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The effect of perceived spatial distance on the decision to relocate for graduate education

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THE EFFECT OF PERCEIVED SPATIAL DISTANCE ON THE DECISION TO RELOCATE FOR GRADUATE EDUCATION

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ABSTRACT

This study investigated the influence of perceived spatial distance (PSD) on students' intentions and decisions to relocate to pursue graduate education. The framework of the theory of planned behavior (TPB) provided the basis for measurement of the components of PSD, that is one's attitude, subjective norm, and perceived behavioral control about spatial distance, as well as an understanding of how PSD may influence relocation intentions and decisions. The components of PSD were hypothesized to be positively related to relocation decisions, with relocation intentions acting as a moderator. Undergraduate students at Louisiana State University who had applied to at least one academic or professional graduate program and intended to graduate within one calendar year of beginning the survey served as the sample. They completed a web-based survey assessing the PSD components and intentions to relocate for postgraduate education at Time 1. Three months later at Time 2, these predictors were reassessed to establish construct stability, and for participants to report their ultimate relocation decisions. Correlation, regression, and relative importance analysis were used to test the hypothesized relationships. Overall, this exploration into PSD suggests that the constructs of PSD are stable over time, and that the components of PSD, especially subjective norms, are predictive of behavioral relocation intentions and decisions.

INTRODUCTION

How far away a given city, job, state, or place *feels* may not directly relate to how many miles away it actually is. An individual's subjective judgment about his/her distance from an object or place, referred to as perceived spatial distance (PSD), entails more than the simple physical distance between two places. It also reflects the real and perceived obstacles and opportunities that lie within that space. PSD may differ across people and influence important life decisions, including relocation to a new city or state for employment or education. The present research project explores Olson and Olson's (2000) assertion that, despite technological advances in communication and technology, "distance still matters" when individuals form relationships, do business, and make decisions. And, more to the point, *perceptions* of spatial distance still matter when individuals decide to embark on new educational or employment opportunities. This study investigates the role of PSD on individuals' decisions to relocate to new cities and states for postgraduate educational opportunities to pursue both academic (e.g., master's or doctoral) and vocational (e.g., master of business administration or doctor of medicine) graduate degrees. In doing so, this project provides new perspective on the measurement of PSD, and assesses how PSD affects individuals' decision making intentions and behaviors through the application of the theory of planned behavior (TPB) (Ajzen, 1988, 1991).

In addition to establishing measurement of a construct relatively new to the literature (i.e., PSD), the present study is also a first attempt to gain insight into the distance-related factors that shape postgraduate relocation decisions among young adults. Because relocation for both educational and employment purposes share many of the same characteristics and challenges (e.g., leaving current location, working with new people), the employment literature is drawn on to shed light on relocation decisions made for the pursuit of educational goals. In so doing, the

hope is to improve upon the methodologies previously utilized to explore the relocation phenomenon.

In general, the research on relocation has investigated the topic using two methodologies (Fisher & Shaw, 1994). The first has participants retrospect about their past moving experiences in order to examine adjustment to relocation, with the delay between participants' actual relocation and data collection often exceeding one year. Such studies should be interpreted carefully as both the time lag in measurement and the retrospective research design introduce hindsight bias (i.e., knowledge of outcomes affecting judgment of past events) that is likely to affect data accuracy (Fischhoff, 1975). The second method commonly used to explore relocation decisions has individuals report their willingness to relocate under hypothetical circumstances using artificially constructed decision scenarios that provide common circumstances across individuals. This methodology lacks the realism of genuine and naturalistic decision making. The present research aims to overcome these limitations by studying prospective graduate students as they make a single type of relocation decision in real time, thereby capturing the realism of authentic decision making behaviors (i.e., choosing where to relocate for graduate school) in a relatively systematic research context. The degree to which the study was successful in these regards will be discussed later in this paper.

PSD may impact post-secondary education decisions, with many students moving to new cities to attend their desired institution or to pursue a particular degree program. College enrollment and graduate degree conferrals are at historically high levels (Choy, 2002), and these levels are projected to increase over the next decade (Hussar & Bailey, 2009), giving importance to understanding what factors affect prospect students' relocation intentions and decisions, and what role PSD plays in this relocation process. Part of the increased drive for educational

attainment is rooted in economics, as half of the jobs in the United States (U.S.) require education beyond high school (Holzer & Lerman, 2007). Further schooling is associated with higher earnings (U.S. Census Bureau, 2010), but in order to pursue opportunities for educational development, some students must negotiate distance by moving, often to new cities or states. Universities seeking to attract ethnically and regionally diverse student bodies as well as employers striving for the strategic advantages associated with workplace diversity must overcome the challenges associated with mobilizing their desired populations for relocation in order to enroll or employ them (Lillie, 2007; Love, 2010). As a result, both student and employee perceptions of distance are becoming increasingly important from an individual and organizational perspective.

Although small bodies of research address some of the challenges associated with distance for educational and employment purposes, such as long-distance learning (e.g., Wang, Solan, & Ghods, 2010; Holsapple & Lee-Post, 2006) and distance work arrangements (e.g., Leonardi, Treem, & Jackson, 2010; Clark, Huang, & Withers, 2003; professional isolation, Cooper & Kirland, 2002), none evaluate how perceptions of spatial distance affect an individual's decision to relocate to a new city or state for graduate education. This decision to move is referred to in the present study as a "relocation decision." Given the trends in education cited above and the rising need for an more educated workforce to further economic development in the U.S. (Carnevale, Smith, & Strohl, 2010), it is important to understand the factors that shape and support relocation decisions that allow for educational pursuit by prospective graduate students. Understanding how perceptions of spatial distance affect this population's decisions to pursue opportunities outside of their present geographic regions may be central to the topic of relocation decisions. Investigating the decision to pursue graduate

education will lend insight into how PSD factors into the relocation decisions of this highly educated segment of the population. Given the importance of human capital (i.e., competencies, knowledge, and attributes that enable individuals to perform labor to produce economic value; Coleman, 1988) within the increasingly global economy (Schultz, 1993), understanding how and in what circumstance this highly educated population chooses to mobilize its resources seems particularly relevant.

In the present study, the distance individuals are willing to relocate for an educational opportunity is explored through individuals' perceptions about smaller and larger spatial distances with respect to their current location. The inclusion of both distance parameters is new to the study of PSD. The existing literature considers how small increments of distance can affect individuals' decisions such as those made within a classroom or a single city (Byrne, 1961; Lee, 1970; McCormack et al., 2008), but it does not provide adequate insight for understanding how decisions unfold with respect to large distances (i.e. between cities or states). The influence that perceptions of small distances have on behavioral decision making leads us to believe that perceptions of large distances will also impact decision making in a meaningful way. The present research makes a first attempt at explaining how perceptions of large spatial distance affect decision making by investigating how relative parameters of larger and smaller spatial distances affect decisions affect students' decisions to relocate to new cities and states for graduate education. This increased understanding of PSD may introduce a new approach to measuring the construct.

To explore the relationship between PSD and relocation decisions, a brief overview of these variables is presented. Next, TPB is introduced to provide a theoretical framework for understanding the way PSD may impact individuals' relocation decisions. See Figure 1 for the

conceptual model and Figure 2 for the measurement model. The hypothesized relationship between these two variables is described and supported with empirical psychological and sociological literatures.

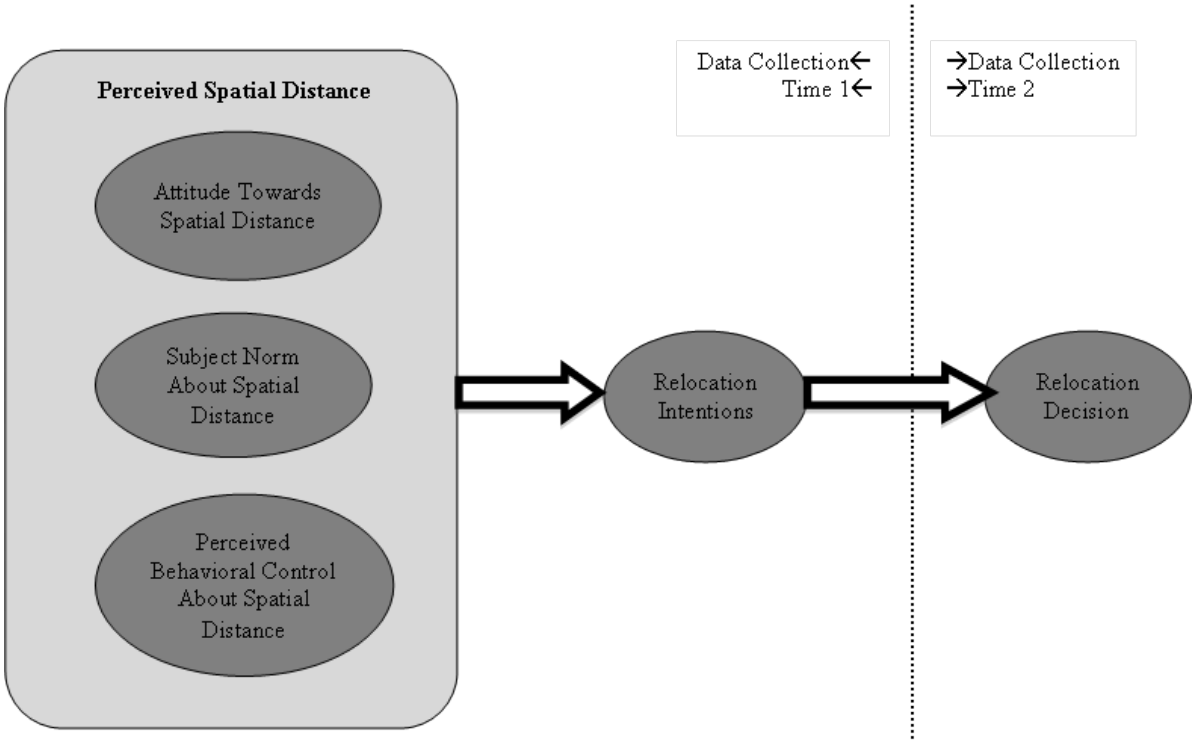
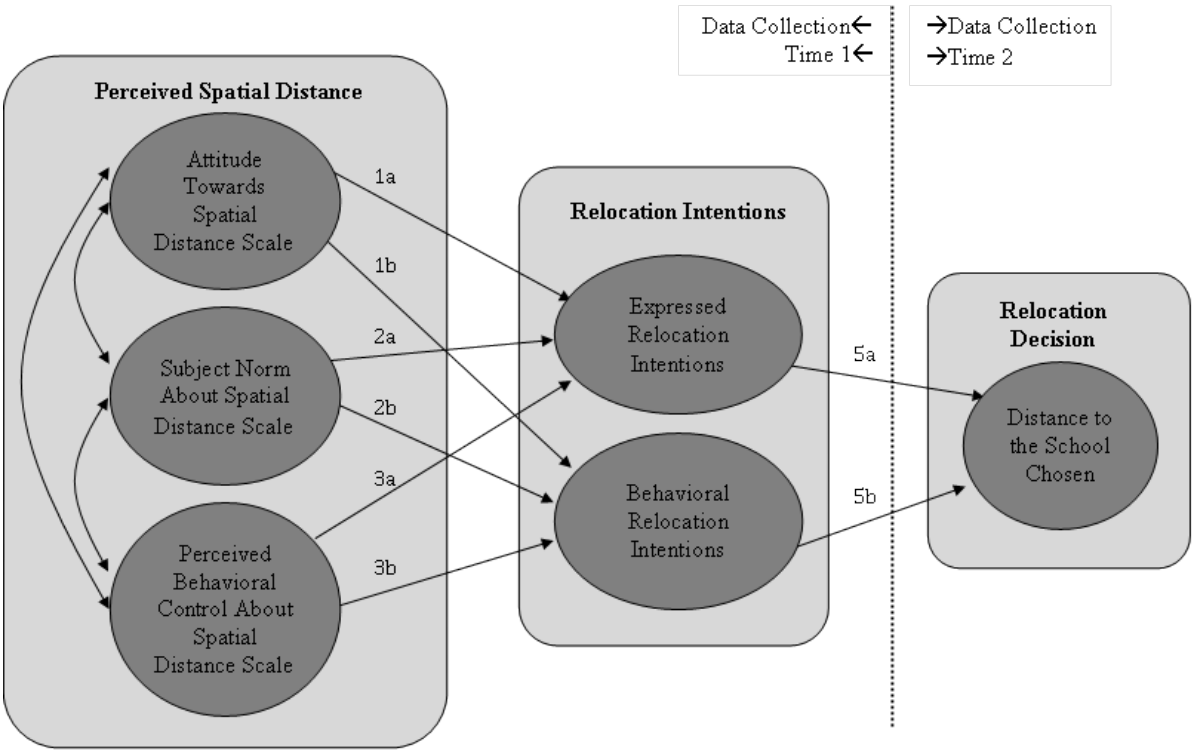


Figure 1 – The Proposed Conceptual Model of the Effect of Perceived Spatial Distance on Relocation Decisions



Note: All paths are in the positive direction. Numbers refer to hypotheses. Please refer to Appendix A for specific hypotheses.

Figure 2 – The Proposed Measurement Model

REVIEW OF LITERATURE

To date, a limited amount of literature explores or quantitatively measures PSD. The present research attempts to do both by investigating how PSD affects students' decisions to relocate for graduate school. Relevant literatures are examined to explain how PSD forms cognitive representations of distance and how these representations relate to relocation intentions and decisions.

Theoretical Underpinnings of Perceived Spatial Distance

Distance has been an important topic in psychology for decades (Bornstein, 1989, 1999; McPherson et al., 2001; Newcomb, 1961; Zajonc, 1968, 1970). Spatial distance is the objective physical space between two locations. Perceptions of spatial distance (i.e. PSD) are an individual's subjective perceptions about the distance between his/her current location and another place, and in this study, PSD is thought to have an attitudinal, normative, and behavioral control component. The present study posits that perceptions of spatial distance shape the way people make decisions about relocation across cities and states. The theoretical mechanisms for understanding how these relationships occur are drawn from a variety of literatures and summarized below.

Construal level theory (CLT) is one framework that has been used to explore the relationship between spatial distance and PSD. The goal of CLT is to explain how individuals think about spatial distance and how subjective perceptions of distance affect thoughts and behaviors (Trope & Liberman, 2003). CLT posits that the way individuals conceptualize spatial distance, temporal distance, social distance, and hypotheticality are related through their subjective understandings of objective distance (Trope & Liberman, 2010). CLT describes how spatial distance and individuals' subjective interpretation of it differ at a cognitive level. The

present study aims to understand the influence of PSD on relocation decisions in a context that cannot be adequately described by CLT as it focuses on the unconscious mechanisms through which individuals perceive distance. The current research seeks to explain how these perceptions of distance manifest themselves in individuals' conscious thought processes and affect their decision making. Thus, the current study utilizes the TPB to examine how PSD affects individuals' relocation decisions through conscious processes. The TPB describes the relationship between individuals' perceptions (e.g., PSD) and their behavior (e.g., relocation decisions), with individuals' intentions linking these two constructs. In the TPB framework, intentions result from individuals' drive, determination, and willingness to perform a behavior as well as their perceived behavioral control about the behavior since behaviors are rarely completely volitional.

Empirical support exists for the application of the TPB to a myriad of behaviors (for recent reviews, see Ajzen, 2001; Armitage & Conner, 2001). For example, the TPB has been successfully applied to predict the behavior of college age adults, the population presently under study, modeling such diverse behaviors as smoking cessation (Black & Babrow, 1991), sexual health behaviors (Amar, 2009; Brubaker & Fowler, 1990; Cha, Kim, & Patrick, 2008; Chan & Cheung, 1998; Chan & Fishbein, 1993), drug misuse (Collins, & Carey, 2007; Judson & Langdon, 2009), software piracy (Moores, Nill, & Rothenberger, 2009), organ donation registration (Bresnahan et al., 2007), fruit (de Bruijn, 2010) and beef consumption (Rivera, Burley, & Adams, 2010), and physical activity (Blanchard et al., 2007). In their meta-analytic review of 185 studies, Armitage and Conner (2001) observed that, on average, the TPB model accounts for 39% of the variance in intentions, 31% of the variance in self-reported behavior, and 20% of the variance in observed behavior. This finding demonstrates the TPB's utility for

explaining behavioral decisions across a variety of populations and contexts. Therefore, the TPB is adopted in the present study to describe the impact of PSD on decision making behaviors related to relocation.

