

Personal Values, Urban Form and Auto Availability in the Analysis of Walking and Transit

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Abstract:

The Transit Cooperative Research Program has undertaken a major study of the choice of neighborhood form and selection of mode of travel entitled, "Understanding How Individuals Make Travel and Location Decisions: Implications for Public Transportation, TCRP H-31." In this project the research team has applied The Theory of Planned Behavior (TPB) first to the question of how people consider conditions supportive of walking and transit in the selection of their neighborhood, and second, how such conditions are associated with their propensity to alter their transportation behavior to a lifestyle more dependent on walking and transit.

This study included two survey waves of an Internet panel. The first survey group of 865 respondents was restricted to individuals living in United States large metropolitan areas with rail transit service that had moved or were planning to move within a two year period. The group was enriched with transit users from the New Jersey Transit e-panel. The second survey group included respondents from the first survey and additional respondents to achieve a 500 person sample.

The first survey was also designed to support the application of the TPB to the question of selection of neighborhood, the choice of travel mode, and a retrospective analysis of childhood experiences concerning both subjects. To this end, the survey examined the role of normative factors (the social norm), the role of attitudes (attitude toward the behavior) and the role of various constraints to adopting the behavior (the perceived behavioral control). In the second survey the questions focused on choice of mode. The TPB was again used in structuring the survey, so that social norm, attitude and perceived behavioral control could be examined. The second survey also tested the appeal of alternative transportation options and marketing messages.

This paper focuses on the influence of three factors on the choice of walking and transit, the "green modes." The three factors are: 1) personal values, 2) urban design and 3) automobile availability. In the language of the TPB, the personal values factor is analogous to attitude and subjective norm combined. The urban design and automobile availability factors are environmental conditions that can be expected to affect perceived behavioral control.

A series of matrices were developed to reveal the interaction between values and environmental conditions related to work mode choice and tripmaking. The choice of green modes (transit and walking) was very different depending upon the values and environmental conditions observed.

The implications of the research suggest that automobile availability, neighborhood type and values all play important roles in influencing travel behavior.

Keywords:

Theory of Planned Behavior, Transit Oriented Design, attitude, intention, social norm, behavioral beliefs, normative beliefs, perceived behavioral control, self efficacy, mode choice, compact neighborhood, public transportation, transit, walk.

The Role of Personal Values, Urban Form and Auto Availability in the Analysis of Walking and Transit

Purpose

This paper explores the association between three factors and the propensity to choose walking and transit as modes for utilitarian trips. Those three factors concern: 1) the personal values held by the trip maker; 2) the nature of the built environment to either support or impede the inclination to walk and take transit; and 3) the availability of the private automobile.

The paper analyzes the data created by a project undertaken in the Transit Cooperative Research Program (TCRP) in the United States entitled *Understanding How Individuals Make Travel and Location Decisions: Implications for Public Transportation, Project H-31*. The project's first phase used an Internet panel (n=865) to examine the factors associated with the choice of residence, the choice of travel mode, and a retrospective analysis of childhood experiences concerning both subjects. Its second phase used an Internet panel (n=501) to examine factors which might influence the decision to adopt transportation patterns with more emphasis on transit and walking. The project was structured to allow an application of the Theory of Planned Behavior (Ajzen, 1985, 1991) to both phases of research.

The present research builds upon the existing literature which explores the inter-relationship between attitudes/values and transportation behavior. A number of researchers have examined the role of both attitudes and the characteristics of the built environment on travel behavior (Kitamura *et al.*, 1997; Bagley *et al.*, 1999, 2002). This paper builds upon the existing literature, but with two major differences. First, the sample (n=865) comes from a much wider cross section of neighborhoods than used in most of the published research. Specifically designed for the transit industry, the sample is drawn from 12 highly urbanized areas such as the SMSA's for New York, Chicago, Los Angeles and Boston. In this sample, there is a greater degree of variation in the amount and form of transit service and in levels of auto ownership than in previous studies.

