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Determinants of Environmental Behavior: The Effect of Social Context

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Determinants of Environmental Behavior:
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Dedication

To Mom and Dad

I hope you always find your sacrifices meaningful

Acknowledgements

Abstract

Determinants of Environmental Behavior: The Effect of Social Context

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Individual behavior plays a significant role in the use of natural resources and the promulgation of environmental degradation. Environmentally-responsible behavior constitutes practices that generally contribute to environmental well-being. Models that explain why individuals act in an environmentally-responsible way have seen success, but few of them incorporate the effect of the social context of the decision.

The objective of this thesis is to investigate some causal pathways through which social capital affects environmentally-responsible behavior. By building on previous models, this thesis conceptualizes a path model that explores the impacts of community participation, social trust, and strong relationships on behaviors such as commuting, environmental boycotting, and behavior on Ozone Action Days. The model also includes environmental concern and internal locus of control as mediating variables between social capital and these environmental behaviors. Structural equation modeling is used to explore associations. Results show that there are valid relationships between social capital and some of the behaviors.

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Chapter 1: Introduction

Environmental degradation, climate change, and the excessive use of natural resources are continuous threats to the safety and prosperity of modern life. Natural resource and environmental policies aim to mitigate these threats and reduce societies' role in promulgating them by setting rules, prices, and providing public goods. This neoclassical framework for environmental economics is constantly being challenged as more complex environmental problems continue to arise. Some of the current solutions are prohibitively expensive or constraining, require unequal concessions from negotiating parties, or fail to consider the factors defining true individual preference structures.

Although conventional policies play an important role in the protection of our environment, there is a growing need for long-term and robust policy solutions grounded within the view of the social and "irrational" individual as the primary driving force for economic decisions that affect the environment (Ariely, 2009). In 2016, the residential sector in the United States produced around 19.2% of total CO_2 emissions from fossil fuel combustion, and passenger cars produced around 41.9% of total CO_2 emissions from fossil fuel combustion in the transportation sector (U.S. EPA, 2016). These activities, which involve some significant level of individual decision-making, illustrate how changes in behavior at the household level or changes in commuting behavior may achieve significant reductions in CO_2 emissions. The argument can then be made that to reduce emissions, policies that focus on individual behavior shifts can supplement conventional environmental policy. Pro-environmental behavior or *environmentally responsible* behavior *(ERB)*, has therefore been the focus of many researchers (Bamberg & Moser, 2007; Gifford & Nilsson, 2014; Jin, 2013). Within this literature the attention has been on the demographic, socio-economic, socio-spatial, and socio-psychological

causal properties that help explain pro-environmental behavior. The underlying question this literature tries to answer is what makes an individual more disposed toward ERB and therefore what public policies might be tailored based on the beneficial impacts of a certain factor. This literature cumulatively proposes a variety of models that explain the heterogeneity in a specific ERB or a set of ERBs using a group of determinants.

One line of research that attempts to understand economic decisions and behaviors has focused on the effect of *social networks*. Although this research can be categorized within that focusing on social antecedents of behavior, it specifically theorizes that actions are best contextualized by examining the features of the social network in which actors exist. The idea that certain social networks may produce socially beneficial outcomes is well-established in multiple areas. For instance, *social connectedness* in a community can enhance health through propagating healthy social norms and increasing health literacy, both which help people take better health decisions (Kim, Subramanian, & Kawachi, 2006). Social connectedness has also been seen to significantly reduce crime rates in African American migration networks across U.S. cities between 1960 and 2009 (Stuart & Taylor, 2017).

A common yet arguable mechanism for social networks is that densely connected networks are more likely to produce socially beneficial outcomes through prompting collective action from the actors (Ostrom, 2007; Videras, 2013). Pretty & Ward (2001a) established this concept for environmental outcomes by considering *social capital* as a resource generated by the structural property of relationships between actors in a network, and demonstrating how this resource facilitates cooperation and lowers costs for actors in working together. Building on previous descriptions of social capital which incorporate trust, common rules, norms, measures of reciprocity, and connectedness, they claim that actors in communities with higher social capital have more confidence in

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collective environmental activities and are less likely to engage in private actions that result in negative environmental impacts. Along similar lines, Adger (2003) and Katz (2000) link social capital and the collective management of natural resources. They argue that effective collective decision-making required for dealing with climate change depends on social factors, as well as networks that support the flow of information and access to natural capital. They also argue that social capital may be a substitute for institutions that govern and help enforce ownership through social norms.

What about beneficial environmental outcomes through behaviors that do not necessarily require collective action, or their placement in the "collective action" category is less clear? Particularly, behaviors that fall into the category of "Private-Sphere Environmentalism"(P. C. Stern, 2000). Are there any claims that properties of networks such as social capital or social connectedness can have a positive impact on bringing about individual ERB? Although there are some findings that speak to this question, the answer seems less clear, and the mechanisms linking social capital and ERB are not well established (Thoyre, 2011). This is possibly the case for three reasons. First, ERB is a broad term used to describe actions that are beneficial to the environment. These private decisions are driven by multiple factors, and the importance of the social context in which the decision occurs is not necessarily always visible. One can say that social connectedness for instance might translate into higher cell-phone usage leading to higher energy use, whereas the reasons one might be reluctant to use public transportation are less clear. Ultimately, examining the antecedents of any ERB involves identifying a specific behavior and then theorizing the specific factors that play a role within that behavior. Second, examining the social context of an individual behavior does not always have clear implications. In social capital research for instance, measures of social capital vary widely, and if considered alone, they do not account for social structure. But even

when a study accounts for the structure, it is challenging to reach irrefutable causal conclusions. This is due to effects such as homophily: that individuals might be connecting with others who engage in the same behavior, rather than engaging in the behavior due to their social connections (Barnes, Lynham, Kalberg, & Leung, 2016). Also, it might be challenging due to possible variables driving both the ERB and the social structure (Videras, 2013). Third, and probably for the reasons just listed, the literature attempting to understand determinants of ERB has seen more success, in terms of theorizing and explaining variance, from looking at micro-level psychological factors than macro-level social factors. Particularly, the *Theory of Planned Behavior (TPB)* and *Norm-Activation Theory (NAT)* have been prominent theories within research attempting to model ERB (Bamberg & Moser, 2007; Cho & Kang, 2017; Klöckner, 2013).

Although these models have seen success, they are not perfect either. They do not always explain variance in behaviors, they vary widely, and there are several factors that can impact behaviors, all of which differ based on the type of ERB being modeled. It remains that models could be improved by including the effect of social networks as an explanatory variable and perhaps integrate that effect into the micro-level models. It is still unclear how social capital is situated with respect to these other socio-psychological constructs within the models for predicting ERB.

This study addresses the impact of social capital - as one property of a social network - on ERB. It also addresses the causal mechanisms through which social capital might be integrated with other socio-psychological and cognitive constructs. I do this through proposing hypotheses for these causal pathways and then testing for valid correlations through an appropriate statistical methodology. Specifically, I use survey data from the *Austin Area Community Survey* between 2004 and 2015 to run regression models on self-reported behaviors such as taking different actions on Ozone Action Days,

willingness to commute using alternative means of transportation, environmental boycotting, and type of commuting vehicle (hybrid or not). I include explanatory demographic variables such as income, educational attainment, and gender as control variables in addition to social capital and other socio-psychological factors. Specifically, I use a *structural equation model (SEM)* to predict the specified ERBs. These models attempt to verify the causal pathways by which social capital and the other variables interact.

The rest of this paper is organized as follows: In chapter 2, I present the literature that describes pro-environmental behavior and its explanatory factors. The notion of *environmental concern* is a significant factor that is included in the study. I also define social capital, determine ways to measure it, and determine its reported usefulness in predicting ERB. In chapter 3, I state my hypotheses. In chapter 4, I describe the data, explain the construction of the latent variables, and I specify the structural equation model that will generate the data which tests the hypotheses. In chapter 5, I describe the results and attempt to understand why the data verifies the proposed relationships between social capital and the other variables. Results show that there are some valid relationships between social capital and willingness to commute using alternative means of transportation, however only modest claims should be made on the causal effects of social capital due to some limitations in the data and model specification. In chapter 6, I make concluding remarks and propose research moving forward.

Establishing a connection between social capital and environmental outcomes should be important for policymakers. It signifies that social ties and norms matter for environmental behavior in addition to what current policies consider. Then there would be reason to believe that environmental social nudges, for instance, can bring about positive outcomes through shifting individual behavior. A good example of an

environmental social nudge is the "Don't Mess with Texas" anti-littering campaign which reduced visible roadside litter by 72% in the first six years of the program (Nagatsu, 2015; Thaler & Sunstein, 2008; Videras, 2013).

Chapter 2: Literature Review

ENVIRONMENTALLY RESPONSIBLE BEHAVIOR

ERBs constitute practices that generally contribute to environmental well-being. This definition builds on the definition of environmental behavior as "broadly all types of behavior that change the availability of materials or energy from the environment or alter the structure and dynamics of ecosystems or the biosphere" (Steg & Vlek, 2009; P. C. Stern, 2000) The research that focuses on ERB attempts to understand the factors that predict it and propose interventions for behavioral change. Often, the goal is to achieve environmental sustainability through promoting or discouraging behavior, based on how much the behavior impacts the environment and how many people engage in it.

Behavioral Theories and Models

Initial research attempted to demonstrate that ERB is moved by a mixture of self-interest causes, concern for other objects (people, future generations, environments), social, and demographic factors(Hines, M, Hungerford, & Tomera, 1987; Lehman, 1993; Van Liere & Dunlap, 1980) But later on, focus shifted on psycho-social variables and categorized them into four groups: attitudinal factors, contextual factors, personal capability factors, and habitual factors. Researched then utilized three main theories to formally model ERB: (1) norm-activation theory, (2) theory of planned behavior, (3) value-belief-norm.

Norm-activation theory is a theory initially developed for altruistic behavior. Within environmental behavior, it states that engaging in ERB rests on the feelings of moral obligation an individual might experience (personal norms). As shown in Figure 1, personal norms are determined by an interplay of cognitive, emotional, and social factors such as the environmental consequences of a behavior and perceived behavior control or

whether the individual has the ability to engage in the behavior (Bamberg, Hunecke, & Blöbaum, 2007; Klöckner, 2013; Schwartz, 1977).

The theory of planned behavior is a general theory for behavior and rests on the central assumption that intention, or willingness to engage in a behavior, directly determines whether an individual performs the behavior. As shown in Figure 2, intention is determined by three factors: attitudes, which incorporate beliefs about a behavior, subjective norms, which includes social pressures and norms, and perceived behavioral control (Ajzen, 1991; Bamberg, Ajzen, & Schmidt, 2003). Therefore, ERB rests on the individual's subjective attitudes towards the behavior, its outcome, the ability to engage in it, and the subjective interpretation of what people's expectation and support are towards the ERB.

Value-belief-norm (VBN) is an extension of Schwartz's norm activation theory of altruism (Schultz et al., 2004; Schultz, 2001; Stern & Dietz, 1994) and is specifically used to model ERB. As shown in Figure 3, it considers personal norms for a pro-environmental action as the direct determinant of the behavior and are caused by a chain of causal variables that are pre-requisites to the activation of personal norms. For instance, if an individual is not aware of the consequences of a certain behavior, they would not activate any feelings of personal responsibility for what the actions entail.
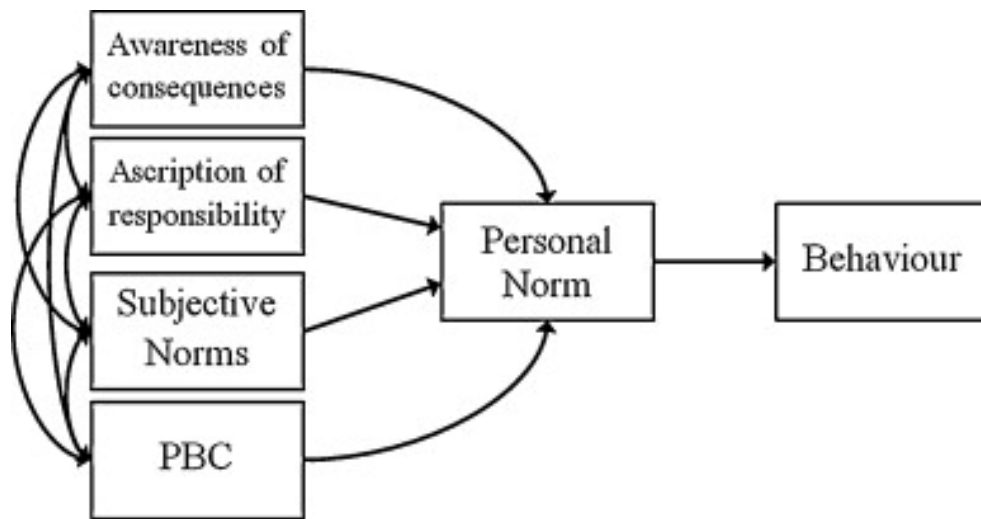
Figure 1: Norm-activation Theory
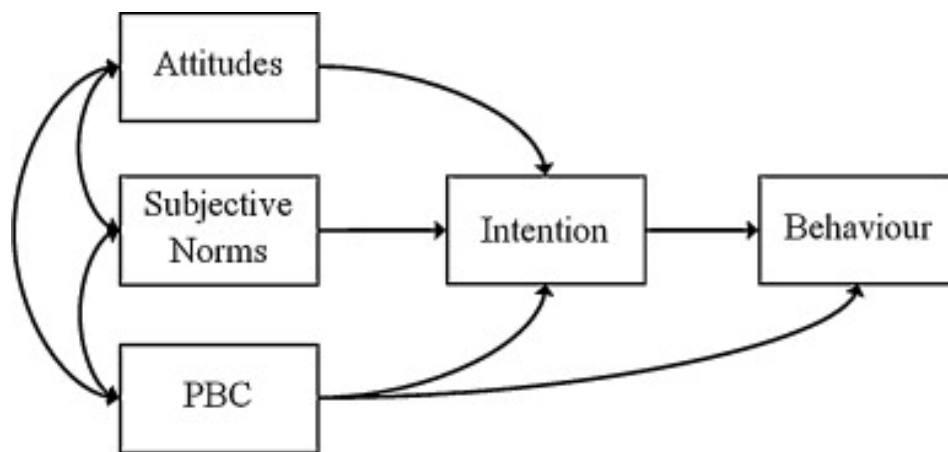
Figure 2: Theory of Planned Behavior
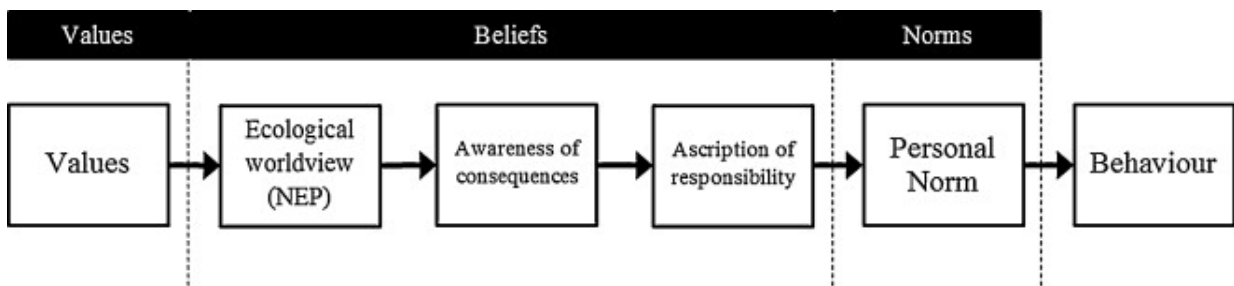
Figure 3: Value-Belief-Norm Model

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There are numerous studies that use these theories to explain ERB. But more recently ERB is viewed to be motivated by a combination of pro-social (NAT and VBN) and self-interest (TPB) tendencies. This has led to studies that attempt to integrate the theories to create more comprehensive models that predict ERB more accurately. For instance, in commuting behavior Gardner & Abraham (2010) use a TPB framework that incorporates personal norms as a determinant of intentions to explain car and non-car city transportation behaviors. Similarly, Bamberg et al. (2007) use an integrative framework from TPB and NAT to test the effect of personal norms on the intentions of using public transportation in two cities. They find that personal norms are a significant predictor of the intention to use public transportation.

Other personal, psycho-social and cognitive factors not included in the original theories also made their way into ERB modeling. Gifford & Nilsson (2014) summarize some of these factors: knowledge and education, locus of control, childhood experiences, place attachment, religion, and other demographic variables. Particularly, some meta-analyses have contributed to the integration of the theories and these other factors within ERB models. A meta-analysis by Klöckner (2013) on 56 studies helps identify an integrated framework that incorporates variables from all three theories in addition to habits. A meta-analysis by Hines, M, Hungerford, & Tomera (1987) found as well that factors such as knowledge of issues, knowledge of action strategies, attitudes, verbal commitment, sense of responsibility, and locus of control, were consistently associated with ERBs. Locus of control is an individual's beliefs about whether change can be achieved through behavior. Internal locus of control within ERB refers to the belief that an individual's actions will have an impact on the environment while external locus of control within ERB would attribute control over environmental impact to external sources such as chance or government (Gifford & Nilsson, 2014; Hines et al., 1987).

In this analysis, I give focus to locus of control and environmental concern as potential predictors of ERB.