As described in the TPB model, there are three antecedents to intentions. They are one's attitudes, subjective norms, and perception of behavioral control. These three cognitive components are used in the present study to operationally define the three conceptual domains of the PSD construct and to demonstrate how these three components influence the development of individuals relocation intentions and behavioral decisions, both independently and in concert.

Relocation Intentions and Decisions

The decision to relocate can be difficult and multifaceted in that it can be impacted by many things. In particular, previous research speaks to the importance of attitudes toward relocation (Brett & Reilly, 1988) and past relocation experiences (e.g., Patrick & Strough, 2004) but not about PSD. How PSD as well as these established factors affect the relocation decisions of young adults specifically has not yet been well explored. Given that individuals born between 1957 and 1964 held an average of eleven jobs from ages 18 to 44 and this number was positively related to education level (Bureau of Labor Statistics, 2010), in addition to the increased need for and job access afforded by the attainment of postsecondary education (Carnevale, Smith, & Strohl, 2010), this study attempts to add to the understanding of how individuals relocate by addressing a factor absent from the literature, that is, PSD.

Relocation and life course literature generally categorize young adults with middle age adults, especially when comparisons are made across age groups (e.g., Koenig & Cunningham, 2001), but there is reason to believe that important characteristic features and behavioral motivations distinguish the two populations. For example, while older adults tend to relocate

because of poor health and to be closer to their families, young to middle-aged adults tend to relocate in order to increase their income and job satisfaction through educational attainment or new employment opportunities (Oldakowski & Roseman, 1986; Serow, 1987; Williams, Jobes, & Gilchrist, 1986). Young adults have different attitudes about work and family as well as fewer past experiences than middle-aged and older adults (Pew Research Center, 2010), and this may lead them to make different relocation decisions. Therefore, it is important to analyze the relocation decisions of young adults separately to properly assess the behavioral decisions of this age group. This study investigates the relationship PSD has with relocation intentions and decisions, so prospective graduate students, a particular group within the young adult population, are studied independently of other groups to best understand the pattern of relationship.

Beyond investigations of individual-level relocation decisions, the relocation decisions of organizations and employee willingness to follow their employers during company relocations are described within the literature (e.g., Brett & Reilly, 1988; Cotton & Majchrzak, 1990; Feldman & Bolino, 1998; Turban, Campion, & Eyring, 1992). However, the focus is most often placed on the outcomes of the relocation decisions made by individuals rather that the factors that shape the decisions themselves (e.g., Rawsthorne, Hillman, & Healy, 2009). Identifying the antecedents of relocation decisions will allow for better understanding of the factors that influence relocation and the strategies that can be used to encourage employees to relocate (Brett & Reilly, 1988). In a similar vein, this study examines the role PSD plays as a precursor to the relocation decisions made by prospective graduate students.

The present project describes how PSD predicts the relocation intentions and decisions of prospective graduate students regarding the selection of a graduate training institution. Drawing on TPB, relocation intentions are proposed as a mediator between PSD and relocation decisions,

and can be conceptualized with regard to indicator type (behavioral indications and self-report) and geographic distance (smaller and larger). First, individuals' applications to institutions serve as behavioral indicators of their relocation intentions, and the average distance to these schools indicates the amount of distance an individual considered negotiating when relocating for graduate school. This will be referred to here after as behavioral relocation intentions. Second, individuals' self-reported willingness to relocate to each of the schools where they applied for graduate training constitutes individuals' expressed relocation intentions. The composite of these expressions about the institutions that are the smallest and largest distances away constitute two distinct variables: expressed relocation intentions toward smaller and larger distances. Because assessment of PSD has not been undertaken on this scale in the relocation literature before, both an objective and subjective measurement of intention are included within this study to best determine how the two are related to each other as well as PSD, and whether the two constructs are distinct (i.e., multi-trait multi-method; Campbell & Fiske, 1959). Further, the report of behavioral relocation intentions gives meaning to the expressed relocation intention. Knowing the distance to each institution an individual applied to gives context to the expressed willingness to relocate to each place and allows the rating to function as a rating of expressed willingness to relocate the distance associated with each institution.

Antecedents to Relocation Intentions

Attitude Towards Spatial Distance. An attitude is an affective evaluation of a behavior that is determined by one's beliefs about the consequences of engaging in that behavior, known as behavioral beliefs (Ajzen, 1988, 1991). An attitude towards spatial distance is determined by the behavioral beliefs associated with negotiating spatial distance. In the present research, this attitude is studied in relation to relocation for enrollment in graduate school. Individuals may believe that relocating to another city or state for graduate school will lead to a higher quality or

more prestigious education than attending a nearby school. These and other beliefs about the instrumentality of negotiating spatial distance for the purpose of pursuing graduate education will form individuals' attitudes toward spatial distance.

According to the TPB, attitudes are positively related to intentions to perform the behavior and have been shown to predict intentions across a variety of contexts and age groups (Ajzen, 1991). In their meta-analytic review, Armitage and Conner (2001) found that attitudes, in general, predicted 24% of the variance in intentions toward a host of behaviors. The relationship between attitudes and intentions has also been demonstrated empirically in the context of relocation and educational decisions. For example, Brett and Reilly (1988) found that employees' attitudes toward relocation for job transfers were positively related to their relocation intentions as measured by willingness to relocate for employment purposes. Additionally, students' attitudes have been shown to predict their intentions regarding education related decisions, such as course enrollment (e.g., Dalgety & Coll, 2006; Randall, 1994), pursuit of undergraduate education (e.g., Carpenter & Fleishman, 1987), and high school graduation (Davis et al., 2002).

Fishbein and Ajzen's (1975) expectancy-value model of attitudes posits that individuals learn to have more positive attitudes toward behaviors that they believe have predominantly desirable consequences and more negative attitudes toward behaviors that they believe have mostly undesirable consequences. The valence of attitudes translates into intentions to perform specific behaviors, with individuals having greater intentions to perform behaviors that are associated with positive attitudes. This may be driven in part by Festinger's (1957) notion of cognitive dissonance which holds that individuals are motivated to behave in ways that are consistent with their attitudes because inconsistency produces discomfort. Therefore, in the

present study, positive attitudes toward spatial distance are thought to be associated with greater intentions to negotiate distance when relocating for graduate school, as these intentions would be consistent with individuals' attitudes. In this study, individuals with greater behavioral relocation intentions are expected to consider attending graduate schools that are, on average, farther away from their current location as indicated by the application behavior. Individuals with greater expressed relocation intentions about smaller spatial distance are expected to express greater willingness to negotiate the distance associated with relocating to schools closest to them, and individuals with greater expressed relocation intentions about larger spatial distance are expected to express greater willingness to relocate to schools farthest from them. Therefore, it is hypothesized that attitudes towards spatial distance will be positively related to two demonstrations of relocation intentions.

Hypothesis 1a. Attitude toward spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 1b. Attitude toward spatial distance will be positively related to behavioral relocation intentions.

Subjective Norm About Spatial Distance. A subjective norm is one's perception of social pressure to engage in a particular behavior and is determined by what one believes are the expectations of the individuals around her/him, referred to as normative beliefs (Ajzen, 1988, 1991). In the focus theory of normative conduct, normative beliefs are broken down into two categories (Cialdini, Reno, & Kallgren, 1990). Descriptive normative beliefs describe how an individual thinks others actually behave in a particular situation (i.e., norm of what is done), and injunctive normative beliefs refer to what behaviors an individual thinks others approve or disapprove of in a particular situation (i.e., norm of what ought to be done). These two types of

normative beliefs constitute the subjective norms that guide individuals' intentions to behave. The relationship between subjective norms and behavioral intentions may be driven by social influence, the way in which social norms impact individuals' intentions to behave and their desire to conform (Deutsch & Gerard, 1955). This relationship can occur through normative social influence, which causes individuals to align their behavioral intentions with social norms and conform to the expectations of others. It can also occur through informational social influence, when individuals utilize the opinions of others during the formation of their behavioral intentions. The degree to which students internalize norms may also be determined in part by their perceived self-efficacy of doing so (Bandura, 1982).

According to the TPB, subjective norms meaningfully predict behavioral intentions, and this has been shown true in a myriad of contexts (Ajzen, 1988, 1991). In their meta-analysis, Armitage and Conner (2001) found that subjective norms accounted for an average of 12% of the variance in general behavioral intentions. Specific to the present research, subjective norms have been shown to predict the behavioral intentions of young adults. These include intentions to complete the school year (Davis et al., 2002) and to make healthy eating choices (Louis et al., 2007). Subjective norms have also been shown to predict relocation intentions of employees. For example, Brett and Reilly (1988) found that the attitudes of employees' spouses toward relocation significantly predicted employees' intentions to relocate. These findings suggest that the attitudes of others may impact students' relocation intentions.

In the present research, individuals may perceive that those around them have expectations about where they should relocate for graduate school. For example, an individual may perceived that his/her family and friends think s/he should attend graduate school close to home, while s/he might perceive that her/his professors promote considering universities farther

away. Normative beliefs might be most influential among first-generation college graduates. In the absence of readily available precedents or examples, students who are the first in their families to attend college or graduate school may depend more heavily on the advice of others when pursuing opportunities to attend graduate school in a new place.

The beliefs held by influential people about negotiating distance when pursuing educational goals shape one's subjective norm, thereby influencing her/his relocation intentions. This means that students with more positive subjective norms about negotiating spatial distance to reach educational goals are likely to have greater intentions to negotiate distance to reach these goals. They will express greater willingness to negotiate the distance associated with relocation and will consider attending graduate schools that are, on average, farther from their current residences. In accordance with the TPB and with support from empirical findings, it is hypothesized that subjective norms about spatial distance should be positively related to both expressed and behavioral relocation intentions.

Hypothesis 2a. Subjective norm about spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 2b. Subjective norm about spatial distance will be positively related to behavioral relocation intentions.

Perceived Behavioral Control About Spatial Distance. Perceived behavioral control is an individual's perception of her/his ability to perform a behavior, and it is determined by one's perception of factors that facilitate or impede the performance of the behavior, referred to as control beliefs (Ajzen, 1988, 1991). Perceived behavioral control, in turn, can predict one' behavioral intentions, and this relationship may be driven by the concept of self-efficacy. Perceived behavioral control is conceptually similar to Bandura's (1982) self-efficacy in that

both concepts refer to individuals' beliefs that they are capable of performing a given behavior. It has been well established that individuals' confidence in their abilities to perform a behavior greatly influences their intentions and decisions to actually engage in that behavior (e.g., Bandura, Adams, & Beyer, 1977; Bandura, Adams, Hardy, & Howells, 1980). Self-efficacy beliefs can also influence individuals' choices of activities and behaviors, leading them pursue those they feel capable of achieving (Bandura, 1982, 1991). The TPB allows this construct to function within a framework that allows for even greater prediction of individuals' behavioral intentions.

The predictive relationship between perceived behavioral control and behavioral intentions has been demonstrated empirically (see Notani, 1998 for review). A meta-analytic review revealed that, on average, perceived behavioral control accounted for 18% of the variance in behavioral intentions (Conner & Armitage, 1998). More specifically, perceived behavioral control has been shown to predict the behavioral intentions of young adults, the population of interest in the present research. For example, perceived behavioral control has been shown to influence both nonsmoking intentions of college students (Nehl et al., 2009) and the school year completion intentions of high school students (Davis et al., 2002). Particularly relevant, Ajzen and Madden (1986) found that perceived behavioral control significantly predicted the intentions of undergraduate students to attend class lectures and earn "A's" in the class, suggesting that perceived behavioral control influences intentions related to educational goals.

In the context of the present research, individuals hold beliefs about their abilities to negotiate distance when relocating for graduate school. These beliefs will form individuals' perceived behavioral control about spatial distance. For example, individuals may believe that staying in touch with friends and adjusting to their new homes after moving will be easy. These

beliefs will lead them to have high levels of perceived behavioral control with regard to negotiating spatial distance. In contrast, individuals that believe they will lose touch with friends and have trouble adjusting after relocating hold negative beliefs that may lead them to perceive they have low levels of behavioral control when negotiating spatial distance. Students with more positive control beliefs are likely to have greater perceived behavioral control about spatial distance, and such efficacious perceptions are likely to be associated with greater intentions to negotiate distance to reach educational goals. This means that students with greater perceptions of behavioral control will express greater intentions to negotiate the distance associated with relocation and will consider attending graduate schools that are, on average, farther away from their current location. In the present research, it is hypothesized that perceived behavioral control about spatial distance will be positively related to relocation intentions.

Hypothesis 3a. Perceived behavioral control about spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 3b. Perceived behavioral control about spatial distance will be positively related to behavioral relocation intentions.

Having discussed separately each of the predictors of relocation intentions in the TPB framework, the combined utility of these predictors will now be explored.

Perceived Spatial Distance. In the present study, attitude, subjective norm, and perceived behavioral control about spatial distance are thought to form the defining components of PSD. They are conceived of and will be analyzed separately to understand how they function independently of each other. However, PSD is traditional conceptualized as having a composite structure that reflects an individual's global understanding of the spatial distance associated with

singular entity, and is thought to have a combined singular influence on intentions and behaviors. For this reason, a hypothesis involving the composite PSD construct is also proposed.

Drawing on the TPB framework, the PSD components work together to determine individuals' behavioral intentions to relocate for graduate school, with more favorable attitudes and subjective norms as well as greater perceived behavioral control leading to greater behavioral intentions (Ajzen & Fishbein, 2000). Each of the three components provides utility in predicting an individual's intentions, and when taken together, they prove to provide an even better prediction. This relationship has been shown to be true for various behaviors of young adults. For example, Nemme and White (2010) demonstrated that taken together, attitudes, subjective norms, and perceived behavioral control significantly predicted young adults' intentions to send text messages while driving. Similarly, in the present study, students with more positive attitudes, more positive subjective norms, and more perceived behavior control regarding negotiating spatial distance to reach educational goals are expected to have more positive perceptions of spatial distance and have greater intentions to negotiate distance to reach these goals. These intentions will be indicated through greater expressed willingness to negotiate the distance associated with relocation and demonstrated by applications to graduate schools that are, on average, farther away from individuals' current location. Therefore, in the present research, positive perceptions of spatial distance should significantly predict relocation intentions.

Hypothesis 4a. Positive perceptions of spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 4b. Positive perceptions of spatial distance will be positively related to behavioral relocation intentions.

Thus far, the present research has been concerned with relocation intentions as they are predicted by individuals' perceptions of spatial distance. In particular, perceptions of spatial distance have been explored by assessing individuals' views about negotiating spatial distance (attitudes), the opinions held by others (subjective norms), and the perceptions individuals hold about their abilities to overcome spatial distance when relocating for graduate school (perceived behavioral control). The next section will explore how individuals' relocation intentions predict ultimate relocation decisions.

Relocation Decisions

In the TPB framework, relocation intentions function as both outcomes of individuals' perceptions of spatial distance as well as predictors of relocation decisions. The preceding sections describe how attitudes, subjective norms, and perceived behavioral control about spatial distance all contribute to form the cognitive basis for PSD as well as how these constructs may be combined to predict individuals' relocation intentions. In this section, the focus shifts to the latter half of the TPB framework, where relocation intentions function as predictors of the decisions young adults make regarding relocation to new cities for pursuit of educational opportunities. This will allow for the exploration of how expressed and behavioral intentions predict individuals' relocation decisions.

Past TPB research has demonstrated the utility of intentions as predictors of behavior. A meta-analysis revealed that, on average, intentions accounted for 27% of the variance in a variety of performed behaviors (Armitage & Conner, 2001). More specific to the present study, students' intentions have been shown to predict education related behaviors, including the choice to pursue college education (Carpenter & Fleishman, 1987) and selection of an undergraduate major (Tan & Laswaf, 2009). Additionally, Randall (1994) demonstrated that graduate students' intentions

to enroll in an elective business ethics course measured two months before the start of the term meaningfully predicted their attendance on the first day of class.

