

**THE COLLEGE PRIME TIME: DEVELOPMENT OF
INVOLVEMENT INTERESTS USING THE PLACE ATTACHMENT THEORY**

by

Manyu Li

B.S.Sc in Psychology, The Chinese University of Hong Kong, 2008

M.S. in Psychology, University of Pittsburgh, 2011

Submitted to the Graduate Faculty of
The Dietrich School of Arts and Sciences in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Psychology

University of Pittsburgh

2014

UNIVERSITY OF PITTSBURGH
The Dietrich School of Arts & Sciences

This dissertation was presented

by

Manyu Li

It was defended on

30th April, 2014

Committee members:

Timothy Nokes-Malach, PhD, Department of Psychology

Edward Orehek, PhD, Department of Psychology

Fengyan Tang, PhD, School of Social Work

Dissertation Advisor: Irene Hanson Frieze, PhD, Department of Psychology

Copyright © by Manyu Li

2014

V J G " E Q N N G I G " R T K O G " V K O G < " F G X G N Q R O G P V " Q H
INVOLVEMENT INTERESTS USING THE PLACE ATTACHMENT THEORY

Manyu Li, Ph.D

University of Pittsburgh, 2014

The time students spend in college is invaluable. Students gain in-depth knowledge of various subjects, develop their career goals and learn how to socially interact with their peers. At the same time, it is important that students learn to be participating and responsible citizens of their community during their prime time in college (Giles & Eyler, 1994). This study was done to better understand how to get students involved in the communities around the school area, using the place attachment theoretical framework. It also aimed to look at the impact of actual participation in a volunteering activity to help their communities. It was hypothesized that students' actual participation in a volunteering activity would increase their place attachment to the school area and their interests in volunteering for the communities in the future. A conceptual model was constructed to understand how participating in a volunteering activity affects volunteering intentions. Specifically, it was hypothesized that students' place attachment was predicted by their social relations in the area, their adult attachment style and their knowledge of the school area. These factors were then expected to relate to their interests in volunteering for the communities around the school area and their actual involvement in a randomly assigned volunteering event. Two-hundred-sixty-seven students from the Introduction to psychology participant pool were recruited. Two-hundred-and-nine students were asked to participate in

event, while fifty-eight other students served as a control group who did not participate in an event. The conceptual model was tested with three path models using Mplus software. Results confirmed the hypothesized models. Also, as hypothesized, volunteering intention at time 2 was higher than that of time 1 only for activity group but not control group. However, place attachment was found to be increased across time for both activity and control group. Implications for getting students involved in their communities and their development into responsible citizens were discussed.

TABLE OF CONTENTS

LIST OF TABLES	X
LIST OF FIGURES	XI
PREFACE.....	XII
1.0 INTRODUCTION.....	1
1.1 DEFINITIONS	2
1.1.1 Community and community involvement	2
1.1.2 Place attachment to the school area community.....	3
1.1.2.1 Affective approach of defining place attachment.....	4
1.1.2.2 Bi-dimensional approach of defining place attachment.	6
1.1.2.3 Defining place attachment as affective, behavioral and cognitive attachment	9
1.2 PREDICTORS OF PLACE ATTACHMENT	14
1.2.1 Social relations as predictor of place attachment	14
1.2.2 Knowledge about the place as a predictor of place attachment.	15
1.2.3 General attachment style as a predictor of place attachment.....	16
1.3 THE EFFECT OF PLACE ATTACHMENT ON INTERESTS IN HELPING THE COMMUNITY	17
1.3.1 Place attachment and community involvement	17

1.3.2	The effect of attitudes on actual behaviors	19
1.4	THE EFFECT OF INVOLVEMENT IN HELPING THE COMMUNITY ON FUTURE ATTACHMENT AND HELPING BEHAVIORS	20
1.4.1	The impact of involvement behaviors on attitudes	20
1.5	STUDY DESIGN AND HYPOTHESES	22
2.0	METHOD.....	28
2.1	SAMPLE	28
2.2	MEASURES.....	31
2.2.1	Pilot study	31
2.2.2	Social relations, measured at time 1 and time 2.....	31
2.2.3	Knowledge about the school area, measured at time 1 and time 2.....	32
2.2.4	Adult attachment style, measured at time 1 only	32
2.2.5	Place attachment to the school area, measured at time 1 and time 2.....	33
2.2.6	Previous volunteering experiences and interests in volunteering for the school area, measured at time 1 and time 2	34
2.2.7	U v w f g p v u ø " k p x q n x g o g p v " k p " v j g " c 35 u k i p g f	
2.2.8	Other variables.....	35
2.3	PROCEDURE.....	36
2.4	DATA ANALYSIS	38
3.0	RESULTS.....	40
3.1	DESCRIPTIVE DATA: MEANS AND CORRELATIONS OF STUDIED VARIABLES.....	40

3.2	TESTING THE CHANGE OF PLACE ATTACHMENT AND VOLUNTEERING INTENTION [H1 AND H2].....	44
3.3	TESTING HYPOTHESIZED MODELS.....	46
3.3.1	Testing model 1 (H3 and H4): Basic model of predicting place attachment and volunteering intention	46
3.3.2	Testing model 2 (H5): Basic model of predicting place attachment and volunteering intention	48
3.3.3	Testing model 3 (H6 to H9): Basic model of predicting place attachment and volunteering intention.....	49
3.3.4	Modification of model 3: Controlling time 1 variables (H6 to H9)	50
4.0	DISCUSSION	53
4.1	EXPLANATIONS OF THE RESULTS.....	53
4.2	LIMITATIONS	61
4.3	CONCLUSION.....	63
	APPENDIX A	65
	APPENDIX B	72
	APPENDIX C	73
	APPENDIX D.....	74
	APPENDIX E	82
	APPENDIX F	84
	APPENDIX G.....	86
	APPENDIX H.....	88
	APPENDIX I.....	89

APPENDIX J.....	93
APPENDIX K.....	94
BIBLIOGRAPHY.....	95

LIST OF TABLES

Table 1. Sample characteristics by control and two activity groups.....	29
Table 2. Means of all tested variables.....	41
Table 3. Correlations of all tested variables.....	42
Table 4. Means of time 1 variables by control and two activity groups, and means of involvement in the activity assigned by the two activity groups.	43
Table 5. Means of time 2 variables by control and two activity groups, and means of involvement in the activity assigned by the two activity groups.	44

LIST OF FIGURES

Figure 1. The Conceptual Model.	24
Figure 2. Hypothesized model 1: Basic model of predictors of place attachment and the effect of place attachment on community involvement.	26
Figure 3. The effect of intention to volunteer at time 1 on involvement in assigned volunteering event (Activity group only).....	26
Figure 4 . The effect of participants' invol knowledge, place attachment and volunteering intention in the school area at time 2.....	27
Figure 5. Unstandardized path coefficients of model 1: basic model of predictors of place attachment and the effect of place attachment on community involvement. (** $p < .01$).....	46
Figure 6. Unstandardized path coefficients of model 1 tested with time 2 variables (** $p < .01$) ..	48
Figure 7. Unstandardized regression coefficient of model 2. ** $p < .01$	49
Figure 8 . Unstandardized path coefficients of the activity on their social relations, knowledge, place attachment and volunteering intention in the school area at time 2. (** $p < .01$).....	50
Figure 9. Unstandardized path coefficients of the conceptual model. * $p < .05$, ** $p < .01$	52
Figure 10. Participants' cognitive dissonance was solved by externally attributing their behavior to earning rewards.....	57

PREFACE

I would like to express my deepest gratitude to all my dissertation committee members. I would like to thank Prof. Timothy Nokes for his help since the beginning of my doctoral study. His professional guidance and continual encouragement have made my journey so much smoother. I would like to thank Prof. Fengyan Tang for her expertise in volunteering research, which has made my works more relevant and applicable to the field. I would also like to thank Dr. Edward Orehek for his helpful comments with his social psychology expertise, particularly on experimental design of the dissertation study.

I would like to express my deepest gratitude to my advisor, Prof. Irene Frieze. To me, she is the best advisor in the world! I have been benefited not only from her professional instruction on research and career, but also from her patient guidance and unconditional support. Without these I would not have grown and become the person I am today. Words cannot express my thankful heart to all that she has done for me. I am so blessed to be her student.

I would also like to thank Dr. Anna Halechko, Loranna Sayre-Nath, Julie Magee and all the staff in the Department of Psychology at the University of Pittsburgh who have provided me with timely help throughout my doctoral study. I would like to thank my dear friend, Kristina Swanenburg, who has been my good company in the department, and has been so capable of keeping me positive through all the ups and downs.

I would like to thank all the brothers and sisters for their supports and prayers in Berean, Tiberias and the Pittsburgh Chinese Church Oakland as well as Deepwell Emmanuel Church in Hong Kong. I would also like to thank everyone in my family and my fiancé for all of their unconditional love and support throughout these years!

1.0 INTRODUCTION

Community involvement is a crucial component in enhancing the sustainability of a community and in addressing important local social issues (Lawther, 2009). Getting students involved in the community when they are in school, through activities such as volunteering for a community activity, is important to the development of their civic engagement and to their future participation in the community (Giles & Eyer, 1994). In addition to benefits to the community, community involvement can empower individuals (e.g. Speer, Jackson, & Peterson, 2001) and enhance individual well-being (Hyypä & Maki, 2003). The benefits to students of getting involved in the community in terms of their enhanced well-being and mental health do not only appear in younger adulthood, but also extend to older adulthood (Tang, 2010). Therefore, it is important for both the individual and the community that involvement in communities is developed early in life and continues throughout the life-span. One of the ways to develop people's involvement in their community is through volunteering (Giles & Eyer, 1994).

Therefore, the ultimate goal of this dissertation study is to understand how to get college students involved in their community through volunteering. Using a longitudinal design, this dissertation study adopts the place attachment theoretical framework to look at factors that are associated with first-year college students getting involved in their community, and how participating in an actual community volunteering event affects their future attachment to the

community and their interests in helping the community change. Specifically, the questions this dissertation study aims to answer include how students' developed, how place attachment to the school area relates to interests in helping the community, and how participating in community helping behaviors would in turn affect later attachment to the place. Through understanding the answers to these questions, ways to create more opportunities for such possibilities could be identified. More effective methods could also be derived to make students' short -changing and meaningful time in

1.1 DEFINITIONS

1.1.1 Community and community involvement

Each year, when the school year starts again, numerous students leave their homes for the first time and start new journeys in colleges and universities. This is an all new experience to the freshman students. These students learn what they can and cannot do and what they should and should not do when they lead an independent life. For many of them, this is the first time they leave a familiar community and live in a new community independently.

Community is broadly defined as “inhabited people identified by common interests, values, cultures, etc., but not bounded by physics (Pretty, Chipuer & Bramston, 2003, p. 274). This definition is consistent with the earlier categorization of community by Gusfield (1975). According to Gusfield, the term community can be referred to as relational (pp. xvi, 32) or territorial (pp. xv, 32). A relational community can be understood as “quality of character of

x v i) ” . T h i s m a y i n c l u d e c o m m o n i n t e r e s t s , s k
equated with geographical location, such as neighborhood, town and city (Gusfield, 1975).

Although for school setting, the school area can both be a geographic location (territorial community) and a group of people gathering because of their shared interests (relational community), the present dissertation study focuses on the geographic aspect of the school area. T h e r e f o r e , “ c o m m u n i t y ” i s c o n s i d e r e d a s i t e r r i t o r i a l c o m m u n i t y . Specifically, the present study focuses on the *school area community* as the target community of study. The school area community includes the campus itself as well as the surrounding areas around campus, namely, the urban Oakland and immediately surrounding areas. This is because students do not just engage in activities within the campus community, but they usually visit these surrounding areas for meeting people, shopping or other activities.

Community involvement in the dissertation study is defined as voluntary helping behaviors that people do for the community in which they reside (International Labour Organization, 2011). Specifically, in this study, community involvement is equated with the behaviors that students engage in to help the school area community. This can be volunteering events, such as providing assistance to persons unrelated to them, cleaning or improving the environment in the community or preparing and serving food for people in the community (International Labour Organization, 2011).

1.1.2 Place attachment to the school area community

Another key variable in the present study besides the community involvement variable is place attachment. P l a c e a t t a c h m e n t i s g e n e r a l l y d e f i n e d (Healey, 2008). When students come to the university, some of them develop a liking for the

school area and eventually develop a strong sense of belongingness and attachment to the school area. Others may feel negatively about the school area and just want to leave the area once they graduate. The type of bonding or attachment to a place is captured by the concept of place attachment (Chow & Healey, 2008).

The place attachment framework is adopted in this dissertation study because place attachment has been previously found to relate to community involvement and was suggested as important in explaining why people want to get involved in the community (Li, Wiewiora, & Frieze, 2012). Furthermore, place attachment is a psychological concept that touches on different aspects of a person's affective, behavioral, and cognitive attachment (Li, Wiewiora, & Frieze, 2012). My earlier work has suggested that the concept of place attachment is able to capture the psychological phenomena leading to people contributing to their communities (e.g. Li, Wiewiora, & Frieze, 2012).

Different ways to conceptualize place attachment were developed. In particular, researchers have been trying to understand the psychological processes behind place attachment. Different approaches from uni-dimensional to multidimensional methods have been suggested. The following approaches are to be discussed:

- Affective approach of defining place attachment
- Bi-dimensional approach of defining place attachment as place identity and place dependence
- Defining place attachment as affective, behavioral and cognitive attachment

1.1.2.1 Affective approach of defining place attachment.

One of the approaches to understanding place attachment is the uni-dimensional approach of defining place attachment as an affective experience. The majority of place attachment

research adopts this conceptualization. For example, Hildago and Hernandez (2001) suggested that place attachment is the feeling of being comfortable and safe in a physical place, as well as feeling close to the people in that place. These conceptualizations are reflected in their scale with items such as “ I would be sorry if I and the would be sorry to move out of my house, without the p lewicka (2004) also i ve w perceives place attachment as an affective experience towards the place. In her widely-used scale, Lewicka (2004) measures place attachment using 12 negatively framed and 12 positively framed items that tap into participants’ feelings describing 9 positive and 3 negative feeling items (Lewicka, 2006, 2008, 2010). Another version describing 7 positive and 2 negative feeling items has also been used (Lewicka, 2005). There were no reasons provided by Lewicka about why the scales were modified. However, some common items being used include strong affective com here” (positive item), “ I don’t like this p pleasure (negative item) ” .

The research findings suggesting that place attachment can be measured through affective bonds to a place are robust. For example, people with more affective attachment to a place tend to stay longer in the place (Lewicka, 2008, Rollero & Piccoli, 2010; Tartaglia, 2006) and are less likely to migrate (Kelly & Hosking, 2008). Therefore, there is no doubt that place attachment involves some kinds of affective attachment.

Applying this affective approach to the present study’s context, students school would be solely represented by their feelings toward the school area, such as whether they like the school area or not, or whether they feel happy when they are in the area. Robust research on affective place attachments towards a place are a t h a t

central element of attachment to a place. However, some researchers have suggested that emotions alone are not sufficient in defining the concept of place attachment (Altman & Low, 1992; Scannell & Gifford, 2010), while other researchers suggested that other dimensions are more representative than the affective dimensions (Williams & Roggenbuck, 1989).

1.1.2.2 Bi-dimensional approach of defining place attachment.

Theorists who suggested the importance of non-affective dimensions define place attachment as place dependence and place identity. Place dependence refers to how an individual depends on a place for a certain purpose (Jacob & Schreyer, 1980), whereas place identity refers

to “dimensions of the self that define physical the environment” (Proshansky, 1978, part definition). Res

developed measures of place attachment based on this definition (e.g. Kyle, Graefe, Manning & Bacon, 2004; Semken & Freeman, 2008; Todd & Anderson, 2006). For example, Williams and Roggenbuck (1989) developed a scale with 11 place dependence and 16 place identity items.

Sample items for place dependence are “I enjoy other area” and “I was a for doing the type of things I did here.” any o

Sample items for place identity were “I find and “I feel like this place is part of me”. T

place attachment in wilderness users (Williams, Patterson, & Roggenbuck, 1992), hiking trail users (Kyle et al., 2004), and residents in a community (Vorkinn & Riese, 2001). A shortened and modified version was also used in measuring place attachment in national parks and recreation sites (Williams & Vaske, 2003) and in regions in Arizona (Semken & Freeman, 2008).

Using the same definition for place attachment, Todd and Anderson (2006) developed a scale measuring place attachment to a river trail in New York at the Tioughnioga River. Similar to

Williams and Roggenbuck's (1989) scale, this dimension (e.g. "I would spend more time on place identity" and "The Ohio River means a lot to me"). The other studies, although not claiming to include or differentiate place attachment from place identity directly, also included items that tapped into place identity. For example, Bonaiuto, Aiello, Perugini, Bonnes and Ercolani (1999) developed a widely used 4-item Italian Neighborhood Attachment Scale to measure people's place attachment, such as "this neighborhood is part of me".

Studies that adopt this definition found that people who identified with the place are more concerned with the social and physical features of the place (Kyle et al., 2004). In other words, they care more about the place. Similarly, people with higher place dependence are more concerned with the development of the place (Kyle et al., 2004). Another study also found that people with higher place identity and dependence would engage in more environmentally responsible behaviors, such as sorting recyclable trash or talking with others about environmental issues (Vaske & Kobrin, 2001).

However, this definition is problematic from a general sense as well as from the specific sense of the context of the present study. From the point of view of general place research, although this definition and the measures developed from this conceptualization were commonly used in earlier studies in the 1980s, they have received many challenges, especially from more recent literature (e.g. Hernandez, Hidalgo, Salazar-Laplace & Hess, 2007; Rollero & Piccoli, 2010).

Specifically, Hernandez et al. (2007) suggested that there are at least 4 different positions place theorists take to explain the relations between place attachment and place identity. The first

position sees place attachment as consisting of different dimensions, place identity and place dependence. The second position, on the other hand, sees place attachment as a dimension of place identity. The third position is held by those who believe that place attachment and place identity are the same concept and can be used interchangeably. While the three positions above believe there are some kinds of relations between place attachment and place identity, the last position, suggests that the two concepts, place identity and place attachment, do not overlap, but they both fall under a higher level concept, sense of community.

The fourth position that place identity and place attachment are separate concepts but both subsumed under a higher order concept seems to be the most reasonable. First, there is no doubt that place identity and place attachment are inter-related. Research has consistently found high correlations between place attachment and place identity (Pretty et al., 2003). However, based on previous theoretical arguments, it is very likely that place identity and place attachment are different concepts. For example, Lewicka (2008) argued that place attachment was an emotional bond with a place, a tie to a place that is directly to attachment (Lewicka, 2008, pp. 212). Lewicka (2008) argued that place identity refers to both the continuity and uniqueness of a place, but place attachment does not necessarily include both of these aspects. For example, one can attach to multiple places, but may only identify with a few places (Lewicka, 2008). Also, Hernandez et al. (2007) argued that a person can be attached to a place (wanting to stay), but they may not necessarily see that place as part of their personal identity. Hernandez et al. (2007) also argued that attachment seems to come much earlier than identity. It is possible that one attaches to a place but does not identify with the place.

In explaining the high correlations between place attachment and place identity, Hernandez et al. (2007) postulated that the sample in place research has constantly involved

people who have a high attachment and have stayed in one place for a long period of time. Therefore, these samples are biased, and consist of people who are attached to the place *and* identify with the place. Therefore, it appears that place attachment and place identity are inter-related but different.

Defining place attachment as place identity and place dependence does not fit well within this study's context. According to Hernandez et al. (2007), first year students may have developed attachment to the school area (e.g. liking the school area and feeling bonded to the area), but they may not identify with the school area in such a short period of time. Therefore, defining place attachment as place identity seems to be inappropriate in this study's context. Also, given that one goal of the dissertation study is to understand first-year college students' initial attachment to school, defining it as place identity may not be relevant.

Another reason why this bi-dimensional definition is not used in the present study relates to the use of *place dependence* as a defining feature for place attachment. Particularly, students who served as the study participants in this dissertation study generally have no choice but to do all of their daily activities in the school area. In other words, they are forced to depend on the place. Therefore, place dependence, like that of place identity, cannot be considered as a variable in this context.