Secondly, the research applies a construct influenced by earlier applications of the Theory of Planned Behavior (Bamberg *et al.* 2003). The present research explores a concept in which values and attitudes combine to form an *inclination* (either positive or negative) to undertake a behavior, in this case the choice of transit or walk mode for a trip. Once that inclination is formed, the subject makes a judgment about his or her ability to carry out this behavior, based on a review of the obstacles and difficulties that might impede the adoption of that behavior. In the most basic case, the built environment (here expressed as neighborhood type) might either facilitate the adoption of the behavior, or impede the adoption of that behavior. This paper explores the concept that automobile availability is negatively associated with the propensity to walk and take transit.

The TCRP H-31 Project has created a new source of data that integrates information about personal attitudes and values with more traditional information about travel behavior and neighborhood form. The new data set makes possible the examination of the inter-

relationship between values held by the traveler and the characteristics of the built environment in the formation of travel behavior and modal choice.

Methods

Design

The research is based on a cross sectional survey, which includes information collected on a retrospective basis.

Sample

In the first of two separate surveys, 865 persons were surveyed who had either recently made a residential location decision, or were considering making one. The survey was administered over the Internet, and took approximately 35 minutes to complete. The sample was selected to improve the understanding of people's decision to move to a Transit Oriented Development, referred to in the project as a "compact neighborhood." The sample was drawn from eleven major metropolitan areas, distributed across the United States, which offered public transportation services. Of the total sample, 639 were selected from privately owned panel of 40,000 respondents, while 226 were drawn from a research panel maintained by New Jersey Transit. The sample was comprised of those who either had considered moving in the last two years, or are presently considering moving in the future. The survey was specifically designed to over-sample groups with proximity to good public transportation, and was not meant to represent any kind of national random sampling.

Measures

Green Mode Share

Respondents were asked to name their primary mode of transportation for nine trip purposes as well as the frequency with which they took transit or walked for each trip purpose. Green mode share for each trip purpose was defined as share of those reporting that they took transit or walked for that purpose. The use of self reported "primary mode" is consistent with most transportation surveys, and with the United States Census. Although bicycling is a green mode, it did not figure significantly in responses to this survey and is therefore not included in the analysis.

Monthly Green Trips

For each trip purpose where a respondent indicated that they took transit as a primary mode or an occasional mode, they were asked information about the frequency of tripmaking. Similarly, for each trip purpose where a respondent indicated that they walked as the primary mode or occasionally, they were asked to indicate the frequency of the trip. These results were used to create an estimate of monthly trips by transit and by walking, and together as monthly green trips.

Two Groups Based on Personal Values

A factor was created which reflected the personal values towards urban attributes and environmental issues. The factor for these personal values was created by combing 15 variables, which included:

- “For me to live within walking distance to stores, restaurants, a public library would be... Desirable/undesirable;” and,
- “When you last considered changing your home location, how important was ... having a commercial district (with things like a coffee shop, retail stores, and restaurants) within walking distance of my home... Not important at all/extremely important.”

The factor representing urban/environmental values showed a high level of internal consistency with a Cronbach’s *alpha* of .85. The sample was then divided into two groups: one with higher than mean scoring on the combined factor, labeled as the High Values group, and the second with scorings lower than the mean, labeled as the Low Values group. Of the total sample, 467 respondents were in the High Values group, and 398 were in the Low Values group. Appendix A provides a list of the survey statements that make up the urban/environmental factor.

Two Groups Based on Neighborhood Type

We created two groups based on location defined by three considerations. A respondent is referred to as living in a “compact neighborhood” if (1) there is some form of housing other than a single family home within 1/3 of a mile from the residence; (2) there is a commercial district within 1/3 mile of the residence; and (3) there is transit service to the location. Each of these conditions is based on the self reporting of the respondent, and no independent verifications were undertaken. Of the total sample, 222 reside in a compact neighborhood, and 463 do not.

Two Groups Based on Auto Availability

The term “low auto availability” refers to a household in which there are fewer cars than adults. The term “high auto availability” refers to a household in which the number of cars is equal to or greater than the number of adults.

Analysis

Cross Tabulations for the Three Key Variables, and the Mean Value of Green Mode Share and Monthly Green Trips

Each of the three binary variables was first analyzed for its association with green mode share to work and with total green trips per month. These are presented in tables showing overall variation by each variable separately. Then, all combinations of two binary variables at a time were calculated, presented as tables of four cells each. Eight subgroups were then created, representing all combinations of the three binary variables. Each cell of each matrix shows the mean value of green mode share for work and total monthly green trips for that subgroup.