ENVIRONMENTAL CONCERN

Research about environmental concern started in the 1960s with the growth of environmental movements. The use of the term in public and political discourse might explain its use in the literature, despite it not being a strictly scientific term. Originally, environmental concern was more of a term that referred to a range of environmentally related psychological constructs such as perceptions, knowledge, attitudes, values, and behaviors (Bamberg, 2003). As the field grew, more researchers differentiated between these constructs as either precedents (beliefs, values, knowledge) or antecedents (behavior), and environmental concern was mostly treated as an attitude towards facts and behaviors with consequences for the environment (Ajzen, 1989; Fransson & Gärling, 1999).

The notion of attitude in social psychology had a distinct meaning so some researchers who used the term environmental attitude as the collection of beliefs, affect, and behavioral intentions towards environmental issues or activities while defining environmental concern as the affective portion of this attitude (Schultz, Shriver, Tabanico, & Khazian, 2004). However, others continued to use the two terms environmental attitude and concern interchangeably (Milfont, 2009). For instance, Fransson & Gärling (1999) reported environmental concern as a specific attitude that determines intention regarding environmental behavior, but also a general attitude or value orientation towards the environment. Dunlap & Jones (2002) used both terms interchangeably but defined environmental concern as the "degree to which people are aware of problems regarding the environment and support efforts to solve them, or indicate a willingness to contribute personally to their solution" (p.489).

More recently, environmental concern is conceptualized as a general attitude centered on the cognitive and affective evaluation of environmental protection (Bamberg, 2003; Newman & Fernandes, 2015; Van Liere & Dunlap, 1980). Environmental attitude is conceptualized as the tendency to evaluate the natural and built environment, and factors affecting their quality with some degree of favor or disfavor.

Measurement of Environmental Concern

There are over 700 measures for environmental concern and attitude, but only some have been psychometrically validated (Dunlap & Jones, 2002; McIntyre & Milfont, 2016). These measurements could be divided into those that measure concern toward specific aspects of the environment such as climate change, water quality, and air quality. For instance, in a study to understand the gap between environmental concern and specific sustainable behaviors, Thieme, Royne, Jha et. al (2015) measured three dimensions for environmental concern: concern for wildlife, concern for waste, and concern for energy. Using specific measures of concern is partly a response to research that found low correlations between generalized environmental concern and specific environmental behaviors (Eckes & Six, 1994). But low correlations did not stop researchers from using generalized environmental concern as an explanatory construct as there are advantages for using a general measure as opposed to more specific concern. As Bamberg (2003) and de Groot & Steg (2007) emphasize, unlike environmental concerns towards specific aspects, general attitudes may affect a wide range of behaviors and can therefore provide insight on where intervention should focus.

Most measures of general environmental concern include survey questions that speak to reactions over human impact on the environment. Common questions might be around whether humans are abusing the environment, and if that will produce disastrous consequences. For example, a commonly used scale, but more so categorized as a scale

for environmental attitude, is the *New Environmental Paradigm (NEP)* scale. It comprises of 15 items that ask about notions such as human limits to growth, fragility of nature, and exemptionalism (Dunlap & Jones, 2002; Fransson & Gärling, 1999; McIntyre & Milfont, 2016). NEP has been psychometrically validated and is used in tens of models as seen in Klöckner's (2013) meta-analysis. Given all the broad measures of environmental concern, what remains imperative in the case where a study attempts to develop its own scale, is that the scale is consistent and captures what it purports to measure (McIntyre & Milfont, 2016).

Bases for Environmental Concern

There are two main streams of research that provide an explanation for the origins of environmental concern. The first stream of research focused on background factors that predispose individuals to be environmentally concerned. These can be broken down into socio-demographic factors and personal factors. Socio-demographic factors include age, gender, race, religion, social class, urban-rural residence, and political party affiliation (Bamberg, 2003; Fransson & Gärling, 1999; Gifford & Nilsson, 2014; Van Liere & Dunlap, 1980). These factors typically explain between 10-15% of the variance in environmental concern with age, education, and political ideology being most consistently associated (Newman & Fernandes, 2015). Personal factors include childhood experiences, personality type (big 5), environmental knowledge, self-efficacy, sense of responsibility and guilt, preference for outdoor activities, proximity to environmental problem sites, and some cultural variations (Gifford & Nilsson, 2014; P. W. Schultz et al., 2004). According to Schultz et al. (2004), these factors can also explain environmental concern, but they do not give a theoretical understanding of why individuals develop the attitude.

The second stream of research attempted to create this theoretical ground. Stern & Dietz (1994) developed a theory on the value-basis for environmental attitudes which aligns with the previous notion that environmental concern can be a value orientation. Their value-basis theory for environmental concern is nested within the VBN model. In the VBN model, three sets of values: egoistic (concern for self), social-altruistic (concern for others), and biospheric (concern for plants and animals) values provide the source for environmental concern. Environmental concern then interacts with other constructs though a causal chain to stimulate environmental behavior. In line with this theory, Schultz (2001) further emphasized that environmental concerns may be based on the awareness of harmful consequences of environmental problems to values or valued objects within the three dimensions (de Groot & Steg, 2007). Additionally, other studies have examined the relationship between environmental concern and post-materialist values and noticed that they are positively correlated (Fransson & Gärling, 1999; Gifford & Nilsson, 2014).

Environmental Concern-Behavior Link

The relationship between environmental concern and behavior is complex. Environmental concern does not always predict ERB because there are over 30 psychological barriers to behavioral change (Bamberg & Moser, 2007; Gifford & Nilsson, 2014; Newman & Fernandes, 2015). Despite that, most models incorporate some type of environmental attitude or concern measurement. Studies show that generalized environmental concern is linked to ERB through behavior specific attitudes, personal norms, and much less directly through intentions and behaviors (de Groot & Steg, 2007; Gardner & Abraham, 2010). Bamberg (2003) explored the effect of environmental concern on student decisions to request an information brochure about green electricity products. He found that environmental concern does not necessarily influence specific

behaviors directly but only situation-specific cognitions, how the decisional problem is framed, and the relevant behavioral alternatives along with their salient consequences.

SOCIAL CAPITAL

According to Videras (2013), there are three different approaches by which sociologists may observe the structure of a social network: Social capital research, the social structural approach to social capital, and social network analysis.

Social capital research studies usually include one dimension of social capital; a single measurement of the resource available to actors because of their membership in the network. The estimated effect of the resource on an economic outcome or decision is then measured. In this study, I consider the social structural approach to social capital, which takes more than one type of social capital into account when measuring effects on an outcome. Individuals have different types of resources available to them based on their placement in a network. For instance, an individual might be interconnected with multiple actors but have weak ties, each of which impacts the outcome being explored differently. As such, individuals' social capital can be assessed on multiple dimensions I discuss in the next section.

Where the two previous approaches focus on measuring self-reported forms of available social resources, social network analysis takes a more granular approach. By looking at a specific actor and the ties formed with other actors, it attempts to understand how information flows across the network, which nodes play central roles, and how specific ties affect outcomes. Although social network analysis is a more robust method to make causal inferences than social capital research or the social structural approach, it requires extensive datasets. Given the lack of network data available in the survey, social network analysis is not considered in this study.

What is social capital and why is it that it can be considered it a resource for society and individuals? Social capital as a contemporary concept garnered attention starting with Pierre Bourdieu and James Coleman then later on with Robert Putnam, Francis Fukuyama, Nan Lin, and others. Bourdieu (1986) defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectivity-owned capital" (p. 286). Lin (1999) stated the premise for social capital as "investment in social relations with expected returns" (p.30). In other words, individuals engage with other actors in the network which produces personal benefits. Lin then gives four explanations to how these benefits emerge. First, social interactions facilitate the flow of information that reduce transaction costs. Second, social ties help actors exert influence on others through position achieved through relationships. Third, ties provide endorsement of an actor's social credentials (his social capital), which in turn provides the actor with more resources and other forms of potential capital. Fourth, ties reinforce identity and recognition which provide emotional support and entitlement to owned resources. For these reasons, social capital can be considered as a separate form of capital; it provides resources for the individual in ways not accounted for by other forms of capital such as financial and human capital. This perspective on social capital, often referred to as the relational-level perspective, considers the social investment to be made by and for the individual.

Benefits can also be accrued from social ties by means of resources created for the network as a whole. This framing, occasionally referred to as the "public good" framing (Putnam, 1993; Thoyre, 2011), or the societal-group perspective, views social capital as a resource available to the group. It is, as other public goods, both non-rivalrous and non-

excludable in that it is hard to exclude individuals from using social capital, and its use by one individual does not reduce another actor's usage. Within this perspective social capital is the collective norms, trust, social connectedness, and reciprocity all actors can benefit from (Coleman, 2000; Ostrom, 2007; Pretty & Ward, 2001a; Putnam, 1993). Actors require these group properties to exist in some form since they facilitate interaction and set expectations. The group property is how Pretty & Ward (2001b) and others demonstrated social capital to be essential for collective action. For instance, trust and norms create social obligations for individuals, which engenders confidence in collective or group activities. Actors in a collective initiative need to have confidence that collective benefits will accrue to them, that others will reciprocate action and not act as free-riders. Social capital is then seen as the benefits for in-group morality that balances individual rights and responsibilities.

The two perspectives on social capital (individual versus group) has led to some theoretical and measurement divergence. However, what both groups agree to is that social capital is a social asset produced as a result of individual interactions, and that embedded resources are beneficial to both the collective and individuals in the collective (Lin, 1999).

Measurement and Components

Given the two perspectives on social capital, there are multiple ways to operationalize and measure it. This is a frequent critique of the concept. First, since it is a resource embedded in a social network, it can be measured as a collective-level construct (group, neighborhood, community, and nation); but it can also be measured at the actor level such as an individual score. For the former, one important distinction is between structural cognitive, and relational social capital (See

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Appendix 1). For the latter, an important distinction is between bonding, bridging, and linking social capital.

Putnam (2000) distinguished between social capital as it refers to the type of bond between two individuals. Bonding social capital then refers to strong ties such as those within a homogenous group like a community, small geographic area, or a family. Bonding ties are those ties where there is a significant degree of affinity between actors and from which actors receive emotional support (Jones, Sophoulis, Iosifides, Botetzagias, & Evangelinos, 2009; Macias & Williams, 2014). Bridging social capital refers to ties between individuals across horizontal social groups, while linking social capital refers to ties between individuals specifically across vertical social classes, hierarchies, or groups of people with different power and authority in the network.

These distinctions, which I use in this study, are important because researchers often differentiate between the resources a type of bond makes available with respect to decisions and outcomes. For example, bonding ties enhance emotional well-being, bring individuals together against challenges, but incur costs if they create in-group obligations, while bridging ties can facilitate economic advancement and information transfer (Brunie, 2009).

Social Capital and Behavior

Subjective norms are a common antecedent to behaviors in both the theory of planned behavior and norm-activation theory. In psychology, subjective norms are the perceived social norms regarding a behavior held by the individual. Since group norms are central to the concept of social capital as previously explained, the assumption can be made that an individual's perception of norms is affected by different levels of social capital among other factors. In this study I do not explore the effect of environmental norms on behavior but recognize the significant relationship.

There are other studies that blend social capital theory with social cognitive behavioral theory without exploring an explicit effect on norms of behavior. For instance, one study employed structural equation modeling to investigate the effect of structural, cognitive, and relational social capital on the intention to use Facebook fan pages within a TPB framework (K.Y. Lin & Lu, 2011). Another study explored the relationships between bonding and bridging social capital and the three antecedents for adolescents' intention to accept online friendship requests by strangers also in a TPB framework (Heirman et al., 2015).

Samuel, Commodore-Mensah, & Dennison Himmelfarb (2014) reviewed 53 studies to identify a conceptual framework integrating several community social capital-related concepts, collective efficacy, and individual factors (perceived norms, attitudes, and self-efficacy) that predict health behaviors. Another study finds that social capital factors, such as social and institutional trust, are significantly related to perceived ease of use and usefulness of telehealth systems within a framework for technology acceptance models (Tsai, 2014).

Within entrepreneurship, two studies attempt to establish a relationship between social capital and entrepreneurial intentions. The first finds that bridging social capital, particularly knowing non-family entrepreneurial models is associated with perceived capacity to become an entrepreneur (Liñán & Santos, 2007). The seconds finds that structural social capital components are associated with intention to start a business through the effect on perceived behavior control (the perception of individual ability to start a business) within a TPB framework (Tatarko & Schmidt, 2016).

A few studies seek to establish conceptual frameworks for social capital within environmental behavior theories. The next section summarizes some of these attempts.

Social Capital, EC, and ERB

The argument explored in this research is that social capital mainly enhances private ERB due to both individual and group level social capital generated by social interactions. In this section I present the literature that connects social capital and ERB.

Thoyre (2011) uses a qualitative study to test four hypotheses regarding the causal mechanisms through which social capital can influence ERB. First, social capital might align self-interest with collective environmental interests. Considering individuals as partially motivated by self-interest, and as not internalizing the benefits of environmental behaviors, they might not want to engage in ERB if it seemingly incurs more costs than benefits. Community norms may impose sanctions on individuals that force them to act in accordance with these norms. Positive or negative sanctions therefore modify individual preference structures by incorporating the social cost of not acting in accordance with norms. Second, social capital instils pro-environmental values, which are very similar to pro-social values, through socialization processes that increase concern for the other. Videras et al. (2012) propose similar mechanisms when they proclaim that social context increases the internalization of norms and values. Third, social capital helps the diffusion of information about community needs and issues, which means it may help spread information about environmental problems. Fourth, social capital increases individual ability to carry out ERBs through the diffusion of information about ERBs, which is a way of reducing costs of acting pro-environmentally.

In the same study by Videras et al. (2012), they apply latent cluster models to indicators of norms and strength of ties to estimate social "profile" effects on behaviors that determine a household's carbon footprint and other collective ERBs. These behaviors include having installed an insulated water heater, recycling, whether the individual has donated to an environmental organization, and whether the individual has worked with

others to solve a local environmental problem. They find that individuals with "green ties", how much individuals discuss environmental issues with family, neighbors and coworkers, are significantly positively related to some of the behaviors. These findings support Thoyre's hypotheses about norms, values, and the spread of information.

Jin (2013) uses cross-county data to explore the relationship between several social capital variables and five ERBs: recycling, food-purchasing, commuting behavior, energy conservation, and water conservation. Results show that compliance with social norms and individual civic participation were consistently positively related with all five behaviors. Macias & Williams (2016) examined the same outcome variables and found that social evenings with neighbors was positively correlated with the five outcomes except recycling. They also found that social evenings with friends are positively correlated with having attended an environmental issue demonstration. To do that, they proposed three dimensions of social capital which I use in this study with some minor changes: Relational social capital, community social capital, and generalized trust.

Relational social capital refers to an individual's bridging and bonding types of relationships. They hypothesize that while more bridging relationships expose individuals to a greater diversity of opinions and to varied information, bonding relationships tend to present fewer challenges to status quo perspective and redundant information. Given the view of the status quo in American culture as tending to economic growth, individualism, and free market imperatives, they propose that people with more interactions among their bridging relationships are more likely to engage in ERB, while individuals with more interactions among their bonding relationships are less likely to engage in ERB (Macias & Nelson, 2011). This was explored in another study by examining the effect of community social capital on environmental concern. Results showed that the number of weak ties and occupational status were positively associated with environmental concern

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while the number of visits from friends was negatively correlated Macias & Nelson (2012).

Community social capital produced within individuals who often volunteer, attend public meetings, and participate in local community and civic life has ambiguous effects on individual ERB. Successful community solidarity in the United States has been focused in wealthy communities that opposed NIMBY projects that might produce environmental threats. However, these same communities tend to prefer economic growth and development over environmental impact (Macias & Nelson, 2011). A different study by one of the authors predicted a negative correlation between community social capital and environmental concern, but the results did not confirm this hypothesis (Macias & Williams, 2014). Cho & Kang (2017), however, measure three dimensions of social capital at both individual and community levels: Community ties, prevalence of norms, and social trust. They find that community ties with neighbors and friends is a significant predictor of ERB because it serves as a platform for exchanging ideas and advice around local environmental problems.

Generalized trust is the ability to cooperate and trust other people within the individual's community. Generalized trust is associated with altruistic outcomes and behavior because it helps individuals believe that others are more likely to behave in similar altruistic ways. This is potentially also true for ERBs. However both Cho & Kang (2017) and Macias & Williams (2014) do not find evidence for this relationship.

In the next section, I develop succinct hypotheses grounded in the literature on how environmental concern, social capital, and internal locus of control might affect ERB.

Chapter 3: Hypotheses

In this study, I consider social capital as a latent individual-level construct that can be inferred from an individual's self-reported social relationships, behaviors, and attitudes within the community. I measure three types of social capital in accordance with the literature: community participation, strong ties, and social trust. I define community participation as the capital created for the individual as a result of his investment in the community and take that measure to be a proxy of his bridging relationships. I define strong ties as a measure of the quality of an individual's close bonding relationships and social trust as capital created by an individual's level of trust towards others in his immediate community.