As these studies demonstrate, the TPB describes behaviors that have been premeditated, not spontaneously or habitually performed (Aarts, Verplanken, & van Knippenberg, 1998). Accordingly, changes in intentions result in changes in behavior. As Tan and Laswad (2009) demonstrated, university students chose majors that were consistent with the intentions they expressed at matriculation if they had relatively stable intentions during their time in college. As would be expected according to the TPB model, students who modified their attitudes, subjective norms, and perceived behavioral control regarding their choice of majors during the course of their enrollment also modified their intentions. These students ultimately declared other majors that were consistent with their new intentions. These findings demonstrate that intentions are a key part of the TPB model, linking cognitive beliefs to performed behaviors. When individuals' intentions change, so do the behavioral decisions they ultimately make. Individuals are motivated to behave (and make decisions to behave) in ways that are consistent with their cognitive perceptions in order to avoid cognitive dissonance (Festinger, 1957). In this sense, behavior should be predicted by intentions. Additionally, the stronger behavioral intentions are, the more likely they will lead to actual behaviors (Conner & Armitage, 1998). Students with stronger intentions to negotiate spatial distance to relocate for graduate school will be considering attending schools that are, on average, farther away from their current location and will express greater intentions to negotiate the distance associated with relocation for graduate school. They are more likely to decide to enroll in graduate schools that are farther away than students with lesser intentions. Therefore, in the present research, relocation intentions should be positively related to relocation decisions.

Hypothesis 5a. Expressed relocation intentions about smaller and larger spatial distance will be positively related to the distance of the school chosen.

Hypothesis 5b. Behavioral relocation intentions will be positively related to the distance of the school chosen such that students with greater intentions to negotiate distance will be more likely to decide to attend schools that are farther away.

Time Dependent Variables

In the present study, the TPB framework implies a temporal order in which intentions and their antecedents logically precede behavioral decisions and the assumption that the PSD components that drive intentions and decisions are relatively stable. However, the temporal stability of the PSD measures used in this study has yet to be established. In fact, it is possible that the attitudinal and perceptual components that form PSD might change with time as new information about one's relocation decision emerges. In addition, the intentions one holds might also shift as time draws nearer to the ultimate decision.

In the TPB model, attitudinal predictors of intentions are assumed to be relatively temporally stable, meaning that "an attitude remains unchanged over time regardless of whether or not it is challenged" (Sheeran, Orbell, & Trafimow, 1999, p. 722). These predictors are assumed to be persistent over time, and this may be due to confirmation bias, the tendency for individuals to remember, seek, and perceive information such that it confirms their established beliefs (Nickerson, 1998).

In order for the TPB model to result in accurate prediction of behavior, intentions must remain relatively stable from the time they are measured until the behavioral decision is made (Ajzen, 1996). New information or originally unforeseen circumstances have the capacity to change intentions prior to the behavioral decision. Such changes mean that the original measures

might not accurately predict the behavioral decision (Conner et al., 2000). In support of this assumption and in line with the findings of Sheeran et al. (1999), Conner et al. (2000) found that the stability of intentions moderated the relationship between intentions and behavior such that stable intentions were strong predictors of behavior, whereas unstable intentions were only weak predictors of behavior.

In the present research, individuals may change their relocation intentions over time as indicated by their application to additional schools after the first assessment (Time 1) and before making their relocation decision (Time 2). An individual with highly stable behavioral relocation intentions will have little or no change in application behavior between the two time points, meaning s/he still has intentions of relocating the same distance for graduate school. In contrast, an individual with less stable intention will demonstrate some level of change in application behavior, meaning s/he has intentions of relocating a different distance for graduate school. An individual could have intentions to relocate closer or farther away at Time 2, but the absolute magnitude of change in relocation intentions would represent the level of stability present in his behavior as a change of the same distance in either direction would be equally unstable. Therefore, intention stability will be the absolute value of the change in behavioral relocation intentions from Time 1 to Time 2. The greater this absolute value, the less stable an individual's relocation intentions are.

The stability of individuals' intentions to relocate may moderate the relationship between relocation intentions and relocation decisions such that more stable relocation intentions should be more strongly predictive of the distance associated with the relocation decision and less stable relocation intentions should be less predictive.

Hypothesis 6. Stability of behavioral relocation intentions will moderate the relationship between behavioral relocation intentions and the relocation decision, such that behavioral relocation intentions will be more predictive of the relocation decision when they change less from Time 1 to Time 2.

Although the TPB assumes relative temporal stability of predictors in the model, other work in the perceived distance literature, namely CLT, supports the idea that these predictors could change over time. As discussed earlier, CLT is a framework that allows for the exploration of how distance, including temporal distance, can affect individuals' mental representations of events and goals. According to CLT, the farther away one is from an event in time, the more global and abstract one's mental representation of it is, and the closer one is to an event in time, the more specific and concrete one's mental representation of it is (Liberman & Trope, 1998). Additionally, the desirability of a goal is represented more abstractly, while the probability of attaining a goal is represented more concretely. This means that value of the abstract aspects and desirability of a goal increase with temporal distance from the goal, whereas the value of the concrete aspects and the feasibility of a goal decrease with temporal distance from the goal (Ajzen & Fishbein, 2000). In the present research, as one gets closer to making the relocation decision, the value of the concrete aspects and the feasibility of the relocation decision may increase while the value of abstract aspects and the desirability of the relocation decision may decrease. This implies that at Time 1, when the relocation decision is farther away in time, individuals' perceptions of spatial distance may be influenced more by desirability concerns. At Time 2, when the relocation decision has just been made and is temporally closer, feasibility concerns may be emphasized. This means that individuals' attitudes towards spatial distance (i.e., desirability) should have relatively more impact on their relocation intentions at Time 1 and

perceived behavioral control about spatial distance (i.e., feasibility) should have relatively more impact on their relocation intentions at Time 2.

Hypothesis 7a. Attitude toward spatial distance will demonstrate the strongest positive relationship with behavioral relocation intentions at Time 1.

Hypothesis 7b. Perceived behavioral control will demonstrate the strongest positive relationship with behavioral relocation intentions at Time 2.

In addition to testing the hypotheses proposed above, exploratory analyses were undertaken to further explore the data collected. Due to the small sample size at Time 2, there was insufficient power to assess the overall fit of the theoretical model using structural equation modeling (SEM) as originally proposed. Please refer to Figures 1 and 2 above for the conceptual and measurement models, respectively. Please see Appendix A for the full list of hypotheses and Appendix B for the inclusion criteria and sample size for each hypothesis.

MATERIALS AND METHODS

Sample

Participants in the present study were graduating undergraduate seniors at Louisiana State University (LSU) who had applied to at least one graduate or professional school program and had intentions to graduate with their bachelor's degree within one calendar year of beginning the study. Participants were recruited to participate in the web-based survey. At Time 1, 178 participants responded to the survey, with 112 (63%) agreeing to participate at Time 2. Two months later at Time 2, 36 (32%) participants responded to the survey.

At Time 1, participants had applied to an average of 2.81 graduate programs (*SD* = 2.30), while at Time 2, participants had applied to an average of 3.39 programs (*SD* = 2.43). A large portion of participants (42%) had only applied to one graduate institution at Time 1, while fewer (13%) had applied to 6 or more schools at that time. Approximately half (49%) of participants applied primarily to master's programs, 15% applied primarily to doctorate programs, 12% applied primarily to medical programs, 10% applied primarily to business or MBA programs, and 3.4% applied primarily to dentistry programs.

Two-thirds (64%) of participants were female, and the average age was 22 years old (*SD* = 2.18). With the exception of six participants (4%) that were over 25, the participants ranged in age from 20 to 25, with a median age of 22. A majority (84%) of participants indicated they were Caucasian, while 10% indicated they were African American. Additionally, 3% of participants identified as each Asian and Hispanic. The sample analyzed in the present study is fairly representative of the racial breakdown of LSU graduates with regard to minority representation. Of all those students at LSU receiving degrees (both undergraduate and graduate) during the

2009-2010 school year, 77% were Caucasian, 10% were African American, 3% were Asian, and 3% were Hispanic, while an additional 7% were temporary residents of the U.S.

Approximately 19% of participants indicated that their undergraduate major was psychology, while about 10% majored in kinesiology. Approximately 5% of participants received their bachelor's in biological sciences, while about 4% received degrees in each communication sciences and disorders, political science, and biological engineering. Of those 36 individuals who responded at Time 2, about 56% (20 individuals) reported they would be pursuing a master's degree, while about 25% (9 individuals) reported they would be pursuing a doctoral degree, and 11% (4 individuals) reported they would be pursuing a medical degree. Additionally, about 6% (2 individuals) reported they would be pursuing a law degree, and about 3% (1 individual) reported they would be pursuing an MBA or business degree.

Regarding parental educational achievement, just over one third (35%) of participants reported that their mothers had completed a bachelor's degree, and just over one fifth (21%) reported that she had earned a master's degree or higher. Similarly, 29% participants reported that their father had completed a bachelor's degree, while an additional 30% reported that he had earned a master's degree or higher. From this data, it can be concluded that 27% of participants are first-generation college graduates, while 73% are non-first-generation college graduates. Additionally, 38% have at least one parent who has completed a master's level degree or above.

Participants were also asked about the educational achievement of their siblings. While approximately one third (34%) of the sample is the oldest or only child in their family, of those with siblings ahead of them in school, 28% have a sibling who has earned a bachelor's degree while an additional 21% have a sibling who has earned a master's degree or higher. These

numbers provide insight into the educational norms established by participants' immediate family members, and the implications will be further discussed later in this paper.

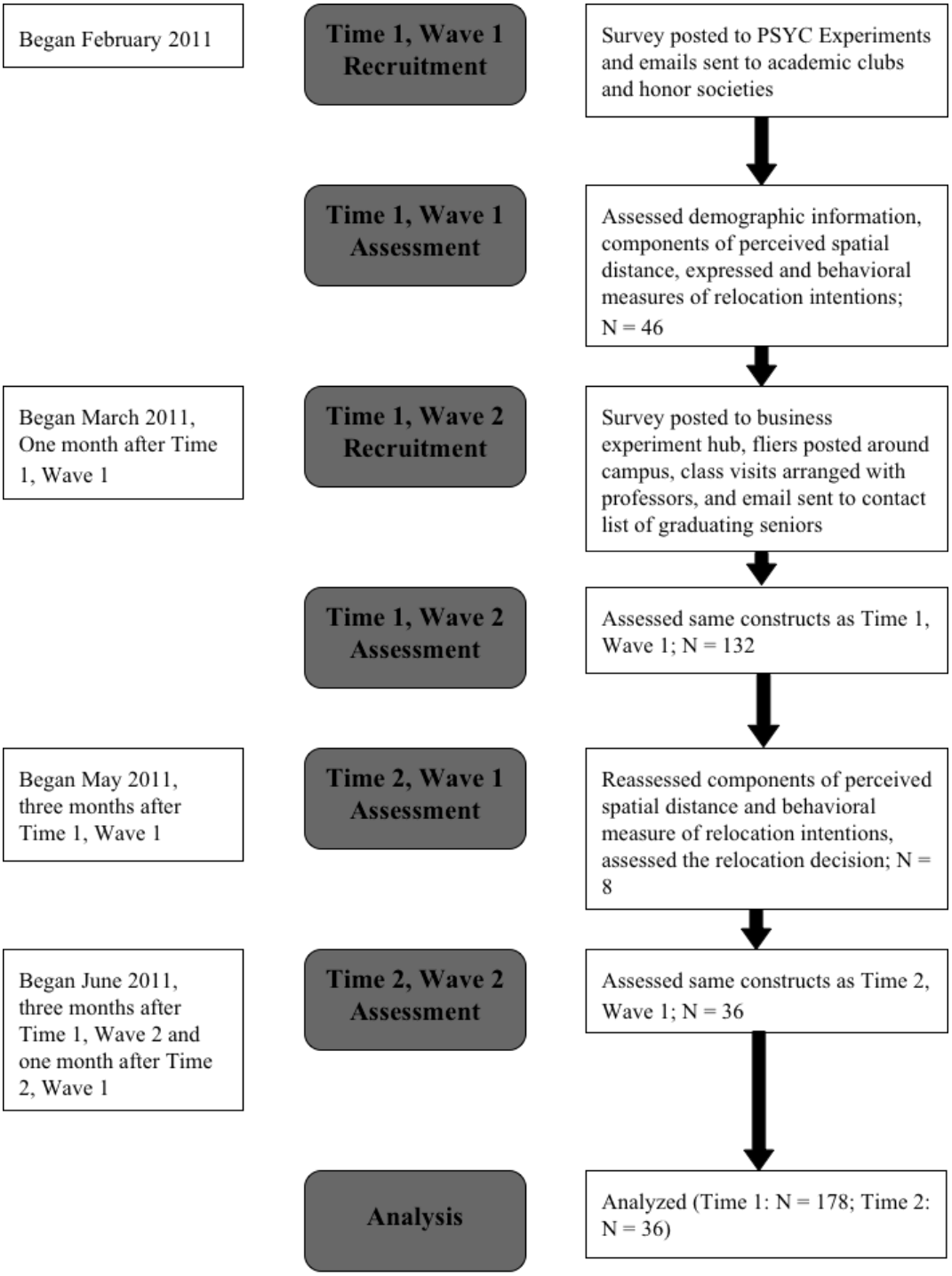


Figure 3 – Diagram for study procedures

Procedure

Recruitment for this study began in the winter of 2011. Time 1 data collection occurred in two major waves, one beginning in February 2011 and one beginning in March 2011. In order to maintain this approximate one-month delay between waves, Time 2 data collection also occurred in a two waves, with the first wave commencing in May 2011 and the second in June 2011. Participants were given approximately two weeks to complete the survey. Please see Figure 3 for the complete timeline of this study's procedure.

Participants in the present study were recruited in several ways. During Wave 1, students currently enrolled in psychology classes were able to access the survey via PSYC Experiments located in the menu of their PAWS accounts. As compensation for their participation in the survey, many of these individuals received nominal class credit. Emails were also sent to academic clubs and honor societies to invite participation in the survey. Although inclusion criteria were made clear and emphasized when potential participants signed up for the study, many who where ineligible because they were not planning to graduate by December 2011 and/or they had not applied to at least one graduate or professional program still registered for and completed the survey. Their responses are not included in the present analyses, and once this problem was recognized, later participants who did not meet inclusion criteria were prevented from completing the survey.

After the initial Wave 1 data collection effort, which yielded 46 usable data points, participation was incentivized with optional entry into a fifty-dollar raffle upon completion of the survey. Recruitment continued through the psychology department during Wave 2 and was extended to include students currently enrolled in business classes through the use of business department's experiment hub. Many of these students received nominal class credit for their

completion of the survey. Additional participants were recruited through class announcements arranged with professors, fliers posted around campus, and emails sent to campus academic clubs, honor societies, and department coordinators. The recruitment flyer is available in Appendix C. Emails soliciting participation were also sent directly to 1200 graduating senior students. This contact list was obtained through correspondence with the registrar's office at LSU. In total, Wave 1 resulted in 46 data points at Time 1 and eight at Time 2. Wave 2 data collection produced 132 responses at Time 1 and 28 at Time 2, resulting in an overall response of 148 individuals at Time 1 and 36 individuals at Time 2.

An online survey format was used for data collection. The web-based medium should not have posed any selection bias problems as the intended sample should have been very familiar with internet and computer use given that these are essential tools for student functions like enrollment and class work. Completion of the survey took approximately 15 minutes at Time 1 and approximately 10 minutes at Time 2. At the end of the survey at Time 1, participants were asked to provide their email address if they were interested in participating in the follow-up survey at Time 2. Each participant completing the survey was automatically assigned a unique identification number so that surveys from the two times could be linked.

At Time 1, participants completed measures assessing the PSD components and their relocation intentions in addition to demographic and screening measures. Please see Appendix D for the complete list of items. At Time 2, perceptions of spatial distance and behavioral relocation intentions were reassessed, and this allowed for the stability of intentions (Hypotheses 6) as well as the relative importance of PSD components (Hypotheses 7a and 7b) to be determined. Participants also reported their relocation decisions at Time 2, and this allowed for the relationship between intentions and decisions (Hypothesis 5) to be determined. Please see

Appendix E for the complete list of items administered at Time 2. Expressed relocation intentions were not reassessed at Time 2 because the measure was phrased such that individuals reported how likely they would be to attend a given institution they applied to *if they were accepted*. Because individuals predominantly knew at Time 2 which institutions they had been accepted to and which they had not, it was reasoned that hindsight bias would affect reassessment of this measure. The implications of the phrasing of this measure and the resulting decision will be further discussed in the following sections of this document.