1.1.2.3 Defining place attachment as affective, behavioral and cognitive attachment

Although the bi-dimensional approach to define place attachment through place identity and place dependence is not supported, this definition does point us to other possible components of place attachment other than affective place attachment (Scannell & Gifford, 2010). Scannell and Gifford (2010) suggested that, other than affective attachment, place attachment also includes behavioral and cognitive attachment. Therefore, a better definition is to define place

attachment as affective, behavioral and cognitive bonding to place. This definition, as discussed below, also fits better with the context of this dissertation study. Support for this definition can be found in a recent development of the place attachment concept by Scannell and Gifford (2010).

Scannell and Gifford (2010) argued that place attachment should consist of three different aspects, namely, the Person-Place-Process (PPP) framework. According to them, the person aspect concerns individual experiences and memories in the place, such as places where one experienced personal growth or the place where someone got married. This would also include places for which a person possesses collective memories of historical events, or cultural/religious practices. In other words, the person aspect relates to the significant experiences a person had in that place. Another aspect, place, focuses on the social and physical aspect of the place itself. This includes the scale of place (e.g. neighborhood, town or city), physical features of the place, and whether social relationships and group identity” (Scannell and Gifford, 2010). This dimension relates to any features, social or physical, that the place itself contains.

These two dimensions, person and place, highlight the events and features that are happening or that happened in the place. In other words, these are the physical or social bonds that lie outside of an individual. These first two dimensions are less relevant to the context of the present study, as these two dimensions do not refer to the fundamental psychological processes of place attachment that are being discussed here. These two aspects are related to place attachment, but they are usually treated as predictors of place attachment, instead of place attachment itself (e.g. Goodenow, 1993; Pretty et al., 2003; Sampson, 1988).

The third aspect that Scannell and Gifford (2010) suggested, process, is more relevant to the psychological processes of place attachment that are being discussed in this paper. In their review paper, they suggested that one should think about psychological place attachment as involving three aspects: affective, behavioral and cognitive. They suggested that these three aspects together contribute to the concept of psychological place attachment and that all three are part of the basic concept of psychological place attachment. This affective, behavioral and cognitive approach to defining place attachment is similar to the definition of attitudes in social psychology, which also consists of these same three components (Ostrom, 1969).

The present dissertation study adopts this definition of place attachment as affective, behavioral and cognitive bonding to place. Specifically, not only their emotions to the place, but also their thinking and behaviors towards the place. Each of the components is defined below.

The *affective* aspect is defined consistently with the unidimensional approach of affective attachment discussed above, which is the emotional connection one has toward a place (Hidalgo & Hernandez, 2001; Lewicka, 2008). The definition also extends to include happiness and liking of the place (Scannell & Gifford, 2010). I add to the existing definition with concepts including a sense of belonging, which was suggested in previous theoretical papers as closely related to affective place attachment (Gustafson, 2008; Hipp, 2010). The concept of having a sense of belonging is widely used in group and social support literatures (e.g. Hagerty & Williams, 1999; Hurtado & Carter, 1997; Walton & Cohen, 2007), but it is also discussed in place research. In place research, the sense of belonging refers to the specific feeling of connectedness to a place (Gustafson, 2008). Ward and Styles (2005) compared the sense of belonging to the human attachment to a primary caregiver that Bowlby (1969) suggested. They proposed that the sense of

belonging to a place can help people feel secure, just like mother-infant attachment. Therefore, using this definition, the present dissertation study assumes that students' attachment is expressed through their liking of the school area and the happiness and belongingness that they experience in the area.

The *behavioral* aspect is defined as proximity-maintaining behavior (Scannell & Gifford, 2010). Applying to the context of first year students, proximity-maintaining behaviors may include staying abreast of the current news in the school area or wearing school t-shirts (Li & Frieze, 2011; Scannell & Gifford, 2010). Scannell and Gifford (2010) also suggested that behavioral attachment includes reconstruction of place. For example, immigrants may re-create shops and buildings that were in their home country when they migrate to a new place, forming areas such as Chinatown and Little Italy. However, the dissertation study involves first year students who may not have a chance to leave the school yet, so this aspect may be irrelevant.

Finally, the *cognitive* aspect of place attachment is defined as the memories and the meaning of the place (Scannell & Gifford, 2010). Students come to school and start creating memories unique to the school area. At the same time, the school area may now mean something more important to them than it did when they first arrived at the school. For example, the school area may be important to students because it is the first place in which they have led independent lives. These kinds of cognitive perceptions of the place represent their bonding to the school area expressed through their cognitions.

It should be noted, however, that there is overlap among these three components of place attachment. For example, significant memories about the school area may be cognitive but may also be associated with happiness, depending on what those memories consist of. Similarly, liking and caring about the area can be emotional aspects of place attachment, but

at the same time, they can be behavioral aspects, such as staying abreast of the current news in the school area. Therefore, from a measurement perspective, these three aspects are difficult to separate apart and should be treated as one dimension.

A measure using this definition was developed in previous studies, and the three aspects of place attachment were found to fall under a single major factor (Li, 2011; Frieze et al., 2011).

This scale, or the Psychological Place Attachment Scale, includes items such as “I feel happy when I am in (the place)” (affective), “I care about the matter where I am” (behavioral), and “I have a strong sense of belonging to the place” (cognitive).

The scale was found to have high reliability. The scale was factor analyzed, and all of the items loaded into a single dimension. This approach led to findings that were consistent with other place attachment research. For example, people with higher place attachment were more likely to want to stay in the place (Frieze et al., 2011). People with higher attachment to a specific place (e.g. school) were also found to change their behaviors in positive ways in that place (e.g. academic motivation, Li, Frieze, Nokes-Malach, & Cheong, 2013). This scale was developed into different versions depending on the context of the study. Section 1.01(a)(i)Appendix A summarizes the development of the scale.

To conclude, in the present study, place attachment to the school area community is defined as affective, behavioral and cognitive bonding to the surrounding area of the school, where affective attachment to the school area involves feeling such as happiness, liking and sense of belonging, behavioral attachment involves proximity-maintaining behaviors, and cognitive attachment involves staying abreast of the current news in the school area. These three elements of place attachment are treated as uni-dimensional from a measurement perspective because of their overlapping nature.

1.2 PREDICTORS OF PLACE ATTACHMENT

To study the impact of place attachment on community involvement, the first question to ask is what contributes to students' place attachment? To consider this more directly, what attachment? To consider predictors of students' attachment to the social aspects of their school life. Specifically, using previous research findings, social aspects of students' school life and their psychosocial development (general attachment style) was included as the predictors for place attachment. Students' knowledge of also added to predict place attachment.

1.2.1 Social relations as predictor of place attachment

Social relations are usually identified as one of adjustment to university life (e.g. Pancer, Hunsberger, Pratt, & Alisat, 2000). Research evidence also supports the conclusion that better social relations in the university relate to stronger school attachment. For example, Chow and Healey (2008), in their interview study of first year university students moving from home to the social relationships allowed students to feel more settled or feel at home. This feeling of being at home is similar to place attachment. Using a quantitative method, Freeman, Anderman and Jensen (2007) found that the perception of being accepted in the university was associated with higher level attachment to the university. In another study, France, Finney and Swerdzewski (2010) also found that more positive relationships with others significantly related to higher university attachment. These studies add support to the argument that having more

social contacts with people in the university may relate to stronger development of place attachment to the university.

Place attachment research outside of the university context has also supported the idea that positive social relations are related to stronger attachment to the neighborhood. For example, Pretty et al. (2003) asked participants' the and found that those who experienced more friendship had significantly higher attachment to the neighborhood. Bonaiuto et al. (1999), measuring social the quality of their relationships with neighbors and friends, found that social relations significantly predicted higher place attachment. To see if participants' close friends found a positive significant relationship between friendships in a place and attachment to the place. Therefore, in this dissertation study, it was hypothesized that more positive social relations and friendships experienced in the university would predict stronger attachment to the university area.

One controversial issue in the literature is whether social relations should be predictors of place attachment or consequences of having high place attachment. Therefore, this longitudinal study added to the literature by looking at relationships at time 1 and time 2. It would relate to place attachment at time 1, and 2) how place attachment at time 1 would affect one's social relations at time

1.2.2 Knowledge about the place as a predictor of place attachment.

Another predictor studied in this paper is knowledge about the place. This variable is not commonly included as a predictor for place attachment. However, since this dissertation study

looks at first-year students who may change from not knowing anything about the school area to knowing more about the school area, knowledge of the area seems to be an important aspect of students' early college. This is different from the cognitive aspect of place attachment defined in this study. Cognitive aspect of place attachment focused on the memories or meaning of the place, instead of general knowledge. Place attachment research showed that knowledge of a place may predict one's place attachment. Turkish Cypriot refugees from 18 to 82 years old. In the study, participants were asked to draw a picture of their homeland. It was found that people who expressed more attachment to their homeland during interview drew their homeland with more details of the house and streets and shops nearby, suggesting that they knew more information about the place. Therefore, in this study, it was hypothesized that the school's area would predict their attachment to the school area. Also, through participation in the events in the school area, it was hypothesized that students would increase, which in turn would affect their later place attachment to the school area.

1.2.3 General attachment style as a predictor of place attachment.

Another predicting variable of place attachment is one's secure attachment relationships, such as attachment to romantic partners and close friends. According to Bowlby (1988), it is human tendency to want to explore new environment. This exploration behavior depends on one's attachment quality. Bowlby's research showed that secure attachment to their parents, they feel confident that they can retreat back to their attachment figures if there are dangers in the environment. This feeling of security thus forms the secure base for individuals to explore an extended environment.

a t t a c h m e n t t o p l a c e , o n e c a n a r g u e t h a t h a v i n g social relations, which are usually romantic partners or close friends, should provide people with comfort in exploring new place. Being able to explore new places should then enable an individual to form social relations. Social relations, as suggested above, can help people form attachment to new places. Therefore, applying this argument to this dissertation study, students with more secure adult attachment would have better social relations, which, in turn, would have higher attachment to the university area.

1.3 THE EFFECT OF PLACE ATTACHMENT ON INTERESTS IN HELPING THE COMMUNITY

1.3.1 Place attachment and community involvement

Social relations, attachment style and knowledge about the place were hypothesized to predict place attachment. T h e n e x t q u e s t i o n i s w h e t h e r s t u d e n t s have the intention to get involved in the school area and to help the community. Research has consistently found t h e e f f e c t o f p l a c e a t t a c h m e n t o n p e o p l e ' s b e h a v i o r. Research on place attachment shows that people who are highly attached to a place are more concerned about the place and more willing to expend effort to help the community (e.g. Chavis & Wandersman, 1990; Devine-Wright, 2009; Mishra, Mazumdar & Suar, 2010; Vaske & Kobrin, 2001; Vorkinn & Riese, 2001). For example, asking participants their positive and negative affect towards a place, Lewicka (2005) found that this kind of affective place attachment was associated with p e o p l e ' s i n v o l v e m e n t i n c i v i c a c t i v i t i e s r e l a t e d t o t h e p l a c e .

(2010) measured place attachment using the Neighborhood Attachment Scale (Bonaiuto et al., 1999) which tapped into participants' feelings about their neighborhood. They found that people's participation in community activities was related to their place attachment to the place. Li et al. (2012) found that attachment to the school area, students with higher place attachment were more willing to contribute to the place by picking up litter on the street and volunteering in the place. Although not looking at people's helping behaviors in the place, attachment was related to being more active in general in the community. More evidence showed that place attachment was related to people's participation in that place (Mishra et al., 2010), when controlling for different demographics variables. This shows that people with higher place attachment were more conscious about natural disaster that could happen in a place and more concern about that place.

Looking at it from a different perspective, Crosby, Kelly and Schaefer (1986) suggested that when people were allowed to be cognitively involved in the place, such as by being involved in the decision making processes of the place and thus creating unique meaning and memories of the place, they were more likely to contribute to the place. Other studies found that when people felt that the place was more important to them and that they were able to have control over the place, they were more likely to participate in the neighborhood later (Chavis & Wandersman, 1990; Perkins, Hughey & Speer, 2002; Zimmerman & Rappaport, 1988). Thus, motivating people to participate in their community should involve making people think more positively about the place and remember more positive memories of the place.

1.3.2 The effect of attitudes on actual behaviors

Research on attitudes and behavior also suggests the effects of place attachment on community involvement. Place attachment is of the place, and not to community involvement is the desired target behavior. Research, such as the works of Ajzen and Madden (1986) on the Theory of Planned Behaviors, suggests intention of performing relevant behaviors. Ajzen and Madden attitudes are related to behaviors through one's behavior context of the present dissertation study, students' ir plate (attitudes) influences to the their behavioral intention to help the community (behavioral intention). This may then affect whether they actively participate in a community involvement activity (behavior).

Therefore, all the evidence suggests that place attachment has a strong and positive relation with helping behaviors, or behavioral intention in the community. In addition to these variables, previous volunteering experiences should also be considered. Research in general found that people who volunteered before were more motivated to volunteer in the future than people who did not volunteer before (e.g. Clary & Snyder, 1999; O Toole, Hanusa, Gibbon & Boyles, 1999).

To test these ideas, the dissertation study measured students' intention participating in various community helping activities. Students were then randomly assigned to participate in involvement in the activity would be measured to test their actual behaviors. It was hypothesized that students' higher place attachment higher interests in participating in the activities.

1.4 THE EFFECT OF INVOLVEMENT IN HELPING THE COMMUNITY ON FUTURE ATTACHMENT AND HELPING BEHAVIORS

While social relations, general attachment style and knowledge of the place are hypothesized to predict place attachment, and place attachment is expected to predict one's intention of getting involved in the community, the next question that the present study asks is whether students' involvement (behaviors) will in turn change their place attachment and future community helping intentions (attitudes). In other words, would behaviors affect attitudes in this context?

1.4.1 The impact of involvement behaviors on attitudes

As mentioned above, attitudes seem to have an impact on behaviors. However, do behaviors also affect people's future attitudes? First (1957) dissonance theory, when people hold two conflicting cognitions, they suffer from a negative state. To reduce this negative emotion, they will change their thoughts or behaviors to be more consistent with each other. Applying dissonance theory to the community involvement process, people who have performed in activities helping the place may try to avoid thoughts that suggest negative traits of the place. They might try to adjust their thoughts and attitudes to perceive the place as positive (positive place attachment) to avoid the negative state that inconsistent thoughts and behaviors can produce.

Evidence from research on attitudes and behaviors also supports the possibility of behaviors affecting attitudes. Specifically, some studies suggested that behaviors can impact attitudes, especially when attitudes are weak (Bem, 1972; Wells & Petter, 1980). Since the

students in this present study are new to the school and have just started to develop their attitudes about the school area (place attachment), their attitudes towards the place may be rather weak. Therefore, it is possible will be easily affected by their s' p l participation behaviors.

It should be noted that participation in the current study does not only refer to attendance at the activity. As Willigen (2000) found in her volunteering study, it is important to look at volunteer s involvement in the volunteering activity, rather than looking merely at attending the volunteering activity. In this study, participation behaviors include how involved students are when they participate in the activity and how they perceive the experiences of the activity. It was thus hypothesized that s t u d e n t s ' in the activity would lead to higher place attachment to the school area, which in turn would lead to higher future intentions to volunteer for the school area.

This process of participation behaviors affecting participants ' attachment to place was believed to be mediated by both social relations and knowledge of the school area. As previously discussed, place attachment was believed to be affected by social relations and knowledge of the school area. At the same time, participants ' behaviors in the volunteering activity can be related to how many social connections they make during the activity (Miller, Schleien, Rider, Hall, Roche & Worsley, 2002; Wilson & Musick, 1999) and how much more knowledge they obtained in regard to the school area (Chinman & Wandersman, 1999). Therefore, it was also hypothesized that after students participated in the assigned activity, s t u d e n t s ' change s in place attachment would be mediated by their social relations and knowledge of the school area at that time.

1.5 STUDY DESIGN AND HYPOTHESES

The present dissertation study involved two phases. In the first phase, a basic model of predictors of place attachment and the effect of place attachment on community involvement was tested. Students were asked to fill out a survey that looked at their social relations in the school area, general attachment style, their knowledge about the school area, place attachment to the school area and their interests in volunteering for the community. In the second phase, the focus was on the effects of actual community involvement activities. Students were either randomly assigned to participate in a volunteering event contributing to the school area or were not assigned to participate in any activity. For those who were randomly assigned to participate in the event, they were scheduled to participate in an event from 1 to 3 weeks after completing the initial surveys. Immediately after the event, students were asked to fill out another survey similar to the first survey. In addition to the measures used in the first survey, this second survey also asked students their feelings after participating and their interests for future participation in the community. For those participants who were not assigned to participate in a volunteering event, they were told that none of the possible events were available, but they were still asked to complete the follow-up survey. The survey was the same as the one for those who participate in a volunteering event, except that the questions about their involvement in the assigned activity were not included.

First, it was hypothesized that by participating in activities that helped the community, students' place attachment and volunteering intention would increase. Therefore, it was hypothesized that place attachment at time 2 and volunteering intention at time 2 would be significantly higher than those of time 1 only for the activity group, but not the control group [H1-2]. These would be tested with separate paired-sample t-tests.

In addition to studying the impact of the assigned activity on the change of place attachment, a detailed model looking at the impact of different volunteering intention was also developed. The conceptual model, as illustrated in **Error! Reference source not found.**, hypothesized that students' social and knowledge of the school community would positively relate to their place attachment to the school area, which in turns would relate to higher interests in volunteering, controlling for previous volunteering experiences [H3 and H4]. In other words, it was hypothesized that students' social relation would be associated with their style interests in volunteering for the school area, mediated through place attachment to the school area. For activity group, interests in volunteering would then further relate to students' involvement in the assigned event [H5]. It was also hypothesized that involvement in the assigned event would increase students' positive knowledge of the school area [H6], which would again increase students' place attachment to the school [H7] and interests in volunteering for the community in the future [H8]. A direct effect from participants' intention to volunteer at time 2 was also predicted [H9]. Participants' responses to time 1 variables would be compared to make sure the two groups were not significantly different. Participants in the two assigned events would also be compared to make sure their experiences were not significantly different.

Because of the limited sample size, the conceptual mode, as illustrated in Figure 1, was tested separately using 3 different models. The hypotheses and the corresponding models are summarized as follow:

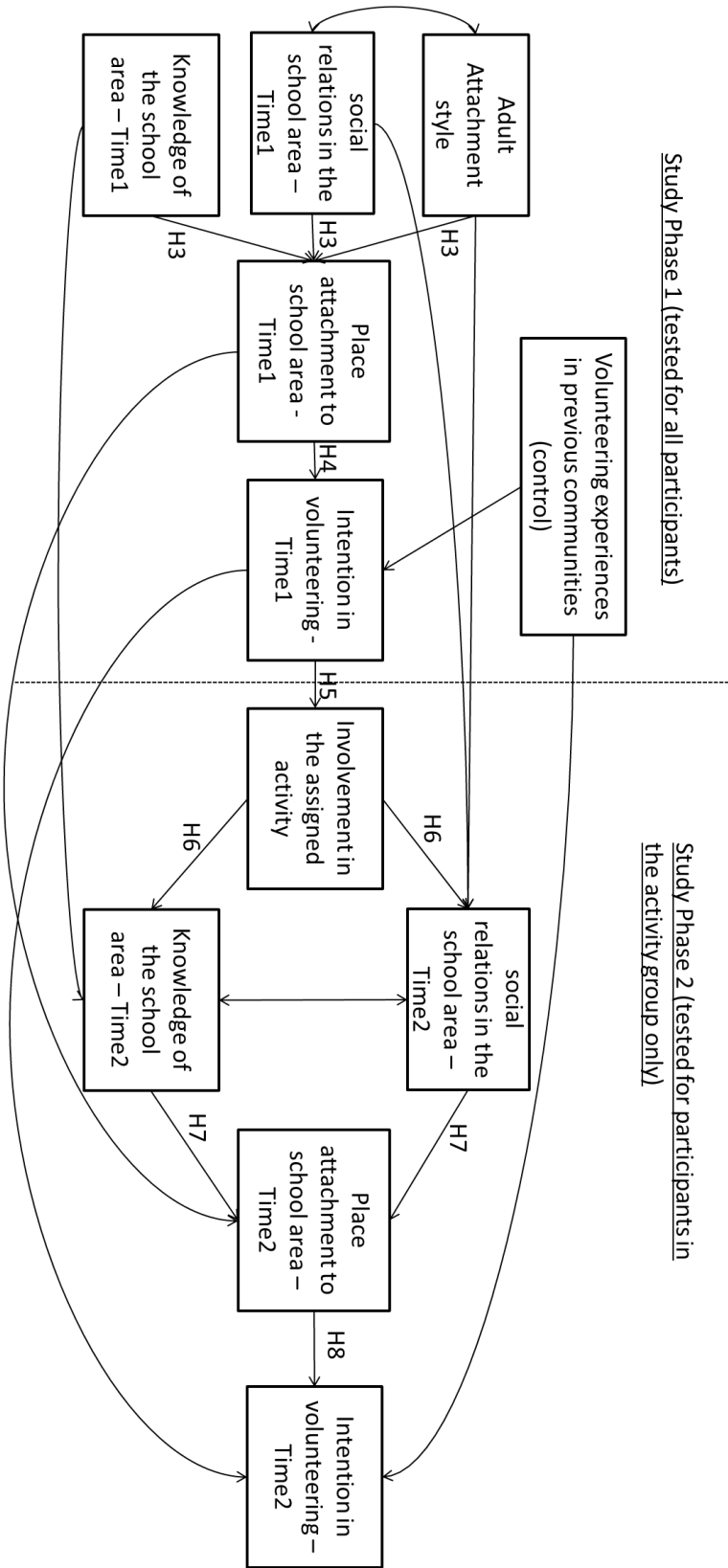


Figure 1. The Conceptual Model.

