

Developing a hierarchical model of personality and motivation to predict youth volunteerism : a cross-culture study

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**DEVELOPING A HIERARCHICAL MODEL OF PERSONALITY AND
MOTIVATION TO PREDICT YOUTH VOLUNTEERISM: A CROSS-CULTURE
STUDY**

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School of Social Sciences

A thesis submitted to Nanyang Technological University in partial fulfillment of the
requirements for the degree of Doctor of Philosophy

2018

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I hereby certify that the work embodied in this thesis is the result of original research, is free of plagiarised materials, and has not been submitted for a higher degree to any other University or Institution.

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Ring Joyce Pang Shu Min

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Ngo Thuy Anh

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ABSTRACT

Despite a plethora of societal problems that are best solved by citizen participation, the problem of inaction exists whereby members of society fail to mobilize themselves to respond to pressing social issues. This research examines the personality and motivation predictors of volunteering to understand and solve the problem of inaction. Using the Meta-Theoretic Model of Motivation and Personality (3M Model; Mowen, 2000) as the theoretical framework, we developed a conceptual hierarchical model of personality that consists of personality traits and motives previously found to predict volunteerism. In three studies, we tested this model empirically in two different samples of youths (age 18 to 25) in Singapore and in the United States. Results revealed the key personality traits and motives, and their patterns of interaction, that predict youth volunteering in both samples. Cross-cultural differences in personality predictors also emerged. Theoretically, these findings support the development of an overarching theory to explain the interplay of traits and motives in predicting a specific behavior. Practically, they offer insights into key personality predictors of youth volunteering and possible culture-specific influences. As a contribution to solving the problem of inaction, this research offers practical recommendations for improving volunteer management, and for developing a giving culture in our societies.

Keywords: personality, traits, motivation, youth volunteerism

CHAPTER ONE: INTRODUCTION

Modern society faces a plethora of man-made challenges that can be better addressed by citizen participation rather than advances in science and technology (e.g., Boyte, 1991). Examples of these problems include environmental destruction, poor education, discrimination, armed violence, and so on. Snyder (1993) argued that since these problems are man-made, solutions to these problems require human actions, and thus, volunteerism as a form of citizen participation can contribute to addressing these societal problems. As part of the effort to promote volunteerism, especially among young citizens, the present research will explore personality predictors of young people's engagement in volunteerism. In the following sections, we argue for the importance of volunteerism and the challenges that curb the development of volunteerism worldwide, discuss how this research contributes to address these challenges, and summarize the literature that informs this research endeavor. We will then introduce the scope of the research before discussing and interpreting the results from a series of three empirical studies. Finally, we will discuss the implications of the research for theoretical development and practical implementation.

1.1 Importance and challenges of volunteerism

Voluntary help and mutual assistance have always been vital to the survival of rural communities, especially in societies that preceded the 19th-century industrialization (see Gillette, 1999 for a brief history of volunteerism). In modern societies, volunteerism continues to assume a major role as the impetus for development, according to United Nations, who argues that volunteerism contributes to breaking down cultural barriers, increasing civic responsibility, and promoting social solidarity (United Nations Volunteers, 2010). Specifically, research has found the economic, social, psychological, and health benefits of volunteerism (for a review,

see Wu, 2011). In terms of its economic impacts, statistics in 2004 estimated that approximately 140 million volunteers in 37 countries around the world were contributing around 400 billion US dollars per year to global economy (Salamon et al., 2004). On the social level, volunteerism contributes to social capital (Wilson & Musick, 1999) and encourages public acceptance of diversity through dispelling volunteers' prejudices and stereotypes (Mündel & Schugurensky, 2008). Finally, individual volunteers also benefit greatly from their engagement in volunteerism. Compared to non-volunteers, volunteers gain more job-related benefits such as interpersonal skills, communication skills, and increased knowledge, engage in healthier behaviors such as reduced alcohol consumption and smoking (Flanagan & Sadowski, 2011), have better physical health (House, Landis, & Umberson, 1988), and experience greater subjective well-being (Meier & Stutzer, 2008; Greenfield & Marks, 2004).

Despite the important contribution of volunteerism to the economy, social development, and individuals' health and wellbeing, the flourishing of volunteerism in modern societies is hindered by two formidable hurdles. The first challenge pertains to a recent volunteering trend worldwide in which short-term, ad-hoc volunteering becomes the mainstream, while long-term volunteering is decreasing. For example, in North America, there is an increasing prevalence of episodic volunteers who provide their service in less than 3-4 months or on an irregular, ad-hoc basis, while long-term and regular volunteers who commit to a single organization regularly over many years decrease drastically in number (Graff, 2002). Meanwhile in Singapore, results from the National Volunteer and Philanthropy Center's (NVPC) survey revealed that even though the average weekly and monthly volunteer hours have increased slightly and steadily since 2008, the majority of volunteering remains occasional, with ad hoc

volunteers accounting for 74% of all current volunteers in 2012 and 64% in 2014 (NVPC, 2014). These statistics suggest that to maintain a sufficient voluntary workforce, voluntary welfare organizations and non-profits need to address the increasing challenge of volunteer recruitment.