Measures at Time 1

The questionnaire contained items designed to assess the major constructs of the TPB framework as they relate to PSD, along with demographic and contextual variables thought to have an impact on the perceptions, intentions, and decisions observed in this study. The items assessing attitude, subjective norm, and perceived behavioral control about spatial distance were adapted from Davis et al. (2002), and all measures assessing the TPB constructs were developed with guidance from the TPB survey construction guidelines outlined by Ajzen (1991, 2006). The full list of measures can be found in Appendices D and E.

For the variables of attitude toward smaller and larger spatial distance, mean values were calculated requiring at least six of the eight items to have responses. For the variables of subjective norm about smaller and larger spatial distance, mean values were calculated requiring at least two of the three items to have responses. For the variables of perceived behavioral control about smaller and larger spatial distance, mean values were calculated requiring at least three of the four items to have responses.

Exploratory factor analyses (i.e., principle components analyses) were conducted on items assessing attitude, subjective norm, and perceived behavioral control about spatial distance

to investigate the underlying structure of the scales. The initial analysis included the thirty items used to assess the three components of PSD, and revealed a five-factor solution that explained 71% of the variance (see Appendix F). Items assessing attitude toward smaller and larger spatial distance and subjective norm about smaller and larger spatial distance loaded onto individual factors, with average factor loadings of .84, .85, .69, and .67, respectively, as did those assessing perceived behavioral control about smaller spatial distance, with an average factor loading of .77. The items assessing perceived behavioral control about larger spatial distance, however, loaded onto the factor for subject norm about larger spatial distance, average factor loading .59, with a few items also loading onto factor for perceived behavioral control about smaller spatial distance, with an average factor loading of .55. In order to gain a better understanding of how each of the scales loaded individually, exploratory factor analyses were performed on each of the three components of PSD, with 74%, 72%, and 68% of the variance being explained for attitude, subjective norm, and perceived behavioral control, respectively. Please see Appendices G, H, and I, respectively, for results. These analyses revealed that items assessing smaller distances and larger distances loaded separately for each of the three measures assessing PSD, with average loadings ranging from .79 to .86. Thus, the decision was made to treat each of these measures as two constructs: attitude, subjective norm, and perceived behavioral control about smaller spatial distance and larger spatial distance.

Attitude Toward Spatial Distance. Participants' attitudes toward spatial distance were assessed using two sets of eight evaluative semantic differential scales, with one set assessing attitudes toward smaller distance and one assessing attitudes toward larger distance. Responses to "For me, relocating to a new city in the region of the United States where I (currently live, do not currently live) to attend graduate school would be..." were made on 7-point scales ranging

from -3 to +3. Response were recoded on a scale from 1 to 7 prior to analysis. High scores assigned to the positive end of each scale. The anchors of these scales were as follows: punishing–rewarding, useless–useful, bad–good, harmful–beneficial, foolish–wise, unpleasant–pleasant, undesirable–desirable, and boring–exciting. Reliability of the measures was assessed using Cronbach's alpha, and high levels were demonstrated by both (smaller distance: $M = 4.88$, $SD = 1.49$, $\alpha = .94$; larger distance: $M = 5.06$, $SD = 1.5$, $\alpha = .95$).

Subjective Norm About Spatial Distance. Two sets of three items were used to assess participants' subjective norms about spatial distance, with one set assessing subjective norms about smaller distance and one assessing subjective norms about larger distance. Respondents were asked to indicate on a 7-point Likert-type scale, where 1 corresponded to very unlikely and 7 corresponded to very likely, the extent to which they believed that most people who are important to them think they should relocate to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school, would approve of them relocating to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school, and expect them to relocate to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school. Reliability of the measures was assessed using Cronbach's alpha. High levels were demonstrated by both (smaller distance: $M = 4.81$, $SD = 1.35$, $\alpha = .74$; larger distance: $M = 4.07$, $SD = 1.56$, $\alpha = .85$).

Perceived Behavioral Control About Spatial Distance. Two sets of four items were used to assess participants' perceived behavioral control about spatial distance, with one set assessing perceived behavioral control about smaller distance and one assessing perceived behavioral control about larger distance. Responses for all items were made on a 7-point Likert-

type scale, where 1 corresponded to strongly disagree and 7 corresponded to strongly agree. These items were, "I have a great deal of control over relocating to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school," "I can overcome any obstacles or problems that could prevent me from relocating to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school," "It is mostly up to me whether or not I relocate to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school," and "It will be easy for me to relocate to a new city in the region of the United States where they (currently live, do not currently live) to attend graduate school." Reliability of the measures was assessed using Cronbach's alpha, with high levels demonstrated by both (smaller distance: $M = 5.43$, $SD = 1.23$, $\alpha = .85$; larger distance: $M = 4.64$, $SD = 1.39$, $\alpha = .82$).

Relocation Intentions. In the present research, relocation intentions refer to individuals' expressed intentions and behavioral indicators about their plans to negotiate distance to relocate for graduate school. Intentions were captured with two ways: behavioral relocation intentions and expressed relocation intentions.

Behavioral Relocation Intentions. Participants were asked to provide the name and location of each of the schools they applied to during the graduate school application process as well as the city, state, and zip code of their residence during that time. This information was used to determine the zip code for each graduate institution. Google Maps was used to calculate the distances in miles between individuals' residences and the schools where they applied. The direct distance between the two locations was used, as if one drew a line to connect one point to the other. Calculating a direct distance helped avoid the variability in distance that the use of travel

routes between locations could have caused. For each participant, the average distance to schools applied to was calculated (*M* = 464.28, *SD* = 759.80).

Expressed relocation Intentions About Smaller and Larger Spatial Distance. Participants were asked to indicate how likely they were to attend each of the schools they applied to if they were accepted. Responses were made on a 7-point Likert-type scale, where 1 corresponded to very unlikely and 7 corresponded to very likely. These ratings were used to manually generate the variables of expressed relocation intentions about smaller (*M* = 5.27, *SD* = 1.81) and larger (*M* = 5.18, *SD* = 1.77) distance only for those participants who had applied to at least two graduate programs (*N* = 104). The sample size was further reduced to include only those participants who indicated their likelihood of attending all of the schools that constituted the small and/or large distance measures (*N* = 95 and *N* = 86, respectively). For those participants who indicated both, the mean difference between large and small distance was -.07 (*SD* = 2.41). This empirically driven approach was undertaken so that this measure would be conceptually similar to the measures of PSD that employed smaller and larger spatial distance referents. Additionally, since this study investigates perceptions of spatial distance, it seemed appropriate to investigate what small and large distances were for individuals.

For a given participant, I looked at the distant to each school where s/he applied (i.e., behavioral relocation intentions) and determined which of these schools fell into the upper extreme and lower extremes of distance. For most participants (86%), over 100 miles separated these two extremes. For some participants, there was a school that was the clearly largest (and/or smallest) distance away. For others, visual inspection revealed that two or more schools were roughly the same distance away and were the schools that were the largest (and/or smallest) distance away. In this case, the information provided about these schools was averaged to create

the corresponding expressed relocation intention variable about smaller or larger distance. The rating of the closest school(s) applied to comprised expressed relocation intentions about smaller spatial distance (*M* = 199.96, *SD* = 199.96), while the rating of the farthest school(s) applied to comprised the behavioral relocation intentions about larger spatial distance (*M* = 851.85, *SD* = 677.31). The mean difference between the two distances was 610.84 miles (SD = 545.79).

Measures at Time 2

The Time 2 questionnaire contained items designed to reassess the major constructs of the TPB framework as they relate to perceptions of spatial distance, as well as the relocation decision.

Stability of Behavioral Relocation Intentions. The stability of behavioral relocation intentions refers to the absolute mean difference in individuals' behavioral relocation intentions between Time 1 and Time 2. Individuals could apply to additional schools after assessment at Time 1 and before making their relocation decisions, resulting in changes to their original behavioral relocation intentions.

Individuals with highly stable behavioral relocation intentions had little or no change in application behavior between the two time points, either because they applied to no additional schools or because they applied to schools that were, on average, the same distance away as those schools they applied to at Time 1. These individuals had intentions of relocating the same distance for graduate school at both time points. Individuals with less stable behavioral relocation intentions exhibited change in application behavior between the two time points because they applied to schools that were, on average, a lesser or greater distance away than those schools they applied to at Time 1. These individuals had intentions of relocating either closer or farther away for graduate school at Time 2 than at Time 1. The absolute magnitude of

change represents the level of stability because changes of the same magnitude in both directions (i.e. +100 and -100 miles) are equally unstable. The farther this absolute mean difference is from zero, the less stable an individual's behavioral relocation intentions are.

For each individual who responded at both Time 1 and Time 2, stability was determined by calculating the absolute mean difference (*M* = 13.67, *SD* = 30.57) between behavioral relocation intentions as measured at Time 1 (*M* = 568.44, *SD* = 814.76) and Time 2 (*M* = 570.31, *SD* = 811.43). A score of zero implies stable behavioral relocation intentions. A high level of stability was reflected by an absolute mean difference near zero, meaning there was little to no change in behavioral relocation intentions between the two data collections. A lower level of stability was reflected by a higher absolute mean difference, meaning there has been a larger amount of change in intentions. Additionally, the mean difference for each of the components of PSD (attitude, subjective norm, and perceived behavioral control) was calculated. Please refer to Table 5 for means and standard deviations.

Relocation Decision. In the present research, the relocation decision refers to the distance in miles an individual will relocate to attend the graduate institution where s/he has chosen to enroll (*M* = 475.47, *SD* = 859.18). At Time 1, participants provided the city, state, and zip code of the residence where they lived when they applied to graduate school, and at Time 2, participants provided the name and location of the school where they have decided to relocate for graduate school. This information was used to determine the zip code for each graduate institution. The distance between these two locations was calculated the in the same way as distances for relocation intentions (see "Relocation intentions" above).

RESULTS

Analytic Strategy and Preliminary Analyses

Pearson's correlations were used to test the relationships set forth in Hypotheses 1 through 3 as well as Hypotheses 5. The relationship between the components of PSD and relocation intentions set forth in Hypothesis 4 was tested using multiple regression analysis. Moderated regression analysis was used to test the moderating effect of stability of intentions proposed by Hypothesis 6. Dominance analysis was performed to test Hypotheses 7a and 7b.

Data collected from participants in Waves 1 (Time 1: $N = 46$, Time 2: $N = 8$) and 2 (Time 1: $N = 132$, Time 2: $N = 28$) were first combined and then analyzed to assess whether there was adequate statistical power to test the study's hypotheses. Using this full data set, sufficient power was achieved to test all hypotheses except for Hypothesis 7b. Results of this analysis should be interpreted cautiously as observed power reached .69 instead of the standard .80 or above.

For Time 1 data, means and standard deviations are presented in Table 1 and correlations are presented in Table 2. For Time 2 data, means and standard deviations are presented in Table 3 and correlations are presented in Table 4. Table 5 presents t-test comparisons for the measures collected at both Time 1 and Time 2.

Table 1 – Means and Standard Deviations for Time 1 Measures

Variables	N	Mean	SD
1. Attitude Toward Smaller Spatial Distance	178	4.88	1.49
2. Attitude Toward Larger Spatial Distance	178	5.06	1.5
3. Subjective Norm About Smaller Spatial Distance	178	4.81	1.35
4. Subjective Norm About Larger Spatial Distance	178	4.07	1.56
5. Perceived Behavioral Control About Smaller Spatial Distance	178	5.43	1.23
6. Perceived Behavioral Control About Larger Spatial Distance	178	4.64	1.39
7. Expressed Relocation Intentions About Smaller Spatial Distance	95	5.27	1.81
8. Expressed Relocation Intentions About Larger Spatial Distance	86	5.18	1.77
9. Behavioral Relocation Intentions	178	464.28	759.8
10. Relocation Decision	36	475.47	859.18

Table 2 – Correlation Table for Time 1 Measures and Time 2 Relocation Decision

Variables	1	2	3	4	5	6	7	8	9
1. Attitude Toward Smaller Spatial Distance	(-.94)								
2. Attitude Toward Larger Spatial Distance	-.14+	(-.95)							
3. Subjective Norm About Smaller Spatial Distance	.43**	-.17*	(-.74)						
4. Subjective Norm About Larger Spatial Distance	-.28**	.59**	-.30**	(-.85)					
5. Perceived Behavioral Control About Smaller Spatial Distance	.07	.06	.21**	.05	(-.85)				
6. Perceived Behavioral Control About Larger Spatial Distance	-0.12	.30*	.25**	.46**	.36**	(-.82)			
7. Expressed Relocation Intentions About Smaller Spatial Distance	-0.04	-.10	.05	.10	0	0	----		
8. Expressed Relocation Intentions About Larger Spatial Distance	.04	.07	-.04	0	.10	.13	.10	----	
9. Behavioral Relocation Intentions	-.29**	.18*	-.18*	.38**	.08	.12	-.01	-.03	----
10. Relocation Decision	-.37*	0.28	-.39*	.39*	-.06	.23	-.09	.26	.94**

Note: +p < .10. *p < .05. **p < .01.

Table 3 – Means and Standard Deviations for Time 2 Measures

Variables	N	Mean	SD
1. Attitude Toward Smaller Spatial Distance	36	4.66	1.73
2. Attitude Toward Larger Spatial Distance	36	5.19	1.33
3. Subjective Norm About Smaller Spatial Distance	36	4.65	1.84
4. Subjective Norm About Larger Spatial Distance	36	3.64	1.83
5. Perceived Behavioral Control About Smaller Spatial Distance	36	5.74	0.96
6. Perceived Behavioral Control About Larger Spatial Distance	36	5.03	1.31
7. Behavioral Relocation Intentions	36	570.31	811.43
8. Relocation Decision	36	475.47	859.18
9. Stability of Behavioral Relocation Intentions	36	13.67	30.57

Table 4 – Correlation Table for Time 2 Measures

Variables	1	2	3	4	5	6	7	8
1. Attitude Toward Smaller Spatial Distance	(-.97)							
2. Attitude Toward Larger Spatial Distance	-.17	(-.95)						
3. Subjective Norm About Smaller Spatial Distance	.68**	-.07	(-.85)					
4. Subjective Norm About Larger Spatial Distance	-.12	.63**	-.33*	(-.86)				
5. Perceived Behavioral Control About Smaller Spatial Distance	.44**	.31+	.49**	.32+	(-.78)			
6. Perceived Behavioral Control About Larger Spatial Distance	-.02	.40*	.06	.39*	.55**	(-.82)		
7. Behavioral Relocation Intentions	-.31+	.27	-.36*	.44**	-.03	.18	----	
8. Relocation Decision	-.37*	.26	-.36*	.38*	-.11	.12	.94**	
9. Stability of Behavioral Relocation Intentions	-.06	-.02	-.23	.27	.05	.01	.19	.13

Note: +p < .10. *p < .05. **p < .01.

Table 5 – Means, Standard Deviations, Correlations, and Paired T-test Results

	N	Time 1		Time 2		r	Mean Difference	df	t
		Mean	SD	Mean	SD				
1. Attitude Toward Smaller Spatial Distance	36	4.68	1.52	4.66	1.72	.62**	-.01	35	.06
2. Attitude Toward Larger Spatial Distance	36	5.07	1.48	5.19	1.33	.83**	.13	35	-.92
3. Subjective Norm About Smaller Spatial Distance	36	4.65	1.63	4.65	1.84	.71**	0	35	0
4. Subjective Norm About Larger Spatial Distance	36	4.18	1.73	3.64	1.83	.81**	-.54	35	2.90**
5. Perceived Behavioral Control About Smaller Spatial Distance	36	5.67	1.26	5.74	.96	.46**	.08	35	-.39
6. Perceived Behavioral Control About Larger Spatial Distance	36	4.63	1.41	5.03	1.32	.52**	.41	35	-1.84+
7. Behavioral Relocation Intentions	36	568.44	814.76	570.31	811.42	.99**	-1.87	35	-.34

Note: +p < .10. *p < .05. **p < .01.

Test of Hypotheses

Hypothesis 1 stated that attitude towards spatial distance would be positively related to relocation intentions. To test this hypothesis, both attitude and expressed relocation intentions

about smaller and larger spatial distance were taken into consideration. Therefore, Hypothesis 1a tested the relationships between attitude toward smaller and larger spatial distance and expressed relocation intentions about smaller and larger spatial distance, while Hypothesis 1b tested the relationships between attitude toward smaller and larger spatial distance and behavioral relocation intentions. Attitude toward smaller spatial distance was expected to positively relate to expressed relocation intentions about smaller spatial distance and negatively relate to both expressed relocation intentions about larger spatial distance and behavioral relocation intentions. Attitude toward larger spatial distance was expected to positively relate to expressed relocation intentions about larger spatial distance and behavioral relocation intentions, and negatively relate to expressed relocation intentions about smaller spatial distance.