Structural Equation Modeling

In order to determine *relative importance* of each of the three factors, and to document the correlations between each of the three factors, a model was created using structural equation modeling (SEM). For the model an endogenous variable representing green mode share for all trip purposes was used. One benefit of this approach is that the modeling process specifically illustrates (and diagrams) the relationships between each of the variables.

In these equations, the binary categories High Value and Low Value were replaced by the continuous variable representing all reported values on the combined scale. The binary categories “high auto available” and “low auto available” were replaced by the continuous variable representing all reported levels of autos per adult. For the question of living in a compact neighborhood the binary values were retained. Demographic variables were reviewed, and income per person was found to be significant in the model.

Structural equation modeling was used to show the relative role of each of the three observed exogenous variables related to single observed endogenous variable (green mode share) and to show the correlations among the three exogenous variables. Goodness of fit methods included an r^2 equivalent, NFI, CFI and RMSEA.

Results

As hypothesized, all three variables are strongly associated with the propensity to make green trips. These results are reviewed first for each of the three variables individually, then for the combination of variables two at a time, and then for the combination of all three. Appendix B shows the summary of all data used in these tables, including the definition of the subgroup, the mean value for green mode share for work and total green trips per month, the size (N) of the subgroup and the Standard Mean of Error for each value.

The statistical summary of the relationships among the four variables is presented in diagram form from the structural equations model, with goodness of fit summaries.

Results from the Mean Values for the Cross Tabulated Groups

Personal Values, Neighborhood, and Auto Availability, (Examined Individually)

One's personal values towards urban and environmental issues are associated with the propensity to take green modes. As shown in Table 1A, the High Values group has a 45% green mode share to work, while the Low Values group has a 25% green mode share. This difference is more pronounced looking at total tripmaking in Table 1B. The High Values group takes over 2 ½ times as many green trips per month as the Low Values group.

Similarly, neighborhood type is associated with the propensity to take green modes. Those living in a compact neighborhood have about a 50% green mode share to work, while those living not living in such a neighborhood have a 30% mode share, as shown in Table 1A. Looking at total green trips per month (Table 1B), those living in a compact neighborhood take around 2 ½ times as many trips by green modes as those not living in compact neighborhoods.

Finally, the level of auto availability is associated with the propensity to choose green modes. Participants from households with less than one car per adult have a green mode share to work of 52%; those from households with at least one car per adult have a green mode share of 28%, as shown in Table 1A. Table 1B shows that those participants from households with less than one car per adult took around 2 ½ times as many green trips per month as those from households with at least one car per adult.

<i>Personal Values</i>		<i>Neighborhood Type</i>		<i>Auto Availability</i>	
	Green share		Green share		Green share
High Values Group	45%	In compact neighborhood	50%	Low Auto Availability	52%
Low Values Group	25%	Not In compact neighborhood	30%	High Auto Availability	28%

Table 1A. Relationship between the three factors and the propensity to take green modes to work

<i>Personal Values</i>		<i>Neighborhood Type</i>		<i>Auto Availability</i>	
	Green trips		Green trips		Green trips
High Values Group	32	In compact neighborhood	41	Low Auto Availability	39
Low Values Group	12	Not In compact neighborhood	17	High Auto Availability	16

Table 2B. Relationship between the three factors and the number of green trips per month.

The Combination of Personal Values and Neighborhood Type

We explored the relationship between the propensity to take green modes and the *combined* influence of personal values and the built environment. In order to visualize the combined impact of both positive and negative influences on the use of walking and transit, a simple four cell matrix is used. This format allows the reader to examine variation separately (looking along either the rows or columns) or together (looking at any combination of the four cells) as shown in Table 2A and Table 2B.

Looking at Table 2A and Table 2B, those in the High Values group choose green modes more than of the low values group. From the same table, those in the supportive neighborhoods choose green modes at a higher rate than those outside those neighborhoods, no matter what their values. Looking at mode share to work in Table 2A, when the two supportive influences combine (High Values group, living in CN), the highest mode (55%) share results; when both negative influences combine, the result (23%) is the lowest. Each of the two “conflicted” cells acts much like the sample average. The differences are more pronounced when total green tripmaking is examined. Those in the High Values group living in a CN take over 4 times as many walking and transit trips as those with low values living outside a CN.