Secondly, modern societies face the prevalent problem of inaction, a term coined by Snyder (1993) to refer to “an individual and collective failure to meet the challenges of society’s problems” (p. 252). Snyder (1993) argued that people’s beliefs, values, and intentions could not account for such failure, as people held adaptive beliefs and good values regarding social harmony and environmental sustainability. However, “when it comes to actually doing something, people’s actions fall short of their beliefs and values” (Snyder, 1993, p. 252). Therefore, efforts to tackle human problems in modern societies need to also confront and address the problem of inaction.

1.2 The scope of the present research

The present research defines a volunteer as a person who contributes unpaid time and energy to activities that benefit other people, society, or the environment, through an organization. This form of volunteering is known as formal volunteering and is referred to as volunteering or volunteerism for short throughout this dissertation. Alternatively, a person can volunteer through helping activities that are not mediated by formal organizations, such as helping a friend or a neighbor, but this form of informal volunteering is beyond the scope of this research. As a complex and multifaceted phenomenon, volunteerism can invite investigation from a variety of disciplines, such as history, economics, sociology, psychology, and so on. Within the scope of this dissertation, we examine the phenomenon of volunteerism with a specific

focus defined by the tradition of research on volunteerism in the field of psychology, a conceptual model of the volunteer process, and the age and culture of the participants.

First, from the perspective of psychological science, it can be argued that efforts to devise effective volunteer recruitment strategies and address the problem of inaction need to begin with an understanding of who the potential volunteers are, which dispositions predispose individuals to take up volunteering, and how these dispositions interact to influence the decision to volunteer. Hence, the present research examines the interplay of personality traits and motives in predicting volunteering.

Second, this research is informed by the Volunteer Process Model (Omoto, Snyder, & Hackett, 2012; Snyder & Omoto, 2008). The model conceptualizes volunteerism as a process that unfolds through three stages of pre-volunteering characteristics (i.e., antecedents), experiences during volunteer activities, and post-volunteering consequences. These stages can be examined at the levels of individuals, social groups, organizations, and sociocultural contexts. The present research focuses on the first stage (i.e., antecedents) and the level of individuals in the Volunteer Process Model, because the psychological perspective taken by the author limits the investigation to the individual level. Furthermore, and perhaps more importantly, it can be argued that the above-mentioned volunteering trends which resulted from irreversible demographic changes calls for adaptation of strategies to recruit new volunteers. Therefore, an understanding of the antecedents of volunteerism among individuals can greatly inform new recruitment practices.

Third, the present research focuses on youths aged between 18 and 25. Because of their developmental stage, this group of late adolescents and young adults is an especially important age group to focus on in the effort to promote volunteerism and thus to solve the problem of inaction. According to Erikson's (1959) theory of

psychosocial development, two most important developmental milestones for adolescents and young adults include the ability to form an identity based on knowledge of different social roles and the ability to establish, foster, and maintain relationships with other people, hence these are key periods for identity and intimacy development (Erikson, 1963; Mortimer, Finch, & Kumka, 1982). The positive effects of volunteerism on these developmental milestones have been established: voluntary work was found to predict civic commitment (Flanagan et al., 1998), civic engagement and adherence to prosocial norms (Youniss & Yates, 1997), improved self-concept and attitude toward society (Moore & Allen, 1996), and enhanced sense of civic responsibility (Astin & Sax, 1998). Research also suggest that motivation to volunteer may be consistent with Erikson's developmental theory: Boling (2006) found that adolescents had greater identity motivation than the average of the other age groups, but less support was found for the prediction that young adults would have greater intimacy motivation to volunteer than the average of the other age groups. Based on the evidence above, it can be rationally inferred that this developmental period is crucial for developing prosocial capacity and an identity that incorporates altruistic values. This is particularly important for the promotion of volunteerism because the strength of a person's identity as a volunteer (i.e., volunteer role identity) predicts greater voluntary participation (Grube & Piliavin, 2000; Lee, Piliavin, & Call, 1999; Finkelstein, Penner, & Brannick, 2005).