I test the influence of social capital on four ERBs. Whether individuals do different actions on ozone action days, whether they usually commute with means other than personal cars, whether they drive hybrid cars, whether they are willing to commute using alternative means of transportation such as bus, carpool, bike, rail or train, walking. Finally, I explore the impact on individual buying or boycotting behaviors due to environmental reasons. Based on what has been put forth, I hypothesize the potential effects of social capital, environmental concern, and internal locus of control on ERBs as the following:

(H1) Community participation positively influences action on OADs, commuting behavior, vehicle type, willingness to commute using alternative means of transportation, and boycotting

(H2) Strong ties negatively influence action on OADs, commuting behavior, vehicle type, willingness to commute alternative means of transportation, and boycotting

(H3) Social Trust positively influences action on OADs, commuting behavior, vehicle type, willingness to commute use alternative means of transportation, and boycotting

(H4) Environmental concern positively influences action on OADs, commuting behavior, vehicle type, willingness to commute use alternative means of transportation, and boycotting

(H5) Internal locus of control positively influences action on OADs, commuting behavior, vehicle type, willingness to commute using alternative means of transportation, and boycotting

Furthermore, I hypothesize on some non-exhaustive pathways for these relationships. I expect community participation to expose individuals to more diverse information that increases their awareness on environmental issues, and instill pro-environmental values that define environmental concern. In line with Macias & Nelson (2012), I expect strong ties with family and friends - bonding relationships - to negatively influence environmental concern due to the redundant information these relationships provide that support adherence to the status quo. I expect higher social trust to translate to a higher trust in the sources of information presented to individuals by their bridging relationships on growing environmental impacts. Therefore, I expect the relationship between social trust and concern to be positive.

(H1-4) Community participation positively influences environmental concern

(H2-4) Strong ties negatively influence environmental concern

(H3-4) Social trust positively influences environmental concern

Regarding the relationship between social capital and locus of control, I expect that community participation positively affects internal locus of control through increasing individual beliefs in the effects of personal action. There are two ways this might occur. Generally, individuals participating in specific causes in the community might have higher beliefs that their actions produce change because they've witnessed examples of that occurring. More specifically to the environment, since community participation is linked to more diverse sources of information, I suspect that individuals who participate in the community have more access to instances where human action led to environmental degradation, and have thus witnessed the effects of individual behavior. I expect strong ties to positively affect internal locus of control because individuals who feel supported and emotionally stable have higher beliefs about self-efficacy and their ability to implement change (Elfring & Hulsink, 2003; Hsiao, Lee, & Chen, 2016).

I expect social trust to increase the belief that other individuals will also contribute to collective action problems. This requires an a priori belief that individual actions matter and therefore a belief that individual actions can harm the environment.

(H1-5) Community participation positively influences internal locus of control

(H2-5) Strong ties positively influences internal locus of control

(H3-5) Social trust is positively correlated with internal locus of control

Within this study, I do not attempt to understand the effect of social capital on the subjective norms regarding the behavior. One reason is that this relationship is well established in the literature, and environmental social norms have a significant impact on behavior particularly in a TPB framework (Cho & Kang, 2017; de Groot & Steg, 2007; Thoyre, 2011). But another reason is that the data does not measure any subjective norms

towards environmental behavior. More generally, and as mentioned before, there are multiple other factors that might affect ERB that I do not explore. For instance, since the aim is to model willingness or intention to commute using alternative means of transportation, there is benefit in including the effects of perceived behavior control and attitudes towards using other means of transportations as explanatory factors. Although, the effect of perceived behavioral control is minimized in the question about commuting intentions (see next chapter), I recognize the importance of these variables but focus on the effect of social capital through particular causal mechanisms.

Finally, the literature attempts to measure the effects of social capital on behaviors and not on behavioral intentions. I propose that measuring the effect on intentions in the willingness to commute using alternative methods questions in addition to self-reported ERB has two of advantages. First, self-reported behavior is often hard to predict because there are several situational factors that might affect the outcome that are often beyond the measurement scope or interest of the study (Hines et al., 1987). For instance, the meta-analysis on ERBs by Klöckner (2013) shows that studies on average predict only 36% of behavior, while predicting around 55% of intention. Intention is the most correlated factor with behavior and is seen as the foremost unmitigated precedent for behavior. In line with these models, any socio-cognitive process that includes the effect of social capital is likely to be better suited at predicting intentions than behavior. This might be one reason Cho & Kang (2017) and Macias & Williams (2014) found weak correlations between trust and ERB. Perhaps one would find better correlations by testing that hypothesis on intentions instead. Second, measuring willingness or intention to commute using alternative means of transportation within individuals who usually commute using their cars, helps understand the internal cognitive process within the group of individuals that policy is primarily interested in affecting. One of the purposes

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of this study is understanding how behavioral change can be achieved within individuals that do not engage in the behavior, rather than those who already do. In the next section, I discuss the methodology that generates data that addresses the hypotheses.

Chapter 4: Data and Methodology

AUSTIN AREA COMMUNITY SURVEY

The Austin Area Community Survey is a phone survey originally conducted by the *Central Texas Sustainability Indicators Project (CTSIP)* through a third-party. The survey consists of 20 sections each having between 3 and 20 questions that speak to the overall quality of life in the Austin Area. The questions used in this study are included in the following sections of the survey: Philanthropy and Volunteerism, Neighborliness, Civic Engagement, Sustainability, Commuting, Air Quality, Land Use/Growth Climate Change, and Demographics. A version of the survey is included in Appendix 2. The geographic focus of the survey is the 6-county region which includes and borders the city of Austin: Travis County, Bastrop County, Burnet County, Caldwell County, Hays County, and Williamson County.

The survey was conducted in 2004, 2006, 2008, 2010, and 2015 with some minor differences between versions from each year. The average number of respondents per survey was 1,952 with a total of 9,760 respondents. The survey adheres to methodological procedures and definitions from the American Association for Public Opinion Research (AAPOR, 2015). Appendix 3 shows the disposition tables for the 2015 responses. The completion rate for that year was 1.97%, or 1,912 completed individual surveys from a total 97,262 records dialed. These records were compiled through sample providers and include 53,888 wireless telephone numbers and 43,374 landlines. The records dialed help achieve adequate sample sizes among key demographics and county residents through the imposition of quotas. All key quotas were achieved except for the number of males (864 achieved out of 956) and number of individuals sought through landlines (840 achieved out of 956).

The interviews were conducted using a computer-assisted telephone interviewing software to minimize questioning errors and implement survey skip patterns. Dialing errors were also minimized through software which streamlined the dialing process. Each telephone number was called up to five times to ensure adequate response rates, with the opportunity for respondents to request callbacks at more convenient dates if they wished. Moreover, Spanish speaking households were re-dialed by bilingual interviewers who conducted the Spanish version of the survey. Weights were applied to the final survey responses to produce reliable estimates of population parameters but were not included in this study. Weighting compensates for selection and sampling biases that relate to differential non-response and under-coverage.

In this study, I use two samples from the 2015 responses data, each subsample having its own characteristics based on the outcome variable chosen for the model. Due to skip logic used in the survey, as well as split ballots, not every respondent has all questions answered. This means that there are multiple instances of missing data within the two models. This is treated using list-wise deletion, meaning that if a respondent has one question in the model unanswered, this respondent is excluded from the whole model. This has three implications. First, it increases selection bias if respondents with missing values differ systematically from respondents with complete data. Second, since the two models use a relatively different subset of respondents, the models are not consistent and cannot be easily compared to determine causal inferences between variables. Third, list-wise deletion has significant implications on statistical power in that it might reduce the available data in a model to too few cases that reduce the model fit or make it unidentifiable.

In short, list-wise deletion resulted in significantly smaller subsamples in the models that affect selection bias, consistency between models, and statistical power. I

attempt to deal with these issues separately within the methodology. To deal with selection bias, descriptive statistics were explored for the independent variables in each model to characterize the resulting sample and evaluate bias. To deal with the loss of statistical power, independent variables were chosen within each model that result in sufficient data points that make the model identifiable. Loss of predictive power is inevitable since there are less data points, but the models explored end up using more than 100 responses. Regarding consistency across models, I argue that understanding the consistent effect of a predictor such as social capital on the different behavioral variables is less important than studying the effect that predictor has on each behavioral variable. In other words, the aim is to understand whether or not, and how social capital impacts commuting behavior and environmental boycotting rather than whether social capital consistently impacts both.

Although there are several available imputation methods in lieu of list-wise deletion that treat missing data to retain more responses, most of these methods rely on missingness that is not contingent on structural or design factors inherent to the survey. In other words, these methods can be used when the data has missing instances due to some random factor as opposed to inherent design factors (Gelman & Hill, 2007). To distinguish between missingness-at-random (random split ballots) and missingness due to design factors (skip logic) would require a complex and hefty process applied to the complete data set. This is beyond the scope of this study.

ESTABLISHING CAUSALITY

The study intends to verify the hypotheses through an appropriate logical framework that helps establish causal relationships. According to (Kline, 2012) there are five general requirements to establishing causality between two variables:

1. There should be temporal precedence between the two variables. This is not addressed as all variables are measured simultaneously through the survey.

2. There should be an observed correlation or covariation between the two variables. Covariations are generated using structural equation modeling which is detailed in the next section.

3. There should be no other plausible explanations for the covariation between the two variables. This can be achieved through controlling for all the possible confounding variables. I discuss this criterion in the results section by hypothesizing about confounding variables and exploring selection bias.

4. The distribution of the variables should match the distribution assumptions taken by the method that measures the covariations. For instance, it is widely agreed upon that in linear regression, there are normality assumptions about the independent variables to justify the significance of a correlation. In the methodology, I use an appropriate estimator that relaxes some assumptions usually required in structural equation modeling.

5. The direction of the causal relationship between the variables has to be correctly specified with no validity for an inverse relationship. In the results section I discuss the possibility of reverse causality.

The next section discusses the statistical method used to check covariation in the data.

STRUCTURAL EQUATION MODELING

Structural equation modeling (SEM) is a statistical technique widely used in the behavioral sciences. One advantage of SEM is that it simultaneously supports the formulation of latent constructs through confirmatory factor analysis and multiple regression to estimate path coefficients between predictors, latent factors, and multiple simultaneous outcome variables. SEM functions by assuming a model for latent and

directional relationships between variables, which implies a structure for the covariance between them. After specifying the model, estimated factor loadings and covariance are investigated to support or invalidate hypotheses. The model fit is also evaluated by investigating the difference between the observed covariance matrix and the implicit covariance matrix (Hox & Bechger, 1999).

Two similar models were built to investigate relationships with the only difference between them being the outcome variables and the sample of respondents. In the survey, only individuals who commute by car were asked about their willingness to commute using alternative means of transportation. Therefore, I use the sample of individuals who answered that question in the first model as an outcome variable. The second model predicts the other four ERBs (behavior on OADs, commuting behavior, vehicle type, and boycotting), and uses a sample of respondents different from the first model. A summary of the descriptive results for both samples is included in the next chapter.

The data was analyzed in R, using the *lavaan* Version 0.5-20 package (Yves et al., 2015). The SEM models were fit using a *Weighted Least Squares Median Variance (WLSMV)* estimator. The WLSMV estimator is chosen over the customary maximum likelihood estimator because it helps relax the assumption that endogenous variables in the model have a multivariate normal distribution (Brown, 2006). This is not the case in the model where there are several endogenous variables that are binomial or ordinal or continuous but not normal.

Although missing data due to skip logic and split ballots was only treated with list-wise deletion, missing data due to choosing the "No Response/Don't Know" category was treated with mean imputation for all survey questions that include that category. This

would help retain some of the missing data that would have been otherwise excluded through list-wise deletion.

In the next section, I define the endogenous, exogenous, and latent variables that specify the models as seen in Figure 4. A summary of the variables used in this study and their corresponding questions in the survey are in Appendix 4.
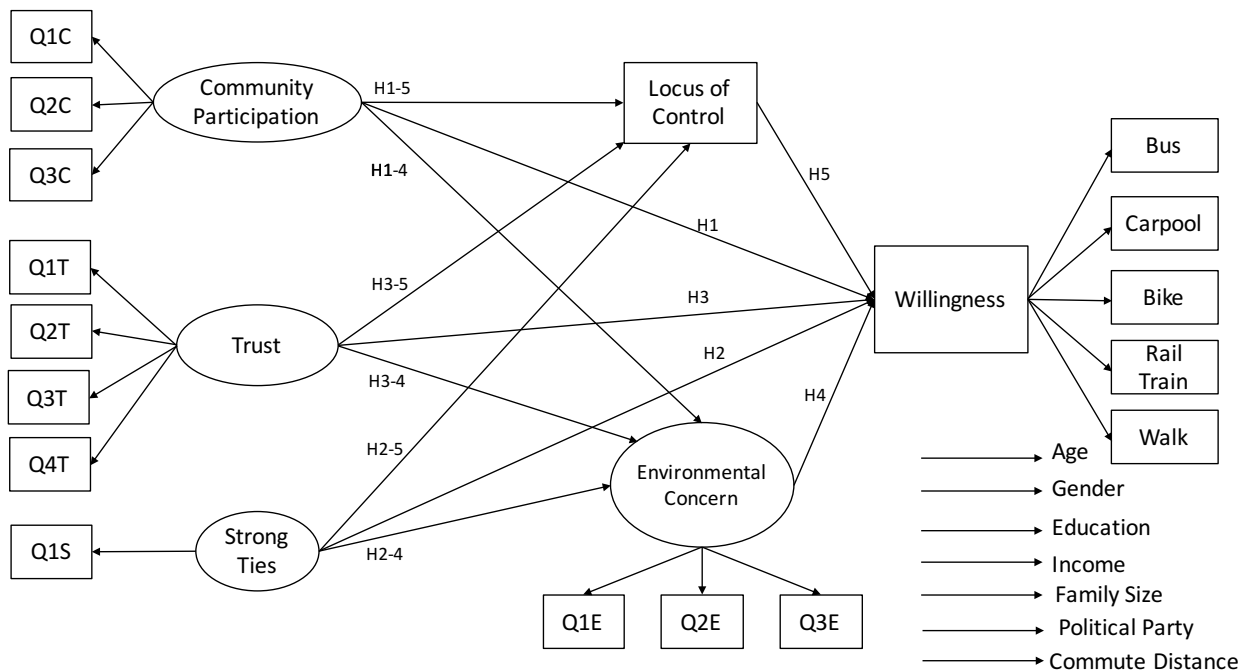

Figure 4: Path Model 1 for Willingness to Commute Using Alternative Means of Transportation

ENDOGENOUS VARIABLES

Endogenous variables are dependent variables caused by one or more endogenous or exogenous variables in the model. Endogenous variables can be observable (measured in the survey) or latent (inferred). There are 4 latent variables in the model, only one of

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which is endogenous, environmental concern. Social capital latent constructs are treated as exogenous that covariate.

ERBs

The first model measures the direct and indirect effect of predictors on the willingness to commute using each means of transportation. Although Figure 4 shows "Willingness" as a box with multiple arrows as if being a latent variable, this notation is only used to simplify the schematic. The SEM has 5 simultaneous dependent outcome variables measured on a scale of 1 (Not at All Willing) to 3 (Very Willing). The question "If the conditions were right for you, please tell me if you would be very, somewhat, or not at all willing to use the following alternatives to driving alone to work/school/other destination" is answered for 5 different modes: Riding the bus, using carpool or vanpool, riding a bike, riding commuter rail or train, and walking.

The second model is built similar to the first model but asks about the other four ERBs. The scales for these questions differ so dichotomous dummy variables were created for the first three questions that indicate whether or not the respondent engages in the behavior.

Ozone Action Days: "Do you do any of the following on Ozone Action Days" is a multiple answer question with 9 response categories for different actions respondents might engage with such as "Delay Mowing Lawn", "Carpool", and other. I create a dummy variable with a "Yes" if the respondent does at least one of the actions. It is important to note that all respondents who answer this question replied with a "Yes" to a previous question that ask if they know what Ozone Action Days are.

Commuting Behavior: "Do you typically get to your destination by…" is a single answer multiple choice question with 7 response categories for 7 different modes such as

"Car", "Bus", and others. I create a dummy variable with a "Yes" if the respondent chooses any other option than the first response category "Car".

Vehicle Type: "What fuel do you use for that vehicle" is a single answer multiple choice question with 4 response categories, (1) Gas, (2) Hybrid: Gas/Electric, (3) Diesel, and (4) Other. I create a dummy variable with "Hybrid" if the respondent chooses option 2, and "Other" if respondent chooses any of the other options.

Boycotting: "Please think again about some of the products, services, brands, or companies you boycotted for ethical, political, and/or environmental reasons in the past 12 months. How important were the following considerations (C. Environmental Concerns)?" is a single-answer multiple choice question with 4 response categories (4) Very Important, (3) Somewhat Important, (2) Not Really Important, or (1) Not at all Important. I model this variable as an ordinal variable.

Internal Locus of Control

Internal locus of control is an endogenous observable variable based on the question "My actions can influence the quality of the environment", which has 4 response categories: (1) Disagree Strongly, (2) Disagree Somewhat, (3) Agree Somewhat, (4) Agree Strongly. The variable is modeled as an ordinal variable such that a higher number indicates higher internal locus of control.

Environmental Concern

Although I do not use questions specific to the NEP scale or other scales commonly used in environmental literature, I develop a valid scale given the available questions in the survey that speak to environmental attitude and affect towards environmental protection. First, an exploratory factor analysis was run on 8 different questions. Factor loadings and Cronbach's Alpha indicated that some questions did not

load properly on that scale. Three of these questions were retained to develop a better scale which was evaluated using a confirmatory factor analysis on a sample of 2485 respondents. The questions, factor loadings and alpha (0.65) are show in Table 1. The first question Q6_3C was reverse scaled to capture higher environmental concern.