Hypothesis 1a stated that attitude towards spatial distance would be positively related to expressed relocation intentions about smaller and larger spatial distance and was not supported. Attitude toward smaller ($r = -.04$, $p > .10$) and larger ($r = -.10$, $p > .10$) spatial distance were not related to expressed relocation intentions about smaller spatial distance. Attitude toward smaller ($r = .04$, $p > .10$) and larger ($r = .07$, $p > .10$) spatial distance were also not related to expressed relocation intentions about larger spatial distance. However, there was support for Hypothesis 1b, which stated that attitude towards spatial distance would be positively related to behavioral relocation intentions. Attitude towards smaller spatial distance was negatively and significantly related to behavioral relocation intentions ($r = -.29$, $p < .01$), and attitude toward larger spatial distance was positively and significantly related to behavioral relocation intentions ($r = .18$, $p < .05$).

Testing of Hypothesis 1 revealed no significant relationships between attitude toward smaller and larger spatial distance and expressed relocation intentions about smaller and larger

spatial distances. However, there were significant relationships between attitude toward smaller and larger spatial distance and behavioral relocation intentions, indicating that more positive attitudes towards smaller spatial distances were related to intentions to relocate a shorter distance and that more positive attitudes towards larger spatial distance were related to intentions to relocate a farther distance.

Hypothesis 2 stated that subjective norm about spatial distance would be positively related to relocation intentions. To test this hypothesis, both subjective norm and expressed relocation intentions about smaller and larger spatial distance were taken into consideration. As a result, Hypothesis 2a tested the relationships between subjective norm about smaller and larger spatial distance and expressed relocation intentions about smaller and larger spatial distance, while Hypothesis 2b tested the relationships between subjective norm about smaller and larger spatial distance and behavioral relocation intentions. Subjective norm about smaller spatial distance was expected to positively relate to expressed relocation intentions about smaller spatial distance and negatively relate to expressed relocation intentions about larger spatial distance and behavioral relocation intentions. Subjective norm about larger spatial distance was expected to positively relate to expressed relocation intentions about larger spatial distance and behavioral relocation intentions, and negatively related to expressed relocation intentions about smaller spatial distance.

Hypothesis 2a stated that subjective norm about spatial distance would be positively related to expressed relocation intentions about smaller and larger spatial distance, and this hypothesis was not supported. Neither subjective norm about smaller spatial distance ($r = .05$, $p > .10$) nor subjective norm about larger spatial distance ($r = .10$, $p > .10$) was significantly related to expressed relocation intentions about smaller spatial distance. Subjective norm toward

smaller spatial distance (r = -.04, p > .10) and subjective norm toward larger spatial distance (r = .00, p > .10) also both failed to be significantly related to expressed relocation intentions about larger spatial distance. Hypothesis 2b stated that subjective norm about spatial distance would be positively related to behavioral relocation intentions. This hypothesis was supported as subjective norm about smaller spatial distance (r = -.18, p < .05) was negatively and significantly related to behavioral relocation intentions, and subjective norm about larger spatial distance (r = .38, p < .01) was positively and significantly related to behavioral relocation intentions.

While testing of Hypothesis 2 revealed no significant relationships between subjective norm about smaller or larger spatial distance and expressed relocation intentions about smaller or larger spatial distances, there were significant relationships between subjective norm about smaller and larger spatial distance and behavioral relocation intentions. Positive subjective norm about smaller spatial distances were related to intentions to relocate a shorter distance away, and more positive subjective norm about towards larger spatial distance were related to intentions to relocate a farther distance.

Hypothesis 3 stated that perceived behavioral control about spatial distance would be positively related to relocation intentions. To test this hypothesis, both perceived behavioral control and expressed relocation intentions about smaller and larger spatial distance were taken into consideration. Consequently, Hypothesis 3a tested the relationships between perceived behavioral control about smaller and larger spatial distance and expressed relocation intentions about smaller and larger spatial distance, while Hypothesis 3b tested the relationships between perceived behavioral control about smaller and larger spatial distance and behavioral relocation intentions. Perceived behavioral control about smaller spatial distance was expected to positively relate to expressed relocation intentions about smaller spatial distance and negatively relate to

both expressed relocation intentions about larger spatial distance and behavioral relocation intentions. Perceived behavioral control about larger spatial distance was expected to positively relate to expressed relocation intentions about larger spatial distance and behavioral relocation intentions, and negatively related to expressed relocation intentions about smaller spatial distance.

Hypothesis 3a stated that perceived behavioral control about spatial distance would be positively related to expressed relocation intentions about smaller and larger spatial distance and was not supported. Analyses revealed that perceived behavioral control about smaller spatial distance (r =.00, p > .10) and larger spatial distance (r =.00, p > .10) were not significantly related to expressed relocation intentions about smaller spatial distance. Perceived behavioral control about smaller spatial distance (r =.10, p > .10) and larger spatial distance (r = .13, p > .10) were also not significantly related to expressed relocation intentions about larger spatial distance. Hypothesis 3b stated that perceived behavioral control about spatial distance would be positively related to behavioral relocation intentions and did not receive support. Perceived behavioral control about smaller spatial distance (r =.08, p > .10) and perceived behavioral control about larger spatial distance (r = .12, p > .10) were not significantly related to behavioral relocation intentions. Therefore, none of the relationships between the measures of perceived behavioral control and relocation intentions were significant.

Testing of Hypotheses 1 through 3 revealed that the measures of PSD failed to directly relate to expressed relocation intentions in a statistically significant way. However, attitude and subjective norm about both smaller and larger distances were significantly related to behavioral relocation intentions. Attitude and subjective norm about smaller distance negatively related to behavioral relocation intentions, while attitude and subjective norm about larger distance

positively related to behavioral relocation intentions. This means that participants that had more positive attitudes and subjective norms about smaller spatial distance tended to apply to institutions that were closer to their residences at the time of application, while participants that had more positive attitudes and subjective norms about larger spatial distance tended to apply to institutions that were farther from their residences at the time of application.

Next, I investigate how these components of PSD work together to predict expressed and behavioral relocation intentions. Due to the novel nature of the present study and our interest in the underlying relationships between the PSD constructs, I found it prudent to assess both how each component relates to the two types of relocation intentions as well as how these elements fit together to form the larger concept of PSD and how this composite construct relates to relocation intentions. Hypothesis 4 stated that positive perceptions of spatial distance would be positively related to relocation intentions and received partial support. The results of the multiple regressions performed to test the two part of this hypothesis are results are presented in Tables 6, 7 (Hypothesis 4a), and 8 (Hypothesis 4b).

Table 6 – Regression Results for Composite Perceptions of Spatial Distance Predicting Expressed Relocation Intentions About Smaller Spatial Distance

	b	**ΔR^2**	**ΔF**
Attitude Toward Smaller Spatial Distance	.03		
Attitude Toward Larger Spatial Distance	-.25+		
Subjective Norm About Smaller Spatial Distance	.09		
Subjective Norm About Larger Spatial Distance	.32+		
Perceived Behavioral Control About Smaller Spatial Distance	.00		
Perceived Behavioral Control About Larger Spatial Distance	-.06		
Overall Model		.06	.91
(df)			(6, 88)

Note: N = 95. + p < .10. * p < .05. ** p < .01.

Table 7 – Regression Results for Composite Perceptions of Spatial Distance Predicting Expressed Relocation Intentions About Larger Spatial Distance

	b	ΔR^2	ΔF
Attitude Toward Smaller Spatial Distance	.06		
Attitude Toward Larger Spatial Distance	.10		
Subjective Norm About Smaller Spatial Distance	-.07		
Subjective Norm About Larger Spatial Distance	-.14		
Perceived Behavioral Control About Smaller Spatial Distance	.07		
Perceived Behavioral Control About Larger Spatial Distance	.14		
Overall Model		.04	.51
(df)			(6, 79)

Note: N = 86. + p < .10. * p < .05. ** p < .01.

Table 8 – Regression Results for Composite Perceptions of Spatial Distance Predicting to Behavioral Relocation Intentions

	b	ΔR^2	ΔF
Attitude Toward Smaller Spatial Distance	-.19*		
Attitude Toward Larger Spatial Distance	-.06		
Subjective Norm About Smaller Spatial Distance	-.05		
Subjective Norm About Larger Spatial Distance	.39**		
Perceived Behavioral Control About Smaller Spatial Distance	.13+		
Perceived Behavioral Control About Larger Spatial Distance	-.12		
Overall Model		.20**	7.00**
(df)			(6, 171)

Note: N = 178. + p < .10. * p < .05. ** p < .01.

Hypothesis 4a stated that positive perceptions of spatial distance would be positively related to expressed relocation intentions about smaller and larger spatial distance. The models involving expressed relocation intentions about smaller and larger spatial distance were not significant, $F(6, 88) = .91$, $p > .10$, Cohen's $f^2 = .06$, and $F(6, 79) = .51$, $p > .10$, Cohen's $f^2 = .04$, respectively, so Hypothesis 4a was not supported. Hypothesis 4b stated that positive perceptions of spatial distance would be positively related to behavioral relocation intentions. The model accounted for 20 percent of the observed variance, $F(6, 171) = 7.00$, $p < .01$, Cohen's

$f^2 = .25$, providing minimal support for Hypothesis 4b. Testing of Hypothesis 4 revealed the measures of PSD predictive of behavioral relocation intentions but not expressed relocation intentions. However, there does not appear to be increased utility in analyzing these components together. Regressing the six components of PSD onto behavioral relocation intentions results in only two significant predictors (i.e., attitude toward smaller spatial distance, $b = -.19$, $p < .05$, and subjective norm about larger spatial distance, $b = .39$, $p < .01$). Although this allows us to create a more parsimonious model, it does not increase our understanding of the relationships between components of PSD and behavioral relocation intentions.

Hypothesis 5 stated that relocation intentions would be positively related to the relocation decision and was partially supported by analyses. Hypothesis 5a stated that expressed relocation intentions about smaller and larger spatial distance would be positively related to the distance of the school chosen. Analysis revealed nonsignificant relationships between expressed relocation intentions toward both smaller ($r = -.09$, $p = .67$) and larger ($r = .26$, $p = .22$) spatial distance and the distance to the chosen school. Hypothesis 5b stated that behavioral relocation intentions would be positively related to the distance of the school chosen such that students with greater intentions to negotiate distance would be more likely to decide to attend schools that are farther away, and analysis showed a significant and positive relationship ($r = .94$, $p < .01$). Therefore, Hypothesis 5 received partial support. Individuals who had intentions to relocate farther away as indicated by behavioral relocation intentions were also more likely to decide to relocate to enroll at institutions that are farther away. Similar to the results for the hypotheses already explored in this paper, testing of Hypothesis 5 demonstrated that behavioral relocation intentions were significantly related to the relocation decision while expressed relocation intentions were not.

Hypothesis 6 stated that the stability of behavioral relocation intentions would moderate the relationship between behavioral relocation intentions and the relocation decision, such that relocation intentions would be more predictive of the relocation decision when they are more stable than when they are less stable. The variables of behavioral relocation intentions and the stability of relocation intentions were entered into the model in the first step, and the interaction term was entered in the second step. The interaction term proved to be multicolinear (Tolerance = .34, VIF = 2.94), and the standardized regression coefficient of the interaction term was not significant (B = -.08, p > .10). Hypothesis 6 failed to be supported. The full analysis is presented in Table 9. Thus, the sample does not allow us to address whether relocation intentions are more predictive of the relocation decision when they are more stable between Time 1 and Time 2.

Table 9 – Regression Results for Testing of Moderating Effect of the Stability of Behavioral Relocation Intentions on the Relocation Decision

	b	**ΔR^2**	**ΔF**
Step 1: Intentions and Stability		.89**	137.00**
Behavioral Relocation Intentions	.95**		
Stability of Behavioral Relocation Intentions	-.06		
Step 2: Interaction		.00	.66
Interaction	-.08		
Overall Model		.89**	90.60**
(df)			(3, 32)

Note: N = 36. +p < .10. *p < .05. **p < .01. Significant models are indicated under ΔR^2.

To test Hypotheses 7a and 7b, relative importance analyses were conducted on the predictors of relocation intentions at Time 1 and Time 2 to determine the unique contribution of each independent variable with respect to the others. Because multicollinearity of predictors can affect the interpretation of regression coefficients (Darlington, 1968), regression coefficients were supplemented with dominance weights computed using general dominance analysis, the analytical approach of Johnson and colleagues (Johnson, 2000, 2001; Johnson & LeBreton,

2004). These weights consider the direct, partial, and total contribution of each variable to R^2 for the complete model.

Hypothesis 7a stated that attitude toward spatial distance would be the dominant factor that explains behavioral relocation intentions at Time 1. This means that attitudes toward smaller and larger spatial distances were expected to explain the greatest amount of predicted variance for behavioral relocation intentions in relation to the other measures of PSD at Time 1. However, attitude toward smaller spatial distance accounted for about 26% of the observed variance while attitude toward larger spatial distance accounted for just 5%. Subjective norm about larger spatial distance accounted for the largest percentage of observed variance, about 51%. Subject norm about smaller spatial distance accounted for 7% of the observed variance, and perceived behavioral control about both smaller and larger distance each accounted for approximately 5% of the observed variance. Hypothesis 7a was not supported as attitude toward spatial distance was not the dominant predictor of behavioral relocation intentions, but rather, subjective norms about larger spatial distance accounted for the most observed variance. The results of the dominance analysis for predictors of behavioral relocation intentions at Time 1 are presented in Appendix J.

Hypothesis 7b stated that perceived behavioral control about spatial distance would be the dominant factor that explains relocation intentions at Time 2. This means that perceived behavioral control about smaller and larger spatial distances were expected to explain the greatest amount of predicted variance for behavioral relocation intentions in relation to the other measures of PSD at Time 2. However, perceived behavioral control about larger distance accounted for approximately 5% of the observed variance, and perceived behavioral control about smaller distance accounted for about 3% of the variance. Subjective norms accounted for

the most observed variance, with subjective norm about larger spatial distance accounting for about 44% while subject norm about smaller spatial distance accounted for about 21%. Attitude toward smaller spatial distance accounted for approximately 17% of the observed variance, and attitude toward larger spatial distance accounted for about 10% of the observed variance. These findings failed to support Hypothesis 7b. Instead, these findings are similar to those of earlier hypotheses, particularly Hypothesis 7a, that demonstrate the explanatory strength of subjective norms in predicting behavioral relocation intentions. The results of the dominance analysis for predictors of behavioral relocation intentions at Time 2 are presented in Appendix K. Overall, results for Hypothesis 7 indicate that subjective norm about spatial distance is the dominant factor that explains relocation intentions both at Times 1 and Time 2.

Exploratory Analyses

As mentioned above, the small number of participants at Time 2 resulted in insufficient power to assess the overall fit of theoretical model proposed in this paper. The construct used to assess expressed relocation intentions further restricted the assessment of the model. Therefore, additional analyses were undertaken to better understand how smaller and larger distance might be utilized to explain variance in the behavioral relocation intentions variable. Table 10 presents means and standard deviations, and Table 11 presents correlations. Exploratory analyses are reported below.