Finally, this research engages a cross-cultural perspective, because culture can arguably have systematic influence on personality traits and motives, resulting in cross-cultural differences in the personality predictors of youth volunteerism. This research chooses to study youth volunteerism in Singapore and the United States (U.S.), because while these countries represent different cultures (i.e., Asian,

collectivistic culture and Western, individualistic culture, respectively) (Hofstede, 1980), their social infrastructures that promote and support youth volunteerism share major similarities. In terms of differences, Singaporean culture is dominated by collectivistic value which emphasizes interdependence and prioritization of group interests, while American culture is dominated by individualistic value which emphasizes independence and prioritization of private interests (Hofstede Insights, 2017). In both countries, the spirit of giving through volunteerism is emphasized and encouraged by the governments via the enactment of public policies such as the Edward M. Kennedy Serve America Act in the U.S. and Values in Action policy in Singapore. These policies lead to an increase in funding and programs to improve volunteerism in general, and youth volunteerism in particular. For example, the proposed budget of 1.149 billion U.S. dollars to implement Serve America Act, which was the largest funding for service in America (Office of Social Innovation and Civic Participation), was approved in 2010. Since then, it has funded and supported community service and service learning programs for youths such as the Summer of Service program, the Semester of Service program, Youth Empowerment Zones, and Learn and Service America (Nesbit & Brudney, 2013). Similarly, Singapore's government enacted mandatory volunteerism for students in public schools via the Community Involvement Program, which was revamped and renamed to Value in Action in 2012. The government also supports nationwide volunteerism movement such as SG Cares (Goy, 2017) and service programs by the National Volunteer & Philanthropy Centre and the National Youth Council of Singapore. In both of these multi-racial, multi-religious societies, volunteerism is believed to contribute to building a culture of giving, enhancing social responsibility, and fostering an inclusive society (Ministry of Social and Family Development, 2018; Encyclopedia.com). Given

these similarities, any differences in the pattern of results for these groups can be better accounted for by their cultural and psychosocial distinctiveness than by differences in their volunteer movement. One major distinction between the two cultures is the dominance of different cultural values. Singaporean culture is dominated by collectivistic value which emphasizes interdependence and prioritization of group interests, while American culture is dominated by individualistic value which emphasizes independence and prioritization of private interests (Hofstede Insights, 2017). Endorsement of different cultural values may influence how individuals in these two cultures approach volunteerism. Specifically, the present research explores how youths in these different cultures differ in their reliance on personality traits and motives as reference values for making the decision to volunteer.

In summary, the present research aims to examine a model of personality and motivation that predicts volunteerism in two samples of youths in Singapore and in the U.S. We will now review the literature of personality and volunteerism with a special focus on youth volunteerism.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of the literature

A literature review of personality and volunteerism reveals three major areas of research, namely the personality characteristics of volunteers (i.e., their personality traits and motives), the barriers to volunteering, and the effects of volunteering on volunteers. The line of work that is most relevant to the present research is the literature on personality characteristics of volunteers. Three main approaches have been undertaken by previous researchers to study volunteers' personality: the trait approach, the motive approach, and the Theory of Planned Behaviour (TPB; Azjen, 1985). In the following sections, we will discuss each approach in depth and then propose to integrate these approaches into an overarching theoretical model of personality and motivation.

2.2 The trait approach

The first approach focuses on identifying personality traits associated with volunteering. The studies reviewed here found individual differences between volunteers and non-volunteers, suggesting that some personality traits predispose people to engage in volunteer work. Among these traits are the Big Five traits. The relationship between the Big Five traits and volunteering has been established, whereby higher agreeableness, extroversion, conscientiousness, emotional stability, and openness predict greater volunteering (Baek, Martin, Siegler, Davey, & Poon, 2016; Carlo, Okun, Knight, & de Guzman, 2005; Dorner, Mosoni, & Hatvani, 2017). Among the Big Five traits, agreeableness was consistently found to predict volunteering (Carlo et al., 2005; Paterson, Reniers, & Völlm, 2009), suggesting that those who are generally kind, cooperative, and considerate would likely engage in formal volunteering to help others. Since volunteering requires extensive social

interactions, scholars have also argued that it may appeal more to extroverts. The association between extroversion and volunteering has been established in several studies (e.g., Burke & Hall, 1986; Smith & Nelson, 1975). Inconsistent results were found for the role of neuroticism, or emotional instability: while low neuroticism significantly predicted volunteering in some studies (McCann, 2017; Village & Francis, 2010), the effect was insignificant in others, especially when the effect of the other Big Five traits were included in the analyses (Carlo et al., 2005).