ENVIRONMENTAL CONCERN (ALPHA = 0.65 / N=2485)		FACTOR LOADING
Q6_3C	Our regional economy could be stronger if there was less concern about the environment (1) Disagree Strongly, (2) Disagree Somewhat, (3) Agree Somewhat, (4) Agree Strongly	0.451
Q9_3	Do you believe that higher ozone levels pose a very serious threat to you and your family? (1) Not at all, (2) Not so Serious, (3) Somewhat Serious, (4) Very Serious	0.631
Q17_5	On a scale from 1 to 10 with 1 meaning not concerned and 10 meaning very concerned, how concerned are you about climate change?	0.799

Table 1: Confirmatory Factor Analysis for Environmental Concern

EXOGENOUS VARIABLES

Exogenous variables in the models include social capital latent constructs and demographic control variables. They are exogenous because their causes of are not included in the model. They only play the role of predictors and are set free to vary.

Social Capital

The questions chosen for social capital were considered so as to form a latent construct representing each dimension. Therefore, community participation is a latent variable formed by questions such as volunteering, involvement in local groups, and knowledge of community issues. Strong ties were represented by one question about how much individuals receive the emotional and social support they need. The assumption is that this is a good estimate for the quality of strong ties because individuals receive emotional and social support from their bonding ties. Social trust was measured through a combination of questions about trust towards neighbors. A confirmatory factor analysis was run on a sample of 500 respondents to verify that the questions chosen adequately represent the constructs (see Table 2 and Table 3).

Control Variables

Key demographic information was obtained from survey respondents. Some of that information was included in the models after treating for outliers to account for variability in the behaviors. For instance, age, social class, gender, party, and family size have all been proved to either positively or negatively correlate with environmental concern and other environmental behaviors (Gifford & Nilsson, 2014; Van Liere & Dunlap, 1980). In my model, age, family income, family size and education are coded as ordinal variables, gender is coded as dichotomous, while political party is coded as three dichotomous dummy variables for independent, democrat, and republican. Moreover, since some outcome variables pertain to commuting, a question about commute time was included in the model as it can have significant predictive power for these responses. Although resident county would have been a relevant predictor, it was not included in the model because the samples for both models were only from Travis county.

SOCIAL CAPITAL	QUESTION NUMBER	SURVEY QUESTION	FACTOR LOADING
	Q10_8_1	People around here are willing to help their neighbors (1) Strongly Disagree (2) Somewhat Disagree, (3) Somewhat Agree, (4) Strongly Agree	0.769
	Q10_8_2	This is a close-knit neighborhood (1) Strongly Disagree (2) Somewhat Disagree, (3) Somewhat Agree, (4) Strongly Agree	0.673
SOCIAL TRUST (N=500)	Q10_8_3	People in this neighborhood can be trusted (1) Strongly Disagree (2) Somewhat Disagree, (3) Somewhat Agree, (4) Strongly Agree	0.763
	Q10_8_4	People in this neighborhood generally don't get along with each other (1) Strongly Disagree (2) Somewhat Disagree, (3) Somewhat Agree, (4) Strongly Agree	0.509

Table 2: Confirmatory Factor Analysis for Social Trust

SOCIAL CAPITAL	QUESTION NUMBER AND DESCRIPTION	SURVEY QUESTION	FACTOR LOADING
	Q2_4RC Volunteering – Open-ended answered recoded as an ordinal variable	Over the last 2 months, how many hours altogether did you spend volunteering -- either to help people in need or to improve the quality of life in your community? (1-9)	0.465
COMMUNITY PARTICIPATION (N=500)	**Q4_1** Knowledge of community issues – Single-answer multiple choice question coded as an ordinal variable	How well informed would you say that you feel about key issues affecting the future of your community? (1) Not at all informed, (2) Not too well informed, (3) Somewhat well informed, (4) Very well informed	0.538
	Q4_2 Participation in local groups – Multiple-answer question converted to a dummy variable with the amount of groups the individual was involved	In the last 12 months, tell me what types of local groups you have been involved in or actions you have taken as a result of your concern or interest in the future of your community? (0-13)	0.767

Table 3: Confirmatory Factor Analysis for Community Participation

Chapter 5: Results

Two models were fit with different subsamples. The first model includes willingness to commute using alternative means of transportation as five outcome variables, while the second model includes the other four ERBs (taking action on OADs, commuting behavior, vehicle type, and environmental boycotting). After investigating the samples for both models, commuting behavior and vehicle type were dropped from the second model because there were not enough responses for the dichotomous categories in the subsamples for these questions (Only 10 individuals in that sample drove a hybrid car, and 11 individuals used means other than their car to commute). A confirmatory factor analysis was run again within the SEM to confirm that the observed variables still loaded on the latent constructs as intended within the new subsamples. All factor loadings were comparable and within acceptable ranges.

The models were fit and output tables were created with R *stargazer* Version 5.2.1 package after some modifications (Hlavac, 2018). This section shows model fits and path coefficients and discusses them in light of proposed hypotheses.

MODEL FIT CRITERIA

I assessed a number of SEM diagnostic statistics to determine the goodness-of-fit based on Hox & Bechger (1999). First, the $\chi2$-test of model fit for the baseline model tests the null hypothesis that all slope parameters in the structural part of the model are 0 and the factor loadings in the measurement part of the model are all 1. For a good model fit, the aim is to reject this null hypothesis. Although it is customary to report the χ^2-test for model fit in a standard SEM, this test is not valid for the family of Weighted Least Squares estimators, of which WLMSV is used, because distributional assumptions are violated. The WLMSV was used to relax normality assumptions for endogenous

variables because several of the variables use are ordered, dichotomous, or continuous skewed. Although WLMSV helps include ordinal and categorical variables, it should be noted that there is evidence that WLMSV estimators require high samples (>500) for reliable standard errors estimates for factor loadings and coefficients (Li, 2014).

The *comparative fit index (CFI),* considers the discrepancy between the data and the hypothesized model, while adjusting for sample size. The *Tucker–Lewis reliability index (TLI)*, is an adjusted version of the *normed fit index (NFI)* of discrepancy between the χ2-value of the hypothesized model and the χ^2-value of the null model. Both CFI and TLI range from 0 to 1 with larger values indicating better model fits. Values above 0.90 are usually required to accept the model, while values above 0.95 are required for 'good' fits (Hox & Bechger, 1999; Roberts, Popli, & Harris, 2018).

The *root mean square error of approximation (RMSEA)* shows the amount of unexplained variance and thus is a measure of how well a given model approximates the true model. The *standardized root mean square residual (SRMR)* is also an absolute fit index that evaluates the standardized difference between observed and predicted correlations. RMSEA and SRMR can range from 0 to 1 with smaller values indicating better fit and acceptable model fit requiring values below 0.06.

These statistics are reported for both models in Table 4. The χ^2 reported have p-values < 0.0001 indicating that the null hypothesis cannot be rejected; however, as mentioned, I do not use this criterion to evaluate model fit. The other fit statistics seem to be in the acceptable range for both models except for TLI which is slightly below 0.9. CFIs are above the 0.9 cut-off while the RMSEAs and SRMRs are below 0.06.

SEM Diagnostic Statistic	Model 1	Model 2
χ2 (df, p-value)	251.81 (173, 0.001)	226.39 (140, 0.001)
CFI	0.94	0.92
TLI	0.89	0.89
RMSEA	0.043	0.050
SRMR	0.048	0.051

Table 4: SEM Fit Statistics

MODEL 1 RESULTS: Willingness To Use Alternative Means of Transportation

Descriptive statistics were used to analyze the profile of the respondents within the first model. By looking at Table 5, it can be inferred that the sample is not significantly biased. For instance, the average age of the sample was close to the third category of responses representing the age margin between 35 and 44. With respect to income, although the average is slightly above the middle value representing the $65,000 to $75,000 margin, the data has high standard deviation indicating sparsity. Commute time was coded as the summation of two ordinal variables with 11 categories that indicate the time required to commute to and from work. In those ordinal variables, 1 represents "< 5 minutes" and 11 represents ">50 minutes" and each level represents 5-minute increments. The maximum of 22 for commute time therefore indicates that there are individuals in this sample that potentially commute over 100 minutes. The average of 11.59 thus indicates that the total commute time for individuals in this sample is approximately between 45 and 65 minutes. Finally, individuals in this sample are more

likely to identify as democrat (51%) than republican (13%) or independent (14%). The remaining 22% of respondents identify as "other" or chose "no response", which I do not include the effects thereof within the models.

Variable	N	Mean	St. Dev.	Min	Max
Community	253	0.00	0.93	-1.84	2.34
Social Trust	253	-0.00	0.42	-1.46	0.59
Strong Ties	253	0.00	1.25	-3.10	0.90
Environmental Concern	253	-0.00	0.44	-1.18	0.63
Age	253	3.18	1.55	1	6
Family Income	253	7.76	3.48	1	13
Education	253	4.49	1.08	1	6
Family Size	253	2.66	1.45	1	7
Internal Locus of Control	253	3.45	0.77	1	4
Commute Time	253	11.59	5.24	2	22
Willingness – Bus	253	1.76	0.76	1	3
Willingness – Carpool/Vanpool	253	1.78	0.75	1	3
Willingness – Bike	253	1.61	0.78	1	3
Willingness – Train/Rail	253	2.10	0.83	1	3
Willingness – Walk	253	1.62	0.82	1	3
Gender (Male=1)	253	0.56		0	1
Party – Independent	253	0.14		0	1
Party – Democrat	253	0.51		0	1
Party – Republican	253	0.13		0	1

Table 5: Descriptive Statistics for Model 1 Sample

N=253	Internal Locus of Control (R² = 0.166)			Environmental Concern (R² = 0.299)	
Variables	Standardized Coefficients		p-value	Standardized Coefficients	p-value
Community Participation	-.136		.132	.074	.396
Social Trust	**.242***		.001	**.188**	.007
Strong Ties	-.125		.097	-.021	.747
Age	-.081		.300	-.102	.183
Family Income	-.118		.170	-.066	.417
Education	.139		.112	-.063	.420
Family Size	.082		.282	-.045	.524
GenderMale	-.034		.666	-.073	.365
Independent	.0004		.996	-.015	.861
Democrat	.168		.095	**.323***	.0002
Republican	-.079		.375	**-.213**	.010

Standardized Coefficients   *p < .05; **p < .01; ***p < .001.

Variables	Bus	Carpool / Vanpool	Bike	Rail/ Train	Walking
Environmental Concern	**.324**	**.308**	.243	**.435***	.124
Internal Locus of Control	.165	.018	.018	.105	.112
Community Participation	.131	-.099	.177	.077	**.234***
Social Trust	**-.154***	**.169***	.104	-.070	-.081
Strong Ties	-.039	-.039	**-.136***	.031	-.078
Commute Time	**-.181***	**-.162***	**-.272***	-.080	**-.289***
Age	-.031	**-.164***	**-.176***	**-.202**	**-.187***
Family Income	.147	.076	.063	.206*	.065
Education	-.030	.011	.068	.101	.072
Family Size	-.063	-.029	-.129	**-.174***	-.138
GenderMale	.026	.012	**.197***	.015	.015
Independent	.053	-.101	.054	.096	-.020
Democrat	.032	-.094	.046	.074	.025
Republican	-.056	-.083	.014	.072	-.074
R²	**0.251**	**0.214**	**0.289**	**0.339**	**0.250**

Table 6: Regression Results for Model 1 (N=253)

Regression results in Table 6 show the significance and sign of path coefficients for hypothesized relationships. The effect of social capital on mediating socio-psychological variables, internal locus of control and environmental concern, are mixed. Only social trust had a significant positive relationship with both environmental concern and internal locus of control. This indicates that individuals who are more trusting towards their communities are also more likely to be concerned about the environment and believe their actions to be harmful towards it. Community participation and strong ties did not show significant positive and negative relationships as respectively predicted.

The effect of social capital on the willingness to commute using alternative means of transportation were mixed too. Social trust showed a significant positive relationship with the willingness to carpool/vanpool. This is consistent with the notion that individuals who trust their neighbors are more willing to carpool with them. However, social trust counter-intuitively showed a negative relationship with willingness to take the bus. The other social capital dimensions had no stark effects: community participation was only positively correlated with willingness to walk, while strong ties were only negatively correlated with willingness to take the bike. With respect to the effect of environmental concern, it was significantly positively correlated with the willingness to take the bus, carpool/vanpool, and take the rail/train, while internal locus of control was not significantly related to any of these outcomes.

Among the control variables, commute time and age were the most significant having a negative effect on willingness to commute with most of the alternative means as expected. Also, political affiliation played a significant effect on environmental concern. Democrats were more likely to be more environmentally concerned and republicans were less likely to be environmentally concerned.

MODEL 2 RESULTS: Behavior on Ozone Action Days and Environmental Boycotting

Variable	N	Mean	St. Dev.	Min	Max
Community	249	0.00	1.17	-2.50	3.29
Social Trust	249	0.00	0.41	-1.62	0.51
Strong Ties	249	0.00	1.08	-3.23	0.77
Environmental Concern	249	-0.00	0.46	-1.16	0.58
Age	249	4.12	1.55	1	6
Family Income	249	7.65	3.29	1	13
Education	249	4.58	1.09	1	6
Family Size	249	2.49	1.39	1.00	7.00
Internal Locus of Control	249	3.50	0.72	1	4
Behavior - OAD	249	0.65		0	1
Behavior - Boycotting	249	3.33	0.78	1	4
Gender (Male=1)	249	0.51		0	1
Party – Independent	249	0.14		0	1
Party – Democrat	249	0.56		0	1
Party – Republican	249	0.12		0	1

Table 7: Descriptive Statistics for Model 2 Sample

Descriptive statistics were used to analyze the profile of the respondents within the second model. By looking at Table 7, it can be inferred that this sample looks very similar to the sample used in model 1. For instance, the average age of the respondents was also close to the third category of responses representing the age margin between 35 and 44. Individuals in this sample are also more likely to identify as democrat (56%) than republican (12%) or independent (14%). Finally, there seems to be enough respondents within both categories of responses to the outcome variable of interest in this model about behavior on ozone action days. 65% of respondents indicated that they do at least one thing differently on ozone action days.

N=249	Internal Locus of Control ($R^2 = 0.092$)		Environmental Concern ($R^2 = 0.373$)	
Variables	Standardized Coefficients	p-value	Standardized Coefficients	p-value
Community Participation	-.116	.160	-.018	.806
Social Trust	**.186***	.011	**.176****	.002
Strong Ties	-.031	.660	.007	.873
Age	-.060	.468	-.012	.853
Family Income	**-.167***	.045	-.100	.156
Education	.097	.272	.089	.172
Family Size	-.022	.786	-.030	.667
GenderMale	-.049	.551	-.125	.062
Independent	.018	.851	-.038	.632
Democrat	.091	.379	**.268****	.001
Republican	-.074	.422	**-.362*****	0.00000

Variables	Takes Action on Ozone Action Days	Boycotting Due to Environmental Reasons
Environmental Concern	**.470****	**.895*****
Internal Locus of Control	.005	-.021
Community Participation	.127	**.185***
Social Trust	-.028	-.017
Strong Ties	-.134	-.049
Age	-.126	.084
Family Income	-.124	.052
Education	.017	**-.230*****
Family Size	.003	-.055
GenderMale	-.065	.050
Independent	.088	.037
Democrat	.007	.054
Republican	.186	**.289*****
R^2	**0.243**	**0.680**

Table 8: Regression Results for Model 2 (N=249)

Regression results for model 2 in Table 8 show consistent relationships between social capital and mediating socio-psychological variables in the two models. As seen in the first model, only social trust had a significant positive relationship with both environmental concern and internal locus of control. Moreover, political orientation had similar effects on environmental concern such that democrats indicated that they were more environmentally concerned.

The effect of social capital on taking at least one action on OADs and boycotting for environmental reasons was not strong. Community participation was significantly positively correlated with boycotting but not with taking action on ozone action days, and social trust and strong ties showed no significant effects. Consistent with model 1, environmental concern was significantly positively correlated with both behaviors, while internal locus of control was not.

Among the control variables, education and political affiliation with the republican party had unexpected significant relationships with boycotting. Individuals with higher educational attainment were less likely to boycott for environmental reasons while republicans were more likely to.

DISCUSSION

Results from both model show that social trust was the most important social capital dimension with respect to effects on ERB. Community participation and strong ties exhibited anticipated relationships on one ERB each which is in line with findings in the literature on the positive and negative respective effect of bonding and bridging relationships on ERB (Cho & Kang, 2017; Macias & Williams, 2014). But social trust exhibited significant relationships on two ERBs, environmental concern, and internal locus of control. This supports our hypotheses about the causal chain between social trust, environmental concern, and ERB, particularly the willingness to carpool/vanpool.

This might support the argument that social trust can enhance confidence in self-efficacy and confidence in diverse sources of information that either increase environmental concern or increase confidence in the effect of an ERB in reducing environmental impact. However, at the same time, higher social trust was linked to less willingness to use the bus. These conflicting results indicate that there might be other confounding variables not included in the model. One reason trust is positively related to the intention to carpool/vanpool is that individuals who might carpool are most likely to do so through their neighbors. While trusting neighbors is an important part of that decision, the decision to take the bus is less influenced by that trust, and perhaps more by norms. Since the question asks about willingness to carpool, higher social trust might translate to higher trust in car-use norms if those norms are prevalent within a community or neighborhood, and if those norms potentially oppose bus-use norms. In other words, individuals who trust their communities might be willing to not use their own cars to commute as long as they're not breaking prevalent car-use norms by using the bus.