Hypotheses for study phase 1:

Hypothesis testing the difference of place attachment between study phase 1 and 2:

H1: For participants who participate in an assigned activity, place attachment at time 2 would be significantly higher than that of time 1. For participants who were not assigned to participate in any activity, place attachment at time 1 and time 2 would not be significantly different.

H2: For participants who participate in an assigned activity, volunteering intention at time 2 would be significantly higher than that of time 1. For participants who were not assigned to participate in any activity, volunteering intention at time 1 and time 2 would not be significantly different.

A. Model 1 (Figure 2):

H3: Social relations in the school area, adult attachment style and knowledge about the school area at time 1 significantly would significantly relate to higher place attachment to the school area at time 1.

H4: Place attachment to the school area at time 1 would significantly relate to higher intention in volunteering for the school area at time 1.

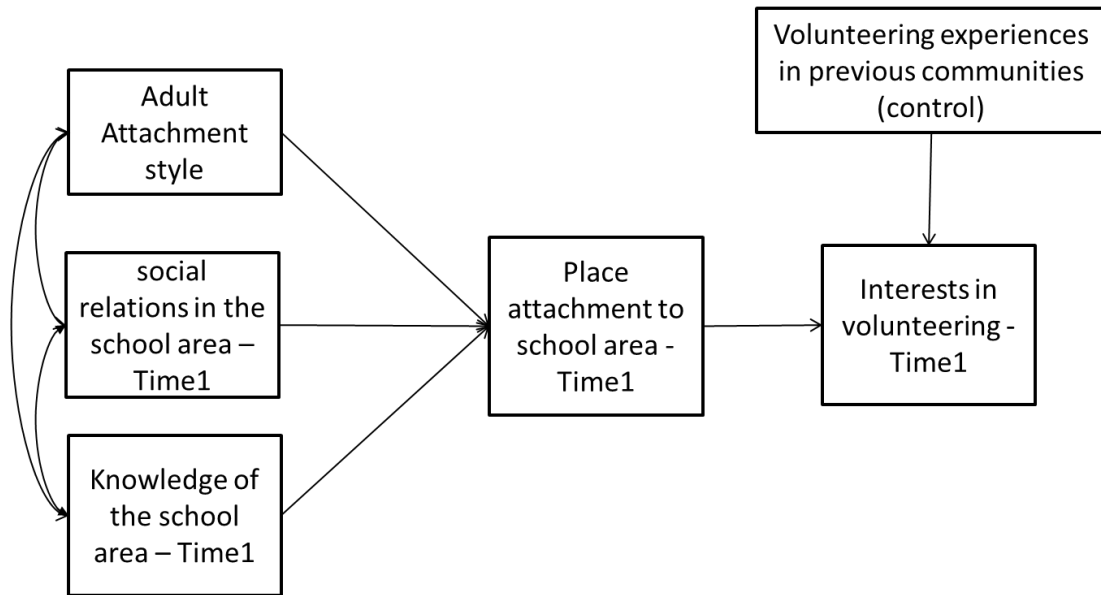


Figure 2. Hypothesized model 1: Basic model of predictors of place attachment and the effect of place attachment on community involvement.

Hypotheses for study phase 2 (for participants in activity group only):

B. Model 2 (Figure 3)

H5: For participants in the activity group, intention in volunteering for the school area at time 1 would significantly relate to higher involvement in the assigned volunteering event.

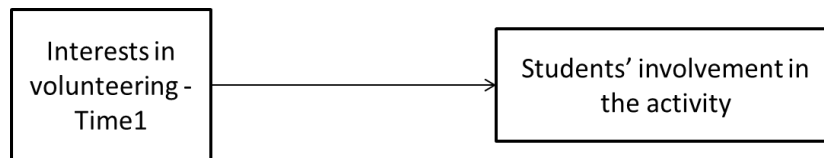


Figure 3. The effect of intention to volunteer at time 1 on involvement in assigned volunteering event (Activity group only).

C. Model 3 (Figure 4)

H6: For participants in the activity group, involvement in the assigned volunteering event would relate to higher social relations in the school area and knowledge about the school area at time 2.

H7: For participants in the activity group, social relations in the school area and knowledge about the school area at time 2 would relate to higher place attachment to the school area at time 2.

H8: For participants in the activity group, place attachment at time 2 would relate to higher intention in participating in future volunteering events at time 2.

H9: For participants in the activity group, involvement in the assigned activity would relate to higher intention in participating in future volunteering event at time 2.

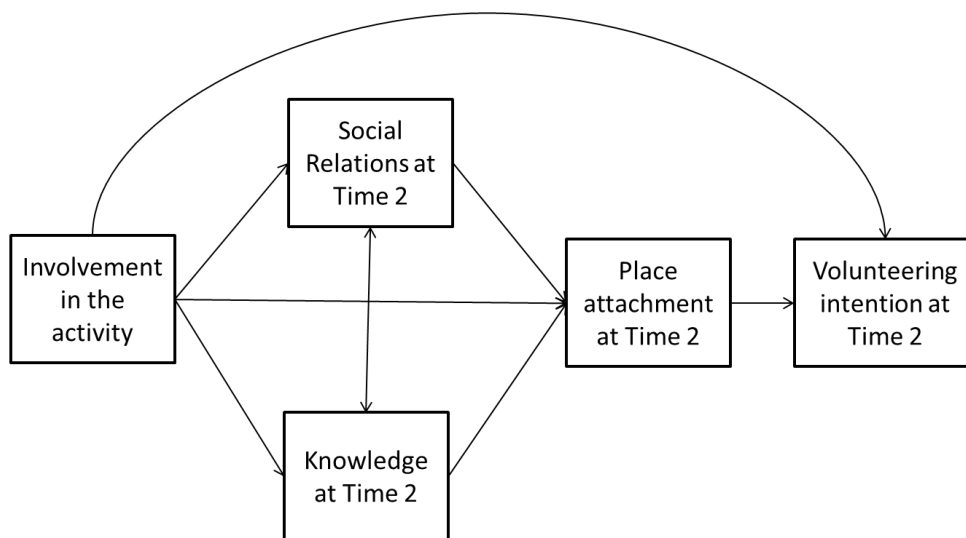


Figure 4. The effect of participation involvement in the activity on their social relations, knowledge, place attachment and volunteering intention in the school area at time 2.

2.0 METHOD

2.1 SAMPLE

A total of 300 participants were recruited through the Psychology Participant Pool. However, 8 of the participants filled out incorrect responses in Time 1 survey (e.g. filling out 5 on a scantron when there were only 4 options in the survey). These data were considered erroneous and the individuals who reported erroneous responses were completely removed from the dataset. There were 25 participants who were absent from a scheduled activity, either because they were not able to make it or they simply did not show up without a reason. These participants were considered as drop-outs, and were not included in the research data. Thus, the drop-out rate was 8.3%. Dropout analyses were done to see if participants who dropped out were significantly different from participants who stayed in the study among all measured variables. A MANOVA showed that participants who dropped out were not significantly differed from participants who stayed in the study among the measured variables, including place attachment, knowledge of the school area, social relations and volunteering intention at time 1 and time 2, as well as their adult attachment and previous volunteering experiences.

The final sample consisted of 267 participants. Among the 267 participants, 70 were male (26%) and 197 were female (74%). The control group consisted of 58 participants (22%). Among them, 14 were male (24%) and 44 were female (76%). The activity group consisted of

209 participants (78%) were assigned to the activity group. Among them, 56 were male (27%) and 153 were female (73%). More detailed sample characteristics are summarized in Table 1, presented across control group and the two activity groups. A MANOVA was done to compare the differences among control group and the two activity groups (ICP and Adopt-a-Block groups, explained below) on these sample characteristics. The number of days at the school area was found to be different between the control and activity group. Therefore, the number of days at the school area was controlled when studying time 2 variables.

Table 1. Sample characteristics by control and two activity groups.

Sample characteristics	Control	Activity 1 –	Activity 2 –
	Group	ICP	Adpot-a-Block
	N (%)	N (%)	N (%)
	N=58	N=175	N=34
- Gender-Male	14 (24.1)	48 (27.4)	8 (23.5)
- Having one or more family members who are alumni of the school	15 (25.9)	37 (21.1)	6 (17.6)
- Living on-campus	55 (94.8)	172 (98.3)	33 (97.1)
- Having one or more friend coming to the school with them	33 (56.9)	103 (58.9)	16 (47.1)
	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)
- Number of days at the school area when completing time 2 survey	32.60 (3.71) ^a	28.91 (5.38) ^b	28.53 (.83) ^b
- S t u d e n t s ' i n t e activities*			
I. Language partner program	2.98 (1.42)	2.93 (1.28)	2.91 (1.40)
II. Homelost project	2.79 (1.28)	3.01 (1.20)	3.29 (1.36)
III. Community center renovation project (potential activity 1)	3.38 (1.14)	3.53 (1.00)	3.65 (1.10)

IV. Adopt-a-Block (potential activity 2)	2.91 (1.19)	3.05 (1.12)	3.26 (1.26)
V. Food bank event	3.57 (1.22)	3.78 (1.04)	4.03 (1.09)
VI. Family house event	3.79 (1.21)	3.75 (1.18)	3.88 (1.15)

*For details of descriptions of the potential activities, refer to Appendix D.

Note: Differences in mean are represented by different superscripts. Significant difference in number of days at the school area when completing time 2 survey was found among the three groups ($F=14.55$, $df=264$, $p<.01$). The control group was in school much longer than the two activity groups when completing time 2 survey.

Participants were recruited based on these criteria: 1) first-year students 2) aged 18-22 and 3) never lived in the school area. The criteria were set to limit the sample to traditional college students who were new to the school area. Students were awarded 1 participant pool credit for completing the first phase of the study (survey only), and 2 participant pool credits for completing the whole study (pre- and post-survey, and for activity group, one hour participating in a volunteering event).

Specific sample size of the present study was determined based on the parameters that are to be estimated in the model. The rule for model analysis is about 5 (Bentler & Chou, 1987) to 10 participants (Schreiber, Stage, King, Nora & Barlow, 2006) for each parameter estimated. As shown in the hypothesized models (Figure 2-4), the parameters for model 1, 2 and 3 were 14, 3, and 13. This means that the sample size needed for testing the model is at least 70-140. Therefore, the number of participants recruited should be sufficient for testing the hypothesized models.

2.2 MEASURES

2.2.1 Pilot study

A pilot study was conducted to test the scales being used in the present dissertation study. One hundred eighty-eight participants were recruited to participate in the pilot study. Similar to the present study, the participants were recruited from the Introduction to psychology participant pool at the University of Pittsburgh. Among the participants, 47% were male (N=88) and 53% were female (N=100). The age range was 18-22.

In the pilot study, participants were asked to complete a survey that measures their social relations in school, their interests in volunteering and their previous volunteering experiences.

The Cronbach's Alphas obtained from testing following corresponding sections.

2.2.2 Social relations, measured at time 1 and time 2

Social relations were measured by four items adopted from relationships subscale of the Scale for Measuring Social Relations (Li et al., 2013). The combined scale was chosen because it was originally constructed for a school setting.

Also, a similar version of the combined scale was applied in a previous study (Li et al., 2013)

looking at student attachment to the school. The items were modified from Cemalcilar to refer to social relations in the school area. Sample modified items were “ I feel close to my friends in the school area ”

school area” and “I can share my problems with m
 these items based on a 5-point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). This
 6-item scale was tested in the pilot study mentioned above. Cronbach’s Alpha of the
 in the pilot study was .86. Cronbach’s Alpha for social relation
 Cronbach’s Alpha for social relation averaged to measure
 create a mean score in the analysis, separately for time 1 and time 2.

2.2.3 Knowledge about the school area, measured at time 1 and time 2

Knowledge about the school area was measured using a scale constructed by Li et al. (2012).
 This 10-item scale measured students’ knowledge about the school area
 area very well”, “I know how to scale also asked
 participant whether they know the history, business and important people in the area. This scale
 was previously used in a study on place attachment and community involvement (Li et al., 2012),
 and was found to be a reliable scale. Cronbach’s
 Alpha for the scale measured at time 1 was .7
 time 2 was .79. Item responses ranged from 1(Strongly disagree) to 5(Strongly agree). The items
 of this scale were averaged to create a mean score in the analysis.

2.2.4 Adult attachment style, measured at time 1 only

Adult attachment was measured by Brennan, Clark, & Shaver’s item (Adult Attachment Scale). This scale is a widely-used adult attachment scale (e.g. Anders & Tucker, 2000; Mikulincer, Gillath, & Shaver, 2002). It allows for the computation of secure attachment

by simply averaging all the item scores. Higher scores indicate less secure attachment, while lower scores indicate a more secure attachment style. Before participants started answering the questions, they were given instructions asking them to “please take a moment to think about you generally feel in important relationships in your life. Think about your past and present relationships with people who have been especially important to you, such as romantic partners and close friends. Using the scale below, respond to each statement in terms of how you generally feel in these relationships on a 5-point Likert Scale from 1 (Strongly disagree) to 5 (Strongly agree) how much they agree with the statements. Higher score represented more insecure attachment. The scale was only used at time 1 to measure participants' attachment.

2.2.5 Place attachment to the school area, measured at time 1 and time 2

A shortened student version of the Psychological Place Attachment Scale (PPAS, Frieze et al., 2011; Li et al., 2012; Li et al., 2013) was used to measure students' attachment to the school area at time 1 and time 2. Details of the development of the place attachment scale are listed in Appendix A. The shortened version of PPAS –student version consists of 13 items. The development of this shortened version, tested by the data used by Li et al. (2013), is also shown in Appendix A. The Cronbach's alpha was .90. Sample items were “I feel happy when I am in the school area (happiness)” and “The school area is important to me” (mean item responses ranged from 1(Strongly disagree) to 5(Strongly agree). Cronbach's Alpha for the scale measured at time 1 was .85, and Cronbach's Alpha for time 2 was .86. The items were averaged to create a mean score in the analysis.

2.2.6 Previous volunteering experiences and interests in volunteering for the school area, measured at time 1 and time 2

A 7-item self-constructed scale previously tested in the pilot study was used to measure interests in volunteering for the school area at time 1 and time 2. The items were constructed based on the Manual on the Measurement of Volunteer Work (International Labour Organization, 2011). Only items that are relevant to the context of college students were selected. Participants rated the items on a 5-point Likert Scale from 1 (Strongly disagree) to 5 (Strongly agree) for interests in volunteering, and on a 5-point Likert Scale from 1 (Never) to 5 (Always) in terms of their previous volunteering experiences. Sample items were “ I am interested in doing voluntary work in the school area, such as fundraising and providing voluntary assistance to persons unrelated to me in the school area (such as the elderly, poor or disaster victims, children) , prepare and serve food, or transport people in need”, “I am interested in volunteering to clean or improve the school area or work to improve the environment of this school”, and “I am interested in providing voluntary assistance to persons unrelated to me in the school area (such as the elderly, poor or disaster victims, children) , prepare and serve food, or transport people in need”. This scale was tested in the pilot study mentioned above, and was found to be a reliable measure. After the pilot test, some additional negative items were added to the scale. Sample items were “I am not interested in volunteering for the school area” and “It is not my responsibility to provide voluntary assistance to persons unrelated to me in the school area”. The final scale consisted of 14 items and was used to measure 1) previous volunteering history, 2) volunteering intention at time 1, and 3) volunteering intention at time 2. Cronbach's alpha for previous volunteering history at time 1 was .86, and Cronbach's alpha for volunteering intention at time 1 was .85. The items were averaged to create a mean score in the analysis.

Students' interests in their potential assignments were measured to understand how interested students were before they participated in the potential events. The items were constructed based on the volunteering activity that the participants would be potentially assigned to join. Specifically, six events were listed on the survey that students can rate. The first two and the last two events were hypothetical events. The third and fourth events were events in which students would potentially be assigned to participate. The purpose of including these hypothetical events is to avoid bias in responding.

2.2.7 **U v w f involvement' in the assigned events, measured at time 2 only**

Student involvement in the assigned event was measured through a survey given at time 2 using 8 self-constructed items. Students who were in the activity group were asked about their overall feelings toward the assigned event and whether they felt they were involved in the activity. Sample items included “ I e n j o y e d p a r t i c i p a t i n g f r i e n d s t h r o u g h t h e e v e n t ” , a n d “ I e n j o y e d p a r t i c i p a t i n g i n t h e e v e n t ” . R e s p o n s e s r a n g e d f r o m 1 (S t r o n g l y d i s a g r e e) t o 5 (S t r o n g l y a g r e e) . C r o n b a c h ' s A l p h a f o r m e n t c o e f f i c i e n t m e a s u r e d a t t i m e 2 w a s . 7 9 . T h e i t e m s w e r e b o t h a v e r a g e d t o c r e a t e a m e a n s c o r e a n d o b s e r v e d i n d i v i d u a l l y i n t h e a n a l y s i s .

2.2.8 **Other variables**

Students' demographics including their gender and age were included in the survey given at time 1. Types of the assigned volunteering events were recorded as a control measure.

2.3 PROCEDURE

In the first phase of the study, all participants were given the initial survey (see Section 1.01(a)(i)Appendix D) which mainly measured their social relations, adult attachment style, knowledge about the school area, place attachment to the school area and their interests in participating in different volunteering events. After filling out the survey, participants were asked to write down on a separate sheet of paper their name, email and phone number, and were asked to indicate the time that they were available to participate the second phase of the study (see Section 1.01(a)(i)Appendix F). All participants were told that they would be notified of their assigned time and activity through email. Participants were also told that they were randomly assigned to the event. Participants were then assigned into activity group or control group by the order they came in the experimental room. The ratio of assignment to the control as compared to the activity group was set to be 1 to 3. Therefore, for every 4 participants entered in the experimental room, 1 was assigned to the control condition. Each of the 4 consecutive participants were grouped as one set, and the chosen control group participants in each group were matched with their three counterpart activity group participants with respect to the time to which they were asked to fill out time 2 survey. This procedure was done to insure a sufficiently large sample for the activity groups. It also aimed to ensure that both activity group and control answer the post-test at about the same time. This is particularly important because as first-year students in the university, participants' place attachment could vary greatly during the first few months of their college life.