Behavioral Relocation Intentions About Smaller and Larger Distance. In an effort to better understand the relationships between the components of PSD and relocation intentions, the measure of behavioral relocation intentions was used to create two new variables: behavioral relocation intentions about smaller and larger spatial distance. As with expressed relocation intentions about smaller and larger spatial distance, these new variables were generated manually

Table 10 – Means and Standard Deviations for Exploratory Analyses

Variables	N	Mean	SD
1. Attitude Toward Smaller Spatial Distance	104	4.76	1.45
2. Attitude Toward Larger Spatial Distance	104	5.2	1.55
3. Subjective Norm About Smaller Spatial Distance	104	4.84	1.37
4. Subjective Norm About Larger Spatial Distance	104	4.25	1.61
5. Perceived Behavioral Control About Smaller Spatial Distance	104	5.49	1.23
6. Perceived Behavioral Control About Larger Spatial Distance	104	4.70	1.30
7. Expressed Relocation Intentions About Smaller Spatial Distance	95	5.27	1.81
8. Expressed Relocation Intentions About Larger Spatial Distance	86	5.18	1.77
9. Behavioral Relocation Intentions About Smaller Spatial Distance	104	199.96	327.01
10. Behavioral Relocation Intentions About Larger Spatial Distance	104	849.92	679.43

Table 11 – Correlation Table for Exploratory Analyses

Variables	1	2	3	4	5	6	7	8	9
1. Attitude Toward Smaller Spatial Distance	(-.94)								
2. Attitude Toward Larger Spatial Distance	-.27**	(-.96)							
3. Subjective Norm About Smaller Spatial Distance	.42**	-.31	(-.79)						
4. Subjective Norm About Larger Spatial Distance	-.39**	.62**	-.45**	(-.86)					
5. Perceived Behavioral Control About Smaller Spatial Distance	.02	.01	.30**	-.04	(-.86)				
6. Perceived Behavioral Control About Larger Spatial Distance	-.19+	.33**	-.32**	.53**	.23**	(-.81)			
7. Expressed Relocation Intentions About Smaller Spatial Distance	-.04	-.10	.05	.10	0	0	----		
8. Expressed Relocation Intentions About Larger Spatial Distance	.04	.07	-.04	0	.10	.13	.10	----	
9. Behavioral Relocation Intentions About Smaller Spatial Distance	-.37**	.31**	-.40**	.40**	.07	.23*	.04	-.01	----
10. Behavioral Relocation Intentions About Larger Spatial Distance	-.44**	.19+	-.26**	.26**	.09	.15	-.03	.06	.38**

Note: +p < .10. *p < .05. **p < .01.

only for those participants who had applied to at least two graduate programs ($N = 104$). For a given participant, I looked at the distant to each school where s/he applied and determined which of these schools fell into the upper extreme and lower extremes of distance. For some participants, there was clearly a school that was the largest (and/or smallest) distance away. For

others, visual inspection revealed that a participant had applied to two or more schools that were roughly the same distance away. In this case, the distances to these schools were averaged. The distances to the closest and farthest schools were used to create the measures of behavioral relocation intentions about smaller (M = 199.96, SD = 327.01) and larger (M = 849.92, SD = 679.43) spatial distance. The average distance between these two measures was 651.89 miles (SD = 630.16).

Next, the correlations between the behavioral relocation intentions about smaller and larger spatial distance and the components of PSD were examined, and the relationships proposed in Hypotheses 1 through 4 were explored. The full correlation table is available in Table 10. The relationship between the measures of relocation intentions and the relocation decision (i.e., Hypothesis 5) are excluded from discussion due to small number of participants who applied to at least two graduate schools and responded at Time 2 (N = 26).

Mirroring Hypothesis 1, exploring the relationship between attitude toward spatial distance and behavioral relocation intentions about smaller and larger spatial distance resulted in significant findings. Attitude toward smaller spatial distance was negatively and significantly related to behavioral relocation intentions about smaller (r = -.37, p < .01) and larger (r = -.44, p < .01) spatial distance, indicating that more positive attitudes toward smaller spatial distance are associated with intentions to relocate a shorter distance. Additionally, attitude toward larger spatial distance was significantly and positively related to behavioral relocation intentions about smaller (r = -.31, p < .01) and larger (r = .19, p < .10) spatial distance, indicating that more positive attitudes toward larger spatial distance are associated with intentions to relocate farther away.

Subjective norms about spatial distance exhibited a similar pattern in relation to behavioral relocation intentions. Similar to the results of the testing of Hypothesis 2, subjective norm about smaller spatial distance was negatively and significantly related to behavioral relocation intentions about smaller (r = -.40, p < .01) and larger (r = -.26, p < .01) spatial distance, indicating that more positive subjective norms about smaller spatial distance are associated with intentions to relocate a shorter distance. Subjective norm about larger spatial distance was positively and significantly related to behavioral relocation intentions about smaller (r = .40, p < .01) and larger (r = .26, p < .10) spatial distance, indicating that more positive subjective norms about larger spatial distance are associated with intentions to relocate farther away.

Results from analyses concerning the link between perceived behavioral control and behavioral location intentions, like with testing of Hypothesis 3, were less conclusive. Perceived behavioral control about smaller spatial distance was not significantly related to behavioral relocation intentions about smaller (r = .07, p > .10) and larger (r = .09, p > .10) spatial distance. Although perceived behavioral control about larger spatial distance was significantly related to behavioral relocation intentions about smaller spatial distance (r = .23, p < .05), it was not significantly related to behavioral relocation intentions about larger spatial distance (r = .15, p > .10). Together, these results indicate that higher levels of perceived behavioral control about larger spatial distance are associated with intentions to relocate farther away, but only with regards to schools that are closer.

Next, similar to the analyses undertaken to test Hypothesis 4, the components of PSD were regressed onto expressed relocation intentions about smaller and larger spatial distance to investigate the relationship between perceptions of spatial distance and intentions. The model

that regressed the components of PSD onto behavioral relocation intentions about smaller spatial distance was significant. Twenty-eight percent of the observed variance was accounted for, $F(6, 97) = 6.25$, $p < .01$, Cohen's $f^2 = .39$. Only the significant predictor was subjective norm about smaller spatial distance ($b = -.29$, $p < .01$), while attitude toward smaller spatial distance ($b = -.17$, $p < .10$) and perceived behavioral control about smaller spatial distance ($b = .19$, $p < .10$) were both marginally significant predictors. Please see Table 12 for additional beta weights. The model that regressed the components of PSD onto behavioral relocation intentions about larger spatial distance was also significant. Twenty-two percent of the observed variance was accounted for, $F(6, 97) = 4.53$, $p < .01$, Cohen's $f^2 = .28$. Attitude toward smaller spatial distance was the only significant predictor in the model ($b = -.36$, $p < .01$). Please see Table 13 for the results of the regression. As with the original testing of Hypothesis 4, the results from these two additional regressions only proved to provide minimal support. Only a few of the predictors were significant, and the overall models did not provide additional insight into the relationships between the components of PSD and behavioral relocation intentions.

Table 12 – Regression Results for Composite Perceptions of Spatial Distance Predicting Behavioral Relocation Intentions About Smaller Spatial Distance

	b	**ΔR^2**	**ΔF**
Attitude Toward Smaller Spatial Distance	-.17+		
Attitude Toward Larger Spatial Distance	.08		
Subjective Norm About Smaller Spatial Distance	-.29**		
Subjective Norm About Larger Spatial Distance	.19		
Perceived Behavioral Control About Smaller Spatial Distance	.19+		
Perceived Behavioral Control About Larger Spatial Distance	-.07		
Overall Model		.28	6.25**
(df)			(6, 97)

Note: N = 104. +p < .10. *p < .05. **p < .01. Significant models are indicated under ΔR^2.

Table 13 – Regression Results for Composite Perceptions of Spatial Distance Predicting Behavioral Relocation Intentions About Larger Spatial Distance

	b	**ΔR^2**	**ΔF**
Attitude Toward Smaller Spatial Distance	-.36**		
Attitude Toward Spatial Larger Distance	.02		
Subjective Norm About Smaller Spatial Distance	.09		
Subjective Norm About Larger Spatial Distance	.14		
Perceived Behavioral Control About Smaller Spatial Distance	-.04		
Perceived Behavioral Control About Larger Spatial Distance	-.07		
Overall Model		.22	4.53**
(df)			(6, 97)

Note: N = 104. +p < .10. *p < .05. **p < .01. Significant models are indicated under ΔR^2.

Together, the results from these exploratory analyses involving behavioral relocation intentions about smaller and larger spatial distance demonstrated patterns that were similar to the original hypothesis testing that included the omnibus measure of behavioral relocations. While not affording us with much new information, the relationships between the PSD components and behavioral relocation intentions about smaller and larger spatial distance do provide support for the original set of hypothesis testing. That is, those individuals who have more positive attitudes and social norms about smaller spatial distance have intentions to relocate to schools that are closer as indicated by their behavioral relocation intentions about both smaller and larger spatial distance, while those individuals who have more positive attitudes and social norms about larger spatial distance have intentions to relocate to schools that are farther as indicated by their behavioral relocation intentions about both smaller and larger spatial distance. Again, perceived behavioral control does not shed light on relocation intentions.

First-Generation College Graduate Status. Research suggests that prior to entering college, first-generation college students tend to have lower grade point averages, lower standardized test scores, and a less rigorous set of courses than non-first-generation students (Vargas, 2004). In our sample, t-test comparisons revealed no significant differences between first-generation and non-first-generation college graduates on the variables of high school GPA, undergraduate GPA, or age. Likewise, there were no significant differences for the variables of attitude toward smaller and larger spatial distance, subjective norm about smaller and larger spatial distance, and perceived behavioral control about smaller and larger spatial distance as measured at Time 1. This suggests that some of the differences typically noted between first-generation and non-first-generation college students are not present in our sample of prospective graduate students. There may be something different about first-generation college students that go on to complete their undergraduate educations and apply to graduate programs in terms of academic preparedness or ability. Understanding the factors that differentiate these students from the first-generation college-bound population at large could help with better understanding how these individuals apply to graduate school and what factors, including PSD, affect their decisions.

A chi-square test of goodness-of-fit was also performed to determine whether the first-generation and non-first-generation college graduate status differed between participants of different races. Race was collapsed into these categories because chi-square tests assume that all cells have expected counts of at least one, and that no more than 20% of cells have expected counts of less than five (Field, 2009). Using individual distinctions (i.e. Hispanic, Asian) rather than an "other" category would not have satisfied these assumptions. Analysis revealed that the actual number of participants of each race was not distributed across generation status as

expected when race was categorized into White/Caucasian and all else, $\chi^2(1) = 4.92$, $p < .05$ (Table 14 provides specific counts). More minorities were first-generation college graduates than expected, while fewer were non-first-generation graduates. The opposite pattern was true for White/Caucasian participants. The results are consistent with the finding that first-generation college graduate are more likely to be Black or Hispanic compared with their peers whose parents were college graduates (Chen, 2005).

Table 14 – Chi-Square Test of Goodness of Fit for Undergraduate Graduate Generation Status by Race

			Race		
			White / Caucasian	All Other	Total
Undergraduate Graduate Generation Status	First-Generation Undergraduate	Count	34.00	14.00	48
		Expected Count	39.10	8.90	48
	Non-First-Generation Undergraduate	Count	111.00	19.00	130
		Expected Count	105.90	24.10	130
	Total	Count	145	33	178
		Expected Count	145	33	178

Note. The overall fit of the model indicates that the number of participants of each race is not distributed as expected, $\chi^2(1) = 4.92$, $p < .05$.

Family and Friends. Participants were asked whether they had family and/or friends located near each of the institutions they applied to. Participants indicated they had family members located near over one third (38%) of the institutions they applied to. Additionally, participants had friends located near about 44% of the institutions they applied to, while participants had neither family nor friends located near about 45% of the institutions they had applied to. These percentages suggest that our participants value the social support that family and friends provide, and may help us interpret the predictive strength of subjective norms for relocation intentions. Given that subjective norms about spatial distance were shown to be a prominent predictor in this investigation of PSD, it is fitting that participants would apply to

schools located near to those individuals whose opinions shape their behavior. Additionally, family and friend support has been shown to be tied to academic success and adjustment (Demaray & Maleck, 2002; Brissette, Scheier, & Carver, 2002). Whether proximity of family and friends would affect the actual or perceived level or utility of the support received by our population still needs to be investigated.

DISCUSSION

This study investigated the influence of PSD on students' intentions and decisions to relocate to new cities for postgraduate education. Although only some of proposed hypothesized relationships functioned as predicted, this study introduces a new perspective on and approach to the measurement of PSD by exploring distance perceptions in the context of relocation decisions. In the sections below, the purpose and major findings of the present study are summarized, and are followed by a discussion of the limitations of the study and directions for future research. Next, the practical and research implications of the study are explored, and finally, general conclusions are presented.

Summary of Purpose and Major Findings

The present study explores how perceptions of spatial distance are structured, and how PSD relates to individuals' intentions to relocate to pursue graduate education as well as how these intentions relate to the behavioral decision of how far to relocate. In general, the results suggest that PSD does affect individuals' intentions to relocate for graduate school and that these intentions, in turn, affect decisions to relocate. The PSD components of attitude and subjective norm proved to be the most useful predictors of behavioral relocation intentions, while perceived behavioral control proved to be unrelated. Expressed relocation intentions about smaller and larger spatial distance also failed to be predicted by the PSD components. Additionally, the stability of the PSD components as well as behavioral relocation intentions over the course of the decision making process were also investigated. The results suggest that both PSD components and relocation intentions are relatively stable over the course of the decision making process, and that subjective norm is the primary component of PSD that explain behavioral relocation intentions at Time 1 and Time 2.

Analyses investigating the relationship between the components of PSD and the measures of expressed and behavioral relocation intentions demonstrated that perceptions of spatial distance relate to behavioral relocation intentions but not expressed relocation intentions. Twenty percent of the variance was accounted for in the model containing behavioral relocation intentions, while nonsignificant amounts of variance, just 6% and 4%, were explained in the models containing expressed relocation intentions about smaller and larger spatial distance, respectively (see Tables 4 through 6). Results from the exploratory analyses conducted mirrored these results, with significant amounts of variance being explained in the models containing behavioral relocation intentions about smaller and larger spatial distances, 28% and 22%, respectively. These results indicate that the model containing all of the PSD components does not give us better predictive power or understanding of relocation intentions as very few of the predictors are significant in the full model. The individual correlations between PSD component and relocation intentions prove more useful.

The individual relationships between attitude, subjective norm, and perceived behavioral control about smaller and larger spatial distance and the individual measures of intentions exhibited a similar pattern. The results of Pearson's correlations revealed that none of the measures of PSD significantly related to expressed relocation intentions. Additionally, subjective norm and attitude toward spatial distance significantly related to behavioral relocation intentions, but perceived behavioral control did not. The results of the exploratory analyses conducted with the two measures of behavioral relocation intentions were similar. There were significant relationships between subjective norm and attitude toward smaller and larger spatial distance and behavioral relocation intentions about smaller and larger spatial distance, but not between

perceived behavioral control about smaller and larger spatial distance and behavioral relocation intentions about smaller and larger spatial distance.

These findings indicate that subjective norms about spatial distance, especially larger spatial distance, demonstrate a consistent predictive relationship with behavioral relocation intentions. Not only do subjective norms have a strong relationships with behavioral relocation intentions (See Table 2), dominance analysis also shows that subjective norms, especially about larger distances, are relatively more important predictors of behavioral relocation intentions than are attitudes and perceived behavioral control at both Time 1 and Time 2 (see Tables 8 and 9).

These results are not surprising when put in the context of the familial educational norms reported by participants. Over half of participants reported that their mother has completed her bachelor's degree or above, and almost 60% of participants indicated their father has done the same. Just 27% of participants are first-generation college graduates, and 38% have at least one parent who has a graduate degree. Additionally, 49% of participants have at least one sibling who has earned a bachelor's degree or higher. In comparison, of those 12th graders who graduated in 1992 and enrolled in college between 1992 and 2002, just 36% had a parent who had at least one parent who had received a bachelor's or higher degree (Chen, 2005). This suggests that, on average, the sample in the present study comes from a more educated background than the typical college undergraduate.

The relationship between attitude toward spatial distance, especially toward smaller distance, and behavioral relocation intentions is somewhat weaker and less consistent. Attitudes towards smaller and larger spatial distances demonstrated strong relationships with behavioral relocation intentions (See Table 2). However, attitudes are relatively less important, although still significant predictors, of behavioral relocation intentions at Time 1 and Time 2 (see

Appendices J and K). This may indicate that participants' own attitudes, rather than what they perceive as the attitudes of those around them (i.e. subjective norms), play a smaller role in the formation of their relocation intentions. Interpreting these findings through the lens of social cognitive theory, which posits that individuals acquire portions of their knowledge through observing others, may prove illustrative (Bandura, 1989). A key tenant of this theory is vicarious learning, the process by which an individual learns how to perform an action by observing or learning from the behaviors and experiences of others. The high levels of education obtained by the families of participants in the present study may mean that participants' views about moving for graduate education were influenced by their families and friends, making subjective norms a important component in the formation of their perceptions of spatial distance. Seeing as most of our participants were in their early twenties, they may have still been learning from those around them and forming their own attitudes toward distance, making this component of PSD relatively less important for this population.