In this study, environmental concern was positively correlated with 5 out of 7 outcome variables. This supports the hypothesis about the relationship between environmental concern and ERB. However, the literature stresses on environmental concern as an indirect determinant of ERB mediated by other situation specific factors, which are not included in our models, like personal norms, subjective norms, and beliefs towards the behaviors. This is also one explanation for the weak relationships between internal locus of control and ERB. Although Hines et al. (1987) finds a mean correlation of 0.37 between internal locus of control and ERB in 15 studies, Gifford & Nilsson (2014) state that internal locus of control seems to moderate the link between values and ERB. However, they do not specify if that mediation occurs exclusively through internal locus of control. I suggest that there might be other variables that mediate the relationship

between internal locus of control and ERB that I left out such as perceived behavioral control. Attributing environmental harm to individual action is only one condition, and alone is not enough to assume the same individual will be willing to take action on that harm. Particularly an ERB needs to be preceded by a moral position on personal infliction of that harm.

Gifford and Nilsson's statement that internal locus of control moderates the link between values and ERB is interesting for another reason. This study did not assume a directional relationship between internal locus of control and environmental concern; however, the SEM accounted for a potential correlation. Results showed a significant 0.4 correlation between the two constructs. Given the value origins of environmental concern as proposed earlier, there might exist a potential common exogenous cause other than social capital which reduces the confidence in the impact of social capital dimensions.

LIMITATIONS

Table 9 summarizes the results for hypothesis testing. Although the data generally supports some of the hypotheses, establishing causality is a difficult endeavor in this study for several reasons.

First, it is difficult to establish temporal precedence between two constructs given their socio-psychological nature and their simultaneous measurement in a survey.

Second, loss of statistical power due to list-wise deletion makes it hard to confirm if sub-optimal fit (TLI < 0.9), low factor loadings, or insignificant paths are artifacts of the data or a result of model misspecification. There are several reasons model misspecification can occur. First the scales for environmental concern and social capital constructed have sufficient validity, but deviate from measurements in the literature. For instance, the measure of social trust is formed using questions mostly related to trust towards neighbors which is potentially different from general trust towards individuals in

the community beyond geographic proximity. A second way to misspecify the model is reverse causality. One study shows that social capital is a significant mediating variable between internal locus of control and entrepreneurial intentions (Hsiao et al., 2016). Although this is further proof for the relationship between social capital and internal locus of control, I recognize the possibility of having reversed their causal precedence as very few researchers have explored the direction of that relationship. Another study shows that negative correlations exist between social capital and car use because individuals who spend more time commuting alone in their cars have less time to socialize with others Mattisson, Håkansson, & Jakobsson (2015). Given, the first sample in the first model is a group of individual who only commute by car, that recursive effect might exist in my model. A third way to misspecify the model is to disregard relevant variables. As mentioned in the discussion there might be other significant confounding variables that I leave out which reduces the legitimacy of claims on causality.

A particularly relevant variable I leave out is group-level measurements of social capital. Since social capital is a network property, a claim can be made that it may be operationalized by a group-level measurement instead of an individual measurement. In fact, one study compares the effect of community-level social capital and individual-level social capital on ERB and finds that community-level measurement to be more significant (Cho & Kang 2017). Their main premise behind including an aggregated community measurement is that social capital is a latent community-level construct that can be inferred from the observed characteristics of individual relationships within the community. The study is therefore one of the few that incorporate multi-level modeling in an attempt to revisit the macro-level perspective proposed by Putnam and others. Although I recognize the potential significance of a community-level measurement of social capital, I measure individual social capital only for two reasons. First, to test

group-level effects of social capital, the data needs to be aggregated at an appropriate spatial resolution. It is not clear what that spatial resolution should be when measuring 'community' participation or trust as they pertain to ERB. In the survey used, respondents can be grouped by US zip code and county; however, it is not necessarily the case that these resolutions provide the appropriate aggregation to measure aspects of group-level social capital. Second, even when zip code was assumed to be an appropriate resolution, aggregation did not achieve statistically representative samples to compare across zip codes. In other words, there were not enough individuals per zip code due to list-wise deletion.

Finally, selection bias makes it harder to establish causality. Although descriptive statistics didn't show particular bias, there are other variables that might bias the sample such as the year the survey was taken, employment, and geographic location. These variables are homogenous in our sample. Race and urban/rural division are other potential predictors that were not explored in the model although data was available. Due to the existing trade-off between model complexity and model fit, limiting the amount of exogenous predictors helps keep the model identifiable.

Hypothesis Number	Relationship		Supported
(H1) Community Participation	+ ~	ERB	Yes
(H2) Strong Ties	- ~	ERB	Yes
(H3) Social Trust	+ ~	ERB	Yes
(H4) Environmental Concern	+ ~	ERB	Yes
(H5) Internal Locus of Control	+ ~	ERB	No
(H1-4) Community Participation	+ ~	Environmental Concern	No
(H1-5) Community Participation	+ ~	Internal Locus of Control	No
(H2-4) Strong Ties	- ~	Environmental Concern	No
(H2-5) Strong Ties	+ ~	Internal Locus of Control	No
(H3-4) Social Trust	+ ~	Environmental Concern	Yes
(H3-5) Social Trust	+ ~	Internal Locus of Control	Yes

+ ~: Positive Relationship
- ~: Negative Relationship

Table 9: Summary of Supported Hypotheses in this Study

Chapter 6: Conclusion

Findings support the significance of personal and psychological factors and societal factors in explaining ERBs. Particularly, social trust was correlated with environmental concern and locus of control while environmental concern was positively correlated with willingness to take the bus, rail and train, the willingness to carpool/vanpool, taking action on ozone action days, and environmental boycotting. The findings therefore stress the importance of these common factors in explaining multiple behaviors, however they also assert the importance of considering ERBs as distinctive behaviors that individuals engage in as a result of different socio-cognitive processes.

Pretty & Ward (2001b) and others have made the case that social capital is an imperative resource that supports the collective engagement in environmental issues. For instance, social cohesion is important for mobilizing communities against harmful environmental policies. Although this study attempts to make the distinction between public ERB such as environmental advocacy, and private ERB such as commuting behavior through exploring social capital impact on private ERB, it is important to recognize the potential for a collective action framework in explaining individual ERB. Essentially, environmental degradation and the excessive use of natural resources are problems that face our societies at large and are therefore collective action problems. The argument can then be made that social capital is important for private ERB as it is for public ERB if general environmental degradation and excessive natural resource use can be framed as collective problems in an individual's perspective. This context is perhaps another reason one might think of social trust as a significant dimension. It is possible that trust creates conditions that makes it more convenient and less risky to carpool with neighbors, which is what the results in this study show, but it is also possible that trust enhances individual belief that others will equally contribute to the collective solution,

and therefore encourages engagement in private ERB as a solution to global environmental problems.

Conventional international and national policies, technology development, and community mobilization are critical to the creation of more sustainable societies, but so is behavioral change. Focusing on how individuals and communities make better environmental decisions is therefore essential, particularly when incentives and regulation fail to achieve desired outcomes. This is where the need arises for the placement of human decisions in their appropriate social context.

Appendix 1

Structural, Cognitive, and Relational Social Capital

The distinction between structural, cognitive, and relational social capital was proposed by Nahapiet, J., & Ghoshal (1998) while exploring organizational advantages and the creation of new intellectual capital. This distinction builds on the work of Granovetter (1985) who discussed the embeddedness of economic behavior: that behavior and institutions are constrained by social relations.

Structural social capital refers to properties of the network that are relatively externally observable, such as the actors' ties in the network, network configuration (density, connectivity, hierarchy), and intensity and appropriability of links. It includes actions and behaviors of the actors such as patterns of civic engagement (Nahapiet, J., & Ghoshal, 1998; Villalonga-Olives & Kawachi, 2015). These properties are more tangible than cognitive and relational social capital which refer to perceptions that actors in a network hold to be in common and use to facilitate interaction.

Cognitive social capital refers to shared languages, narratives, values, and beliefs within a network that help individuals strive towards common goals. Relational social capital refers to the norms, trust, and expectations of reciprocity. Relational social capital is most closely recognized as the quality of relationships. The distinction between cognitive and relational social capital is more recent. In earlier literature both distinctions were seen as cognitive in that they involved common cognitive perceptions (Liu et al., 2014). The three dimensions are interrelated and causally linked in that one facilitates the presence of the others.

Appendix 2

CENTRAL TEXAS SUSTAINABILITY INDICATORS PROJECT COMMUNITY SURVEY 2015

	Section	Questions	Responses	Page
A	Introduction	3	3	2
1	Arts Participation	6	8	3
2	Philanthropy and Volunteerism	8	10	4
3	Neighborliness	3	3	6
4	Civic Engagement	5	18	7
5	Child Care	13	14	8
6	Sustainability	5	18	11
7	Attractiveness	0	0	0
8	Commuting	20	34	13
9	Air Quality	5	8	17
10	Worry About Crime	8	22	18
11	Workforce and Education	12	25	20
12	English Proficiency	3	3	22
13	Land Use/Growth	4	12	23
14	Health Status and Access	18	18	24
15	Reactions to Race/Ethnicity	7	10	27
16	Water Awareness	7	7	29
17	Climate Change	6	15	30
18	Food	6	6	31
19	Travis County	4	20	32
D	Demographics	17	18	33
B	Branding	2	2	36
E	End	1	1	37
		163	275	

INTRODUCTION

Hello, my name is _____ calling from Customer Research International and we're conducting a survey on quality of life in this community.
(CLARIFY IF NECESSARY: I'm not selling anything)

a.1. May I speak to the male/female adult of the household?
SPEAK TO AN ADULT (OVER AGE 18) IN THE HOUSEHOLD.

We would like to ask you questions about a wide range of quality of life issues in Central Texas for a research project being conducted at UT Austin. Your participation is voluntary and you may decline to answer any question or withdraw from the study at any time. The survey will take about 30 minutes. Your answers will be kept private and anonymous. There are no known risks or rewards associated with your participation. If you have questions about this project or your rights as a participant, you may find contact information for UT staff at rgkcenter.org/sip. The aggregate results of the survey will be published and shared with local and regional leaders and help shape future efforts to sustain our quality of life.

Do you agree to participate in this survey?

a.2.   In what county do you live? (READ LIST)

        1 Travis County
        2 Williamson County
        3 Hays County
        4 Bastrop County
        5 Caldwell County
        6 Burnet County
                8 (OTHER)   [TERMINATE]
                9 (DON'T KNOW/NOT SURE/CAN'T SAY)   [TERMINATE]

(ASK IF a.2=1,2)
a.3.   Are you a resident of the City of Austin?

        1 Yes
        2 No
        9 (DK/NR)

RANDOMLY SELECT SURVEY SET (50/50 quota)

            1 Set A
            2 Set B

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET A)
First are some questions about your Participation in the Arts

58

1.1   Think about the availability of opportunities to enjoy the arts in your community. For each of the following arts, please tell me if you think there are many, quite a few, a small number, or almost no opportunities. (ROTATE QUESTIONS)

    1 Many
    2 Quite a few
    3 A small number
    4 No or almost no
    9 (DK/NR)

A.   Opportunities to visit a local museum?
B.   Opportunities to attend a local performance of live entertainment?
C.   Opportunities to attend an outdoor festival or special event focusing on arts or culture?

(ROTATE 1.2a – 1.2c)
1.2a.   During the last year, about how many times did you visit a local museum?
1.2b.   During the last year, how many times did you attend a local performance of live entertainment?
1.2c.   During the last year, how many times did you attend an outdoor festival or special event focusing on arts or culture?

            (CLARIFY: GIVE BEST ESTIMATE)
1 None
2 1-2
3 3-5
4 6-10
5 More than 10
9 (DK/NR)

1.3   How would you rate the quality of the arts in your community? Would you say…
5 Excellent
4 Very Good
3 Good
2 Fair
1 Poor
9 (DK/NR)

1.4   Would you say that arts activities play a major role, minor role, or no role at all in your life?
1 Major role
2 Minor role
3 No role at all
9 (DON'T KNOW/REFUSED)

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET B)
Next are some questions about Philanthropy and Volunteering

2.1   Thinking about the total amount you have given to charitable programs or organizations over the course of the last year, would you say you have given… (INTERVIEWER INSTRUCTION; IF RESPONDENT ASKS WHETHER THIS CAN INCLUDE CHURCH GIVING, SAY YES.)

      1 None   [SKIP TO Q2.3]
      2 $1 to $100
      3 $100 to $250
      4 $250 to $500
      5 $500 to $1,000
      6 $1,000 to $2,500
      7 More than $2,500
9 (REFUSED/DK)   [SKIP TO Q2.3]

2.2   Thinking of all your donations to non-religious charities, to your faith-based organization and to education-related causes over the past year, approximately how much did you: (ROTATE QUESTIONS)
1 None
2 $1 to $100
3 $100 to $250
4 $250 to $500
5 $500 to $1,000
6 $1,000 to $2,500
7 More than $2,500
9 (REFUSED/DK)

A. Donate to faith-based organizations like churches, synagogues, mosques?
B. Donate to charitable programs or organizations?
C. Donate to education institutions and alumni associations

2.3   How often do you serve as a volunteer for a charitable programs or organizations?
1 Daily
2 Twice a week
3 Once a week
4 Twice a month
5 Once a month
6 Every few months
7 Only occasionally

8 Never
9 (REFUSED)

2.4.1   Over the last 2 months, how many hours altogether did you spend volunteering --
either to help people in need or to improve the quality of life in your community?
(CLARIFY: GIVE BEST ESTIMATE)

_____ Number of Hours (0-998)
999 (DON'T KNOW/NOT SURE/CAN'T SAY)

2_4rc (RECODE)

01   None
02   1-4
03   5-9
04   10-14
05   15-19
06   20-29
07   30-39
08   40-49
09   50+
99   (DK/REF)

2.5   In the last year, have you made a charitable contribution after: (ROTATE
CHOICES - SELECT ALL THAT APPLY)
1 Being contacted by a friend or family member
2 Hearing about an issue from a religious leader
3 Hearing about a need at work
4 Participating in an event
5 Seeing local news coverage
9 (NONE OF THESE)

2.6   I'm now going to read to you some statements about why people donate time and
money. For each one, please tell me if you disagree strongly, disagree somewhat, agree
somewhat, or agree strongly. (ROTATE QUESTIONS)

1 Disagree strongly
2 Disagree somewhat
3 Agree somewhat
4 Agree strongly

9 (DON'T KNOW/NO RESPONSE)

A. To me, giving is more about personal satisfaction than long term benefits
B. I would give more if I knew what my community really needed
C. The only worthy causes are those that make a difference right now

(ASK THIS SECTION OF ALL RESPONDENTS)
Next are some questions about Neighborliness

3.1.   Think about your neighbors living in the 5 households nearest yours. Suppose you needed some kind of help or a small favor. How comfortable would you be asking one of your neighbors for help? Would you be…

4 Very comfortable
3 Somewhat comfortable
2 Not so comfortable
1 Not at all comfortable
5 (It depends on the nature of help or favor)
9 (DON'T KNOW/NOT SURE/CAN'T SAY)

3.2   Do you feel you have a lot in common with the neighbors that live around you? (CLARIFY: Do you share the same cultural and political values?)

4 A lot
3 Somewhat
2 Not so much
1 Not at all
5 (It depends)
9 (DON'T KNOW/NOT SURE/CAN'T SAY)

3.3   If you could afford to live in any neighborhood in greater Austin what neighborhood would that be? SCREENER CODE, OPEN ENDED RESPONSE

1 Response given (SPECIFY)
9 (DK/NR)

(ASK THIS SECTION OF ALL RESPONDENTS)

Next are some questions about your Civic Engagement with your community.

4.1.   How well informed would you say that you feel about key issues affecting the future of your community?   READ LIST
1 Not at all informed
2 Not too well informed
3 Somewhat well informed
4 Very well informed
9 (DK/NR/RF)

4.2.   In the last 12 months, tell me what types of local groups you have been involved in or actions you have taken as a result of your concern or interest in the future of your community?
        ROTATE, READ LIST
        (ASK AS SEPARATE YES/NO/DK QUESTIONS THEN RECODE, RECORD ALL MENTIONS)
01 A neighborhood or homeowner association
02 Attended a meeting hosted by a government agency (CLARIFY: City, County)
03 Attended a non-government sponsored meeting
04 Contacted an elected official
05 A PTA or other school related group
06 A business or professional group (CLARIFY: local Chamber)
07 An environmental group (CLARIFY: Sierra Club)
08 A political campaign
09 A social equity or human services group (CLARIFY: Habitat for Humanity, ACLU)
10 Contacted your local paper or called a radio talk show
11 A spiritual or religious group, a church, or a temple.
12 Other _____ (SPECIFY)

13 (NONE)

4.3.   Do you consider yourself a member of a particular faith or spiritual group that meets regularly at a church, synagogue, temple, or other location?
1 Yes
2 No   [SKIP TO Q4.5]
9 (DK/RF)   [SKIP TO Q4.5]

4.4   How often do you attend services at your place of worship?
1 Once a week
2 Twice a month
3 Once a month
4 A few times a year
5 Once a year or less
9 (DON'T KNOW/REFUSED)

(DIFFERENT FROM 2010 WAVE)

4.5X   People get their news from a variety of different sources. Thinking about how you get information about current events, how often do you consume the following types of media content? For each media type, please answer Always, Usually, Sometimes, Rarely, or Never. (ROTATE QUESTIONS A-K)

1 Always
2 Usually
3   Sometimes
4   Rarely
5   Never
9   (DK/RF)

A.   Local television news
B.   National television news
C.   Radio
D.   Local newspaper (like the Austin American Statesman) either in print or online
E.   National newspaper either in print or online
F.   Portal website that gathers news from many different sources (i.e. Yahoo or Google news)
G.   News information shared by friends or family through social networking sites, like Facebook, Twitter, MySpace, or LinkedIn
H.   News information shared by mainstream news media outlets through social networking sites, like Facebook, Twitter, MySpace, or LinkedIn
I.   Email
J.   Government notices and agendas
K.   Conversations with friends, family, or co-workers
L.   Other sources

(ASK THIS SECTION OF ALL RESPONDENTS)
Next are some questions about Child Care.