The assignment to control group was done by assigning the n^{th} participant in the $[n+4(k-1)]^{\text{th}}$ set of four participants to the control group, where k ($k=1, 2, \dots, 75$) is the number of 4-participant set in the sequence of participants entering the experimental room (i.e. $k=1$ for 1st to

4th participants, $k=2$ for 5th to 8th participants, and ... $k=75$ for 297th to 300th participants), and n ($n=1, 2, 3, \text{ or } 4$) is the order of the participants within the set of four participants (i.e. $n=1$ for the 1st, 5th, 9th, ... 297th participants; $n=2$ for the 2nd, 6th, 10th, ..., 298th participants; $n=3$ for the 3rd, 7th, 11th, ..., 299th participants; and $n=4$ for the 4th, 8th, 12th, ..., 300th participants). For example, the 1st participant in the 1st group of 4-participant sets would be assigned to the control group. Similarly, these are some examples of participants chosen as control group: the 1st participant in the 5th group, 2nd participants in the 6th, 3rd participant in the 7th group, and 4th participant in the 8th.

Participants in the activity group were assigned to participate in one event based on their availability and the limit of the number of participants in each event. Within three weeks after the initial survey, these participants in the activity group received emails relating to their assigned activity (see Section 1.01(a)(i)Appendix G). On the day of the activity, students were first briefed on what they would do and the importance of their actions in helping the community around the school area. Then, participants would then start working on the tasks assigned. After students completed the assigned activity, they would receive an email with an online survey link (see Section 1.01(a)(i)Appendix G). Students were asked to go to the link and complete the post-activity survey (see Section 1.01(a)(i)Appendix I). Then, students were given an online debriefing form (see Section 1.01(a)(i)Appendix J).

Once the three participants in the activity finished the activity, their matching participant in the control group then received email saying that they were not assigned to an activity because of scheduling conflicts (see Section 1.01(a)(i)Appendix H). They were then given a survey link to fill out the post-test. Section 1.01(a)(i)Appendix K shows a flow chat of the procedure.

Several criteria were used to choose the activities, including that 1) the activity had to be on campus, 2) the activity did not last more than 1 hour, 3) the activity had to have an impact on the school area community (the urban Pittsburgh area, including Oakland, Shadyside, Squirrel Hill and Pittsburgh in general) and/or the community members. Two activities meeting these criteria were selected. One project was to help a local community center near the school area (Islamic Center of Pittsburgh, ICP) to renovate their space for community use. Tasks involved included painting walls, washing the floors, and washing tables and chairs. The other project, Adopt-a-Block, involves helping the school area by cleaning up trash on one block of streets on campus. Details of these activities are listed in Section 1.01(a)(i)Appendix E.

2.4 DATA ANALYSIS

After data collection, data were cleaned and variables were labeled to make sure the data did not contain any errors and were ready to be analyzed. Eight participants who filled out incorrect responses (e.g. filling out 5 on a scantron when there were only 4 options in the survey) were removed from the analyses. This is the same as the 8 participants mentioned in the Sample section (p. 28).

To analyze the data, first, means and correlations of all the tested variables were obtained. To test whether place attachment at time 2 (after the volunteering event) was bigger than that at time 1 (before the volunteering event; H1) and whether volunteering intention at time 2 (after the volunteering event) was bigger than that at time 1 (before the volunteering event; H2), paired-samples t-tests were done for both control and activity group to compare whether the two sets of scores were significantly different only in activity group, but not in control group. To

test the hypothesized path model (H2-H8), Mplus software program (Muthen & Muthen, 2005) was employed. The fit of the models were assessed with various fit statistics, comparative fit index (CFI; Bentler, 1990) and root mean square error of approximation (RMSEA; Browne & Cudeck, 1993). CFI greater than .95, and RMSEA less than .08 were used as determinants of whether the data fit the model.

3.0 RESULTS

3.1 DESCRIPTIVE DATA: MEANS AND CORRELATIONS OF STUDIED VARIABLES

Before model testing, means (as shown in Table 2) and correlations (as shown in Table 3) for all tested variables were obtained. A MANOVA was done to compare the differences among control group and the two activity groups (ICP and Adopt-a-Block groups) on time 1 variables. This was to ensure that the three groups were not significantly different during time 1, which in turns supports the conclusion that random assignment was successful. Also, participants' in the assigned activity was also compared across the two activity groups to ensure the two activities were not significantly different. As shown in Table 4, no differences in means were found among these three groups. This suggests that the activity and control group were not significantly different at time 1, and the two activity groups can be combined for analyses. Means and standard deviations for variables measured at time 2 across the control and the two activity groups were also computed and shown in Table 5.

Table 2. Means of all tested variables.

Tested Variables	Time 1	Time 2
	Means (S.D.) N=267	Means (S.D.) N=267
- Social relations in the school area	3.87 (.79) ^a	3.97 (.61) ^b
- Knowledge about the school area	2.90 (.52) ^a	3.10 (.51) ^b
- Adult attachment (Lower score represented more secure attachment)	2.78 (.51)	-
- Place attachment to the school area	3.92 (.52) ^a	3.99 (.47) ^b
- Previous volunteering expereinces	3.00 (.74)	-
- Volunteerng intention	3.60 (.58) ^a	3.51 (.51) ^b
- Involvement in the activity assigned (only applied to the activity group, N= 209)	-	3.52 (.58)

Note: Paired-sample t-tests were conducted to test the differences between time 1 and time 2 variables (N=267). Significant differences ($p < .01$) were indicated by different superscripts. All scales were measured on a 1 (strongly disagree) to 5 (strongly agree) scale. Unless otherwise stated, the higher score represented more positive of the variable.

Table 3. Correlations of all tested variables

	1	2	3	4	5	6	7	8	9	10
1. Social Relations at Time 1	-									
2. Social Relations at Time 2	.63**	-								
3. Knowledge of the school area at Time 1	.31**	.30**	-							
4. Knowledge of the school area at Time 2	.27**	.36**	.74**	-						
5. Adult attachment	-.43**	-.44**	-.21**	-.25**	-					
6. Place attachment to the school area at time 1	.56**	.41**	.44**	.45**	-.22**	-				
7. Place attachment to the school area at time 2	.39**	.55**	.46**	.59**	-.22**	.65**	-			
8. Previous volunteering experiences	.08	.13*	.11	.20**	-.02	.09	.16**	-		
9. Volunteering intention at time 1	.21**	.25**	.17*	.20**	-.05	.30**	.30**	.51**	-	
10. Volunteering intention at time 2	.20**	.29**	.14*	.19**	-.08	.23**	.32**	.44**	.75**	-
11. Involvement in the activity assigned (only applied to the activity group, N= 209)	.13	.26**	.10	.21**	.00	.19**	.27**	.19**	.40**	.57**

* $p < .05$, ** $p < .01$

Table 4. Means of time 1 variables by control and two activity groups, and means of involvement in the activity assigned by the two activity groups.

Tested Variables	Control	Activity 1 –	Activity 2 –
	Group	ICP	Adpot-a-Block
	Means (S.D.)	Means (S.D.)	Means (S.D.)
	N=58	N=175	N=34
- Social relations in the school area	3.70 (.52)	3.94 (.62)	3.86 (.67)
- Knowledge about the school area	2.87 (.59)	2.92 (.49)	2.85 (.59)
- Adult attachment (lower score represented more secure attachment)	2.82 (.57)	2.76 (.49)	2.78 (.49)
- Place attachment to the school area	3.86 (.50)	3.95 (.53)	3.88 (.55)
- Previous volunteering experiences	2.89 (.69)	3.03 (.73)	3.15 (.89)
- Volunteering intention	3.48 (.64)	3.60 (.55)	3.78 (.60)

Note: None of the mean differences were significant. All scales were measured on a 1 (strongly disagree) to 5 (strongly agree) scale. Unless otherwise stated, the higher score represented more positive of the variable. ICP=Islamic Center of Pittsburgh.

Table 5. Means of time 2 variables by control and two activity groups, and means of involvement in the activity assigned by the two activity groups.

Tested Variables	Control	Activity 1 –	Activity 2 –
	Group	ICP	Adpot-a-Block
	Means (S.D.)	Means (S.D.)	Means (S.D.)
	N=58	N=175	N=34
- Social relations in the school area	3.84 (.52)	4.02 (.62)	3.94 (.47)
- Knowledge about the school area	3.06 (.54)	3.11 (.50)	3.06 (.59)
- Place attachment to the school area	3.97 (.45)	4.01 (.48)	3.96 (.67)
- Volunteerng intention	3.40 (.53)	3.55 (.51)	3.56 (.53)
- Involvement in the activity assigned (only applied to the activity group, N= 209)	-	2.53 (.57)	2.78 (.49)

Note: None of the mean differences were significant. All scales were measured on a 1 (strongly disagree) to 5 (strongly agree) scale. ICP=Islamic Center of Pittsburgh.

3.2 TESTING THE CHANGE OF PLACE ATTACHMENT AND VOLUNTEERING INTENTION [H1 AND H2]

First, hypotheses H1 and h2 were tested, Hypothesis H1 suggested that place attachment at time 2 would be significantly higher than that of time 1 for activity group, but not control group. Therefore, place attachment at time 1 and place attachment at time 2 were compared. Paired-samples t-tests were conducted separately for control group and activity group. Contrary to the hypothesis, significant differences between place attachment at time 1 and time 2 were found

both in control group and activity group. For control group, time 2 score ($M=3.98$, $S.D.=.45$) was significantly higher than time 1 score ($M=3.86$, $S.D.=.50$), $t(df=57)=-2.33$, $p<.05$. For activity group, time 2 score ($M=4.00$, $S.D.=.48$) was significantly higher than time 1 score ($M=3.94$, $S.D.=.53$), $t(df=208)=-2.26$, $p<.05$. The differences between time 1 and time 2 were compared across control and activity group using a One-way ANOVA. Results showed that the time 1 and time 2 differences between control and activity were not significant. Therefore, results showed that for both control and activity groups, place attachment increased over time. However, the control and activity group were not differed. Hypothesis H1 was not confirmed.

Similarly, to test hypothesis H2, intentions to volunteer at time 1 and at time 2 were compared. Hypothesis H2 suggested that volunteering intention at time 2 would be greater than time 1 for the activity group, but not the control group. Paired-samples t-tests were thus conducted separately for control group and activity group. However, contrary to the hypothesis, for the activity group, the time 2 score ($M=3.55$, $S.D.=.51$) was significantly lower than the time 1 score ($M=3.63$, $S.D.=.56$), $t(df=208)=3.03$, $p<.01$. For the control group, the time 2 score ($M=3.48$, $S.D.=.63$) was not significantly different from the time 1 score ($M=3.40$, $S.D.=.53$), $t(df=57)=1.33$, N.S. Further investigation by types of activity was done. Results showed that significant differences were found only in Adopt-a-Block activity group $t(df=33)=3.54$, $p<.01$, in which time 2 score ($M=3.56$, $S.D.=.53$) was significantly lower than time 1 score ($M=3.78$, $S.D.=.60$). No significant difference was found in community center (ICP) group between time 1 ($M=3.60$, $S.D.=.55$) and time 2 ($M=3.55$, $S.D.=.51$), $t(df=174)=1.83$, N.S.

3.3 TESTING HYPOTHESIZED MODELS

3.3.1 Testing model 1 (H3 and H4): Basic model of predicting place attachment and volunteering intention

The Initial model was tested and unstandardized regression weights and standard errors are shown in Figure 5. Overall, the model fit the data well, $\chi^2=3.72$, $df=7$, $p=.82$, $CFI=1.00$ and $RMSEA=.00$. As hypothesized, at time 1, both social relations and knowledge of the school area predicted place attachment [H3], and place attachment predicted volunteering intention, controlling for previous volunteering experiences [H4]. The whole set of predictors explained 39% ($R^2=.39$) of variance of place attachment and 29% ($R^2=.29$) of variance of volunteering intention at time 1.

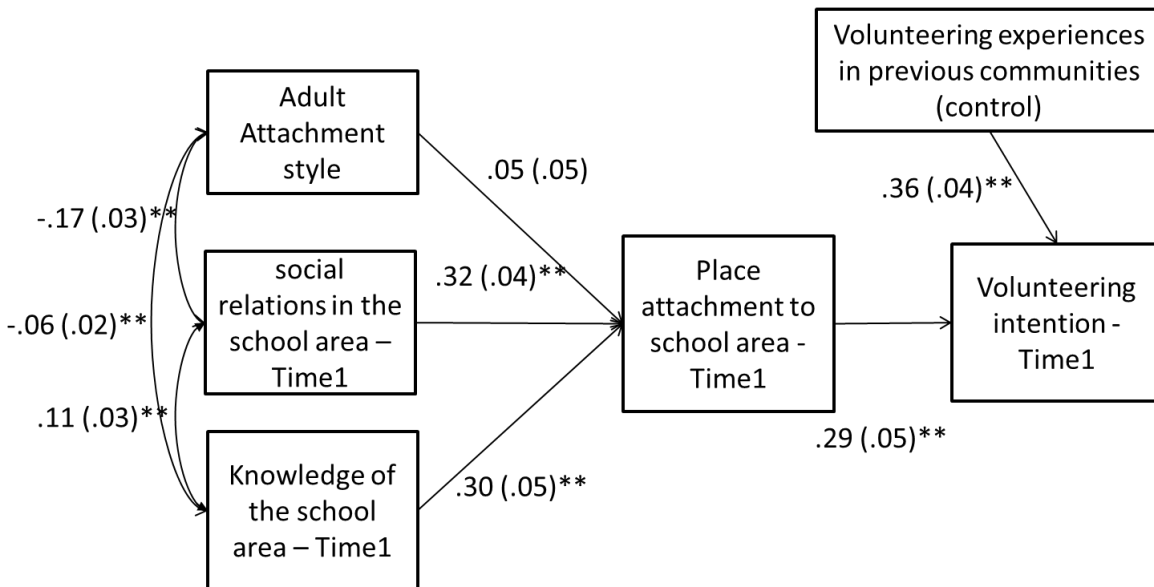


Figure 5. Unstandardized path coefficients of model 1: basic model of predictors of place attachment and the effect of place attachment on community involvement. (** $p<.01$)

A Sobel test (1982) was done to examine the mediating role of place attachment on the relations between social relations and volunteering intention, and between knowledge of the school area and volunteering intention. It was hypothesized that both social relations and knowledge of the school area predicted higher place attachment [H3], which in turn predicted higher volunteering intention [H4]. In other words, it was hypothesized that place attachment positively mediated the relations between social relations and volunteering intention, and knowledge of the school area and volunteering intention. As predicted, significant Sobel Test Statistics, $z=4.70$, $p<.01$ were obtained for the mediating effect of place attachment on the relations between social relations and volunteering intention, suggesting a significant mediated effect. Significant Sobel Test Statistics, $z=4.17$, $p<.01$ were also obtained for the mediating effect of place attachment on the relations between knowledge of the school area and volunteering intention, suggesting a significant mediated effect. Therefore, place attachment is a complete mediator in predicting volunteering intention from social relations and knowledge of the school area, as predicted.

The model was then tested using time 2 variables. The purpose was to confirm that the hypothesized model worked the same across time. Since adult attachment was not significantly associated with any other variables, it was dropped in this analysis. As shown in Figure 6, similar to the model at time 1, both social relations and knowledge of the school area at time 2 predicted place attachment at time 2, and place attachment at time 2 predicted volunteering intention at time 2, controlling for previous volunteering experiences. The whole set of predictors explained 48% ($R^2=.48$) of variance of place attachment and 22% ($R^2=.22$) of variance of volunteering intention at time 1. Although the model fit data was less desirable compared to model 1 with

time 1 variables, the model fit data were still acceptable, $\chi^2=15.81$, $df=5$, $p<.01$, $CFI=.96$ and $RMSEA=.09$.

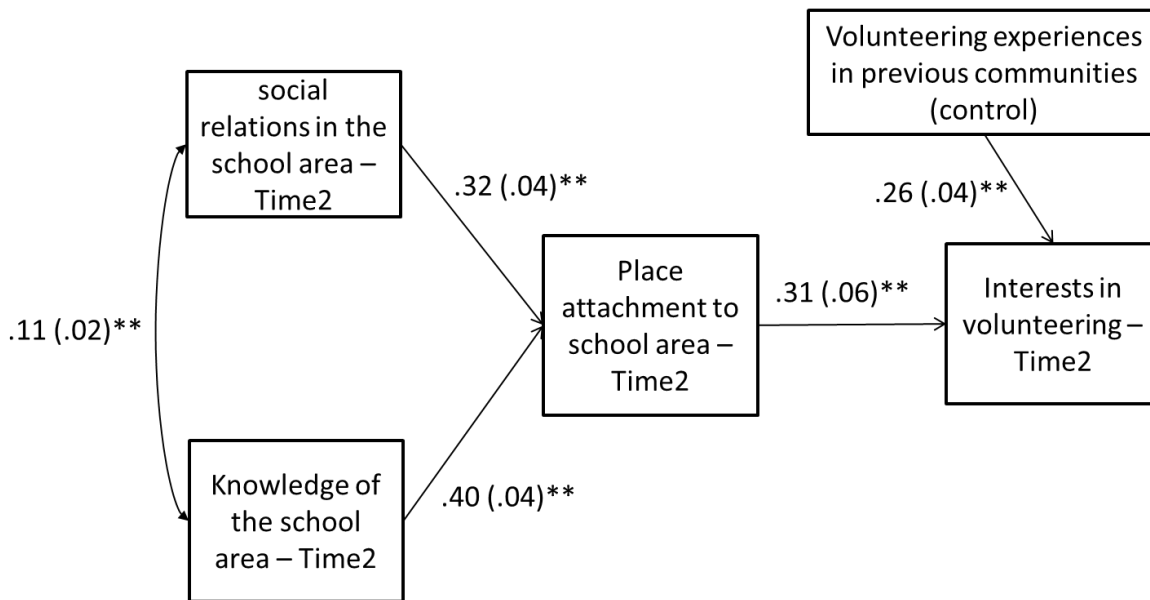


Figure 6. Unstandardized path coefficients of model 1 tested with time 2 variables (** $p<.01$)

3.3.2 Testing model 2 (H5): Basic model of predicting place attachment and volunteering intention

Next, the relations between interests than volunteering activity were tested for activity group using Linear regression analysis. Figure 7 showed the unstandardized regression coefficient. As predicted, interests in volunteering at time 1 significantly predicted student volunteerism ($B=.41$, $S.E.=.107$). This significant relation was still significant after controlling for number of days at the school area, adult attachment, previous volunteering experiences, social relations, knowledge of the school area and place attachment at time 1.

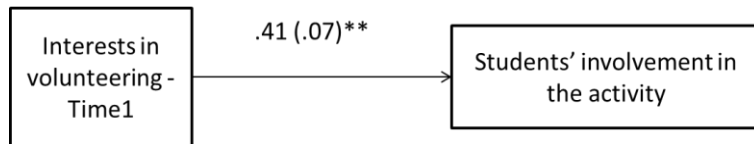


Figure 7. Unstandardized regression coefficient of model 2. $**p < .01$

3.3.3 Testing model 3 (H6 to H9): Basic model of predicting place attachment and volunteering intention

The hypothesized model testing the effect of participants' involvement in social relations, knowledge, place attachment and volunteering intention in the school area at time 2 was being analyzed only for participants in the activity group. Since students' social relations, knowledge of the school area and place attachment can be affected by their number of days in the school area, this variable was used as a control in the analysis. Results showed that, participants' involvement knowledge about the school area significantly predicted place attachment at time 2, but not social relations, as hypothesized [H6]. Social relations and knowledge about the school area at time 2 significantly predicted place attachment at time 2 [H7] and place attachment at time 2 significantly predicted volunteering intention at time 2 [H8]. Involvement in the assigned activity was also found to significantly predict their intention to volunteer at time 2 [H9]. The whole set of predictors explained 7% ($R^2=.07$) of the variance for social relations, 5% ($R^2=.05$) of the variance for knowledge about the school area, 50% ($R^2=.50$) of the variance for place attachment at time 2, and 38% ($R^2=.38$) of the variance for volunteering intention at time 2. Overall, the model fit the data well, $\chi^2=2.6$, $df=2$, $p=.26$, $CFI=1.00$ and $RMSEA=.04$, confirming the hypothesized path model.