Green Work Mode Share		
	<i>Low Values Group</i>	<i>High Values Group</i>
Living in compact neighborhood	37%	55%
Not in a compact neighborhood	23%	38%

Table 3A. Location and Values Together

Total Green Trips/Month		
	<i>Low Values Group</i>	<i>High Values Group</i>
Living in compact neighborhood	21	49
Not in a compact neighborhood	11	23

Table 4B. Location and Values Together

In our sample, the majority of people in CNs (51%) come from a household having less than one car per adult; for those living outside of the CNs, only one quarter (25%) have less than one car per adult.

The Combination of Personal Values and Auto Availability

The combination of the factors for Personal Values and for Auto Availability, and their association with the propensity to take green modes, is shown in Table 3A and 3B. The members of the High Values group who also have lower levels of auto availability show the highest propensity (57%) to take green modes to work, while those from the Low Values group, with high levels of autos available have the lowest propensity (22%) to walk. The “conflicted” cells appear as expected. Looking at the total number of green trips, the High Values group living in a CN made over 4 times the number of walking and transit trips per month as the Low Values group living outside a CN.

Green Work Mode Share		
	<i>Low Values Group</i>	<i>High Values Group</i>
Low Auto Availability	39%	57%
High Auto Availability	22%	34%

Table 3A. Auto Availability and Personal Values Together

Total Green Trips per Month		
	<i>Low Values Group</i>	<i>High Values Group</i>
Low Auto Availability	24	45
High Auto Availability	10	23

Table 3B. Auto Availability and Personal Values Together

The Combination of Neighborhood Type and Auto Availability

The combination of neighborhood type and auto availability, expressed in terms of the propensity to take green modes, is shown in Table 4A and Table 4B. In Table 4A the upper right cell shows the green share (67%) when the two supportive factors come together, while the lower left cell shows the green share (27%) when neither is present. Those living in a compact neighborhood with high auto availability behave similarly to the sample mean. However, those not living in a compact neighborhood who have low auto availability have a higher than average mode share at 41%. Table 4A shows the total monthly green mode trips taken by the sample. Those in a compact neighborhood with low auto availability take over 4 times the number of green trips per month than those outside such neighborhoods with high auto availability.

Green Work Mode Share		
	<i>Not compact neighborhood</i>	<i>compact neighborhood</i>
Low Auto Availability	41%	67%
High Auto Availability	27%	32%

Table 4A. Auto Availability and Location Together

Green Trips per Month		
	<i>Not compact neighborhood</i>	<i>compact neighborhood</i>
Low Auto Availability	25	59
High Auto Availability	14	23

Table 4B. Auto Availability and Location Together

The Combination of Personal Values, Neighborhood Type, and Auto Availability

When all three factors are examined simultaneously, eight subgroups are created, as shown in Table 5A and Table 5B. The results in Table 5A show a green work mode share of 67% associated with the combination of the three supportive conditions and a green work mode share of 22% associated with the three non-supportive conditions. The cell for those with low values in a CN and low auto availability shows the highest mode share, contrary to the expected pattern, however, as can be seen in Appendix B, the number of respondents represented in this group is small (n=17). With respect to the absolute number of green trips per month, the respondents with the three supportive conditions take over 6 times as many green trips as those with three non-supportive conditions.

<p><i>High Values Group</i> <i>In compact neighborhood</i> <i>Low Auto Availability</i> Green Work Mode Share= 67%</p>
<p><i>High Values Group</i> <i>In compact neighborhood</i> <i>High Auto Availability</i> Green Work Mode Share = 38%</p>
<p><i>High Values Group</i> <i>Not In compact neighborhood</i> <i>Low Auto Availability</i> Green Work Mode Share = 47%</p>
<p><i>High Values Group</i> <i>Not In compact neighborhood</i> <i>High Auto Availability</i> Green Work Mode Share = 33%</p>
<p><i>Low Values Group</i> <i>In compact neighborhood</i> <i>Low Auto Availability</i> Green Work Mode Share = 71%</p>
<p><i>Low Values Group</i> <i>In compact neighborhood</i> <i>High Auto Availability</i> Green Work Mode Share = 25%</p>
<p><i>Low Values Group</i> <i>Not in compact neighborhood</i> <i>Low Auto Availability</i> Green Work Mode Share = 30%</p>
<p><i>Low Values Group</i> <i>Not In compact neighborhood</i> <i>High Auto Availability</i> Green Work Mode Share = 22%</p>