5.1. Do you have children under the age of 18 living in your household?
1 Yes
2 No   [SKIP TO NEXT SECTION]
9 (DK/RF)   [SKIP TO NEXT SECTION]

5.2A How many children 6 years old or under currently live in your household?
NUMBER: (0-20) _____

00 (NONE)   SKIP TO Q5.12
98 (DK/RF)   SKIP TO Q5.12

5.2B How many children 3 years old or under currently live in your household?
NUMBER: (0-20) _____
00 (NONE)
98 (DK/RF)
*(check that 5.2B is not greater than 5.2A)

5.3. For only the oldest child, how many hours each week does the child living in your home spend in the care of others (outside of the parents) for education, enrichment or child care? Would you say…
      1 Full-time, about 40 hours a week
      2 Part-time, about 20 hours a week
      3 Just a few hours a week
      4 None
9 (DK/RF)

5.4. Who currently or presently takes care of this child/these children when adults in the household are not at home or not available to take care of them? DO NOT READ LIST, SCREENER CODE TOP THREE
01 A partner or spouse
02 Family relative
03 Neighbor
Out of Home: SPECIFY
04 A child-care center
05 Family day care provider
06 Pre-school
07 Other out of home care (SPECIFY)
88 (Other/Something else) (SPECIFY)
98 (DK/RF)

5.5. How satisfied are you with this child care or preschool arrangement?
4 Very satisfied
3 Somewhat satisfied
2 Not very satisfied
1 Not at all satisfied
9 (DK/RF)

5.6. Have you had any of these child care related problems during the past two years?
      READ / ROTATE CHOICES – SELECT ALL THAT APPLY
1 Difficulty paying for child care
2 Finding child care during evening or weekend hours when family members are working
3 Transportation to or from child care location

4 Finding affordable child care not provided by a relative
7 (NONE OF THESE/NO PROBLEMS)
8 Other (SPECIFY)
9 (DK/RF)

5.7. Where (in what part of your community) do you most need or want your child care services to be located? READ LIST
1 In your own neighborhood, close to where you live
2 Near your work
3 Does not matter
8 Other (SPECIFY)

5.8. What is the most important characteristic you look for (or would look for) in selecting a provider outside of your home for your child? DO NOT READ LIST, SCREENER CODE ONE RESPONSE
1 Location
2 Cost
3 Hours open/available
4 Staffing
5 Curriculum
6 Reputation
7 Accreditation
8 Other (SPECIFY)
9 (DK/NR)

5.10   Over the last week, have you read to or with your child?
1 Yes
2 No
9 (DK/RF)

5.11   What is the title of your child's favorite book?

1 Book Title: SPECIFY:
2 None
3 (Can't remember right now)
8 (DK)
9 (RF/NR)

5.12. How much after-school care each week do you need for the child/children living in your home? Would you say
1 Under 5 hours a week
2 Between 5 and 10 hours a week
3 Between 10 and 15 hours a week
4 Over 15 hours a week

9 (DK/RF)

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET B)
Sustainability is a word with several definitions, for the following question, sustainability means "meeting the needs of present and future generations without compromising our economy, social equity, our environment, or citizen engagement."

6.1 What one word or phrase first comes to mind when you hear this definition of sustainability?

SPECIFY: _____

6.1b IF NONE/NOTHING/DON'T KNOW, THEN READ LIST and ASK FOR ONE:
(ROTATE CHOICES)
1 Environment
2 Economy
3 Equity
4 Quality of life
7 (NONE)
9 (DK/NR)

6.2 Have you heard sustainability talked about related to activities in your community?

1 Yes
2 No
8 (DON'T KNOW/NOT SURE)
9 (NO RESPONSE)

6.3 The following questions are about community priorities. For each one, please tell me if you disagree strongly, disagree somewhat, agree somewhat, or agree strongly.
(ROTATE QUESTIONS)
1 Disagree strongly
2 Disagree somewhat
3 Agree somewhat
4 Agree strongly
9 (DON'T KNOW/NO RESPONSE)

A. Helping people is more important than protecting the environment
B. Social programs are needed because businesses don't do enough

C. Our regional economy could be stronger if there was less concern about the environment
D. Strong economic growth and more jobs will ultimately result in fewer poor and needy people
E. Investing in the environment pays off over the long term more than investing in social programs
F. Because Central Texans care about our environment, our economy is stronger

6.4   Now, we're going to ask you questions about boycotting, that is, refusing to buy a particular product, service, brand, or to make purchases from a particular company, and buycotting, that is the decision to purposely choose one brand or product over another for ethical, political or environmental reasons. In the past 12 months, how often did you buy or purposely not buy a product, service, brand, or company for ethical, political, and/or environmental reasons?

1 Always
2 Usually
3 Sometimes
4 Rarely
5 Never   [SKIP TO NEXT SECTION]
8 (DON'T KNOW/NOT SURE)   [SKIP TO NEXT SECTION]
9 (NO RESPONSE)   [SKIP TO NEXT SECTION]

6.5   Please think again about some of the products, services, brands, or companies you boycotted for ethical, political, and/or environmental reasons in the past 12 months. How important were the following considerations? Please answer Very Important, Somewhat Important, Not Really Important, or Not at all Important. (ROTATE QUESTIONS)
4 Very Important
3 Somewhat Important
2 Not Really Important
1 Not at all Important
9 (DK/RF)

A.   Your health or your family's health
B.   Animal rights or welfare
C.   Environmental concerns
D.   Promote traditional family values
E.   Buying locally
F.   Made in the USA
G.   Fair trade with third-world countries
H.   Promote equal rights or equality
I.   Promote fair labor practices or working conditions

(ASK THIS SECTION OF ALL RESPONDENTS)
Next are some questions about Commuting

8.0 Which of the following best describes your employment status? READ LIST

1 Employed outside of the home
2 Attending school, not employed
3 Self-employed/Work at home
4 Both employed and attending school
5 Not employed or attending school   GO TO NEXT SECTION
6 None/Other   GO TO NEXT SECTION
9 (DK/NR)   GO TO NEXT SECTION

The next few questions are about transportation. Think about your transportation to work or school, or, if you work at home, any other destination that you go to often, say at least 2 or 3 times a week.

8.1 Do you typically get to your destination [CLARIFY: work/school/other] by:
1 Car
2 Carpool/Vanpool   GO TO 8.3
3 Bus   GO TO 8.3
4 Bicycle   GO TO 8.3
5 Walk   GO TO 8.3
6 Something else   GO TO 8.3
7 (Not applicable/Don't go anywhere)   GO TO 8.3
9 (DK/NR)   GO TO 8.3

8.2 When you take your car to your destination, do you typically drive alone?
1 Yes
2 No
8 (DK/NR)
9 (REFUSED)

8.3 Do you arrive at your destination [work/school/other] between 7 and 9 am?
1 Yes
2 No
8 (DK/NR)
9 (REFUSED)

8.4 Do you leave your destination [work/school/other] between 4 and 6 pm?
1 Yes

2 No
8 (DK/NR)
9 (REFUSED)

8.5 How many miles do you travel to work/school one-way?

    SPECIFY: _____
    999 (DON'T KNOW/NO RESPONSE/REFUSED)

8_5rc (RECODE)

01 < 5 miles
02 5 - 9 miles
03 10-14 miles
04 15-19 miles
05 20-24 miles
06 25-29 miles
07 30-34 miles
08 35-39 miles
09 40-44 miles
10 45-49 miles
11 50+ miles
99 (DON'T KNOW/NO RESPONSE/REFUSED)

8.6 How many minutes does your travel to work/school usually take?

    SPECIFY: _____
    999 (DON'T KNOW/NO RESPONSE/REFUSED)

8.7 And how many minutes does your travel home from work/school usually take?

    SPECIFY: _____
    999 (DON'T KNOW/NO RESPONSE/REFUSED)

8_6rc and 8_7rc (RECODE)

01 < 5 minutes
02 5-9 minutes
03 10-14 minutes
04 15-19 minutes
05 20-24 minutes
06 25-29 minutes

07 30-34 minutes
08 35-39 minutes
09 40-44 minutes
10 45-49 minutes
11 50+ minutes
99 (DON'T KNOW/NO RESPONSE/REFUSED)

8.8a Compared to 2 years ago, would you say that these days your total travel time is…

1 A lot longer   GO TO 8.8C
2 A little longer   GO TO 8.8C
3 About the same   SKIP TO 8.9
4 A little shorter   GO TO 8.8B
5 A lot shorter   GO TO 8.8B
6 (NOT APPLICABLE/MOVED WITHIN LAST 2 YEARS)   SKIP TO 8.9
8 (DK/NR)   SKIP TO 8.9
9 (REFUSED)   SKIP TO 8.9

8.8b What is the primary reason it is shorter? (DO NOT READ) (CLARIFY FROM LIST
AS NECESSARY)
01 Traffic congestion has improved
02 Roads are better
03 Change job location
04 Change residence location
05 Change in hour of day traveling
06 Change mode of transportation
07 Change in route
88 (OTHER-SPECIFY)
98 (DK/NR)

8.8c What is the primary reason that it is longer? (DO NOT READ) (CLARIFY FROM
LIST AS NECESSARY
01 Traffic congestion has gotten worse
02 Roads are worse
03 Change job location
04 Change residence location
05 Change in hour of day traveling
06 Change mode of transportation
07 Change in route
88 (OTHER-SPECIFY)
98 (DK/NR)

8.9. Have you changed your method of traveling to and from work/school in the last two
or three years?

1 Yes
2 No   GO TO 8.12
8 DK/NR   GO TO 8.12

8.10. How did you travel previously? (DO NOT READ) (CLARIFY FROM LIST AS NECESSARY)
01 Drive own car
02 Carpool/Vanpool
03 Ride bus
04 Bicycle
05 Motorcycle
06 Walk/jog
07 No travel/Work at home
88 (OTHER-SPECIFY)

8.11. What is the primary reason you changed your means of travel? (DO NOT READ) (CLARIFY FROM LIST AS NECESSARY)
01 Changed home address
02 Changed work address
03 Convenience
04 Got new car
05 Cost of fuel/gas
06 Bus too slow/Bus makes me late
07 My schedule changed
08 Have no car
09 Parking problems
10 Bus schedule changed
11 Health/Environmental reasons
88 (OTHER-SPECIFY)

8.12. (IF Q8.2 = YES, CONTINUE; OTHERWISE SKIP TO 8.13)
If the conditions were right for you, please tell me if you would be very, somewhat, or not at all willing to use the following alternatives to driving alone to work/school/other destination? (ROTATE QUESTIONS)
3 Very willing
2 Somewhat willing
1 Not at all willing

A. Riding the bus
B. Using a carpool or vanpool
C. Ride a bike
D. Ride commuter rail or train
E. Walk

8.13a Do you currently have free parking at work or school?
1 Yes
2 No
9 (DK/NR)

8.13b Does your employer offer any of the following options at your regular place of work or school? ROTATE, READ LIST

1 Yes
2 No
9 (DK/NR).

A. Work at home/telecommute?
B. Flexible work hours?
C. Compressed work week (like four 10 hour days)?
D. Rebate of parking fees?
E. Encourages carpools for employees?
F. Offer bus passes or other public transportation incentives?
G. Provide preferential parking for carpoolers?
H. Provide transportation for carpoolers or bus riders to use in emergencies?
I. Provide parking, storage or shower facilities for bicycle riders?

*(skip 8.13c if no 'Yes' responses at 8.13b?)
8.13c. Do you currently take advantage of any of these options?
1 Yes   GO TO 8.14
2 No
9 (DK/NR)

8.13d. Would you take advantage of these options if offered?

1 Yes, SPECIFY (ask follow-up)
2 Maybe, SPECIFY (ask follow-up)
3 Probably Not
4 No
9 (DK/NR)

8.13d (follow-up) Which options would you take advantage of?
(DO NOT READ - SELECT ALL THAT APPLY)
01 Work at home/telecommute
02 Flexible work hours
03 Compressed work week (like four 10 hour days)
04 Rebate of parking fees

05 Carpools for employees
06 Bus passes or other public transportation incentives
07 Preferential parking for carpoolers
08 Transportation for carpoolers or bus riders to use in emergencies
09 Parking, storage or shower facilities for bicycle riders
98 (DON'T KNOW)

8.14.   I'm going to read a list of things typically cited to improve transportation. For you, please tell me if these are very important, somewhat important, not really important, or not at all important? (ROTATE, READ LIST)
4 Very important
3 Somewhat important
2 Not really important
1 Not at all important

A. More toll roads
B. More freeways and roads
C. Synchronize traffic lights
D. More bike lanes and sidewalks
E. More carpools and ride-sharing
F. Improved bus service
G. More commuter rail and other rail service

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET A)
Next are some questions about Air Quality in Central Texas.

9.1. Are you familiar with Ozone Action Days?

1 Yes
2 No   GO TO 9.3
9 (DKNR)   GO TO 9.3

9.2. Do you do any of the following differently on Ozone Action Days?
        READ / ROTATE CHOICES, SCREENER CODE AND RECORD ALL THAT APPLY

01 Delay buying gas till 5:00 P.M.
02 Delay mowing lawn
03 Ride Bus/Walk/Bicycle
04 Carpool
05 Work at home
06 Change time you go to or return from work/school

07 Change number of side trips /extra trips
08 No Changes in commuting
09 Not applicable, don't commute/work at home
96 (DO NOTHING DIFFERENT)
88 (OTHER-SPECIFY)

9.3. Do you believe that higher ozone levels pose a very serious threat to you and your family, somewhat serious, not so serious, or no threat at all?

4 Very Serious
3 Somewhat Serious
2 Not So Serious
1 None at All
9 (DON'T KNOW)

9.4. What is the year, make and model of the car or truck that you drive most?

YEAR: Specify: (1900-2016) _____
9998 (DON'T DRIVE/NONE)
9999 (DK/NR)

1 MAKE AND MODEL: Specify: _____
9 (DK/NR)

9.5. What fuel do you use for that vehicle?
1 Gas (regular, unleaded)
2 Hybrid (gas/electric)
3 Diesel
8 Other

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET A)
Next are a few questions about your Perceptions of Crime.

10.1   Is there any area in your neighborhood or community (CLARIFY: within 1/2 mile of your home) where you are afraid to walk at night?
1 Yes
2 No
9 (DK/NR)

10.2　Is there any area in your neighborhood or community (CLARIFY: within 1/2 mile of your home) where you are afraid to walk during the day?
1 Yes
2 No
9 (DK/NR)

10.3　Over the past 2 years, how much do you feel that VIOLENT crime (CLARIFY: murder, assault, rape, robbery) in your neighborhood or community has increased? Would you say it has…
1 Increased a lot
2 Increased somewhat
3 Decreased somewhat
4 Decreased a lot
9 (DON'T KNOW/NOT SURE/CAN'T SAY)

10.4　Over the past 2 years, how much do you feel that PROPERTY crime (CLARIFY: burglary, theft, car theft) in your neighborhood or community has increased?
1 Increased a lot
2 Increased somewhat
3 Decreased somewhat
4 Decreased a lot
9 (DON'T KNOW/NOT SURE/CAN'T SAY)

10.5　The next few questions are about your confidence in different parts of the adult criminal justice system in your community. For each one, tell me if you have a great deal of confidence, some confidence, little confidence, or no confidence. DO NOT ROTATE LIST
4 Great deal of confidence
3 Some confidence
2 Little confidence
1 No confidence
9 (DON'T KNOW/NOT SURE)

A. The local police and law enforcement?
B. The criminal courts? (CLARIFY: your city or county courts)
C. The probation and parole system?
D. The prison system? (CLARIFY: your city or county jails)
E. The adult criminal justice system as a whole?

Field 10.6, 10.7, 10.8 to City of Austin residents only

10.6   I'm now going to read you some statements about the police who serve your neighborhood. For each one please tell me if you agree strongly, agree somewhat, disagree somewhat, or disagree strongly with the statement. (ROTATE QUESTIONS)

4 Agree strongly
3 Agree somewhat
2 Disagree somewhat
1 Disagree strongly
9 (DON'T KNOW/NO RESPONSE)

1. The police are doing a good job dealing with problems that concern people in my neighborhood
2. The police are noticeably present/highly visible in my neighborhood.
3. I am satisfied with the police officers who serve my neighborhood.