Moving on to the third component of PSD, the present research failed to find a consistent significant relationship between perceived behavioral control about spatial distance and either type of relocation intention, even when intentions were examined with regard to smaller and larger distance in the exploratory analyses (See Tables 2 and 11). A possible explanation for this lack of relationship is high mean levels of perceived behavioral control (see Table 1), meaning that participants had high levels of perceived behavioral control regardless of the distance in question. Due to the age and life stage of the majority of our sample, they may have fewer circumstances (i.e. homes, children) limiting them to living in specific locations, meaning that their perceived behavioral control about spatial distance may be driven other factors. Additionally, the exploratory analyses revealed a significant relationship only between perceived

behavioral control about larger spatial distance and behavioral relocation intentions about larger spatial distance (see Table 11). This, along with the fact that perceived behavioral control about smaller and larger spatial distance are positively related to each other whereas attitude and subjective norm about smaller and larger spatial distance are negatively related to each other, suggests that this construct operates differently than the other two PSD components. Whereas attitudes and subjective norms capture the perceived desirability of relocation, perceived behavioral control measures a perceived capability of negotiating distance to relocate for graduate school. Subjective norms and attitude may capture more of a *desire* to do something, whereas perceived behavioral control, with its roots in self-efficacy, may capture more of a *capacity* to do something. Therefore, it may relate to PSD in a different way than the other two components of PSD.

Just as the measures of PSD failed to be directly related to both measures of expressed relocation intentions in a statistically significant way, expressed relocation intentions about smaller and larger spatial distance were not significantly related to the relocation decision. In fact, expressed relocation intentions were not significantly related to any measure in the model (see Table 1). This consistent relationship, along with the significant relationships demonstrated by behavioral relocation intentions, suggests that measure used to assess expressed relocation intentions was flawed, rather than construct itself being conceptually unrelated to the other constructs in the model.

Behavioral relocation intentions proved to be strongly and significantly related the relocation decision. This may be due in part to the fact that a large percentage of participants had applied to very few schools at both time points, and this measure of intentions proved to be very stable across the two time points. Additionally, participants' relocation decisions were restricted

to the schools they had applied to. Participants could only choose to attend one of the schools to which they had applied, and in most cases, they were further constrained in that they were accepted by only a subset of the schools to which they had applied. Thus, an individuals' relocation decision was the choice of attending one of a small subset of schools.

Limitations and Directions for Future Research

There are several important limitations present within this study that must be acknowledged. First, the size of the sample at Time 2 ($N = 36$) presented limitations to the statistical power needed to detect significant relationships and to interpret findings. This lack of power was most evident in the testing of Hypothesis 6 regarding the moderating effects of the stability of behavioral relocation intentions on the relationship between behavioral relocation intentions and the behavioral relocation intention. The small sample size likely contributed to the high stability and strong correlation ($r = .99$, $p < .01$) between behavioral relocation intentions measured at the two time points. A larger sample in future studies might aid in the testing of this hypothesis as well as assessment of the overall model using SEM as was mentioned in the original proposal of this project. Additionally, although Conner et al. (2000) identifies multiple ways in which intention stability can be calculated within the context of TPB, most methods require multi-item measures, and the most robust methods require assessment of intentions at more than two times points. Our assessment of intentions does not fit these criteria. Although our small sample at Time 2 does not allow it, testing of Hypothesis 6 might also be strengthen by narrowing in on a more specific population within the greater pool of prospective graduate students as it seems likely that certain types of programs would have different application constraints that might affect stability. For example, master's degree programs may have later

application deadlines than doctorate programs, thus allowing for great ability to apply to additional schools after an round of applications has been sent.

The testing of Hypothesis 6 was further limited by the less than optimal measurement of relocation intentions. The most egregious error was the failure to reassess expressed relocation intentions at Time 2. The wording of Hypothesis 6 implies that the stability of expressed relocation intentions will be used as the moderator in the analysis. However, because this measure had participants rate how likely they were to attend a given school *if they were accepted* to that school, it was not administered at Time 2. There were concerns that because participants knew which schools they had and had not been accepted to and they were reporting their relocation decision at this time, this measure of expressed relocation intentions would suffer from hindsight bias as participants tried to rationalize their acceptances and rejections as well as their relocation decision. Therefore, although Hypothesis 6 is theoretically plausible and was tested using measures of behavioral relocation intentions, this was methodologically ineffectual due to the measure of relocation intentions used.

This also points to the limitation associated with the operationalization of expressed relocation intentions used within the study. This measure was phrased such that participants rated how likely they would be to attend each of the schools they applied if they were admitted. The question was phrased this way to consistently frame the question for all participants. However, in so doing, participants may have been artificially constrained in their thinking about each school. Instead of letting them make their own decisions about how likely acceptance or rejection from each school was, the wording of the question gave them the artificial default of acceptance. This resulted in a high mean rating for likelihood of attendance ($M = 5.53$). Results could differ substantially if this measure is improved with improved wording that allows for reassessment at

Time 2. Future researchers should be careful to not place artificial constraints on this question and might ask participants about their expressed relocation intentions without reference to particular schools. Changing the measure in this way, however, would present the problems of having participants make decisions under hypothetical circumstances. Assessing expressed relocation intentions accurately may prove difficult.

Additionally, unlike most TPB research, the ultimate outcome of our study, the relocation decision, was constrained more than it would be in a typical application of this framework. As mentioned earlier, the present research aimed to overcome limitations of past research methodologies that used retrospection and artificially constructed relocation decisions by studying students as they made their relocation decisions in real time. Although this methodology was adopted in order to preserve the realism of real world decision making behaviors, in so doing, it also artificially constrained participants by framing their relocation options for them. Instead of allowing participants to judge for themselves how likely they would be to attend a certain school considering all of the circumstances that might influence their acceptance and decision to enroll, the wording of the question prevented participants from having to contemplate factors that might make attending a specific school more or less appealing or likely. For example, a prospective student might be accepted to a particular school, but only after a lengthy stay on the school's waiting list, and this could affect the participant's desire to attend this school. Given that participants chose all of the schools to which they applied, it can be assumed that they had some level of interest in attending each of these institutions. Thus, by having participants rate their likelihood of attending each of their prospective institutions if they were accepted, the variability of responses may have been limited, and the mean rating may have been inflated.

Additionally, although I attempted to systematically assess PSD with respect to relocation by identifying a particular actor making a specific decision, there was likely more variation within our sample and the decision making process than expected. The variety of disciplines and types of programs represented was quite diverse, and it stands to reason that the behavior of individuals applying to doctoral level scientific research programs may not be comparable to that of individuals applying to instruction based non-thesis master's programs. Our sample size is insufficient to answer these questions, so future research is needed to better understand the behavior of particular types of prospective graduate students.

Another limitation present in the study is the sample of students used. The study only includes students from LSU, meaning that generalizing the findings from this study to other populations as well as to LSU as a whole should be done with caution. Although online recruitment efforts were focused in the psychology and business departments, class visits were made primarily to basic and engineering science classes. Additionally, a wide array of academic and professional disciplines is represented by the variety of undergraduate majors pursued as well as the diverse types of graduate programs applied to by our sample, so our sample is likely at least somewhat representative of prospective graduate students at LSU. However, a large percentage of participants only applied to one graduate institution, and in most cases, this was the same school they had attended for their undergraduate education. Although the literature does not provide statistics about the typical number of graduate programs individuals apply to or the average distance to these institutions, anecdotally, this behavior is not representative of prospective graduate students in general. Louisiana traditionally has a culture of "born here, live here, die here," and numbers from the 2000 U.S. Census support this: 79% of Louisiana residents were born in their state of residence, in comparison to the national average of 60%, and 59%

lived in the same house in 2000 than they had in 1995, in comparison to the national average of 54%. This supports the notion that applying to a singular graduate school may be more common among graduate students in this sample than the population at large. The exploratory analyses including only those participants who applied to two or more graduate schools attempted to overcome this shortcoming by examining relationships only for those students who had applied to multiple schools. The patterns of relationship between the PSD components and behavioral relocation intentions were similar to those in the original hypothesis testing, meaning that those students who apply to multiple schools may be similar to students who applied to only one school within our.

Practical and Research Implications

This exploration into distance perceptions and relocation introduces a new perspective on and approach to the measurement of PSD. Within the context of relocation to pursue graduate education, the present study suggests that subjective norms about spatial distance are the most meaningful predictor of intentions to relocate, followed by attitude toward spatial distance. Our results suggest that perceived behavioral control is not strongly related.

The findings from this study inform recruitment practices utilized by universities and employers seeking to attract applicants outside of their geographic region. Fostering positive subjective norms about spatial distance may be aided by creating environments for students and employees that encourage positive norms about relocation. For example, recruitment campaigns might be run by employees from different parts of the country and emphasize the positive aspects of relocation while being realistic about the drawbacks. Further, recruitment efforts made at universities might be made by alumni who have direct experience with relocating to work for the company they represent. They will be able to provide accurate accounts of the relocation

process and help potential employees become better informed about the associated opportunities and obstacles.

Although the present study suggests that perceived behavioral control is not significantly related to relocation intentions, it is important to note that participants reported high levels of control. Students chose which graduate institutions they applied to and likely had large amounts of freedom in their choices. Graduate school provides individuals with a large amount of autonomy, especially in certain fields and when pursuing particular degrees, which may help bolster perceptions of control. In an organizational environment, autonomy can be somewhat less apparent. Satellite and work from home options as well as reverse commuting options may increase feelings of control and autonomy for those with such arrangements. Therefore, although our work suggests that perceived behavioral control about spatial distance does not directly related to relocation intentions, it is significantly correlated with subjective norms about spatial distance and may indirectly influence relocation intentions indirectly through this path.

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APPENDIX A

SUMMARY OF RESERCH HYPOTHESES

Hypothesis 1. Attitude towards spatial distance will be positively related to relocation intentions.

Hypothesis 1a. Attitude towards spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 1b. Attitude towards spatial distance will be positively related to behavioral relocation intentions.

Hypothesis 2. Subjective norm about spatial distance will be positively related to relocation intentions.

Hypothesis 2a. Subjective norm about spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 2b. Subjective norm about spatial distance will be positively related to behavioral relocation intentions.

Hypothesis 3. Perceived behavioral control about spatial distance will be positively related to relocation intentions.

Hypothesis 3a. Perceived behavioral control about spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 3b. Perceived behavioral control about spatial distance will be positively related to behavioral relocation intentions.

Hypothesis 4. Positive perceptions of spatial distance will be positively related to relocation intentions.

Hypothesis 4a. Positive perceptions of spatial distance will be positively related to expressed relocation intentions about smaller and larger spatial distance.

Hypothesis 4b. Positive perceptions of spatial distance will be positively related to behavioral relocation intentions.

Hypothesis 5. Relocation intentions will be positively related to the relocation decision.

Hypothesis 5a. Expressed relocation intentions about spatial distance will be positively related to the distance of the school chosen.

Hypothesis 5b. Behavioral relocation intentions will be positively related to the distance of the school chosen such that students with greater intentions to negotiate distance will be more likely to decide to attend schools that are farther away.

Hypothesis 6. Stability of behavioral relocation intentions will moderate the relationship between relocation intentions and the relocation decision, such that behavioral relocation intentions will be more predictive of the relocation decision when they change less from Time 1 to Time 2.

Hypothesis 7a. Attitude toward spatial distance will demonstrate the strongest positive relationship with behavioral relocation intentions at Time 1.

Hypothesis 7b. Perceived behavioral control will demonstrate the strongest positive relationship with behavioral relocation intentions at Time 2.

Hypotheses 1, 2, 3, and 5 will be tested via Pearson's correlations.

Hypothesis 4 will be tested via multiple regression.

Hypothesis 6 will be tested via moderated regression.

Hypotheses 7a and 7b will be tested via relative importance analyses.

APPENDIX B

SUMMARY OF INCLUSION CRITERIA AND SAMPLE SIZE FOR HYPOTHESES

All Hypotheses. Intentions to graduate within one year of beginning the survey and application to one or more graduate programs.

Hypothesis 1a. Participants who had applied to at least two graduate programs and rated their likelihood of attending the schools that were used to calculate their smaller and larger relocation intentions. Smaller: N = 95; Larger: N = 86.

Hypothesis 1b. All participants. N = 178.

Hypothesis 2a. Participants who had applied to at least two graduate programs and rated their likelihood of attending the schools that were used to calculate their smaller and larger relocation intentions. Smaller: N = 95; Larger: N = 86.

Hypothesis 2b. All participants. N = 178.

Hypothesis 3a. Participants who had applied to at least two graduate programs and rated their likelihood of attending the schools that were used to calculate their smaller and larger relocation intentions. Smaller: N = 95; Larger: N = 86.

Hypothesis 3b. All participants. N = 178.

Hypothesis 4a. Participants who had applied to at least two graduate programs and rated their likelihood of attending the schools that were used to calculate their smaller and larger relocation intentions. Smaller: N = 95; Larger: N = 86.

Hypothesis 4b. All participants. N = 178.

Hypothesis 5a. Participants who responded at Time 2, who had applied to at least two graduate programs, and who rated their likelihood of attending the schools that were used to calculate their smaller and larger relocation intentions. Smaller: N = 25; Larger: N = 25.

Hypothesis 5b. Participants who responded at Time 2. N = 36.

Hypothesis 6. Participants who responded at Time 2. N = 36.

Hypothesis 7a. All participants. N = 178.

Hypothesis 7b. Participants who responded at Time 2. N = 36.

APPENDIX C

RECRUITMENT FLYER

Graduating Seniors!
Graduate School Applicants!
Want to win $50?

Are you planning to graduate in 2011?
Have you applied to at least one graduate school?

If so, you qualify to participate in a study aimed at understanding how prospective graduate students think about distance when they apply to graduate school. The online questionnaire takes about 15 minutes to complete.

After completing the survey, you will be entered into a drawing to win $50 cash!!!

You can receive experiment participation credit by logging into your PAWS account and signing up for the survey through link under the "Student Services" sections.

You can also participate by contacting Claire Taylor (ctayl58@lsu.edu) for the link to the survey.

APPENDIX D

TIME 1 MEASURES

Screening and Demographics

1. Are you currently an undergraduate student? (Yes, No)
2. Have you already applied to at least one graduate or professional program (e.g., PhD, MBA, JD, MD, etc.)? (Yes, No)
3. Will you be graduating in 2011? (Yes, No)
4. Please specify in which month of 2011 you will be graduating.
5. What degree will you be receiving when you graduate? (Please specify your major(s)).
6. What university or college will you be receiving this degree from?
7. Please indicate where this school is located.
8. When do you intend to begin graduate or professional school? (Month, Year)
9. What is the highest level of education attained by your Mom? Your Dad? (High School Diploma or GED, Associates Degree or Technical Certification, Bachelor's Degree, Master's Degree or beyond)
10. What is the highest level of education attained by any of your older siblings? (High School Diploma or GED, Associates Degree or Technical Certification, Bachelor's Degree, Master's Degree or beyond, I am an only child / I have no siblings older than me)
11. Please provide the following information if applicable.
    a. High school GPA (4-pt scale where A = 4, B = 3, etc.)
    b. Current college GPA (4-pt scale)
    c. SAT score
    d. ACT score
    e. GRE score (Verbal reasoning and quantitative reasoning)
    f. GRE score (Analytic writing)
    g. MCAT score
    h. LSAT score
    i. GMAT score
    j. Other (Please specify test and score)
12. What is your age? (Years)
13. What is your gender? (Male, Female)
14. What is the zip code of your current residence? That is, the zip code of the address where you currently live while attending school. (NOT your permanent mailing address.)
15. What is your race? Please select all that apply.
    a. Caucasian / White
    b. African American / Black
    c. Hispanic
    d. Asian or Pacific Islander
    e. Native American
    f. Decline to answer
    g. Other (Please specify.)

Attitude Towards Spatial Distance

Please answer each of the following questions by selecting the number that best describes your opinion. Some of the questions may appear to be similar, but they do address somewhat different issues. Please read each question carefully.

"For me, relocating to a new city in the region of the United States where I (currently live, do not currently live to attend graduate school would be..." (-3, -2, -1, 0, +1, +2, +3)

1. punishing – rewarding
2. useless – useful
3. bad – good
4. harmful – beneficial
5. foolish – wise
6. unpleasant – pleasant
7. undesirable – desirable
8. boring – exciting

Subjective Norm About Spatial Distance

Please answer each of the following questions by selecting the option that best describes your opinion. (7-point scale, where 1 = Very unlikely, 2 = Unlikely, 3 = Somewhat unlikely, 4 = Neither unlikely nor likely, 5 = Somewhat likely, 6 = Likely, and 7 = Very likely)

1. Most people who are important to me think that I should relocate to a new city in the region of the United States where I (currently live, do not currently live) to attend graduate school.
2. Most people who are important to me would approve of me relocating to a new city in the region of the United States where I (currently live, do not currently live) to attend graduate school.
3. Most people who are important to me expect me to relocate to a new city in the region of the United States where I (currently live, do not currently live) to attend graduate school.