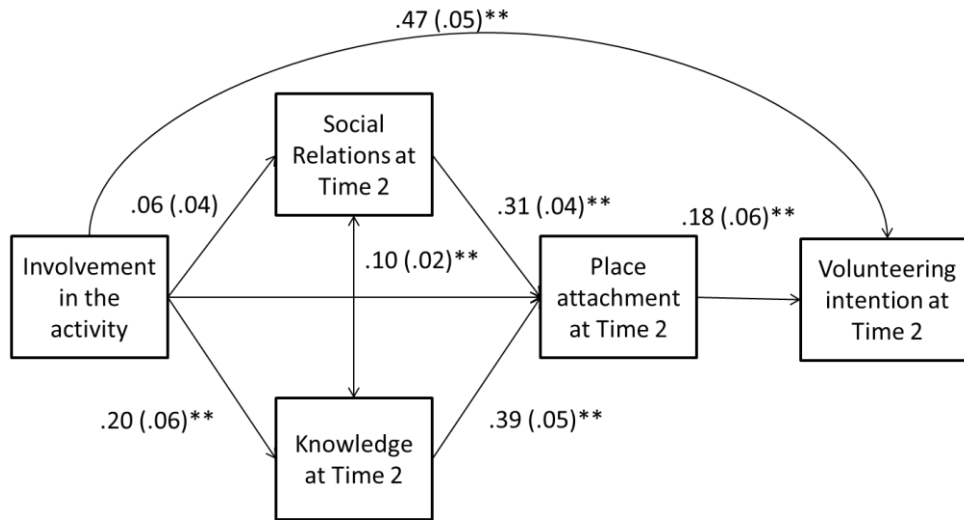


Figure 8. Unstandardized path coefficients of model 3: The effect of participants' involvement in their social relations, knowledge, place attachment and volunteering intention in the school area at time 2. (** $p < .01$)

3.3.4 Modification of model 3: Controlling time 1 variables (H6 to H9)

Model 3 (Figure 8 **Error! Reference source not found.**) successfully tested the relations between students' involvement in the activity, through their social relations, knowledge of the school area and place attachment at time 2, controlling for number of days in the school area. However, because of the limited sample sizes, the corresponding time 1 variables (social relations, knowledge of the school area and place attachment at time 1) were not taken into account in the proposal stage. Initially, the proposed sample was 200, with only 150 participants in the activity group. However, later on, I was approved to obtain more participants from the participant pool. Therefore, I was able to obtain 300 participants, with almost 200 participants in the activity group. Therefore, because of having a larger number of participants for analyses, further modification to model 3 was done by adding time 1 variables as control variables. Similar to the original model 3, since the model only

concerns about participants' only activity group was after included.

The modified model is shown in Figure 9. Results showed that after controlling for social relations and knowledge of the school area at time 1, students' involvement in the activity still predicted social relations and knowledge of the school at time 2. Similarly, after controlling for social relations, knowledge of the school area and previous volunteering experiences at time 1, social relations and knowledge of the school area at time 2 still predicted volunteering intention at time 2. Overall, the model fit the data well, $\chi^2=28.13$, $df=18$, $p=.06$, $CFI=.99$ and $RMSEA=.05$. The whole set of predictors explained 38% ($R^2=.38$) of the variance for place attachment at time 1, 4% ($R^2=.04$) of the variance for involvement in the activity, 41% ($R^2=.41$) of the variance for social relations at time 2, 58% ($R^2=.58$) of the variance for knowledge about the school area at time 2, 59% ($R^2=.59$) of the variance for place attachment at time 2, and 43% ($R^2=.43$) of the variance for volunteering intention at time 2.

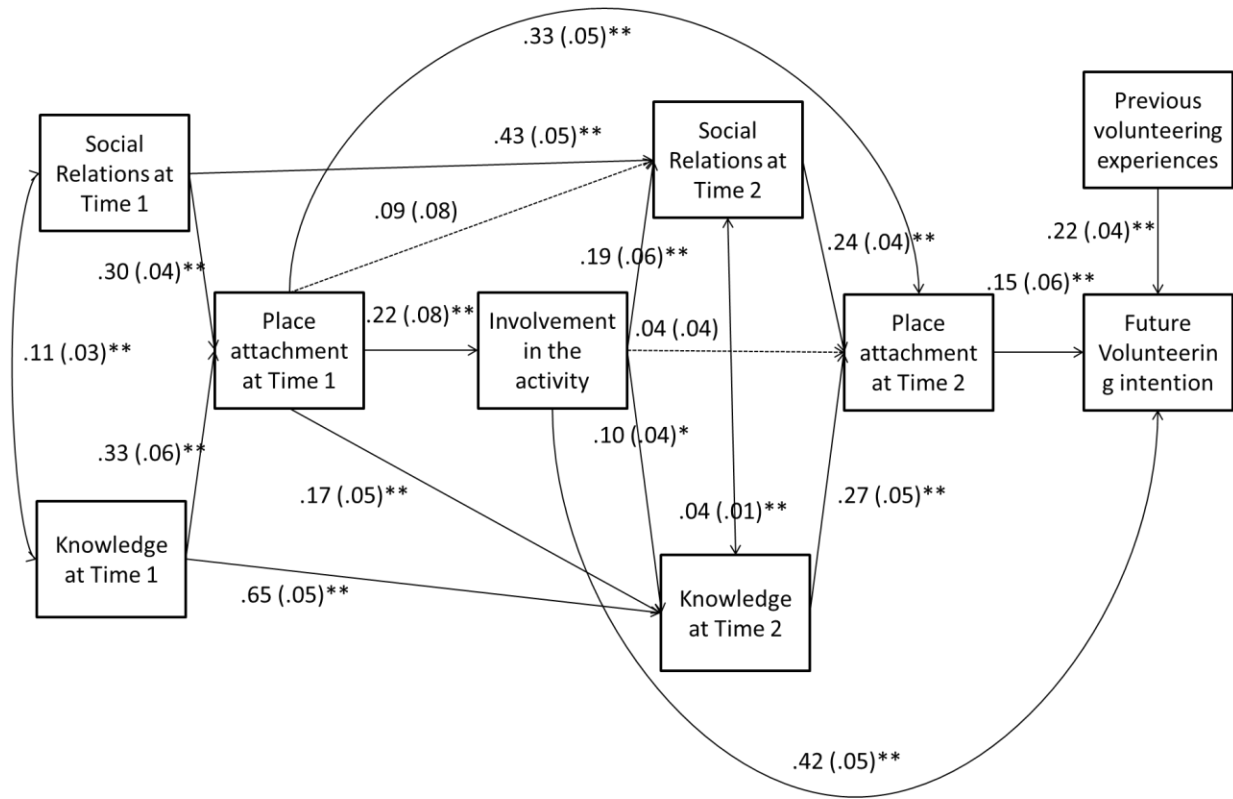


Figure 9. Unstandardized path coefficients of the conceptual model. $*p < .05$, $**p < .01$

4.0 DISCUSSION

4.1 EXPLANATIONS OF THE RESULTS

This study successfully contributes to the understanding of the mechanism of first-year college students' to volunteer. This study looked at how students' volunteering intentions changed after participation in a volunteer activity, in comparison to the students' counter using t-tests. However, results found that students group who participated in a volunteer activity had decreased intentions to volunteer in the future, while both activity and control groups had increased place attachment to the school area across time. Despite the negative results in the t-tests, this study successfully tested a series of models that looked at specific factors that might increase one's place attachment and volunteering intention. The place attachment framework adopted in this study contribute to their community is highly related to his or her attachment to the place. Specifically, one's initial attachment is mediated positively by social relations and knowledge of the school area, was found to relate to their intention to volunteer for activities in the school area. Given the opportunity to actually help the community, one's involvement in the activity found to predict higher future attachment to the place and higher future intention to volunteer. This relation between involvement in the activity and place attachment was mediated positively by social relations and knowledge of the school area. Overall, the results of the study aid the

understanding on the mechanism of first-year college students. This' v o l u could potentially help colleges and universities develop effective programs that encourage s t u d e n t s ' p a r t i c i p a t , i w h i c h , i n i t u r n s , c o u l d h e l p s t u d e n t s d e v e l o p m m u n i their interests in the community and their sense of responsibility for the community in the beginning of their early adulthood.

For the detail interpretations of the results, first, the results confirmed the basic model of place attachment (model 1), which looked at both the antecedents (social relations and knowledge of the school area) and consequences of place attachment (intention to volunteer). Previous studies looked at how social relations and adult attachment predicted place attachment (Li, 2011), and how place attachment related to volunteering intention (Li et al., 2012). This study improved by adopting a path model analysis technique to build a model that includes both antecedents and consequences of place attachment in the context of first-year college students ' t h e f u n c t i o n o f p l a c e a t t a c h m e n t i n o n e ' s i n t

However, it should be noted that opposite to what was hypothesized, adult attachment was found to be non-significant antecedent of place attachment in the overall test of the model, although it was significantly correlated to place attachment measured at time 1 and at time 2. Interestingly, the correlation coefficients between adult attachment and place attachment at time 1 and between adult attachment and place attachment time 2 were identical ($r=-.22$, $p<.01$). Therefore, it appeared that insecure adult attachment (higher score in the adult attachment scale) was consistently related to lower place attachment, but the relations may be too weak to be detected in the path model.

There can be two possible explanations to the weak relations between adult attachment and place attachment. One of the possible explanations is that adult attachment is indeed not an important predictor of place attachment. In other words, if this is true, my earlier speculation that one's childhood attachment may affect how they grow up is not supported. However, this should not be considered as contradictive of Bowlby's (1982) theory. What he suggested mainly referred to children exploring environments early in their life. Therefore, it is possible that the results of this study may suggest about the role of attachment in exploration of one's environment does not extend to adulthood. Another possibility is that adult attachment is an important predictor of place attachment, but the relations were not detected because of measurement or statistical factors. It should be noted that adult attachment and social relations were highly correlated ($p < .01$). Therefore, it is possible that during model analysis, multicollinearity may be present to mask the variance of place attachment shared by adult attachment. Alternatively, adult attachment may be a predictor of social relations, which in turns affect place attachment. This speculation will require further longitudinal study to test.

The present study also successfully identified mediators between involvement in the assigned activity and future intention to volunteer (model 3). As predicted, involvement in the assigned activity was an important predictor of intention to volunteer in the future, mediated by their social relations, knowledge of the school area and place attachment after participating in the activity. This is still true after controlling for the corresponding time 1 variables before they participated in the activity. Therefore, it appeared that volunteers' intention to volunteer to connect with other people and to know more about the area. The higher will

attachment to the place, which then make them more willing to contribute to the place by volunteering.

However, unlike what was predicted, both control group and activity group showed increased in place attachment in the post-test. In other words, participant attachment increased over time, regardless of whether they participated in the activity or not. Further analysis showed that the pre-post scores difference between activity group and control group were not significantly different. This means that the increments in place attachment were not statistically difference between the two groups.

One explanation for the non-significant difference between activity group and control group is that participants in the activity group might not feel involved enough, and so their level of place attachment were not changed because of the activity. This is supported by the finding that how involved the participants felt is an important predictor of place attachment (model 3). This non-involvement may be due to the activity being too short (1 hour), which did not give the students enough time for a change in their overall feelings about the school area, as measured by the place attachment scale.

Another explanation is that using cognitive dissonance theory (Festinger, 1957), one can argue that the non-significant difference between activity and control group on place attachment may be affected by the fact that participants got rewarded (participant pool credits) for participating in the activity. In Festinger experiment, students in the experimental group were asked to tell others that the task was interesting when it was not. It was assumed that this manipulation would create dissonance between the students' actual feelings and what they said. Some students got \$1 reward and some got \$20. It was found that compared to students who got only

\$1 reward, students who were paid \$20 (an unreasonably large reward) reduced their cognitive dissonance by externally justifying their behaviors to their large earnings. In other words, it appeared that the participants believed that they told others the task was interesting when it was not because there was a large amount of reward, not because they genuinely found the task interesting. On the other hand, participants who received a small reward (\$1) did not resolve their dissonance by attributing their behaviors externally. Instead, they attributed their behaviors internally to make themselves believe that they truly enjoyed the task. Similarly, in this study, for participants holding negative attitudes toward the place, they experienced a cognitive dissonance arisen from their negative place attachment and their contradicting behaviors of helping the community in the place. It is thus possible that these participants reduced this cognitive dissonance by externally attributing their participation to earning the participant pool credits, instead of their attachment to the place. This may then explain why the change of place attachment in the activity group before and after the volunteering activity was not differed from that of the control group. Figure 10 illustrated this idea.

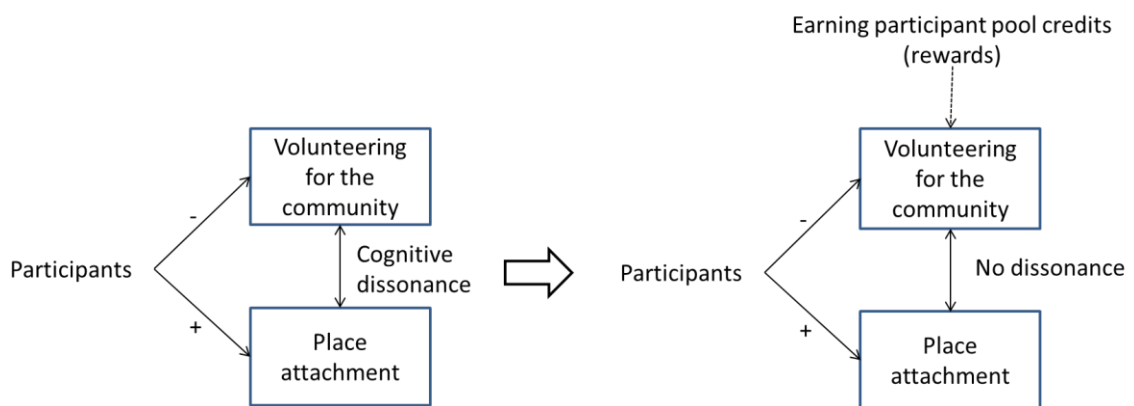


Figure 10. Participants' cognitive dissonance was solved by externally attributing their behavior to earning rewards.

However, this argument using the role of reward may not be the best explanation of the non-significant results of place attachment change between activity and control groups. Different from Festinger and Carlsmith's (1959) study, same amount of credit, so the two groups were not different in this aspect. In addition, the reward in the present study is relatively small compared to the control study. Potential study participants had other choices to do an online study to earn credits, instead of participating in this more demanding project. Moreover, after the completion of the study and reception of the feedback sheet, some participants expressed that they were glad they participated because they could get to know the community better. Therefore, there were no signs that participants felt they had participated solely for credits. Also, it should be noted that cognitive dissonance only happens when participants had the freedom to make choices (Brehm, 1956; Festinger, 1957). Therefore, since students participated for credits and thus were not completely free to choose in the current study, the cognitive dissonance theory might not be applicable in this study.

A more probable explanation is that the non-significant difference may be due to a ceiling effect. It should be noted that place attachment mean scores were already very high during the pre-test. Therefore, due to a possible ceiling effect, the difference between activity group and control group may not have been detected.

Another major finding suggested that compared to the control group, students in the activity group on average had significantly lower intention to volunteer in the future after participating in the volunteering activity. This was completely opposite to what was predicted. Further t-test analysis by types of activity found that the significant difference was found in only one of the two activities, Adopt-a-Block. Thus, students who participated in the Adopt-a-Block

event had more negative attitudes towards volunteering than before they participated. However, neither the control group nor the community center (ICP) group had the predicted significant increase (for the activity group) or a decrease in volunteering intention. Therefore, it appears that the Adopt-a-Block event was the major cause of the interests in Adopt-a-Block at time 1 after reading a brief description in the survey, students were not initially very excited about the activity before assignment to participate in this activity ($M=3.26$, $S.D.=1.26$, on a 1 to 5 scale of interest). Also, on the day of the planned Adopt-a-Block event, there was pouring rain. Students were thus collecting the trash in very heavy rain wearing rain coats, if they had brought them. The hope for student interaction during the event was unlikely to have occurred. Therefore, it is possible that the negative attitudes came from this specific situation and the high cost of volunteering (getting wet and picking up trash on a Saturday morning).¹

Another possible reason for the failure to confirm the prediction that volunteering would need to higher intentions to volunteer in the future was that students may have had uneven levels of involvement in the activity. These individual differences may not have been adequately represented by the low average scores, and these values may have masked the reactions of those participants who did not find the activity interesting or enjoyable. The individual differences were analyzed in the tests of the full model. As the model analysis showed, the level of

¹ A 2 (Time) x 3 (activity types: Control/ICP/AAB) ANOVA was conducted, controlling for student days at the school area. Within-subject result showed that, overall, participants significantly greater than that of time 1, $F(df=1)=6.99$, $p<.01$. However, interactions were not significant, $F(df=2)=.36$, N.S., suggesting that activity types (control, ICP or AAB) were not interacted with the time of the study (time 1 vs. time 2).

involvement in the activity was a major predictor of future volunteering intentions at time 2, mediated by factors such as place attachment, social relations and knowledge of the school area. In other words, while being present in the volunteering activity alone did not predict higher volunteering intentions in the future, those who rated themselves as being more involved in the volunteer activity did, indeed, show higher volunteering intentions for the future, as predicted.

This further emphasizes the importance of making sure that volunteers are involved and enjoyed the event they participated in. This may suggest that to encourage future participation, enhancing involvement in the activity, such as matching the interests of the volunteers with the nature of the tasks, may be more effective than merely having them present in the activity, if one intends to increase desires to volunteer in the future.

This argument on the need for matching between student involvement in the activity could be partially supported by some additional information about the current study. In the current study, participants were asked how interested they were in the activity in which they might possibly be participating (i.e. helping to renovate a community center and helping to clean the streets of the school area). Correlation analyses found that students' initial level of interest in the activity was related to their later involvement in the activity ($r=.25$, $p<.01$ for participants in the ICP community center renovation group and $r=.38$, $p<.01$ for participants in the adopt-a-block street cleaning group). Therefore, even though the t-test result seems to say that the activity had a negative participation on average, the correlational results and the model analyses both agree that as long as students feel involved and enjoyed about the activity, they are interested in doing more voluntary works in the future.

Future studies can be developed to further support this claim by designing an experiment that purposefully examines the matching between students' personalities and interests can be assigned to different activities (matched) and "mismatched" (interests and types of activities are not matched) and observe the role of matching play on influencing students' involvement in the activity and the

4.2 LIMITATIONS

The dissertation study successfully made use of the experimental method, with a matching control group to study phenomenon that are generally investigating using a descriptive field study model. This study was also longitudinal, which allowed investigation of students' change over time and before and after the volunteering activity. In addition, this study developed several detailed model analyses, which brought better understanding of the reasons why people change after the activity. However, like all other studies, this present study also has its limitations.

One major limitation of this current study is the voluntary nature of volunteer activity in the present study. Specifically, students participated in the study to fulfill their course requirement. Therefore, it may not be completely voluntary. Studies looking at similar questions as the current study, that is, the effect of volunteering, usually make use of secondary data using a longitudinal national database (e.g. Astin, Sax, & Avalon, 1999; Borgonovi, 2008; Musick & Wilson, 2003; Zaff, Moore, Papillo, & Williams, 2003) or through recruiting existing volunteers

(e.g. Bakker, Van der Zee, Lewig, & Dollard, 2006; Clary, Snyder, Ridge, Copeland, Stukas, Haugen & Miene, 1998; Millette & Gagne, 2008). Because of the necessity in the present study to use a broad range of students, who were not necessarily interested in volunteering, it was necessary to offer some type of reward or incentive to gain their cooperation. This may challenge the idea that the assigned activity could be legitimately classified as a volunteering activity and thus, whether the results can be applied to true volunteering or community involvement. However, throughout the study, participants were told several times that they could voluntarily withdraw from the study. Therefore, in this sense, students participated in the study completely out of their own will. When asked to rate from 1 (strongly disagree) to 5 (strongly agree) the statement “if it was not required, I would not have participated in the event when some one asked me to” (on a 5 scale), suggesting that participants in general might have volunteered for the same event even if it were not done for participant pool credits. Also, as mentioned in the explanations of the results, participants wrote that they appreciated this opportunity to get involved in local community. Others said that they found the study much more meaningful than other participant pool studies that they did for their course requirement.