10.7   Would you say it is very likely, likely, neither likely nor unlikely, unlikely, or very unlikely that your neighbors could be counted on to intervene if: (ROTATE QUESTIONS)

5 Very likely
4 Likely
3 Neither likely nor unlikely
2 Unlikely
1 Very unlikely
9 (DON'T KNOW/NO RESPONSE)

1. Children were skipping school and hanging out on a street corner
2. Children were spray-painting graffiti on a local building
3. Children were showing disrespect to an adult
4. A fight broke out in front of their house
5. The fire station closest to their home was threatened with budget cuts

10.8   I'm now going to read you some statements related to the people in your neighborhood. For each one please tell me if you agree strongly, agree somewhat, disagree somewhat, or disagree strongly with the statement. (ROTATE QUESTIONS)

4 Agree strongly
3 Agree somewhat
2 Disagree somewhat
1 Disagree strongly
9 (DON'T KNOW/NO RESPONSE)

1. People around here are willing to help their neighbors
2. This is a close-knit neighborhood
3. People in this neighborhood can be trusted
4. People in this neighborhood generally don't get along with each other

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5. People in this neighborhood do not share the same values.

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET A)
The next few questions are about Working and Education in our region.

11.1   Think about your current skill levels related to your job or school. To what extent would you say that your current skill levels or education limit your ability to have the kind of job or position you'd like to have within the next 5 years?
        4 A great deal
        3 Somewhat
        2 Just a little
        1 Not at all   GO TO 11.4
              9 (DK/NR)

11.2   In our region, how available are high quality education, professional development or training for the kind of job you'd like to have in 5 years? Would you say it is…
        3 Very available
        2 Usually available
        1 Not available
        4 (DEPENDS)
              9 (DK/NR)

11.3   Compared to other people in our region with the same education, skills, and interests that you have, do you feel you have equal opportunities to get the kind of job you'd like to have?
1 Yes
2 No
9 (DK/NR)

(DIFFERENT FROM 2010 WAVE)
11.4A How important do you think Pre-K attendance is for future school success of students?
        4 Very important
        3 Somewhat important
        2 Not really important
        1 Not at all important
              9 (DK/NR)

11.5   I'm going to read some statements typically given for why kids dropout or don't perform well in high school. For each one, please tell me if you agree strongly, agree somewhat, disagree somewhat, or disagree strongly with the statement. ROTATE LIST
              4 Agree strongly

3 Agree somewhat
2 Disagree somewhat
1 Disagree strongly
9 (DON'T KNOW/NO RESPONSE)

A. The public school system isn't working
B. Parents aren't involved enough
C. Some kids have more important priorities than school
D. Success in life doesn't depend on finishing high school

11.6   How much additional income over a lifetime do you think a high school diploma is worth?
1 $100,000 or less
2 $100,000 to $500,000
3 $500,000 to one million
4 One million to two million
5 More than two million
9 (DK/NR)

11.7   I'm now going to read to you some statements about college and university education. For each one, please tell me if you agree strongly, agree somewhat, disagree somewhat, or disagree strongly with the statement. (ROTATE QUESTIONS)
4 Agree strongly
3 Agree somewhat
2 Disagree somewhat
1 Disagree strongly
9 (DON'T KNOW/NO RESPONSE)

A. Society has a responsibility to help all students get into college, regardless of ethnicity or economic background
B. Our Texas economy will be strong no matter how many Texas kids go to college
C. Going to a college or university just isn't for everyone
D. College is too expensive nowadays, even with financial aid

11.8   How much additional income over a lifetime do you think a college diploma is worth?
(CLARIFY: in addition to value of high school diploma)`
1 Less than $100,000
2 $100,000 to $500,000
3 $500,000 to one million
4 One million to two million
5 More than two million
9 (DK/NR)

11.9   Did you attend high school in Central Texas? (CLARIFY: in Bastrop, Burnet, Caldwell, Hays, Travis or Williamson County)
1 Yes
2 No
9 (DK/NR)

11.10   Do you have a child who attends or has attended an elementary, middle or high school in Central Texas? (CLARIFY: In Bastrop, Burnet, Caldwell, Hays, Travis or Williamson County)
        1 Currently
        2 Previously
        3 Never
        4 No
        9 (DK/NR)

11.11   I'm going to read you some statements about public school education. For each one please tell me if you strongly agree, agree somewhat, disagree somewhat or disagree strongly with the statement. (ROTATE QUESTIONS)
        4 Agree strongly
        3 Agree somewhat
        2 Disagree somewhat
        1 Disagree strongly
        9 (DON'T KNOW/NO RESPONSE)

A.   Our region's education systems are effective in equipping all students to be prepared for college or careers
B.   Reducing the number of student absences will return millions of dollars to our school districts
C.   I have a responsibility to support the success of students in our region, even if I have no children of my own in school
D.   Central Texas schools are eliminating achievement gaps between different groups of students

11.12 I am going to read some statements about education and our community. For each one
please tell me if you strongly agree, agree somewhat, disagree somewhat or disagree strongly with the statement. (ROTATE QUESTIONS)
        4 Agree strongly
        3 Agree somewhat
        2 Disagree somewhat
        1 Disagree strongly
        9 (DON'T KNOW/NO RESPONSE)

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A.   We need to raise more kids out of poverty if we want to improve educational outcomes

B.   We need to improve educational outcomes if we want to raise more kids out of poverty.

C.   Businesses across our region have a responsibility to help our students succeed in school.

D.   Community groups have a responsibility to help our students succeed in school.

E.   Parents and families have a responsibility to help our students succeed in school.

(ASK THIS SECTION OF ALL RESPONDENTS)
Next I have some questions about your abilities to read and write in English.

12.1.   Would you say that your abilities to read and write in English limit your potential to get a job that you would otherwise be qualified for: (READ CHOICES)

       4 A great deal
       3 Somewhat
       2 Just a little
       1 Not at all
       9 (DON'T KNOW/NOT SURE/CAN'T SAY)

12.2.   Would you say that your abilities to read and write in English limit how easily you can get things done day to day: (READ CHOICES)

       4 A great deal
       3 Somewhat
       2 Just a little
       1 Not at all
       9 (DON'T KNOW/NOT SURE/CAN'T SAY)

12.3.   Are you comfortable reading and writing in a language other than English?

          1 Yes   SPECIFY: _____
          2 No
          9 (DK/NR)

(ASK THIS SECTION OF ALL RESPONDENTS)
Next are some questions about Growth in Central Texas

13.1   For you, please tell me if you agree strongly, agree somewhat, disagree somewhat, or disagree strongly with the statement. ROTATE LIST

        4 Agree strongly

3 Agree somewhat
2 Disagree somewhat
1 Disagree strongly
9 (DON'T KNOW/NO RESPONSE)

A.   Because we can move water wherever we need to, we shouldn't worry about where the water comes from for new development
B. We should widen freeways and build new roads rather than invest more in public transit and other alternatives to cars
C. I am willing to have more people live in my neighborhood so that less natural land or farming areas have to be developed
D. We have plenty of room for growth and shouldn't worry about cities spreading out as they grow
E. Our community has a responsibility to make sure housing is more affordable for the average worker (CLARIFY: affordable to teachers, fire-fighters, etc.)
F. My county government needs a little more power so we can get much better development in our county, outside of our cities
G. Preservation of my community's unique character depends on HOW we grow, not how MUCH we grow.

13.2   In your own words, what do you think are the THREE biggest growth related challenges in your community?
DO NOT READ, SCREENER CODE, PROMPT FOR UP TO THREE RESPONSES

01 Water supply
02 Water quality
03 Air quality
04 Controlling land use
05 Urban sprawl
06 Population/too many people
07 Farm and ranchland preservation
08 Illegal dumping/Solid Waste
09 Energy issues
10 Cost of living
11 Health care
12 Housing choices
13 Jobs
14 Parks/Open space
15 Public education
16 Public safety
17 Racial issues
18 Social equity
19 Transportation/Congestion
88 Other, SPECIFY: _____

98 (DK/NR)

13.3. Is there a neighborhood park or other public outdoor area within walking distance of your home?
1 Yes
2 No   [SKIP TO NEXT SECTION]
9 (DON'T KNOW/NOT SURE)   [SKIP TO NEXT SECTION]

13.4. Do you use the neighborhood park or other public outdoor area that is within walking distance of your home? (IF NO, ASK:) What is the main reason that you do not use it? (READ CHOICES)
I do not live within walking distance of a neighborhood park or other public outdoor area
01 DO NOT READ (Yes, I use a neighborhood park or other public outdoor area)
02 It is too dangerous because of crime
03 It is too dangerous because of traffic
88 Some other reason (SPECIFY)

(ASK THIS SECTION OF ALL RESPONDENTS)
Next I have several questions about your Health and Health Insurance.

14.1   Would you say that in general your health is:
            5 Excellent
            4 Very Good
            3 Good
            2 Fair
            1 Poor
            8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

14.2   Do you currently have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?
            1 Yes
            2 No   GOTO 14.4
            8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

14.3   During the past 12 months, was there any time that you did not have any health insurance or coverage?
            1 Yes
            2 No   GOTO 14.5
            8 (DK/NR)   GOTO 14.5

9 (REFUSED) GOTO 14.5

14.4   What is the main reason you are or were without health care coverage?
DO NOT READ LIST, SCREENER CODE ONE RESPONSE
01 I lost job or changed employers
02 Spouse or parent providing coverage lost job or changed employers
03 Became divorced or separated
04 Spouse or parent died
05 Became ineligible because of age or because left school
06 Employer doesn't offer or stopped offering coverage
07 Cut back to part time or became temporary employee
08 Benefits from employer or former employer ran out
09 Couldn't afford to pay the premiums
10 Insurance company refused coverage
11 Lost Medicaid or Medical Assistance eligibility
12 Self-employed, cost is too high
13 Don't need health insurance/usually healthy
88 (OTHER-SPECIFY)
98 (DON'T KNOW/NOT SURE)
99 (REFUSED)

14.5   When you are sick or need health advice or health care, to which ONE of the
following places do you usually go? READ LIST
01 A doctor's office
                02 A public health clinic or community health center
                03 A hospital emergency room
                04 A hospital outpatient department
                05 Urgent care center
                06 Internet, online
                07 Family or friends
                88 Some other kind of place (SPECIFY)
                96 (NO USUAL PLACE)
98 (DON'T KNOW)
99 (REFUSED)

14.6   Was there a time in the past 12 months when you needed medical care, but could
not get it?
                1 Yes
                2 No   Go to 14.9
                9 (DK/NR)   Go to 14.9

14.7   What is the main reason you did not get medical care? DO NOT READ
        (CLARIFY: if more than one instance, ask about the most recent.)
                01 Cost of getting care I needed

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02 Cost of having insurance
03 Distance
04 Office wasn't open when I could get there
05 Too long a wait for an appointment
06 Too long a wait in the waiting room
07 No child care
08 No transportation
09 No access for people with disabilities
10 The medical provider didn't speak my language
88 (OTHER-SPECIFY)
98 (DON'T KNOW / NOT SURE)
99 (REFUSED)

14.8   What specific type of medical care were you not able to get? DO NOT READ
        (CLARIFY: if more than one instance, ask about the most recent.)
01 Primary care (CLARIFY: prenatal visit, child well check, annual physical, etc.)
02 Emergency care
03 Specialty care (CLARIFY: visit to a specialist such as dermatologist)
04 Dental care
05 Mental health care
06 Eye care
07 Medications
88 (OTHER-SPECIFY)

14.9   Now thinking about your physical health, which includes physical illness and
injury, how many days during the past 30 days was your physical health not good?
(PROBE FOR BEST GUESS)
__ __   Number of days (0-30)
            00 (NONE)
            98 (DON'T KNOW)
            99 (REFUSED)

*question numbers changed to match previous wave
14.9A When was the last time you saw a doctor or nurse for a check-up or physical exam
when you were not sick or injured?
1 During the past 12 months
2 Between 12 and 24 months ago
3 More than 24 months ago
4 Never
9 (NOT SURE)

14.10   Now thinking about your mental health, which includes stress, depression, and
problems with emotions, for how many days during the past 30 days was your mental
health not good? (PROBE FOR BEST GUESS)

__ __   Number of days (0-30)
        00 (NONE)
        98 (DON'T KNOW)
        99 (REFUSED)

14.11   How often do you get the social and emotional support you need? Would you say…
INTERVIEWER NOTE: If asked, say "please include support from any source".
5 Always
4 Usually
3 Sometimes
2 Rarely
1 Never
8 (DON'T KNOW/NOT SURE)
9 (REFUSED)

14.12   In general, how satisfied are you with your life? Would you say…
4 Very satisfied
3 Satisfied
2 Dissatisfied
1 Very dissatisfied
8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

14.15   [FIELD TO BASTROP, BURNET, CALDWELL, HAYS, WILLIAMSON COUNTY RESIDENTS]
      Was there a time in the last 12 months when you sought medical care in Travis County?
        1 Yes
        2 No
        8 (DON'T KNOW)
9 (REFUSED)

14.16   During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?
1 Yes
2 No
8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

14.17   How long has it been since you last visited a dentist or a dental clinic for any reason? Include visits to dental specialists, such as orthodontists.

01 Within the past year (anytime less than 12 months ago) [SKIP TO 14.19]
02 Within the past 2 years (1 year but less than 2 years ago)
03 Within the past 5 years (2 years but less than 5 years ago)
04 5 or more years ago
98 (DON'T KNOW / NOT SURE)
96 (NEVER)
99 (REFUSED)
14.18   What is the main reason you have not visited the dentist in the past year?
(READ ONLY IF NECESSARY)
01 Fear, apprehension, nervousness, pain, dislike going
02 Cost
03 Do not have/know a dentist
04 Cannot get to the office/clinic (too far away, no transportation, no appointments available)
05 No reason to go (no problems, no teeth)
06 Other priorities
07 Have not thought of it
88 (OTHER-SPECIFY)
98 (DON'T KNOW/NOT SURE)
99 (REFUSED)

14.19. Do you have any kind of insurance coverage that pays for some or all of your routine dental care, including dental insurance, prepaid plans such as HMOs, or government plans such as Medicaid?
1 Yes
2 No
8 (DON'T KNOW/NOT SURE)
9 (REFUSED)

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET A)
Now I want to ask you a few questions about Race and Ethnicity.

15.1.   How often do you think about your race or ethnicity? READ LIST
(INTERVIEWER NOTE: The responses can be interpreted as meaning "at least" the indicated time frequency. If a respondent cannot decide between two categories, check the response for the lower frequency. For example, if a respondent says that they think about their race between once a week and once a month, check "once a month" as the response.)
                1 Never
                2 Once a year
                3 Once a month
                4 Once a week
                5 Once a day

6 Once an hour
7 Constantly
8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

15.2   How many times in the past 30 days have you attended an event or activity, outside of work, where you were not part of the majority race/ethnicity in attendance?
READ LIST
1 Once or twice
2 Three or four times
3 About once a week
4 Two or three times a week
5 Every day
7 Never
8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

15. 3   In the last 12 months, would you say that the number of these events is:
5 A lot more
4 A little more
3 About the same
2 A little fewer
1 A lot fewer
8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

15.4.   Within the past 30 days, have you felt emotionally upset, for example angry, sad, or frustrated, as a result of how you were treated based on your race or ethnicity?
1 Yes
2 No
8 (DON'T KNOW / NOT SURE)
9 (REFUSED)

15.5.   Within the past 12 months at work, do you feel you were treated worse than, the same as, or better than people of other races or ethnicities?
1 Worse than other races
2 The same as other races
3 Better than other races
8 (DK/NR)

15.7   I'm now going to read to you some statements about race and ethnicity in your community. For each one, please tell me if you disagree strongly, disagree somewhat, agree somewhat, or agree strongly.

88

(ROTATE QUESTIONS)
     1 Disagree strongly
     2 Disagree somewhat
     3 Agree somewhat
     4 Agree strongly
     9 (DON'T KNOW/NO RESPONSE)

A. My government should do more to improve race relations
B. Racial tensions are a result of big social and national trends rather than a result of local trends and conditions
C. I don't think about people based on their race/ethnicity, but because others do, we have problem.

CITY OF AUSTIN RESIDENTS ONLY

15.8   Do you feel that Austin is a welcoming city for African Americans? (READ CHOICES)

4 Very Much
3 Somewhat
2 Not really
1 Not at all
    9 (DK/NR)

(ASK THIS SECTION OF ALL RESPONDENTS)
Now some questions about your Water Awareness.

16.1   Which of the following best describes your knowledge of the natural source for your drinking water? Would you say…
4 I definitely know
3 I think I know
2 I am not so sure
1 I have no idea
9 (DK/NR)

16.2   In your own words, please tell me the main natural source of your drinking .
DO NOT READ, SCREENER CODE

89

01 Edwards Aquifer
02 Wells/well water/my own
03 Barton Springs
04 Colorado River
05 Lakes/Rivers/Streams
06 Rain/the sky
07 City/County/Municipal District
88 Other Water Provider (SPECIFY)
98 (DK/NR)
99 (REFUSED)

16.3   To whom do you pay your water bill?
1 SPECIFY: _____
2 No one/myself
9 (DK/NR)

16.4a   Thinking about the amount of water in your community NOW, would you say there is…
5 More than enough water in your area
4 Enough water, but not much extra
3 About the right amount of water
2 Probably not enough water
1 A considerable shortage of water
9 (UNSURE/REFUSED)

16.4b   Thinking about the amount of water in your community 25 YEARS FROM NOW, would you say there will be…
5 More than enough water in your area
4 Enough water, but not much extra
3 About the right amount of water
2 Probably not enough water
1 A considerable shortage of water
9 (UNSURE/REFUSED)

16.5   Are you aware of any efforts to conserve water in your community?
        1 Yes
        2 No
        8 (UNSURE)
        9 (REFUSED)

16.6   (IF 16.5=YES:) Please tell me any programs or groups making any effort to conserve water.

