important are environmental factors to you when you moved or plan to move?

- 01 Important
- 02 Somewhat important
- 03 Not important
- 04 Not Certain

7. What is your Zip Code?

\_\_\_\_\_

8. In what year were you born?

01 \_\_\_\_\_

*Please circle your answer:*

9. Who in your household would you consider to be primarily in charge of expenses and budget decisions?

- 01 Self
- 02 Spouse
- 03 Parent
- 04 Other \_\_\_\_\_
- 05 Do not know

10. What is your gender?

- 01 Male
- 02 Female

11. What is your racial or ethnic background?

- 01 White or Caucasian
- 02 Black or African American
- 03 Hispanic
- 04 Asian
- 05 Native American
- 06 Multiracial
- 07 Other \_\_\_\_\_

12. What is your marital status?

- 01 Married
- 02 Single
- 03 Divorced
- 04 Widowed
- 05 Other \_\_\_\_\_

13. What is the highest level of education you have completed?

- 01 Less than high school
- 02 Some high school
- 03 High school degree
- 04 Some college
- 05 College graduate
- 06 Graduate degree
- 07 Trade or technical degree
- 08 Other \_\_\_\_\_

14. How would you best describe your current employment situation?

- 01 Full time employment outside of UNLV
- 02 Part time employment outside of UNLV
- 03 Part time seeking full time job outside of UNLV
- 04 Unemployed seeking work
- 05 Student only; no paid employment
- 06 Work at UNLV/research assistantship
- 07 Other \_\_\_\_\_

15. Please indicate the income category that best describes your household income from all sources before taxes in 2001. We are defining household to mean yourself and those that live with you and **share** your **income** and **expenses**.

- 01 5,000 or under
- 02 over 5,001 to 15,000
- 03 over 15,001 to 30,000
- 04 over 30,001 to 45,000
- 05 over 45,001 to 60,000
- 06 over 60,001 to 75,000
- 07 over 75,001 to 90,000
- 08 over 90,001 to 100,000
- 09 over 100,001

16. How many people are in your household? Again, we are defining household to mean yourself and those that live with you and share your income and expenses.

- 01 \_\_\_\_\_

17. The following are the same income categories, but this time please respond for your **own** income from all sources before taxes in 2001. Do **not** include income from other household members.

- 01 5,000 or under
- 02 over 5,001 to 15,000
- 03 over 15,001 to 30,000
- 04 over 30,001 to 45,000
- 05 over 45,001 to 60,000
- 06 over 60,001 to 75,000
- 07 over 75,001 to 90,000
- 08 over 90,001 to 100,000
- 09 over 100,001

18. How do you receive your income? Is it:

- 01 Fixed source (Salary, pension)
- 02 Hourly rate
- 03 Hourly rate + tips
- 04 Other \_\_\_\_\_

19. What is your student status at UNLV?

- 01 Full time student
- 02 Part time student, taking less than 12 hours/semester
- 03 Other \_\_\_\_\_

20. What college do you attend at UNLV?

- 01 College of Liberal Arts
- 02 College of Business
- 03 College of Education
- 04 College of Hotel Administration
- 05 College of Urban Affairs
- 06 College of Science
- 07 College of Engineering
- 08 College of Fine Arts
- 09 College of Health Sciences
- 10 Honors College
- 11 Other \_\_\_\_\_
- 12 Don't know

21. What is your major?

- 01 \_\_\_\_\_
- 02 Undecided
- 03 Other \_\_\_\_\_

22. What year are you classified as for the current semester?

01 Freshman

02 Sophomore

03 Junior

04 Senior

05 Master's student \_\_\_\_\_ (*year*)

06 Doctoral student \_\_\_\_\_ (*year*)

07 Other \_\_\_\_\_

23. Who is primarily responsible for your tuition and living expenses while you are attending UNLV?

01 Self

02 Parent

03 Shared between self and parent

04 Other \_\_\_\_\_

Thank you. Please return this questionnaire to your participant's packet.