Another concern is that the volunteering activity was only lasted for 1 hour because of the limitation of credits that could be provided for the student participants. This may not give students enough time to fully experience being a volunteer. However, the results in this study suggested that for those who enjoyed participating in the activity, the intervention on first-year college students’ involvement in the one hour community volunteering event during the first semester of their college study. Also, college students are usually busy with course works and part-time jobs. After they graduated, they will then be busy

with their career. A one-hour activity may thus be a good representation of the type of volunteering activity they will do in the future. Therefore, although having a longer activity may also be a good way to see the effect of volunteering attachment change and future volunteering intention, the one-hour activity used in this study appeared to be sufficient.

Another limitation because of considerations of the pool of available student participants was that the sample size was not large enough to test all the hypothesized paths in one single model. Therefore, the model analyses were done as separate smaller models. However, the sample size of almost 300 was still large given the context of the study. Although the models tested were smaller than the conceptual model in **Error! Reference source not found.**, the sample still allowed analyses of moderate size models developed in this study. The models were still sufficient for the purpose of understanding the activity and intention for future volunteering. Future studies with larger sample size will allow more complete understanding of the whole processes from before the activity to after the activity, but models found in this study still provide strong evidence for the processes.

4.3 CONCLUSION

Despite the limitations, the dissertation study successfully built upon previous literatures to test the impact of actual participation in a volunteering using an experimental method. The present study also successfully developed path models to understand how to get first-year college students involved in voluntary community services using the place attachment theoretical framework.

Results of the study suggested that voluntary activities for first-year college students, even for a very short period of time, are helpful to the community and their development into a responsible citizen of their community as long as students are able to enjoy and feel involved in the activity.

The results of the present study contributed to developing strategies to help students adjust to college life and develop their sense of responsibilities to their communities. At the same time, the results of the current study can also be extended to similar context. For example, this study may suggest that place attachment and early participation in the local community may be one of the important factors affecting immigrants adjustment, acculturation and development of their new community networks upon their arrival in their new country.

To develop a more effective volunteering program for first-year college students, the present study suggested that matching the type of activity to students' interests is important. It is also important to make sure students feel socially connected and feel more knowledgeable about the area through these activities. By doing these, students will be able to feel more involved in the activity and thus will have increased place attachment to the community and higher intention to volunteer again in the future.

APPENDIX A

DEVELOPMENT OF THE PSYCHOLOGICAL PLACE ATTACHMENT SCALE

(PPAS)

A.1 PPAS 6 THE ORIGINAL VERSION

The original PPAS was developed using 172 community samples (31% male and 68% female) who have resided in Pittsburgh before. The survey was done online). The original scale consisted of 24 items, with 8 items as affective items (A), 8 items as cognitive items (C), and 8 items as behavioral items (B). As reported in the Exploratory factor analysis (EFA) for the scale, the scale fell on one major dimension.

A1	I feel happy when I am in Pittsburgh
A2	I feel secure when I am in Pittsburgh
A3*	I would not feel sad if I have to leave Pittsburgh
A4*	I don't feel like I belong in Pittsburgh
A5	I like Pittsburgh
A6*	Pittsburgh is not a comfortable place for me.
A7	I am loyal to Pittsburgh
A8*	I can easily replace another place with Pittsburgh.
C1	I have significant memories in Pittsburgh
C2	Pittsburgh has a special meaning for me
C3	I consider Pittsburgh as my home base.
C4	I know all the best places to go in Pittsburgh.
C5*	I will forget about Pittsburgh after I leave.
C6	When people ask me where I am from, I would say Pittsburgh.
C7	I know how to show people around in Pittsburgh. (repeat C4)
C8*	I don't know much about Pittsburgh
B1*	I don't care about what happens in Pittsburgh
B2	I keep up with the news about Pittsburgh no matter where I am
B3	I call my Pittsburgh friends/family in order to know what is happening in Pittsburgh

	Pittsburgh.
B4	When I am out of Pittsburgh, I try to find Pittsburgh food.
B5	I seek out people from Pittsburgh when I am away from Pittsburgh.
B6	I put things around me to remind me of Pittsburgh.
B7*	When I am not in Pittsburgh, I lose track of things happening in Pittsburgh.
B8	I cheer for Pittsburgh sports team.

*Reversed items

A= affective items; B= behavioral items; C= cognitive items

References:

Li, M., & Frieze, I. H. (2011, January) *Measuring and understanding place attachment*. Poster presented at the 12th Annual Meeting of the Society of Personality and Social Psychology, San Antonio, TX, USA.

Li, Frieze, Cheong (revised and resubmitted). "Stay or go? A structural equation model of highly educated individuals' desires to return to their hometowns." *Journal of Behavioral Sciences*.

A.2 PPAS - IN SLOVENIA

Later, the PPAS was translated and back-translated into Slovene and was tested in Eastern Europe on a sample of 120 female Slovenian undergraduate students, aged 20-26. A total of 29 items was used in the Slovene versions. The Slovene version was modified based on the original PPAS so that items that were irrelevant to the Slovene cultures were removed and items that were relevant to the Slovene cultures were added by student research collaborators in Ljubljana. Cronbach's alpha of the scale was .93. Exploratory factor analysis revealed that 29 items formed one major dimension.

A1	I feel happy when I am in Ljubljana.
A2	I feel secure when I am in Ljubljana.
A3*	I would not feel sad if I had to leave Ljubljana.
A4*	I don't feel I belong in Ljubljana.
A9*	I feel bored in Ljubljana.
A10	I am proud of Ljubljana.
A11	It feels good to come back to Ljubljana after I have been away.
A12	I feel relaxed in Ljubljana.
A14	It is the people in Ljubljana that make me care about Ljubljana.
A15	I feel supported by the people in Ljubljana.
A16	People in Ljubljana recognize my accomplishments.
C1	I have significant memories of Ljubljana.
C2	Ljubljana has a special meaning for me.
C4	I know all the best places to go in Ljubljana.
C5*	I will forget about Ljubljana if I move away.

C7	I know how to show people around in Ljubljana.
C8*	I don't know much about Ljubljana.
C9*	I have had bad experiences in Ljubljana.
C10*	Ljubljana seems unfamiliar to me.
B1*	I don't know what happens in Ljubljana.
B2	I keep up with the news about Ljubljana.
B3	I call my Ljubljana friends/family in order to know what is happening in Ljubljana when away.
B6	I put things around me to remind me of Ljubljana.
B7*	When I am not in Ljubljana, I lose track of things happening in Ljubljana.
B9	I suggest to others that they should visit Ljubljana.
B10*	I don't enjoy showing people
B11	I tell people about things that happened to me in Ljubljana.
B12	I am always glad to meet people from Ljubljana if out of town
B13	I get involved in activities in Ljubljana.

*Reversed items

Reference:

Frieze, I. H., Li, M., Drevensek, P., Gazvoda, A., Mihelic, S., & Ogrinc, P. (2011). Psychological factors in migration and place attachment in Slovene Students. *Anthropos: Journal of Psychology, Philosophy, and for the Cooperation of Humanistic Studies*, 43, 179-191.

A.3 PPAS 6STUDENT (STUDENT VERSION)

Later, the original PPAS was modified to use in school context (PPAS-Student). A total of 228 students (48% male and 52% female) from the Introduction to psychology participant pool, aged 18-22, was recruited to test the PPAS-Student. Modification was made based on the PPAS-Student version. Items unrelated to the student experience were found to be .94. Exploratory factor analysis (EFA) was conducted. The items were found to fall onto one major factor, suggesting the scale as one dimension.

A1	I feel happy when I am at Pitt
A2	I feel secure when I am at Pitt
A3*	I would not feel sad if I have to leave Pitt
A4*	I don't feel I belong at Pitt
A5	I like Pitt
A6*	Pitt is not a comfortable place for me.
A9*	I feel bored in Pittsburgh.

A10	I am proud of Pittsburgh.
A11	It feels good to come back to Pitt after I have been away.
A12	I feel relaxed at Pitt.
C1	I have significant memories at Pitt
C2	Pitt has a special meaning for me
C4	I know all the buildings and areas at Pitt.
C5*	I will forget about Pitt after I leave.
C7	I know how to show people around at Pitt.
C8*	I don't know much about Pitt.
C9*	I have had bad experiences in Pitt.
C10*	Pitt seems unfamiliar to me.
B1*	I don't care about what happens at
B2	I keep up with the news about Pitt no matter where I am
B3	I call my Pitt friends in order to know what is happening at Pitt.
B6	I put things around me to remind me of Pitt.
B7*	When I am not at Pitt, I lose track of things happening at Pitt.
B8	I cheer for at least one Pitt sports team.
B9	I suggest to others that they should visit Pitt.
B10*	I don't enjoy showing people impor
B11	I tell people about things that happened to me at Pitt.
B12	I am always glad to meet people from Pitt if out of town.

*Reversed items

References:

Li, M., Frieze, I. H., Nokes-Malach, T., Cheong, J. (2013). Do friends always help your study? Mediating processes between social relations and academic motivation. *Social Psychology of Education, 16*, 129-149.

Li, M. (2011). *Place attachment in university students: social antecedents and academic motivations* (Master's Thesis, University of Pittsburgh)

A.4 SHORTENED PPAS-STUDENT

The shortened PPAS-Student was developed using the same data as the PPAS-S. The shortened version was developed by time answering the survey and thus reduced fatigue. Also, in this dissertation study, definitions for place attachment were further modified. Therefore, items that were irrelevant to the updated definitions needed to be removed.

To develop this shortened version, first, based on PPAS-Student, items unrelated to the definition of place attachment were being removed. Then, based on results of factor analysis, the final shortened scale is as followed.

		Related concepts	Reasons of removable
A1	I feel happy when I am at Pitt	Happiness	
A2	I feel secure when I am at Pitt	Liking	
A3*	I would not feel sad if I have to leave Pitt	Happiness	
A4*	I d o n ' t f e e l I b	Belongingness	
A5	I like Pitt	Liking	
A6*	Pitt is not a comfortable place for me.	Liking	
A9*	I feel bored in Pittsburgh.		Irrelevant to the concept of affective attachment
A10	I am proud of Pittsburgh.		Irrelevant to the concept of affective attachment
A11	It feels good to come back to Pitt after I have been away.		Irrelevant to new students
A12	I feel relaxed at Pitt.	Liking	
C1	I have significant memories at Pitt	Memories	
C2	Pitt has a special meaning for me	Meaning	
C4	I know all the buildings and areas at Pitt.		Irrelevant to the definition of cognitive attachment; Fit better in the knowledge variable
C5*	I will forget about Pitt after I leave.	Memories	
C7	I know how to show people around at Pitt.		Irrelevant to the definition of cognitive attachment; Fit better in the knowledge variable
C8*	I d o n ' t k n o w m u c		Irrelevant to the definition of cognitive attachment; Fit better in the knowledge variable
C9*	I have had bad experiences in Pitt.		Irrelevant to the definition of cognitive attachment
C10*	Pitt seems unfamiliar to me.	Memories	
B1*	I d o n ' t k n o w a b o u t w h a t h a p p e n s a t P i t t .	Proximity-maintaining	
B2	I keep up with the news about Pitt no matter where I am	Proximity-maintaining	
B3	I call my Pitt friends in order to know what is happening at Pitt.		Irrelevant to new students
B6	I put things around me to remind me of Pitt.		Irrelevant to new students
B7*	When I am not at Pitt, I lose track of things happening at Pitt.		Irrelevant to new students
B8	I cheer for at least one Pitt sports		Irrelevant to new students

	team.	
B9	I suggest to others that they should visit Pitt.	Irrelevant to the concept of behavioral attachment
B10*	I don't enjoy important places at Pitt.	Irrelevant to new students
B11	I tell people about things that happened to me at Pitt.	Irrelevant to the concept of behavioral attachment
B12	I am always glad to meet people from Pitt if out of town.	Irrelevant to new students

**Reversed items*

Then, exploratory factor analysis (EFA) was conducted to remove any items that are not related to the main factor. Results showed that the scale form one single with eigenvalue 6.28. Factor loadings for each item are shown below. Cronbach's alpha was found to be .90, which showed good reliability.

Factor loadings for the shortened PPAS-Student:

		Related concepts	Factor loadings
A1	I feel happy when I am at Pitt	Happiness	.83
A2	I feel secure when I am at Pitt	Liking	.56
A3*	I would not feel sad if I have to leave Pitt	Happiness	-.67
A4*	I don't feel I belong	Belongingness	-.76
A5	I like Pitt	Liking	.79
A6*	Pitt is not a comfortable place for me.	Liking	-.77
A12	I feel relaxed at Pitt.	Liking	.60
C1	I have significant memories at Pitt	Memories	.69
C2	Pitt has a special meaning for me	Meaning	.76
C5*	I will forget about Pitt after I leave.	Memories	-.77
C10*	Pitt seems unfamiliar to me.	Memories	-.59
B1*	I don't care about Pitt.	Proximity-maintaining	-.69
B2	I keep up with the news about Pitt no matter where I am	Proximity-maintaining	.45

**Reversed items*

Finally, wordings of the final scale were changed to fit the present study's context. "at Pitt" was changed to "in the school area"

A1	I feel happy when I am in the school area
A2	I feel secure when I am in the school area

A3*	I would not feel sad if I have to leave the school area
A4*	I don't feel I belong in it
A5	I like the school area
A6*	The school area is not a comfortable place for me.
A12	I feel relaxed in the school area.
C1	I expect to have significant memories in the school area after I leave the area.
C2	The school area has a special meaning for me.
C5*	I will forget about the school area after I leave.
C10*	The school area seems unfamiliar to me.
B1*	I don't catch up on the news about the school area.
B2	I keep up with the news about the school area no matter where I am.

**Reversed items*

APPENDIX B

PARTICIPANT POOL RECRUITMENT SCRIPT

F i r s t y e a r s t u d e n t s ' s c h o o l i

FIRST YEAR STUDENT ONLY. GET 3 PARTICIPANT POOL CREDITS IN SHORT PERIOD OF TIME. To be qualified to participate in this study, you have to be 1) 18-22 years old; 2) first-year student at Pitt; 3) never lived in the school area (i.e. Urban Pittsburgh area, including Oakland, Shadyside, Squirrel Hill, South Side or Waterfront) before you came to Pitt.

T h i s r e s e a r c h s t u d y i s t o i n v e s t i g a t e s be surveying college students at the University of Pittsburgh and ask questions relating to their background [e.g., age, gender], as well as about their feelings toward their experiences in Pittsburgh. The survey is confidential and your personal responses will not be identified in any way. There are no foreseeable risks associated with this project, nor are there any direct benefits to you. There will be no monetary compensation.

This study consists of two sections. The first section of the study lasts for no more than 1 hour and you will get 1 subject pool credit upon completion. The second section of the study involves an on-campus activity and a post-activity survey. The second section will not last longer than 2 hours and you will receive 2 subject pool credits upon completion. Please note that when you sign up for this study in the Introduction to psychology participant pool system (Sona System), Sona System will only ask you the timeslots for the first section. You will arrange the time for the second section after you complete the first section.

Your participation is completely voluntary and you have the right to withdraw at any time. Please note that you need to be 18 to participate in this study.

If you are interested, please sign up appropriate timeslot using the participant pool system. This study is being conducted by Manyu Li, who can be reached at MAL109@pitt.edu, if you have any question.

APPENDIX C

INSTRUCTION AND INTRODUCTION OF THE STUDY (TO BE READ TO PARTICIPANTS BY EXPERIMENTER IN THE BEGINNING OF THE SURVEY).

F i r s t y e a r s t u d e n t s ' s c h o o l i

Welcome to the study. As listed in our requirements in the advertisement, to participate in this study, you will have to be

1. First year student
2. 18-22 years old
3. Have not lived in the school area (i.e. Urban Pittsburgh area, including Oakland/Shadyside/Squirrel Hill/South Side or Waterfront) before you came to Pitt
Please raise your hand if you do not meet either of the requirements.

T h e p u r p o s e o f t h e s t u d y i s t o l o o k a t parts of the study. You will immediately get 1 credit by participating in the first half of the study today. After you completed the second section, you will receive the other 2 credits. Therefore, at the end, if you have participated in both parts of the study, you will receive 3 credits.

By staying in this study, you agree to participate in both parts of the study. You can withdraw from the study at any time.

APPENDIX D

THE PRE-ACTIVITY SURVEY GIVEN BEFORE STUDENTS ARE ASSIGNED FOR A VOLUNTEERING ACTIVITY

D.1 SUMMARY OF THE MEASUREMENTS

Scale	No. of Items	Item no. in the survey	Reference
Place attachment scale	13	1-13	Frieze et al. (2011); Li, Frieze, Nokes and Cheong (2013); Li, Frieze and Cheong (revised and resubmits)
Knowledge about school area	10	14-23	Self-constructed, Li, Wiewiora, & Frieze (2012)
Social relations	6	24-29	Li, Frieze, Nokes and Cheong (2013), Camalcilar (2009)
Adult attachment style	36	30-65	Brennan, K., Clark, C, Shaver, P.R., 1998
Self-efficacy	17	66-82	
Life satisfaction	5	83-87	
Interests to volunteer (a)	14	88-101	Self-constructed from pilot
Interests to volunteer (b)	6	102-107	Self-constructed about their interests in participating each event
Previous volunteering experiences	7	108-114	Self-constructed, pilot
Demographics	10	115-124	

Note: Self-efficacy and life satisfaction scales were tested for exploratory purpose, but neither of them was significantly related to the major variables. Therefore, they were omitted in the dissertation.

D.2 SURVEY

A Study on university life:

This research study is to investigate how we will be surveying college students at the University of Pittsburgh and the surrounding areas, and ask questions relating to their background [e.g., age, gender], as well as about their school life. A number of psychological scales are included. There are no foreseeable risks associated with this project, nor are there any direct benefits to you. Your participation is voluntary.

This survey is particularly interested in your feelings toward the school area. **Throughout the survey, ò v j school ar g c ö " k u " f g h k p g f " c u " v j g " R k v v " e c o r w u " c p f " u w Squirrel Hill, Waterfront and south side) and in general other areas/communities you frequently visit in Pittsburgh.**

This is an anonymous survey. Please do not write your name anywhere on the forms. Your personal responses will not be identified in any way. Feel free to skip any items you do not wish to respond to.

This study is being conducted by Manyu Li, who can be reached at 412-383-5046 or MAL109@pitt.edu, if you have any questions.

Please indicate your responses on the scantrons provided.

Thank you for participating!

Often people have strong feelings toward a particular place, such as their school, places they have visited before, or even places they have never been to. Below are statements concerning your feelings toward the area around University of Pittsburgh. Throughout the survey, ò v j g " u e j q q n " as the Pitt campus and surrounding areas (such as Oakland, Shadyside, Squirrel Hill, Waterfront and south side) and in general other areas/communities you frequently visit in Pittsburgh.

There are no right or wrong answers.

Please rate the following statement using the scale below:

Strongly disagree ódisagree óneither agree/disagree óagree óstrongly agree

<-- a -----b-----c-----d-----e----->

1. I feel happy when I am in the school area.
2. I expect to have significant memories of the school area after I graduate.
3. I don't care about what happens in the s
4. I feel secure when I am in the school area.
5. The school area has a special meaning for me.

6. I keep up with the news about the school area no matter where I am.
7. I would not feel sad if I had to leave the school area.
8. I don't feel I belong to the school area
9. I like the school area.

10. I will forget about the school area if I move away.

11. The school area is not a comfortable place for me.
12. The school area seems unfamiliar to me.
13. I feel relaxed at the school area.
14. I know the school area very well.
15. I know how to show people around in the school area.

16. I feel that other people know more than I do about the school area.
17. I know where the popular places are in the school area.
18. I am familiar with the history and background of the school area.
19. If someone asks me about nearby events in the school area, I do not know how to answer.
20. I know where the best deals are for food, goods and/or services in the school area.