88 SPECIFY: _____

98 (DK/NR)

(ASK THIS SECTION OF ALL TRAVIS COUNTY PLUS SET B)
Now some questions about Climate Change.

*question numbers changed to match previous wave
17.0   The following questions are about environmental attitudes. For each one, please tell me if you disagree strongly, disagree somewhat, agree somewhat, or agree strongly.
(ROTATE QUESTIONS)
        1 Disagree strongly
        2 Disagree somewhat
        3 Agree somewhat
        4 Agree strongly
        9 (DON'T KNOW/NO RESPONSE)

A.   I consider myself to be an environmentalist
B.   Environmental issues are too complicated to ever really know what to do
C.   My actions can influence the quality of the environment
D.   It is OK for humans to change the natural environment to suit our needs
E.   Humans are smart enough to make sure that we do not make the earth unlivable
F.   Things humans do can really hurt the natural environment

17.1   In the past 6 months, have you heard or read anything about climate change?
1 Yes
2 No
9 (DK/NR)

17.3   Where do you get your information about climate change? DO NOT READ –
SELECT ALL THAT APPLY
01 Newspaper
02 TV
03 Internet/Website/Email
04 Family/Friends/Co-workers
05 Radio
06 Magazines
07 Billboards
08 Community Groups
09 Faith-Based Organizations
10 Mailers
11 Government Officials
12 Environmental Groups

88 (OTHER-SPECIFY)
97 (NONE/DO NOT GET INFORMATION)

17.4A Thinking about the causes of climate change, which, if any, of the following best describes your opinion?
1 Climate change is entirely caused by natural processes
2 Climate change is mainly caused by natural processes
3 Climate change is partly caused by natural processes and partly caused by human activity
4 Climate change is mainly caused by human activity
5 Climate change is entirely caused by human activity
9 I think there is no such thing as climate change

17.4   Who do you think is responsible for addressing climate change? (ROTATE CHOICES)
Rank the list from 1 to 5 (with 1 meaning the most responsible and 5 meaning the least responsible)

Individual Citizens   RANK: _____
Business/Industry   RANK: _____
Local Government   RANK: _____
State Government   RANK: _____
Federal Government   RANK: _____

17.5   On a scale from 1 to 10 with 1 meaning not concerned and 10 meaning very concerned, how concerned are you about climate change?

LEVEL OF CONCERN: _____

(ASK THIS SECTION OF ALL RESPONDENTS)
These next questions are about the food eaten in your household in the last 12 months, since (current month) of last year, and the affordability of the food you need.

FILL INSTRUCTIONS: Select the appropriate fill from parenthetical choices depending on the number of persons and number of adults in the household. (this information is not asked/available)

I'm going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was often true, sometimes true, or never true for your household in the last 12 months—that is, since last (name of current month).

18.1 The first statement is, "The food that you bought just didn't last, and you didn't have money to get more." Was that often, sometimes, or never true for your household in the last 12 months?
1 Often true
2 Sometimes true
3 Never true
9 (DK OR REFUSED)

18.2. You couldn't afford to eat balanced meals." Was that often, sometimes, or never true for your household in the last 12 months?
1 Often true
2 Sometimes true
3 Never true
9 (DK OR REFUSED)

18.3. In the last 12 months, since last (name of current month), did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?
1 Yes
2 No   (Skip 18.4)
9 (DK) (Skip 18.4)

18.4. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
1 Almost every month
2 Some months but not every month
3 Only 1 or 2 months
9 (DK)

18.5. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?
1 Yes
2 No
9 (DK)

18.6. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?
1 Yes
2 No
9 (DK)

(ASK THIS SECTION OF TRAVIS COUNTY ONLY)

The following questions are intended to collect feedback from Travis County residents on the growth related policies and priorities identified in the Travis County Land, Water and Transportation Plan, available online.

[FOR CLARIFICATION IF ASKED] "Activity Centers are mixed-use developments that have the density and design attributes to accommodate vehicular traffic, support walking and bicycling, and are conducive to transit options. Travis County does not develop activity centers; private developers, municipalities and non-profits do. The county can encourage activity centers, however by providing public infrastructure, such as multi-use roads, drainage features, parks, trails, and county facilities within activity centers; as well as expediting development permits for them when possible."

19.1   Please indicate your level of agreement with the following statements about priorities as strongly agree, agree, neutral, disagree, or strongly disagree. ROTATE LIST
5 Strongly agree
4 Agree
3 Neutral
2 Disagree
1 Strongly disagree
9 (DK/NR)

A.   Travis County should use agreements with willing landowners to conserve land.
B.   Travis County should purchase parkland to conserve land.
C.   Travis County should use voter-approved bonds to support land conservation.
D.   Travis County should use voter-approved portions of tax revenues to support land conservation.
E.   Travis County should conserve land by buying flood-prone properties.
F.   Travis County cannot afford to conserve land and should use public dollars for other purposes.

19.2   Which of the following statements best describes your opinion for areas in unincorporated Travis County? PICK ONE

1   Travis County should create policies to encourage new growth to locate in Activity Centers supported by investments in Transportation Corridors.
2   Current growth patterns should continue with little focus on Activity Centers and transportation investments should be made accordingly.
9   No preference.

19.3   Please indicate your level of agreement with Travis County using the following types of incentives to support development of Activity Centers as strongly agree, agree, neutral, disagree, or strongly disagree. ROTATE LIST
5 Strongly agree
4 Agree

3 Neutral
2 Disagree
1 Strongly disagree
9 (DK/NR)

A.   Prioritize funding of transportation improvements that support Activity Centers.
B.   Use voter approved funding to construct roadways to support Activity Centers (General Obligation Bonds).
C.   Use voter approved funding to partner with developers to construct roadways to support Activity Centers (Public-Private Partnerships).
D.   Use a portion of property tax from landowners within Activity Centers to pay back improvement bonds (Tax Increment Finance and Public Improvement Districts).
E.   Reconstruction roadways within and supporting Activity Centers to be more bicycle, bus, and pedestrian friendly.
F.   Use tax incentives for employers to locate in Activity Centers (Tax Abatements).
G.   Locate public facilities (County offices, community centers, etc) in Activity Centers.

19.4   Please indicate your level of agreement with the following statements about your travel to work as strongly agree, agree, neutral, disagree, or strongly disagree. ROTATE LIST
5 Strongly agree
4 Agree
3 Neutral
2 Disagree
1 Strongly disagree
9 (DK/NR)

A.   The length of my commute to work is an important factor in deciding where I live.
B.   It is important to have trails, sidewalks, and bike paths which are connected to parks, schools, and businesses near my home.
C.   It is important to me to live in a community where I can take a bus or transit to work.
D.   It is important to me to live in a community where I can walk or bike to work.

(ASK THIS SECTION OF ALL RESPONDENTS)
These next questions about demographics enable us to ensure that our survey participants reflect the population of our region:

D.1   How many years have you lived in this region?
            Number of Years: _____
            01 (LESS THAN 1 YR)
            99 (DK/NR)

D.2   How many years have you lived in your current neighborhood?
            Number of Years: _____
            01 (LESS THAN 1 YR)
            99 (DK/NR)
*check logic – D2 cannot be more than D1

D.3   Including yourself, how many people in your family live or stay at this
household? (CLARIFY: all people of any age who are related to you in some way).
            Number of people: _____
            99 (DK/NR)

D.4   Do you own or rent your place of residence?
       1 Own
       2 Rent
            9 (DK/NR)

D.5   Which of the following categories best describes your FAMILY income before
taxes?
       [If respondent refuses at ANY income level, code Refused]

04 Less than $65,000 If "no," ask 05; if "yes," ask 03
($55,000 to less than $65,000)
03 Less than $55,000 If "no," code 04; if "yes," ask 02
($45,000 to less than $55,000)
02 Less than $45,000 If "no," code 03; if "yes," ask 07
($35,000 to less than $45,000)
07 Less than $35,000 If "no," code 02; if "yes," ask 01
($25,000 to less than $35,000)
01 Less than $25,000 If "no," code 07; if "yes," ask OA
        ($15,000 to less than $25,000)
0A Less than $15,000 If "no," code 01; if "yes," code 0A
(less than $15,000)
05 Less than $75,000 If "no," ask 06; if yes, code 05
($65,000 to less than $75,000)
06 Less than $115,000 If "no," ask 0C; if "yes," ask 08
($105,000 to less than $115,000)
08 Less than $105,000 If "no," code 06; if "yes," ask 09
($95,000 to less than $105,000)

09 Less than $95,000 If "no," code 08; if "yes," ask 0B
($85,000 to less than $95,000)
0B Less than $85,000 If "no," code 09; if "yes," code 0B
($75,000 to less than $85,000)
0C Less than $125,000 If "no," code 0D; if "yes," code 0C
($115,000 to less than $125,000)
0D $125,000 or more

Don't know/Not sure
Refused

D.6   Are you of Hispanic or Latino descent?
        1 Yes
        2 No
                9 (DK/NR)

D.7   Which of the following best describes your race? Are you…
1 White or Anglo
2 Black or African American
3 Asian
7 Mixed races
8 Some other race (SPECIFY)
                9 (DK/NR)

D.8   Which of the following best describes your age? Are you…
        1 Between 18 and 24
        2 25 to 34
        3 35 to 44
        4 45 to 54
        5 55 to 64
        6 65 or above
                9 (DK/NR/REFUSED)

D.9   What is the highest level of education you completed? (READ LIST AS
NECESSARY)
1 Grade school or less (<8TH)
2 Some High School (9-11TH)
3 High School Graduate / GED
4 College (Some)/Associates
5 College Graduate / Bachelors
6 Advanced College Degree (Master/PHD)
                9 (DK/NR)

D.10   Did you vote in the last general election of November 2014?
1 Yes
2 No
            9 (DK/NR)

D.11   Do you intend to vote in the next general election in November, 2016?
1 Yes
2 No
            9 (DK/NR)

D.12   Did you vote in the last local election in your community? (CLARIFY: City, County, School)
1 Yes
2 No
            9 (DK/NR)

D.13X With what political party do you usually identify yourself?
1 Democrat
2 Republican
3 Independent
8 (OTHER-SPECIFY)
            9 (DK/NR)

D.14   How would you describe where you live?
1 Urban
2 Suburban
3 Rural changing to suburban
4 Rural
            9 (DK/NR)

D.15   What is your home zip code?

Zip code: (78000-78999)
            99999 (DK/NR)

D.16   What is your work zip code?

Zip code: (78000-78999)
            99999 (DK/NR)

D.17   How would you describe your sexuality? SCREENER CODE

1 Straight, heterosexual (CLARIFY: attracted to opposite sex only)
2 Gay, lesbian, homosexual (CLARIFY: attracted to same sex only)

3 Bi-sexual
4 Transgender
5 (UNSURE ABOUT SEXUAL IDENTITY)
8 (OTHER-SPECIFY)
9 (DK/NR)

(ASK THIS SECTION OF ALL RESPONDENTS)
Our final questions are about your awareness of our survey partners:

*question numbers changed to match previous wave
B14. Have you heard of "KLRU"?
1 Yes
2 No
9 (DK/NR)

B14a. If YES, What is your impression of the "KLRU"?
5 Strong positive
4 Somewhat positive
3 Heard of, but no opinion/Neutral
2 Somewhat negative
1 Strong negative
9 (DK/NR)

INTERVIEWER OBSERVATIONS

I.12 Respondent's Gender:
        1 MALE
        2 FEMALE

I.13 County of Residence (from Sample)
        1 TRAVIS
        2 WILLIAMSON
        3 HAYS
        4 BASTROP
        5 CALDWELL
        6 BURNET
That's all the questions I have today. Thank you for your time.   In case my supervisor
needs to verify that I conducted this survey, may I record your first name?
_____

And let me verify that I reached you at ___ - ___ - _____

Thank you and have a nice day.

Appendix 3

Table 10: Disposition Table / Records Dialed

	Count	Percent
No Answer	15018	15.44%
Answering Machine	29757	30.59%
Phone busy	1741	1.79%
Respondent Not Available	8725	8.97%
Route to Spanish Speaker	235	0.24%
Schedule Callback	164	0.17%
Disconnected Phone	20600	21.18%
Not a Residence	1801	1.85%
Language Barrier	172	0.18%
Terminate- No Adult in Household	1735	1.78%
Terminate - County	846	0.87%
Terminate- Not in targeted Zip Area	131	0.13%
Terminate- Nobody 18-24 ever	386	0.40%
Terminate- Not targeted race	152	0.16%
Refusal	11927	12.26%
Blocked Call	569	0.59%
Cell Phone Complaint	69	0.07%
Computer Tone	941	0.97%
Mid-Interview Terminate	154	0.16%
Quotas full	227	0.23%
Completes	**1912**	**1.97%**
TOTAL RECORDS DIALED	**97262**	**100.00%**

Table 11: Disposition Table / Sampling Rates

I=Complete Interviews (1.1)	1,912
P=Partial Interviews (1.2)	0
R=Refusal and break off with eligible case (2.1)	154
NC=Non-contact with eligible case (2.2)	0
O=Other non-interview with eligible case (2.0, 2.3)	0
UH=Unknown if residential (3.0, 3.1)	47,085
UO=Unknown other (3.2, 3.9) (residential, unknown if eligible)	21,292
INNR = Ineligible: Not residential (4.0,4.1,4.2,4.3,4.4,4.5,4.8,4.9)	24,546
INR=Ineligible: Residential but ineligible for survey (4.7)	2,273
Total	97,262
ADDRESSING CASES WITH UNDETERMINED ELIGIBILITY	
e1 = the % of known-residential cases estimated to have eligible R	47.61%
e2 = the % of unknown-if-residential cases that are estimated to be residential	51.08%
Response Rate 1	
I / (I+P+R+NC+O+UH+UO)	2.71%
Response Rate 2	
(I+P) / (I+P+R+NC+O+UH+UO)	2.7%
Response Rate 3	
I / (I+P+R+NC+O+[e1*e2*UH]+[e1*UO])	8.1%
Response Rate 4	
(I+P) / (I+P+R+NC+O+[e1*e2*UH]+[e1*UO])	8.1%
Cooperation Rate 1	
(I+INR)/(I+INR+R+(e2*(O+UO)))	16.3%
Cooperation Rate 2	
(I+P+INR)/(I+P+INR+R+(e2*(O+UO)))	16.3%
Cooperation Rate 3	
(I+INR)/(I+INR+R+(e2*UO))	16.3%
Cooperation Rate 4	
(I+P+INR)/(I+P+INR+R+(e2*UO))	16.3%
Refusal Rate 1	
R/(I+P+R+NC+O+UH +UO)	30.2%
Refusal Rate 2	
R/(I+P+R+NC+O+e(UH + UO))	57.5%
Refusal Rate 3	
R/(I+P+R+NC+O)	91.8%
Contact Rate 1	
(I+P+R+O) / (I+P+R+O+NC+UH + UO)	32.9%
Contact Rate 2	
(I+P+R+O) / (I+P+R+O+NC+e(UH+UO))	62.7%
Contact Rate 3	
(I+P+R+O) / (I+P+R+O+NC)	8.9%

Appendix 4

Variable	Question Number	Question
Behavior on Ozone Action Days	9_2	Do you do any of the following differently on Ozone Action Days?
Vehicle Type (Hybrid/Other)	9_5	What type of fuel do you use for that vehicle?
Commuting Behavior (Car/Other)	8_1	Do you typically get to your destination by [Clarify: work/school/other] ?
Environmental boycotting	6_5C	Please think again about some of the products, services, brands, or companies you boycotted for ethical, political, and/or environmental reasons in the past 12 months, how important were the following considerations? (Sub-question C is Environmental Concerns)
Willingness to Commute with alternative means of transportation	8_12	If the conditions were right for you, would you be very, somewhat, or not at all willing to use the following alternatives to driving alone?
Environmental Concern	6_3C	Please tell me if you disagree, disagree somewhat, agree somewhat, or agree strongly: Our regional economy could be stronger if there was less concern about the environment.
	9_3	Do you believe that higher ozone levels pose

		serious threat to you and your family, somewhat serious, not so serious, or not threats at all?
	17_5	On a scale from 1 to 10 with 1 meaning not concerned and 10 meaning very concerned, how concerned are you about climate change?
Locus of Control	17_0C	Please tell me if you disagree, disagree somewhat, agree somewhat, or agree strongly: My actions can influence the quality of the environment.
Community Participation	2_4RC	Over the last 2 months, how many hours altogether did you spend volunteering -- either to help people in need or to improve the quality of life in your community?
	4_1	How well informed would you say that you feel about key issues affecting the future of your community
	4_2	In the last 12 months, tell me what types of local groups you have been involved in or actions you have taken as a result of your concern or interest in the future of your community?
Strong Ties	14_11	How often do you get the social and emotional support you need?
Social Trust	10_8_1	People around here are willing to help their neighbors

	10_8_2	This is a close-knit neighborhood
	10_8_3	People in this neighborhood can be trusted
	10_8_4	People in this neighborhood generally don't get along with each other
Age	D_8	Which of the following describes your age?
Gender	I_12	Interviewer's observation about respondent's gender
Education	D_9	What is the highest level of education you completed?
Family Income	D_5	Which of the following categories best describes your family income before taxes?
Family Size	D_3	Including yourself, how many people in your family live or stay at this household?
Political Party	D_13X	With what political party do you usually identify yourself?
Commute Time	8_6 + 8_7	How many minutes does your travel to work/school usually take? How many minutes does your travel from work/school usually take?

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