Table 5A. Percent Green Work Mode Share for Eight Subgroups

<p><i>High Values Group</i> <i>In compact neighborhood</i> <i>Low Auto Availability</i> Monthly Green Trips= 61</p>
<p><i>High Values Group</i> <i>In compact neighborhood</i> <i>High Auto Availability</i> Monthly Green Trips = 31</p>
<p><i>High Values Group</i> <i>Not In compact neighborhood</i> <i>Low Auto Availability</i> Monthly Green Trips = 30</p>
<p><i>High Values Group</i> <i>Not In compact neighborhood</i> <i>High Auto Availability</i> Monthly Green Trips = 20</p>
<p><i>Low Values Group</i> <i>In compact neighborhood</i> <i>Low Auto Availability</i> Monthly Green Trips = 48</p>
<p><i>Low Values Group</i> <i>In compact neighborhood</i> <i>High Auto Availability</i> Monthly Green Trips = 12</p>
<p><i>Low Values Group</i> <i>Not in compact neighborhood</i> <i>Low Auto Availability</i> Monthly Green Trips = 16</p>
<p><i>Low Values Group</i> <i>Not In compact neighborhood</i> <i>High Auto Availability</i> Monthly Green Trips = 9</p>

Table 5B. Monthly Green Trips for Eight Subgroups

Results from the Structural Equation Modeling

The Relative Importance of the Three Factors

Figure 1 shows the results of a structural equation model revealing how the three observed exogenous variables relate to each other, and to the single observed endogenous variable, green mode share. In the SEM diagram, the auto availability variable has the largest standardized coefficient (-0.43) in absolute terms of the three explanatory variables. Urban/Environmental Values and neighborhood type are of similar importance in their association with the propensity to walk or take transit. In relation to the propensity to take green modes, the standardized coefficient for personal values is 0.20, while the coefficient for neighborhood type is 0.23. The negative coefficient for autos per person reflects the negative relationship between the number of cars owned and the propensity to walk and take transit. Income per person also has a significant coefficient, at a slightly lower magnitude (0.17) than the Values coefficient.

The signs for each of the correlations between the independent variables are logical, as shown in the double ended arrows on the left side of the diagram. Having positive views towards urban attributes and environmental concerns is positively correlated with the decision to live in a compact neighborhood. Compact neighborhood location is negatively correlated with the number of cars owned. And, high urban/environmental values are negatively associated with the number of cars owned.

All coefficients from the exogenous variables (including income per person) are significant at $p < .001$. The r^2 equivalent is .44, the NFI is 0.898 and the CFI is 0.9. An RMSEA of .161 suggests that there are more explanatory factors to be identified in future research.