21. I am unfamiliar with what types of businesses & establishments are located in the school area.
22. I know who the important people are in the school area.
23. I know groups and clubs in the school area that are related to my interests.

Please answer the following questions regarding your feelings to your friends in the school area.

Please rate the following statement using the scale below:

Strongly disagree ódisagree óneither agree/disagree óagree óstrongly agree

<-- a -----b-----c-----d-----e----->

26. I feel close to my friends.
27. I can share my problems with my friends.
28. I enjoy spending time with my friends.
29. I find it difficult to find someone to talk to.
30. My classmates and I help each other.
31. I find it difficult to have someone accompany me when I need it.

Please take a moment to think about how you GENERALLY feel in IMPORTANT RELTIONSHPIS in your life. Think about your past and present relationships with people who have been especially important to you, such as romantic partners and close friends. Using the scale below, respond to each statement in terms of how you GENERALLY feel in these relationships.

Strongly disagree ódisagree óneither agree/disagree óagree óstrongly agree

<-- a -----b-----c-----d-----e----->

33. I prefer not to show people how I feel deep down.
34. I worry about being abandoned.
35. I am very comfortable being close to people.
36. I worry a lot about my relationships.
37. Just when people start to get close to me, I find myself pulling away.
38. I w o r r y t h a t p e o p l e w o n ' t c a r e a b o u t m e

39. I get uncomfortable when people want to be very close to me.
40. I worry a fair amount about losing close relationships.
41. I d o n ' t f e e l c o m f o r t a b l e o p e n i n g u p t o c

42. I often wish that other people's feeling
 43. I want to get close to people, but I keep pulling back.
-
44. I often want to merge completely with people, and this sometimes scares them away.
 45. I am nervous when people get too close to me.
 46. I worry about being alone.
 47. I feel comfortable sharing my private thoughts and feelings with others.
 48. My desire to be very close sometimes scares people away.
-
49. I try to avoid getting too close to people.
 50. I need a lot of reassurance that I am loved by others.
 51. I find it relatively easy to get close to others.
 52. Sometimes I feel that I force people to show more feeling and more commitment.
 53. I find it difficult to allow myself to depend on others.
-
54. I do not often worry about being abandoned.
 55. I prefer not to be too close to others.
 56. If I can't get others to show interest i
 57. I tell close others just about everything.
 58. I find it hard to get as close as I would like w a
-
59. I usually discuss my problems and concerns with others.
 60. When I'm not involved in a relationship ,
 61. I feel comfortable depending on others.
 62. I get frustrated when people are not around as much as I would like.
 63. I don't mind asking others for comfort ,
-
64. I get frustrated if close others are not available when I need them
 65. It helps to turn to others in times of need.
 66. When others disapprove of me, I feel really bad about myself.
 67. I turn to others for many things, including comfort and reassurance.
 68. I resent it when close others spend time away from me.

Please rate the following statement using the scale below:

Strongly disagree ódisagree óneither agree/disagree óagree óstrongly agree
 <-- a-----b-----c-----d-----e----->

69. When I make plans, I am certain I can make them work.
 70. One of my problems is that I cannot get down to work when I should.
 71. If I can't do a job the first time. I keep trying until I can.
 72. When I set important goals for myself, I rarely achieve them.
 73. I give up on things before completing them.
-
74. I avoid facing difficulties.
 75. If something looks too complicated, I will not even bother to try it.
 76. When I have something unpleasant to do, I stick to it until I finish it.
 77. When I decide to do something, I go right to work on it.
 78. When trying to learn something new, I soon give up if I am not initially successful.
-
79. When unexpected problems occur, I don't handle them well.
 80. I avoid trying to learn new things when they look too difficult for me.
 81. Failure just makes me try harder.
 82. I feel insecure about my ability to do things.
 83. I am a self-reliant person.
-
84. I give up easily.

- 85. I do not seem capable of dealing with most problems that come up in life.
 - 86. In most ways my life is close to my ideal.
 - 87. The conditions of my life are excellent.
 - 88. I am satisfied with my life.
-
- 89. So far I have gotten the important things I want in life.
 - 90. If I could live my life over, I would change almost nothing.

In the following questions, we are interested in knowing how interested you are to get involved in the u e j q q n " c t g c 0 " C i c k p " ð v j g " u e j q q n " c t g l i n g ö r e a k (suðhlag h k Oakland, Shadyside, Squirrel Hill, Waterfront and south side) and in general other areas/communities you frequently visit in Pittsburgh.

There are no right or wrong answers. Please rate the following statement using the scale below:

Strongly disagree ódisagree óneither agree/disagree óagree óstrongly agree
 <-- a -----b-----c-----d-----e----->

- 91. I am interested in doing voluntary work, such as fundraising and providing administrative support for an organization in the school area.
 - 92. It is difficult to find time for helping the community in the school area.
 - 93. I am interested in providing voluntary assistance in the school area to persons unrelated to me (such as the elderly, children, the poor or disaster victims), prepare and serve food, or transport persons or goods.
 - 94. It is not important to me that the school area is clean or not.
 - 95. I dislike participating in service activities in the school area.
-
- 96. I am interested in providing voluntary help to a campaign for a cause in the school area.
 - 97. Community change does not come from volunteers but from full time paid community leaders and staff.
 - 98. I am interested in shopping for/purchase of goods as help to other households in the school area (e.g. participated in food drive).
 - 99. I t i s n o t c o l l e g e s t u d e n t s ' r e s p o n s i b i l i t y
 - 100. I am not the kind of person that spends free time on volunteering for the school area.
-
- 101. In general, I am interested in doing things to help people in the school area.
 - 102. I am interested in volunteering to clean or improve the school area or work to improve the environment of this area.
 - 103. I am interested organizing event(s), such as community gathering, to make others aware of an issue in the school area.
 - 104. I do not plan to join volunteering activities throughout my college study in the area.

Please read the following event description and indicate your interests to participate using the scale below:
Not interested at all óNot interested óNeither interested/uninterested óinterested óvery interested
 <----- a -----b-----c-----d-----e----->

- 105. Event Name: Language partner
 Content: Help international exchange students get familiar with English, American cultures and college life by being a language partner for one of these students.

Please rate how interested you are:
 a. *Not interested at all*

- b. Somewhat Not interested*
- c. Neither interested/uninterested*
- d. interested*
- e. very interested*

106. Event Name: The Homelost project

Content: Help homeless people in the school area by cutting used T-shirt donated by other students and sewing the cut T-shirts together as quilts.

Please rate how interested you are:

- a. Not interested at all*
- b. Somewhat Not interested*
- c. Neither interested/uninterested*
- d. interested*
- e. very interested*

107. Event Name: Community Center

Content: Help an Oakland community center by renovating their center so that more people in the community can enjoy the facility. This involves some small tasks that are easy to complete.

Please rate how interested you are:

- a. Not interested at all*
- b. Somewhat Not interested*
- c. Neither interested/uninterested*
- d. interested*
- e. very interested*

108. Event Name: Adopt-a-block project

Content: Help cleaning Oakland up by picking up litters in an assigned block in Oakland.

Please rate how interested you are:

- a. Not interested at all*
- b. Somewhat Not interested*
- c. Neither interested/uninterested*
- d. interested*
- e. very interested*

(please continue to the next page)

109. Event Name: Serving food

Content: Food bank in Oakland serves food to lower income individuals. Volunteers assist with serving food to these individuals.

Please rate how interested you are:

- a. Not interested at all*
- b. Somewhat Not interested*
- c. Neither interested/uninterested*
- d. interested*
- e. very interested*

110. Event Name: Family house event
Content: Family house in Oakland offers low cost lodging and support for families of critically ill patients. Volunteers spend an hour playing board games with these families and chat with them.

Please rate how interested you are:

- a. *Not interested at all*
- b. *Somewhat Not interested*
- c. *Neither interested/uninterested*
- d. *interested*
- e. *very interested*

In the following questions, we are interested in knowing your previous volunteering experiences in your hometown or other places that you resided before. Please rate the following statements using the scale below:

Never ----- óSeldom ----- óSometimes ----- óOften ----- óAlways
<-- a -----b-----c-----d-----e----->

- 111. In the past, I did voluntary work for an organization, such as fundraising and providing administrative support.
- 112. In the past, I provided voluntary assistance to persons unrelated to me (such as the elderly, children, the poor or disaster victims), prepare and serve food, or transport persons or goods.

- 113. In the past, I provided voluntary help to a campaign for a cause in the area.
- 114. In the past, I organized event(s), such as community gathering, to make others aware of an issue in the area.
- 115. In the past, I shopped for/purchase of goods as help to other households (e.g. participated in food drive).
- 116. In general, in the past, I did things to help people.
- 117. In the past, I cleaned or improved the environment of the community.

Below are questions about yourself:

- 118. What is your age?
 - a. Under 18
 - b. 18-22
 - c. 23-25
 - d. 26-30
 - e. Above 30

- 119. Which year are you in?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Fifth year or above

- 120. What is your gender?
 - a. Male

b. Female

121. What area do you live?
- a. On campus
 - b. Oakland (off campus living)
 - c. Shadyside
 - d. Squirrel Hill
 - e. Others
122. Do you have any friends or family coming with you to study at Pitt?
- a. 0
 - b. 1-2
 - c. 3-4
 - d. 5-6
 - e. 7 or above
123. Have you lived in the school area (Oakland/Shadyside/Squirrel Hill/Waterfront/South Sides) before you come to Pitt?
- a. Yes
 - b. No
124. Are any of your family members/relatives **alumni** at Pitt?
- a. None
 - b. 1
 - c. 2-3
 - d. 4-5
 - e. 6 or above
125. Do you have any family members/relatives who are studying at Pitt?
- a. None
 - b. 1
 - c. 2-3
 - d. 4-5
 - e. 6 or above
126. Where did you grow up?
- a. Pittsburgh
 - b. Pennsylvania (except Pittsburgh)
 - c. East Coast of the US
 - d. Other areas of the US
 - e. Out of the US
127. How far is your hometown from Pittsburgh?
- a. Pittsburgh, or nearby area
 - b. Within 50 miles from Pittsburgh
 - c. About 51-100 miles from Pittsburgh
 - d. About 101-200 miles from Pittsburgh
 - e. More than 200 miles from Pittsburgh

The end of part 1. Thank You!

APPENDIX E

LIST OF ASSIGNED ACTIVITIES

1. Event Name: Helping Islamic Center of Pittsburgh to renovate their center for the Pitt and Oakland community

Content: Help ICP, an Oakland community center by renovating their center so that more people from Pitt and in the community can enjoy the facilities. This involves some small tasks that are easy to complete.

Venue: 4100 Bigelow Blvd., Pittsburgh, PA 15213

Possible tasks:

- Organizing the kitchen dishes, pots and spices as well as cleaning them.
- Clean the windows
- Clean tables and chairs in main dining room
- Organize the donations room

2. Event Name: Adopt-a-block

Content: Adopt-a-block is a one-hour event. It involves picking up litter in an assigned block in Oakland.

Dates and number of students in each of the activity

Activity	Dates	#students in each event
Islamic Center of Pittsburgh (ICP)	Sep 12 th , 24 th	10-14/session 165(Total)

Adopta-block (TBD)	Sep2 nd , 2013	44 (Total)
--------------------	---------------------------	------------

APPENDIX F

UCORNG " U J G G V " QH " UWT X G [" C U M K L A B I L I U W A F F E R T M E Y Ø " C X C

COMPLETE THE PRE-ACTIVITY SURVEY

Participant no.: _____
Thank you for filling out the survey.
The second phase of the study involves a total of 90 minutes of the study, you participate in one hour on campus event helping the communities around campus area, and finish an online survey at home. By completing this second part of the study, you will receive participant pool credits.
You will be notified within 3 weeks about the confirmed time, venue and content of the you will be participating. It is important that you leave your contact information accurate.
Please print your name: _____
Phone number: _____
Please print the BEST email that can reach you: _____
Please read all the emails sent to you in detail (Sender will be beam109@plit.edu) as important information about how you get your credit will be mainly contained in your emails.
(Please be assured that none of these personal information will be associated to your responses from the survey)

Please check your availability for September (Please check all that apply)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				12 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	13 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	14 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm
15 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	16 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	17 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	18 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	19 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	20 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	21 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm
22 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	23 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	24 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	25 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	26 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	27 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	28 __1011am __11-12pm __12-1pm __1-2pm __23pm __56pm __67pm __78pm
29 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm	30 __1011am __11-12pm __121pm __1-2pm __23pm __56pm __67pm __78pm					

APPENDIX G

EMAIL SENT TO PARTICIPANTS IN ACTIVITY GROUP

G.1 EMAIL SENT TO PARTICIPANTS IN ACTIVITY BEFORE THE ACTIVITY

Thank you for participating in the Part requirement for Introduction to Psychology course at Pitt. You have successfully earned 1 participant pool credit. Please follow the instructions below to earn 2 more participant pool credit. Please keep this email confidential. Please do not share the details of this study with any other students.

The second section of the study involves an on-campus activity and an online post-activity survey. The activity will not last longer than 1 hour and you will receive 2 participant pool credits upon completing both the activity and an online survey at home. Your participation is completely voluntary and you have the right to withdraw at any time.

Your participation is very important to our Pitt community. The organization that you are going to help has had significant impact on the community in the past. Therefore, by participating in the research study, you are helping to develop our community as well. It only requires 1 hour of your time to help the organization, but the help that you provide will be tremendous to the organization as well as the community around the school area.

According to the available date and time you have provided, here is the information of the second part of the study:

Details of the activity:

The activity you will be participating is to help a local community center, Islamic Center of Pittsburgh (ICP), to renovate their space for community use. Their space is open to everyone in the community around Pitt. Your help to the center will directly impact the community around

the school area by providing members in nearby communities with a clean and organized space to use. Please wear clothes that you don't mind getting dirty.

Date: 9/12/2013 (Thursday) Time: 11-12pm (Please be on time)

Venue: 4100 Bigelow Blvd. - Islamic Center of Pittsburgh (ICP)

Direction: (See Google Map) Please note
To get to ICP:

1. Walk to Ruskin and Fifth Ave (the street next to Clapp Hall)
2. Walk up hill
3. Turn right on Bigelow Blvd (which is
4. Turn left on Bigelow Blvd. Walk all the way up hill to 4100 Bigelow.

Please see Google Map for the detail location. It takes about 15 minutes to walk from the Towers to ICP. Please plan your time well. Email me ahead of time if you are not sure how to get there, or call me at 412-726-1302 if you cannot find it.

If you have any question, please email me at [email address] or call me at [phone number].

G.2 EMAIL SENT TO PARTICIPANTS IN ACTIVITY AFTER THE ACTIVITY

First, I would like to thank YOU for your great help today.

Now, please spare a good 30 minutes to do an online survey. Please follow this link: [link being pasted here]. Your participant no. is []. You will need to fill this number in on the first page.

Please finish the survey before [date and time] and email me at [email address] back to get credits.

APPENDIX H

EMAIL SENT TO PARTICIPANTS IN CONTROL GROUP

Thank you for participating in the Part requirement for Introduction to Psychology course at Pitt. You have successfully earned 1 participant pool credit. Please follow the instructions below to earn 2 more participant pool credit. Please keep this email confidential. Please do not share the details of this study with any other students.

According to the available date and time you have provided, we cannot find an activity that matches with your schedule. However, you can still earn 2 participant pool credits by filling out an online survey.

Please spare a good 30 minutes to do the online survey. After you are done, please email me back to notify your completion of the survey. Then I will give you 2 credits. Please follow this link: [link being pasted here]

Your participant no. is []. You will need to fill this number in on the first page.

Please finish the survey before [date and time] and email me back to get credits.

If you have any question, please email me at [email address] or call me at [phone number].

APPENDIX I

THE POST-ACTIVITY SURVEY GIVEN RIGHT AFTER STUDENTS COMPLETED THE ASSIGNED VOLUNTEERING ACTIVITY

I.1 SUMMARY OF THE MEASUREMENTS

Scale	No. of Items	Item no. in the survey	Reference
Involvement in the activity	8	1-8	Self-constructed
Place attachment scale	15	9-24	Frieze et al. (2011); Li, Frieze, Nokes and Cheong (2013); Li, Frieze and Cheong (revised and resubmits)
Knowledge about school area	10	25-34	Self-constructed, Li, Wiewiora, & Frieze (2012)
Social relations	6	35-40	Li, Frieze, Nokes and Cheong (2013), Camalcilar (2009)
Future Interests to volunteer	14	41-54	Self-constructed from pilot

I.2 ACTUAL SURVEY

First-year students' university activity survey involvement

Thank you for participating in the volunteering event.

This survey is particularly interested in your feelings toward the event you just participated and your feeling toward the school area in general. **Throughout the survey, ð v j g " u e j q q n " c t g c ö " campus and surrounding areas (such as Oakland, Shadyside, Squirrel Hill, Waterfront and south side) and in general other areas/communities you frequently visit in Pittsburgh.**

This is an anonymous survey. Please do not write your name anywhere on the forms. Your personal responses will not be identified in any way. Feel free to skip any items you do not wish to respond to.

This study is being conducted by Manyu Li, who can be reached at 412-383-5046 or MAL109@pitt.edu, if you have any question.

Please indicate your response on the scantrons provided.

Thank you for participating!

The following items are about your feelings toward the event you just participated. There is no right or wrong answer. **Please rate the following statement using the scale below:**

Strongly disagree *ódisagree* *óneither agree/disagree* *óagree* *óstrongly agree*
 <-- a -----b-----c-----d-----e----->

1. I enjoy participating in the event.
2. If it was not for fulfilling the participant pool requirement, I would not have participated in the event when someone asks me to.
3. I feel satisfied by participating in the event because I know I helped someone in need.
4. I make friends through the event.
5. I get to know more about the community around the school area in the event.
6. I feel the event was a waste of my time.
7. I wish the activity could last longer.
8. I was very involved in the activity.

Some people have strong feelings toward one place, such as their school, places they have visited before, or even places they have never been to. Below are statements concerning your feelings toward the school area* around University of Pittsburgh. There are no right or wrong answers. Please rate how much you agree to each statement.

***Throughout the survey, ð v j g " u e j q q n " c t g c ö " k u " f g h k p g f " c u " v as Oakland, Shadyside, Squirrel Hill, Waterfront and south side) and in general other areas/communities you frequently visit in Pittsburgh.**

Please rate the following statement using the scale below:
Strongly disagree *ódisagree* *óneither agree/disagree* *óagree* *óstrongly agree*
 <-- a -----b-----c-----d-----e----->

9. I feel happy when I am in the school area.
10. I have significant memories of the school area.
11. I don't care about what happens in the school area.
12. I feel secure when I am in the school area.
13. The school area has a special meaning for me.
14. I keep up with the news about the school area no matter where I am.
15. I would not feel sad if I had to leave the school area.
16. I don't feel I belong to the school area.
17. I like the school area.
18. I will forget about the school area if I move away.
19. The school area is not a comfortable place for me.
20. The school area seems unfamiliar to me.
21. I tell people about things that happened to me at the school area.
22. I feel relaxed at the school area.
23. The school area is very special to me.
24. The school area means a lot to me.
25. I know the school area very well.
26. I know how to show people around in the school area.
27. I feel that other people know more than I do about the school area.
28. I know where the popular places are in the school area.
29. I am familiar with the history and background of the school area.
30. If someone asks me about nearby events in the school area, I do not know how to answer.
31. I know where the best deals are for food, goods and/or services in the school area.
32. I am unfamiliar with what types of businesses & establishments are located in the school area.
33. I know who the important people are in the school area.
34. I know groups and clubs in the school area that are related to my interests.
35. I feel close to my friends.
36. I can share my problems with my friends.
37. I enjoy spending time with my friends.
38. I find it difficult to find someone to talk to.
39. My classmates and I help each other.
40. I find it difficult to have someone accompany me when I need it.

In the following questions, we are interested in knowing how interested you are to get involved in the school area. Again "the school area" is defined as (Shadyside, Squirrel Hill, Waterfront and south side) and in general other areas/communities you frequently visit in Pittsburgh. Please rate the following statement using the scale below:

Strongly disagree ódisagree óneither agree/disagree óagree óstrongly agree
 <-- a-----b-----c-----d-----e----->

41. I am interested in doing voluntary work, such as fundraising and providing administrative support for an organization in the school area.
42. It is difficult to find time for helping the community in the school area.
43. I am interested in providing voluntary assistance in the school area to persons unrelated to me (such as the elderly, children, the poor or disaster victims), prepare and serve food, or transport persons or goods.