Perceived Behavioral Control About Spatial Distance

Please indicate to what degree you agree or disagree with each of the following. (7-point scale, where 1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Neither disagree nor agree, 5 = Agree somewhat, 6 = Agree, and 7 = Strongly agree)

1. I have a great deal of control over relocating to a new city in a region of the United States where I (currently live, do not currently live) to attend graduate school.
2. I can overcome any obstacles or problems that could prevent me from relocating to a new city in a region of the United States where I (currently live, do not currently live) to attend graduate school.
3. It is mostly my decision whether or not I relocate to a new city in a region of the United States where I (currently live, do not currently live) to attend graduate school.
4. It will be easy for me to relocate to a new city in a region of the United States where I (currently live, do not currently live) to attend graduate school.

Relocation Intentions

1. Please list the names of the graduate institutions you have applied to during your graduate school application process. Please avoid using abbreviations where possible (e.g., Louisiana State University, not LSU). We will ask you additional questions about each school on the following pages.

2. For each school listed above:
    a. Where is this institution located? (City; State)
    b. What degree would you pursue at this institution? (MS/MA, PhD/PsyD, JD, MBA/business degree, MD, other (please specify degree))
    c. Please specify the field of study this degree would be in.
    d. How many years would it take you to earn your degree from this institution?
    e. How likely are you to attend this school if you are admitted? (7-point scale, where 1 = Very unlikely, 2 = Unlikely, 3 = Somewhat unlikely, 4 = Neither unlikely nor likely, 5 = Somewhat likely, 6 = Likely, and 7 = Very likely)
    f. Do you have family and/or friends near the location of this school? (Choose all that apply: Yes, family; Yes, friends; No)

APPENDIX E

TIME 2 MEASURES

Measures to Be Reassessed

The following measures from Time 1 will be reassessed (see Appendix A for items)

1. Attitude Towards Spatial Distance
2. Subjective Norm About Spatial Distance
3. Perceived Behavioral Control About Spatial Distance
4. Behavioral Relocation Intentions

Screening Questions

1. Do you still plan to graduate with your bachelor's degree (BA/BS) in 2011? (Yes, No)
2. In which month of 2011 you will be graduating? (Month)
3. When do you intend to begin graduate or professional school? (Month; Year)
4. Have you decided where you will attend graduate school? (Yes, No)

Relocation Decision

1. What graduate school will you be attending? (School Name)
2. Where is this school located? (City; State)
3. What degree will you pursue at this institution? (MS/MA, PhD/PsyD, JD, MBA/business degree, MD, other (please specify degree))
4. How many years do you expect it will take you to earn this degree? (Years)
5. Is there anything else you would like to share about your graduate school application experience?

APPENDIX F

FACTOR ANALYSIS: COMPONENTS OF PERCEIVED SPATIAL DISTANCE

	Component				
	1	2	3	4	5
Attitude Toward Smaller Spatial Distance 1		0.89			
Attitude Toward Smaller Spatial Distance 2		0.83			
Attitude Toward Smaller Spatial Distance 3		0.89			
Attitude Toward Smaller Spatial Distance 4		0.80			
Attitude Toward Smaller Spatial Distance 5		0.85			
Attitude Toward Smaller Spatial Distance 6		0.86			
Attitude Toward Smaller Spatial Distance 7		0.85			
Attitude Toward Smaller Spatial Distance 8		0.71			
Attitude Toward Larger Spatial Distance 1	0.87				
Attitude Toward Larger Spatial Distance 2	0.86				
Attitude Toward Larger Spatial Distance 3	0.93				
Attitude Toward Larger Spatial Distance 4	0.89				
Attitude Toward Larger Spatial Distance 5	0.80				
Attitude Toward Larger Spatial Distance 6	0.85				
Attitude Toward Larger Spatial Distance 7	0.84				
Attitude Toward Larger Spatial Distance 8	0.72				
Subjective Norm About Smaller Spatial Distance 1					0.74
Subjective Norm About Smaller Spatial Distance 2					0.55
Subjective Norm About Smaller Spatial Distance 3					0.78
Subjective Norm About Larger Spatial Distance 1	0.47			0.70	
Subjective Norm About Larger Spatial Distance 2				0.64	
Subjective Norm About Larger Spatial Distance 3				0.66	
Perceived Behavioral Control About Smaller Distance 1			0.87		
Perceived Behavioral Control About Smaller Distance 2			0.76		
Perceived Behavioral Control About Smaller Distance 3			0.89		
Perceived Behavioral Control About Smaller Distance 4			0.57		0.48
Perceived Behavioral Control About Larger Distance 1			0.56	0.52	

Perceived Behavioral Control About Larger Distance 2		0.67
Perceived Behavioral Control About Larger Distance 3	0.55	0.44
Perceived Behavioral Control About Larger Distance 4		0.74

Note. The results shown are from the principle components analysis completed at the item level. A Varimax rotation with Kaiser Normalization was used. Only loadings above 0.40 are shown. Component 1 consists of the items concerning attitude about larger spatial distances. Component 2 consists of the items concerning subjective norm about smaller spatial distance. Component 3 consists of the items concerning perceived behavioral control about smaller spatial distance. Component 4 consists of the items concerning perceived behavioral control and subjective norm about larger spatial distance. Component 4 consists of the items concerning subject norm about smaller spatial distance.

APPENDIX G

FACTOR ANALYSIS: ATTITUDE TOWARD SPATIAL DISTANCE

	Component	
	1	2
Smaller Distance 1		0.90
Smaller Distance 2		0.86
Smaller Distance 3		0.92
Smaller Distance 4		0.82
Smaller Distance 5		0.87
Smaller Distance 6		0.85
Smaller Distance 7		0.86
Smaller Distance 8		0.70
Larger Distance 1	0.89	
Larger Distance 2	0.87	
Larger Distance 3	0.94	
Larger Distance 4	0.91	
Larger Distance 5	0.82	
Larger Distance 6	0.87	
Larger Distance 7	0.87	
Larger Distance 8	0.72	

Note. The results shown are from the principle components analysis completed at the item level. A Varimax rotation with Kaiser Normalization was used. Only loadings above 0.40 are shown. Component 1 consists of the items concerning attitude toward larger spatial distance. Component 2 consists of the items concerning perceived attitude toward smaller spatial distance.

APPENDIX H

FACTOR ANALYSIS: SUBJECTIVE NORM ABOUT SPATIAL DISTANCE

	Component	
	1	2
Smaller Distance 1		0.87
Smaller Distance 2		0.68
Smaller Distance 3		0.84
Larger Distance 1	0.91	
Larger Distance 2	0.82	
Larger Distance 3	0.87	

Note. The results shown are from the principle components analysis completed at the item level. A Varimax rotation with Kaiser Normalization was used. Only loadings above 0.40 are shown. Component 1 consists of the items concerning subjective norm about larger spatial distance. Component 2 consists of the items concerning subjective norm about smaller spatial distance.

APPENDIX I

FACTOR ANALYSIS: PERCEIVED BEHAVIORAL CONTROL ABOUT SPATIAL DISTANCE

	Component	
	1	2
Smaller Distance 1	0.87	
Smaller Distance 2	0.82	
Smaller Distance 3	0.84	
Smaller Distance 4	0.72	
Larger Distance 1		0.83
Larger Distance 2		0.79
Larger Distance 3		0.73
Larger Distance 4		0.80

Note. The results shown are from the principle components analysis completed at the item level. A Varimax rotation with Kaiser Normalization was used. Only loadings above 0.40 are shown. Component 1 consists of the items concerning perceived behavioral control about smaller spatial distance. Component 2 consists of the items concerning perceived behavioral control about larger spatial distance.

APPENDIX J

DOMINANCE ANALYSIS RESULTS FOR THE COMPONENTS OF PERCEIVED SPATITAL DISTANCE PREDICTING EXPRESSED RELOCATION INTENTIONS AT TIME 1 (GENERAL AND RESCALED DOMINANCE WEIGHTS)

		Additional Contribution of:					
	R^2	A	B	C	D	E	F
None		.08	.03	.03	.14	.01	.02
A	.08		.02	.00	.10	.01	.01
B	.03	.07		.02	.11	.00	.01
C	.03	.05	.02		.12	.01	.01
D	.14	.04	.00	.01		.00	.00
E	.01	.09	.03	.04	.14		.01
F	.02	.08	.02	.03	.13	.00	
A, B	.10			.00	.08	.01	.00
A, C	.09		.02		.09	.01	.01
A, D	.18		.00	.00		.01	.00
A, E	.09		.02	.01	.09		.00
A, F	.09		.02	.00	.09	.01	
B, C	.06	.05			.09	.01	.00
B, D	.15	.04		.01		.00	.00
B, E	.04	.07		.03	.11		.00
B, F	.04	.07		.02	.11	.00	
C, D	.15	.03	.00			.01	.00
C, E	.05	.05	.02		.11		.00
C, F	.04	.05	.02		.11	.01	
D, E	.15	.04	.00	.01			.01
D, F	.15	.04	.00	.01		.01	
E, F	.02	.08	.02	.03	.14		
A, B, C	.11				.08	.01	.00
A, B, D	.18			.00		.01	.00
A, B, E	.11			.01	.08		.00
A, B, F	.11			.00	.08	.01	
A, C, D	.18		.00			.01	.00
A, C, E	.10		.02		.09		.09
A, C, F	.09		.01		.09	.10	
A, D, E	.19		.00	.00			.01
A, D, F	.18		.00	.00		.01	
A, E, F	.10		.02	.10	.10		
B, C, D	.15	.03				.01	.01
B, C, E	.07	.05			.09		.00
B, C, F	.06	.05			.10	.01	
B, D, E	.15	.04		.01			.01
B, D, F	.15	.04		.01		.01	

B, E, F	.04	.07		.03	.12		
C, D, E	.16	.03	.00				.01
C, D, F	.15	.03	.00			.02	
C, E, F	.05	.15	.02		.12		
D, E, F	.16	.04	.00	.01			
A, B, C, D	.18					.01	.00
A, B, C, E	.12				.07		.00
A, B, C, F	.11				.08	.01	
A, B, D, E	.19			.00			.01
A, B, D, F	.18			.00		.01	
A, B, E, F	.11			.01	.08		
A, C, D, E	.19		.00				.01
A, C, D, F	.18		.00			.01	
A, C, E, F	.19		-.08		.00		
A, D, E, F	.19		.00	.00			
B, C, D, E	.16	.03					.01
B, C, D, F	.16	.03				.01	
B, C, E, F	.07	.05			.10		
B, D, E, F	.16	.04		.01			
C, D, E, F	.17	.03	.00				
A, B, C, D, E	.19						.01
A, B, C, D, F	.18					.01	
A, B, C, E, F	.12				.08		
A, B, D, E, F	.20			.00			
A, C, D, E, F	.20		.00				
B, C, D, E, F	.17	.03					
Total *R-squared* (A, B, C, D, E, F)	.20						
General Dominance Weights		.05	.01	.01	.10	.01	.01
Rescaled Weights		.26	.05	.07	.51	.05	.05

Note:
N = 178.
A = Attitude Toward Smaller Spatial Distance.
B = Attitude Toward Larger Spatial Distance.
C = Subjective Norm About Smaller Spatial Distance.
D = Subjective Norm About Larger Spatial Distance.
E = Perceived Behavioral Control About Smaller Spatial Distance.
F = Perceived Behavioral Control About Larger Spatial Distance.

APPENDIX K

DOMINANCE ANALYSIS RESULTS FOR THE COMPONENTS OF PERCEIVED SPATIAL DISTANCE PREDICTING BEHAVIORAL RELOCATION INTENTIONS AT TIME 2 (GENERAL AND RESCALED DOMINANCE WEIGHTS)

		Additional Contribution of:					
	R^2	A	B	C	D	E	F
None		.10	.07	.13	.20	.00	.03
A	.10		.05	.04	.17	.01	.03
B	.07	.07		.12	.12	.02	.01
C	.13	.01	.06		.12	.03	.04
D	.20	.07	.00	.05		.03	.00
E	.00	.11	.09	.16	.23		.06
F	.03	.10	.05	.14	.16	.03	
A, B	.15			.05	.12	.00	.01
A, C	.14		.05		.13	.03	.04
A, D	.27		.00	.00		.00	.00
A, E	.11		.03	.06	.16		.02
A, F	.13		.03	.05	.14	.00	
B, C	.19	.00			.06	.01	.01
B, D	.20	.07		.05		.03	.00
B, E	.09	.06		.11	.14		.03
B, F	.08	.08		.12	.12	.04	
C, D	.25	.02	.00			.00	.00
C, E	.16	.02	.04		.09		.02
C, F	.17	.01	.03		.08	.00	
D, E	.23	.04	.00	.02			.01
D, F	.20	.07	.00	.06		.05	
E, F	.06	.07	.06	.12	.18		
A, B, C	.19				.08	.01	.01
A, B, D	.27			.00		.00	.00
A, B, E	.15			.05	.12		.01
A, B, F	.15			.05	.11	.00	
A, C, D	.27		.00			.00	.00
A, C, E	.17		.03		.10		.01
A, C, F	.18		.03		.09	.01	
A, D, E	.27		.00	.00			.00
A, D, F	.27		.00	.01		.01	
A, E, F	.13		.03	.05	.14		
B, C, D	.25	.02				.00	.00
B, C, E	.19	.01			.06		.01
B, C, F	.20	.00			.05	.00	

B, D, E	.23	.04		.02			.01
B, D, F	.20	.07		.06		.05	
B, E, F	.11	.04		.09	.13		
C, D, E	.25	.02	.00				.01
C, D, F	.25	.02	.00			.01	
C, E, F	.17	.01	.03		.08		
D, E, F	.24	.03	.00	.02			
A, B, C, D	.27					.00	.00
A, B, C, E	.20				.07		.01
A, B, C, F	.21				.07	.00	
A, B, D, E	.27			.00			.00
A, B, D, F	.27			.00		.01	
A, B, E, F	.16			.05	.12		
A, C, D, E	.27		.00				.00
A, C, D, F	.27		.00			.00	
A, C, E, F	.18		.02		.09		
A, D, E, F	.27		.00	.00			
B, C, D, E	.25	.02					.01
B, C, D, F	.25	.02				.01	
B, C, E, F	.20	.00			.06		
B, D, E, F	.24	.03		.02			
C, D, E, F	.26	.02	.00				
A, B, C, D, E	.27						.00
A, B, C, D, F	.27					.00	
A, B, C, E, F	.21				.07		
A, B, D, E, F	.27			.00			
A, C, D, E, F	.27		.00				
B, C, D, E, F	.26	.02					
Total *R-squared* (A, B, C, D, E, F)	.27						
General Dominance Weights		.05	.03	.06	.12	.01	.01
Rescaled Weights		.17	.10	.21	.44	.03	.05

Note:
N = 36.
A = Attitude Toward Smaller Spatial Distance.
B = Attitude Toward Larger Spatial Distance.
C = Subjective Norm About Smaller Spatial Distance.
D = Subjective Norm About Larger Spatial Distance.
E = Perceived Behavioral Control About Smaller Spatial Distance.
F = Perceived Behavioral Control About Larger Spatial Distance.

VITA

Claire F. Taylor was born outside of Chicago, Illinois, and spent the later part of her childhood in Louisiana and Texas. She earned her high school diploma from Ronald Reagan High School in San Antonio, Texas, in May 2006. She then attended Rice University in Houston, Texas, where she received her bachelor's degree in statistics and psychology in May 2009. Claire began her graduate education in August 2009 at Louisiana State University in Baton Rouge, Louisiana. Claire is currently a third year student in the Industrial/Organizational Psychology doctoral program at LSU, and her academic advisor is Dr. Tracey E. Rizzuto.

Claire has participated in research presentations at several conferences. She is currently working with Dr. Laura Ikuma in the Construction Management and Industrial Engineering Department on a project that involves the use of eye tracking technology to evaluate the usability of and workload associated with interface design. Claire's research interests include technology implementation and evaluation, social capital and social networks, educational decision making, and human factors.