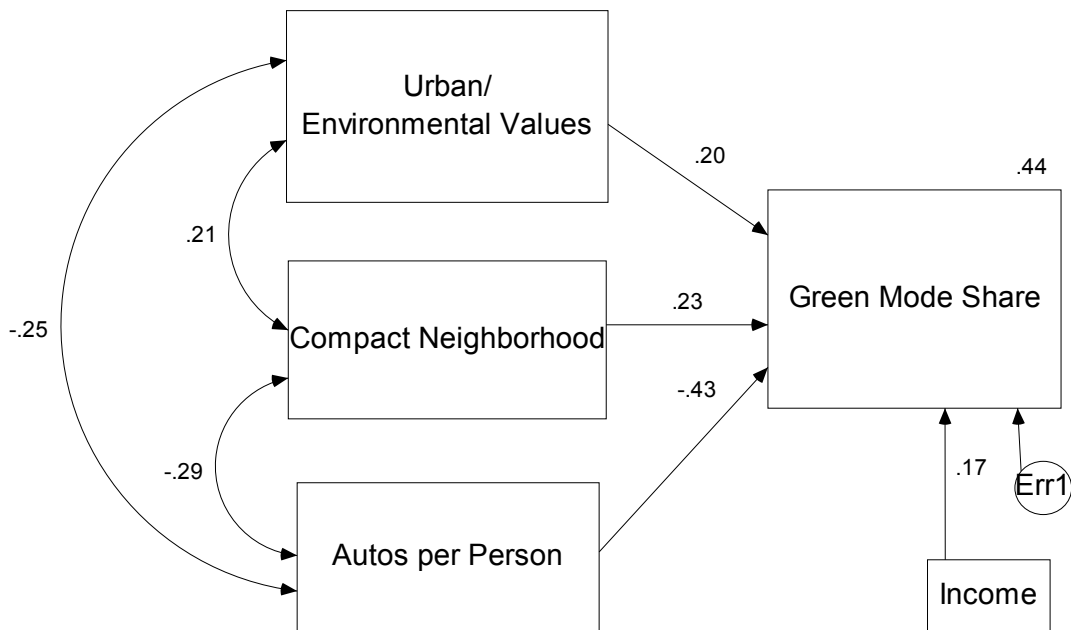


Figure 1. SEM Results: Three Factors and the Propensity to Walk or Take Transit

Discussion

The propensity to choose a mode (walking or transit) is associated with 1) the values and attitudes of the tripmaker toward the behavior; 2) the characteristics of the built environment which either facilitates or impedes the adoption of that behavior; and 3) a factor representing an orientation to the private auto in the adoption of that behavior. All three are candidates for more refinement in the generation of a more complete model. The signs on the SEM coefficients seem reasonable: high green mode share has a positive association with urban values, a positive association with living in a compact neighborhood, and a negative association with the number of cars available.

Looking at the factors individually, those with positive values toward urban and environmental concerns take 2 ½ times as many walk and transit trips as those with less positive values. Those living in a compact neighborhood take 2 ½ times as many walk and transit trips as those outside of compact neighborhood. Those with constrained access to a car take 2 ½ times as many walk and transit trips as those with more autos available.

Looking at the factors in combination, Table 2A and Table 2B suggest that, if a public policy intervention were to entice a member of the High Values group into a compact neighborhood, and, if that person were to act in a manner similar to others of his or her group and location, a major shift in walking and taking transit is implied. If the same public policy were to entice a member of the low values group into the new neighborhood, and if that person were to act in a manner similar to others of his category, the impact would be to increase his green mode share, but the result might be to lower the overall mode share in the compact neighborhood .

In this four cell matrix a clear role is shown for *both* the nature of the built environment and for the values/attitudes of the participant.

The creation of all eight cells allows the observation of each factor separately from the other two. For example, holding both personal values and neighborhood types constant, we can focus on the association between auto availability and propensity to walk and take transit. Here, having stratified for the factor of personal values (high group selected) and the factor of neighborhood type (compact neighborhoods selected) those with low auto availability take roughly twice the number of walk and transit trips than those with high auto availability. This kind of observation can be made comparing any two cells in the matrix.

Limitations

Like many other studies in this area, the results are limited by the reliance on a cross-sectional database in the analysis. Another consideration is the fact that the sample was not selected to represent a random sample of the American population, and that the results should not be misinterpreted to suggest such. The sample was specifically created to understand the attitudes and behaviors of a subset of the population that A) lived in an SMSA with high quality transit services, and B) had either recently moved, or was considering a residential move. The second consideration also has implications for the interpretation of the research. The reliance upon those making or just having made a residential move has produced a somewhat “mobile” sample; with higher participation by young adults, and lower participation from those with lower incomes.

Summary

In a coordinated intervention concerning the policy of increasing the amount of walking and transit undertaken, it would seem to be beneficial to examine the role of auto-orientation as a factor equal in scale of importance equal to that of the quality of the built environment, or the formation of attitudes towards the desirability of green mode choices.

The present project has shown that a variable representing personal values, combined with a variable for the built environment, combined with a variable for orientation towards the automobile provides a the framework with which to analyze the propensity to choose green modes. Further research should explore and refine the question of the role of attachment to the automobile, in all its formats, as a factor associated with the propensity to choose green modes.