44. It is not important to me that the school area is clean or not.
45. I dislike participating in service activities in the school area.
46. I am interested in providing voluntary help to a campaign for a cause in the school area.
47. Community change does not come from volunteers but from full time paid community leaders and staff.
48. I am interested in shopping for/purchase of goods as help to other households in the school area (e.g. participated in food drive).
49. It is not college students' responsibility to help the
50. I am not the kind of person that spends free time on volunteering for the school area.
51. In general, I am interested in doing things to help people in the school area.
52. I am interested in volunteering to clean or improve the school area or work to improve the environment of this area.
53. I am interested organizing event(s), such as community gathering, to make others aware of an issue in the school area.
54. I do not plan to join volunteering activities throughout my college study in the area.

Thank You!

APPENDIX J

FEEDBACK SHEET FOR PARTICIPANTS

First-year students' university Feedback Information for Study Participants

First, we would like to thank you for participating in this study. We would also like to tell you more about the purpose of this research.

This study is part of a continuing project. The purpose of this study is to understand the relations among students' attachment and sense of belonging in Pittsburgh, and involvement in the Pitt area. We predict that attachment to the school area, which is predicted by their social relations in the area, adult attachment style and their knowledge about the area, will relate to their interests in volunteering for the communities around the school area and their level of participation in a randomly assigned volunteering event. It is also predicted that participation in a randomly assigned volunteering event will increase their place attachment to the school area and interests in volunteering for the communities in the future.

We would like to thank you for your participation in this research. We ask that you do not discuss the nature of this study with your classmates. We want their experience in this research to be as unbiased as your own. If you have questions about this research, please contact Manyu Li at 412-383-5046 or MAL109@pitt.edu.

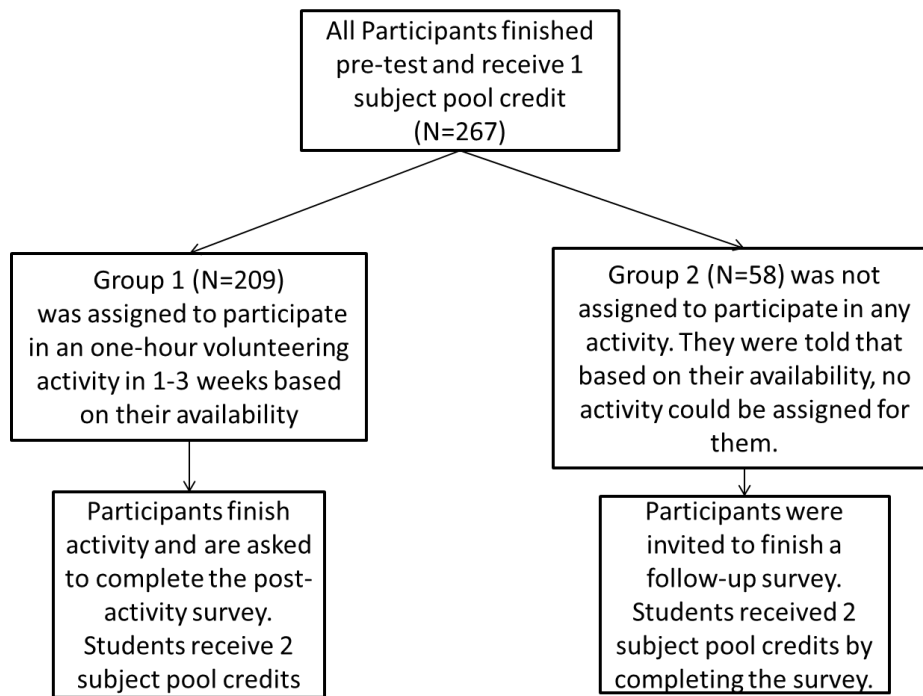
If you want to read more about this topic, you may read the following paper:

Li, M., Frieze, I. H., Nokes-Malach, T., Cheong, J. (2013). Do friends always help your study? Mediating processes between social relations and academic motivation. *Social Psychology of Education*, 16, 129-149.

Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30, 1-10.

APPENDIX K

FLOW CHART OF THE PROCEDURE



BIBLIOGRAPHY

- Altman, I., & Low, S. M. (1992). *Place attachment*. Plenum Press. DOI: 10.1007/978-1-4684-8753-4.
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of experimental social psychology*, 22, 453-474. DOI: 10.4324/9780203869666.
- Anders, S. L., & Tucker, J. S. (2000). Adult attachment style, interpersonal communication competence, and social support. *Personal Relationships*, 7, 379-389. DOI: 10.1111/j.1475-6811.2000.tb00023.x.
- Austin, A. W., Sax, L. J., & Avalos, J. (1999). Long-term effects of volunteerism during the undergraduate years. *The Review of Higher Education*, 22, 187-202. DOI: 10.1111/j.1442-2018.2011.00622.x.
- Bakker, A. B., Van der Zee, K. I., Lewig, K. A., & Dollard, M. F. (2006). The relationship between the Big Five personality factors and burnout: A study among volunteer counselors. *The Journal of Social Psychology*, 146, 31-50.
- Bem, D.J. (1972). Self-perception theory. In L. Berkowitz(Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1-62). New York: Academic Press. DOI: 10.3200/SOCP.146.1.31-50.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246. DOI: 1990-13755-001.
- Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods & Research*, 16, 78-117. DOI: 10.1111/j.1745-3992.2007.00099.x.
- Boaç, C. (2009). Place attachment. *Journal of Environmental Psychology*, 29, 267-278. DOI: 10.1016/j.jenvp.2009.01.001.
- Bonaiuto, M., Aiello, A., Perugini, M., Bonnes, M., & Ercolani, A. P. (1999). Multidimensional perception of residential environment quality and neighbourhood attachment in the urban environment. *Journal of Environmental Psychology*, 19, 331-352. DOI: 10.1006/jenvp.1999.0138.

Borgonovi, F. (2008). Doing well by doing good. The relationship between formal volunteering and self-reported health and happiness. *Social Science & Medicine*, 66, 2321-2334. DOI: 10.1016/j.socscimed.2008.01.011.

Bowlby, J. (1969). *Attachment and loss v. 3 (Vol. 1)*. Random House. 10.2307/588279.

Brehm, J. W. (1956). Post-decision changes in the desirability of choice alternatives. *Journal of Abnormal and Social Psychology*, 52, 384-389.

Brennan, K., Clark, C, Shaver, P.R. (1998). Self-report measurement of adult attachment: An integrative overview. In J.A. Simpson & W.S. Rholes (Eds.) *Attachment Theory and Close Relationships* (pp. 46-76). New York: Guilford Press. DOI: 10.1080/14616730210154225.

Brown, G., Brown, B. B., & Perkins, D. D. (2004). New Housing as Neighborhood Revitalization: Place Attachment and Confidence Among Residents. *Environment and Behavior*, 36, 749-775. DOI: 10.1177/0013916503254823.

Brown, B., Perkins, D. D., & Brown, G. (2003). Place attachment in a revitalizing neighborhood: Individual and block levels of analysis. *Journal of Environmental Psychology*, 23, 259-271. DOI: 10.1016/s0272-4944(03)00050-1.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newsbury Park, CA: Sage. DOI: 10.1177/0049124192021002005.

Cemalcilar, Z. (2009). Schools as socialization contexts: Understanding the impact of school climate factors on student *Applied Psychology An International Review*, 59, 243-272. DOI: 10.1111/j.1464-0597.2009.00389.x.

Chavis, D. M., & Wandersman, A. (1990). Sense of community in the urban environment: A catalyst for participation and community development. *American Journal of Community Psychology*, 18, 55-81. DOI: 10.1007/bf00922689.

Chinman, M. J., & Wandersman, A. (1999). The benefits and costs of volunteering in community organizations: Review and practical implications. *Nonprofit and Voluntary Sector Quarterly*, 28, 46-64. DOI: 10.1177/0899764099281004.

Chow, K. & Healey, M. (2008). Place attachment and place identity: first-year undergraduates making the transition from home to university. *Journal of Environmental Psychology* 28, 362-372. DOI: 10.1016/j.jenvp.2008.02.011.

Clary, E. G., & Snyder, M. (1999). The motivations to volunteer: Theoretical and practical considerations. *Current Directions in Psychological Science*, 8, 156-159. DOI: 10.1111/1467-8721.00037

Clary, E. G., Snyder, M., Ridge, R. D., Copeland, J., Stukas, A. A., Haugen, J., & Miene, P. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, *74*, 1516-1530. DOI: 10.1037//0022-3514.74.6.1516.

Crosby, N., Kelly, J. M., & Schaefer, P. (1986). Citizens panels: A new approach to citizen participation. *Public Administration Review*, *46*, 170-178. DOI: 10.2307/976169.

Devine-w r i g h t , P . (2 0 0 9) . R e t h i n k i n g N I M B Y i s m : T h e r o l e of place identity in explaining place-protective action. *Journal of Community & Applied Social Psychology*, *441*, 426-441. DOI: 10.1002/casp.1004.

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, Ill: Row, Peterson.

F r a n c e , M . , F i n n e y , S . J . , & S w e b e r t a t t a c h m e n t t o i , P . (2 0 0 7) . Attachment to their university: A construct validity study of the University Attachment Scale. *Educational & Psychological Measurement*, *70*, 440 -458. DOI: 10.1177/0013164409344510.

F r i e z e , I . H . , B o n e v a , B . S . , o v š e k , F . J . , M i l j u s k a , J . N . , H o r n o v a , P . P . , P o p o v a , L . , K o r o b a n o v a , J . , S u k h a r e v a , N . (2 0 0 7) . Psychological differences in stayers and leavers: Emigration desires in central and eastern European university students. *European Psychologist*, *9*, 15-23. DOI: 10.1027/1016-9040.9.1.15.

Freeman, T. M., Anderman, L., & Jensen, J. M. (2007). Sense of belonging in college freshman at the classroom and campus levels. *The Journal of Experimental Education*, *75*, 203-220. DOI: 10.3200/JEXE.75.3.203-220.

Giles, D. E., & Eyler, J. (1994). The theoretical roots of service-learning in John Dewey: Toward a theory of service-learning. *Michigan Journal of Community Service Learning*, *1*, 77-85.

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*, 79-90. DOI: 10.1002/1520-6807(199301)30:1%3C79::aid-pits2310300113%3E3.0.co;2-x.

Gusfield, J. R. (1975). *Community: A critical response*. New York: Harper & Row. DOI: 10.2307/2063167.

Hagerty, B. M., & Williams, A. (1999). The effects of sense of belonging, social support, conflict, and loneliness on depression. *Nursing research*, *48*, 215-219. DOI: 10.1097/00006199-199907000-00004.

Hernandez, B., Hidalgo, M. C., Salazar-Laplace, M. E., & Hess, S. (2007). Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology*, *27*, 310-319. DOI: 10.1016/j.jenvp.2007.06.003.

Hidalgo, M. C. and Hernandez, B. (2001). Place attachment: conceptual and empirical questions. *Journal of Environmental Psychology*, 21, 273-281. DOI: 10.1006/jevp.2001.0221.

Hipp, J. (2010). What is the 'neighbourhood' effects of structural characteristics measured at the micro-neighbourhood and tract levels. *Urban Studies*, 47, 2517-2536. DOI: 10.1177/0042098009359950.

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 70, 324-345. DOI: 10.2307/2673270.

Hyppä M. T., & Mäki, J. (2003). Social participation and health in a community rich in stock of social capital. *Health education research*, 18, 770-779. DOI: 10.1093/her/cyf044.

International Labour Organization (2011). *Manual on the measurement of volunteer work*. International Labour Organization: Geneva.

Jacob, G. R. & Schreyer, R. (1980). Conflict in outdoor recreation: A theoretical perspective. *Journal of Leisure Sciences*, 12, 368-380. DOI: 10.1079/9780851994031.0347.

Kelly, G., & Hosking, K. (2008). Nonpermanent communities. *Environment and Behavior*, 40, 575-594. DOI: 10.1177/0013916507302246.

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. Guilford: New York, 366. DOI: 10.1207/S15328007SEM0703_8.

Kyle, G., Graefe, A., Manning, R., & Bacon, J. perceptions of social and environmental conditions in a natural setting. *Journal of Environmental Psychology*, 24, 213-225. DOI: 10.1016/j.jenvp.2003.12.006.

Lawther, P. M. (2009). Community involvement in post disaster re-construction-Case study of the British Red Cross Maldives recovery program. *International Journal of Strategic Property Management*, 13, 153-169. DOI: 10.3846/1648-715X.2009.13.153-169.

Lewicka, M. (2004). Place attachment among Warsaw inhabitants: Determinants and consequences. In J. Grzelak, & T. Zarycki (Eds.), *Social Map of Warsaw. An interdisciplinary study of Warsaw metropolis* (pp. 273-315). Warszawa: Wydawnictwo Naukowe ~~DOI:10.1016/j.environ~~ DOI:10.1016/j.environ.2008.02.006.

Lewicka, M. (2005). Ways to make people active: The role of place attachment, cultural capital, and neighborhood ties. *Journal of Environmental Psychology*, 25, 381-395. DOI: 10.1016/j.jenvp.2005.10.004.

- Lewicka, M. (2006). Regional differentiation of identity: Comparison of Poland and Ukraine. *Studia Regionale i Lokalne*, 23, 5-36.
- Lewicka, M. (2008). Place attachment, place identity, and place memory: Restoring the forgotten city past. *Journal of Environmental Psychology*, 28, 209-231.
- Lewicka, M. (2010). What makes neighborhood different from home and city? Effects of place scale on place attachment. *Journal of Environmental Psychology*, 30, 35-51.
- Li, M. (2011). *Place attachment in university students: social antecedents and academic motivations*. (Unpublished Master's Thesis). University of
- Li, M., & Frieze, I. H. (2011, January). *Measuring and understanding place attachment*. Poster presented at the 12th Annual Meeting of the Society of Personality and Social Psychology, San Antonio, TX, USA.
- Li, M., Frieze, I. H., Nokes-Malach, T., & Cheong, J. (2013). Do friends always help your study? Mediating processes between social relations and academic motivation. *Social Psychology of Education*, 16, 129-149.
- Li, M., Wiewiora, B., & Frieze, I. H. (2012, June). *Loving your neighborhood: The psychological processes of community involvement*. In M. Li & I. H. Frieze (Chairs), *The psychology of community involvement: Understanding motivation, engagement, and development*. Paper presentation at the 9th Biennial Convention of the Society for the Psychological Study of Social Issues, Charlotte, NC, USA.
- Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology*, 83, 881-895. DOI: 10.1037//0022-3514.83.4.881
- Millette, V., & Gagne, M. (2008). Designing volunteers' tasks to maximize motivation, satisfaction and performance: The impact of job characteristics on volunteer engagement. *Motivation and Emotion*, 32, 11-22.
- Miller, K. D., Schleien, S. J., Rider, C., Hall, C., Roche, M., & Worsley, J. (2002). *Therapeutic Recreation Journal*, 36, 247-259.
- Mishra, S., Mazumdar, S., & Suar, D. (2010). Place attachment and flood preparedness. *Journal of Environmental Psychology*, 30, 187-197.
- Muthen, L. K., & Muthen, B. O. (2005). *Mplus: Statistical Analysis with Latent Variables: User's Guide*. Los Angeles, CA: Muthen & Muthen.
- Musick, M. A., & Wilson, J. (2003). Volunteering and depression: The role of psychological and social resources in different age groups. *Social Science & Medicine*, 56, 259-269.

- Ostrom, T. M. (1969). The relationship between the affective, behavioral, and cognitive components of attitude. *Journal of Experimental Social Psychology, 5*, 12-30.
- O Toole, T. P., Hanusa, B. H., Gibbon, J. L., & Boyles, S. H. (1999). Experiences and attitudes of residents and students influence voluntary service with homeless populations. *Journal of General Medicine, 14*, 211-216. DOI: 10.1046/j.1525-1497.1999.00319.x
- Pancer, S.M., Hunsberger, B., Pratt, M., & Alisat, S. (2000). Cognitive complexity of expectations and adjustment to university in the first year. *Journal of Adolescent Research, 15*, 38-57.
- Perkins, D. D., Hughey, J., & Speer, P. W. (2002). Community Psychology Perspectives on Social Capital Theory and Community Development Practice. *Journal of Community Development Society, 33*, 33-52.
- Pretty, G. H., Chipuer, H. M., & Bramston, P. (2003). Sense of place amongst adolescents and adults in two rural Australian towns: The discriminating features of place attachment, sense of community and place dependence in relation to place identity. *Journal of Environmental Psychology, 23*, 273-287.
- Proshansky, H. M. (1978). The city and self-identity. *Environment and Behavior, 10*, 147-169.
- Rollero, C., & Piccoli, N. D. (2010). Place attachment, identification and environment perception: An empirical study. *Journal of Environmental Psychology, 30*, 198-205.
- Sampson, R. J. (1988). Local friendship ties and community attachment in mass society: A multilevel systemic model. *American Sociological Review, 53*, 66-79.
- Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology, 30*, 1-10.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*, 323-338.
- Semken, S., & Freeman, C. B. (2008). Sense of place in the practice and assessment of place-based science teaching. *Science Education, 92*, 1042-1057.
- Speer, P. W., Jackson, C. B., & Peterson, N. A. (2001). The relationship between social cohesion and empowerment: Support and new implications for theory. *Health education & behavior, 28*, 716-732.
- Tang, F., Choi, E., & Morrow-Howell, N. (2010). Organizational support and volunteering benefits for older adults. *The Gerontologist, 50*, 603-612.

- Tartaglia, S. (2006). A preliminary study for a new model of sense of community. *Journal of community psychology, 34*, 25-36.
- Todd, S. L., Ph, D., Anderson, L. S., & Ph, D. (2005). *Place attachment and Perceptions of Benefits Generated By the Future Tioughnioga River Trail Project*. Proceedings of the 2005 Northeastern Recreation Research Symposium (pp. 401-408). Newtown Square, PA: U.S. Forest Service, Northeastern Research Station.
- Vaske, J. J., & Kobrin, K. C. (2001). Place attachment and environmentally responsible behavior. *The Journal of Environmental Education, 32*, 16-21.
- Vorkinn, M., & Riese, H. (2001). Environmental concern in a local context: The significance of place attachment. *Environment and Behavior, 33*, 249-263.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: race, social fit, and achievement. *Journal of personality and social psychology, 92*, 82.
- Ward, C., & Styles, I. (2005). Culturing settlement using pre and post migration strategies. *Journal of psychiatric and mental health nursing, 12*, 423-430.
- Wells, G. L., & Petty, R. E. (1980). The effects of overt head-movements on persuasion: Compatibility and incompatibility of responses. *Basic and Applied Social Psychology, 1*, 219-230.
- Williams, D. R., Patterson, M. E., Roggenbuck, J. W., & Watson, A. E. (1992). Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sciences, 14*, 29-46.
- Williams, D. R., & Roggenbuck, J. W. (October, 1989). *Measuring place attachment: Some preliminary results*. Unpublished paper presented at NRPA Symposium on Leisure Research, San Antonio, Texas, United States.
- Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest science, 49*, 830-840.
- Willigen, M. V. (2000). Differential benefits of volunteering across the life course. *The Journal of Gerontology: Series B, 55*, S308-S318. doi: 10.1093/geronb/55.5.S308
- Wilson, J., & Musick, M. (1999). The effect of volunteering on the volunteer. *Law and Contemporary Problems, 62*, 141-168.
- Zaff, J. F., Moore, K. A., Papillo, A. R., & Williams, S. (2003). Implications of extracurricular activity participation during adolescence on positive outcomes. *Journal of Adolescent Research, 18*, 599-630.
- Zimmerman, M. A., & Rappaport, J. (1988). Citizen participation, perceived control, and psychological empowerment. *American Journal of Community Psychology, 16*, 725-750.