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Appendix A: The Statements that Comprise the Urban/Environmental Values Factor

Statements Rated by Respondents on a 7 Point Scale
When you last considered changing your home location, how important was the following: (ranked from 1=not important at all to 7=extremely important)
1) Having an adequate number of sidewalks in good condition
2) Having frequent bus or other transit (train or trolley) services.
3) Having buses or other transit services serve areas in which I frequently needed to travel.
4) Having a commercial district (with things like a coffee shop, retail stores, and restaurants) within walking distance of my home.
5) Having access to reliable taxi service whenever I need it.
Please tell us how important the following things would be in your choice of a new neighborhood: (ranked from 1=extremely undesirable to 7=extremely desirable)
6) For me, to live within walking distance to stores, restaurants, a public library and a school would be ...
7) For me, to be able to take public transportation to work or for other trips would be...
8) For my household to need to own fewer cars would be...
When I think of things that are important to me: (ranked from 1=strongly disagree to strongly agree)
9) I am concerned about global warming and/or climate change.
10) Protecting the environment should be given top priority, even if it means an increase in taxes.
11) I'd be willing to drive less to reduce my use of foreign oil.
When I think of things that are important to my family, friends, and people who are <u>most</u> important to me...(ranked from 1=strongly disagree to 7=strongly agree)
12) Friends and family think they should be more active in doing their part to protect the environment.
13) Friends and family are concerned about global warming and/or climate change.
14) Friends and family think that protecting the environment should be given top priority, even if it means an increase in taxes.
15) Friends and family would be willing to drive less to reduce their use of foreign oil.

Appendix B: Mean, N, and Standard Error of Mean for the Cross Tabulations

Mean, N, and Standard Error of Mean for the Cross tabulations (Green Work Mode Share)

High Low Urban Values Group	Current compact neighborhood Status	Auto Availability Index	Mean	N	Std. Error of Mean
High Urban Values	Currently in CN	Low Auto Availability	0.67	96	0.474
		High Auto Availability	0.38	61	0.489
		Total	0.55	157	0.499
	Not in CN	Low Auto Availability	0.47	104	0.502
		High Auto Availability	0.33	206	0.471
		Total	0.38	310	0.486
	Total	Low Auto Availability	0.57	200	0.497
		High Auto Availability	0.34	267	0.475
		Total	0.44	467	0.497
Low Urban Values	Currently in CN	Low Auto Availability	0.71	17	0.470
		High Auto Availability	0.25	48	0.438
		Total	0.37	65	0.486
	Not in CN	Low Auto Availability	0.30	57	0.462
		High Auto Availability	0.22	276	0.413
		Total	0.23	333	0.422
	Total	Low Auto Availability	0.39	74	0.491
		High Auto Availability	0.22	324	0.416
		Total	0.25	398	0.436
Total	Currently in CN	Low Auto Availability	0.67	113	0.673
		High Auto Availability	0.32	109	0.469
		Total	0.50	222	0.501
	Not in CN	Low Auto Availability	0.41	161	0.493
		High Auto Availability	0.27	482	0.442
		Total	0.30	643	0.459
	Total	Low Auto Availability	0.52	274	0.500
		High Auto Availability	0.28	591	0.447
		Total	0.35	865	0.478

Mean, N, and Standard Error of Mean for the Cross tabulations Green Trips per Month

High Low Urban Values Group	Current compact neighborhood Status	Auto Availability Index	Mean	N	Std. Error of Mean
High Urban Values	Currently in CN	Low Auto Availability	61	96	44.619
		High Auto Availability	31	61	48.159
		Total	49	157	48.134
	Not in CN	Low Auto Availability	30	104	31.202
		High Auto Availability	20	206	25.317
		Total	23	310	27.741
	Total	Low Auto Availability	45	200	41.224
		High Auto Availability	23	267	32.218
		Total	32	467	37.898
Low Urban Values	Currently in CN	Low Auto Availability	48	17	36.380
		High Auto Availability	12	48	17.093
		Total	21	65	28.296
	Not in CN	Low Auto Availability	16	57	21.795
		High Auto Availability	9	276	12.551
		Total	11	333	14.750
	Total	Low Auto Availability	24	74	28.896
		High Auto Availability	10	324	13.324
		Total	12	398	18.090
Total	Currently in CN	Low Auto Availability	59	113	43.575
		High Auto Availability	23	109	38.804
		Total	41	222	45.038
	Not in CN	Low Auto Availability	25	161	28.867
		High Auto Availability	14	482	19.798
		Total	17	643	22.886
	Total	Low Auto Availability	39	274	39.356
		High Auto Availability	16	591	24.628
		Total	23	865	31.965