Besides the Big Five, other traits that affect volunteering include self-esteem (e.g., Miller, Ginsburg, & Rogow, 1981; Briggs, Landry, & Wood, 2007), narcissism (e.g., Brunell, Tumblin, & Buelow, 2014; Konrath, Ho, & Zarins, 2016), perceived moral obligation (e.g., Lee, Piliavin, & Call, 1999; Hyde & Knowles, 2013), and volunteer role identity (e.g., Finkelstein, 2010; Finkelstein et al., 2005). Another trait that consistently predicts volunteering is empathy (e.g., Eisenberg & Miller, 1987; Lee & Chang, 2007; Paterson et al., 2009). Empathy is a multidimensional socio-emotional construct, which consists of both cognitive and affective dimensions such as empathetic concern, perspective taking, and personal distress (e.g., Penner, Fritzsche, Craiger, & Freifeld, 1995; Mooradian, Davis, & Matzler, 2011). While empathy shares some conceptual similarity with one of the five broad factor—agreeableness—as both constructs pertain to the quality of being compassionate and sympathetic to others, they also have some conceptual distinction such that empathy also encompasses the self-centered feelings of worry and discomfort in facing others’ suffering (i.e., personal distress dimension of empathy) which is more related to neuroticism than agreeableness. In fact, it has been shown that empathetic concern was strongly associated with agreeableness, personal distress was strongly associated with neuroticism, and perspective taking had an association with several Big Five traits

(Mooradian, Davis, & Matzler, 2011; Song & Shi, 2017). Dimensions of empathy also had unique influence on behaviors, especially volunteering, beyond the effect of agreeableness (Bekkers, 2010). Taken together, these reasons justify the need to include both empathy and agreeableness in our studies of volunteer initiation. Other studies of volunteerism have also considered both empathy and agreeableness as meaningful predictors of volunteer behaviors (e.g., Claxton-Oldfield, & Banzen, 2010; Zaskodna, Simek, & Mlcak, 2013). Penner et al. (1995) proposed two prosocial personality traits, other-oriented empathy and helpfulness, which encompass various dimensions of empathy. Higher scores on both factors characterized volunteers compared to non-volunteers, and long-term volunteers compared to short-term volunteers (Penner & Fritzsche, 1993). These factors also positively predicted intention to volunteer (Sibicky, Mader, Redshaw, & Cheadle, 1994) and the length of voluntary service (Finkelstein, Penner, & Brannick, 2005).

Interestingly, in addressing the question of the direction of the relationship between personality and prosocial behaviors such as volunteering, Atkins, Hart, and Donnelly (2005) conducted a longitudinal study to investigate whether childhood personality type predicted volunteering during adolescence. Their results indicated that children with resilient personality type who were high in emotional regulation, social skills, and positive affect were more likely to volunteer during adolescence than those with the under-controlled type characterized by low impulse control and hyperactivity, and the over-controlled type characterized by shyness and social anxiety. In addition, this relationship was not mediated by membership in social institutions at the end of childhood, which might have facilitated initiation of volunteering at a later age. Together, these results led the researchers to conclude that “personality type [which were established prior to volunteering] led to organization-based voluntary helping,

rather than participation in volunteering shapes personality type” (Atkins, Hart, & Donnelly, 2005, p. 157). This proposition highlights the importance of studying personality in the context of volunteerism.

In summary, the trait approach has identified several individual differences in volunteering and established the role of personality traits as predictors of volunteer behaviors. However, the relation between personality traits and volunteering are relatively modest in magnitude (Omoto & Snyder, 1995), suggesting the role of potential mediators and moderators in the relationship between traits and volunteering. Perhaps the most prevailing caveat is that the plethora of traits identified through this approach, coupled with the lack of theoretical and empirical connections among these traits, result in an incoherent understanding of how traits work together to predict volunteering.

2.3 The motive approach

Another approach to the study of volunteer behaviors explores the role of motivational sources. Two distinct types of motives have been identified, namely implicit motives and explicit motives. McClelland, Koestner, and Weinberger (1989) discussed different ways in which implicit motives and explicit motives are distinguished, and Brunstein (2018) further supported these arguments with a large collection of empirical findings. First, one’s explicit motives are driven by cognitive needs to form and maintain one’s self-concepts (Brunstein & Schmitt, 2004), hence they reflect self-images that are attributed to the individuals by the individuals themselves. These consist of self-attributed motives and conscious goals, and they are measured by self-reports. By contrast, implicit motives arise from affective needs as evidenced by their association with affective memories and neuroendocrine correlates (for an overview, see Brunstein, 2018), hence they reflect emotional drives operating

at the subconscious level and are measured by the coding of imaginative stories, such as the thematic apperception test (TAT) and the picture story exercise (PSE).

These distinct types of motivation are found to predict different classes of behaviors: Implicit motives predict spontaneous behavioral trends measured by frequency of a response over time, while explicit motives predict choice behaviors or responses to an immediate situation and are measured by latency or amplitude of a response (McClelland, 1980; Brunstein & Hoyer, 2002; Wegner & Teubel, 2014). For example, Constantian (cited by McClelland, 1985) found that those who scored higher on the implicit motive to connect with other people (i.e., affiliation motive) were more frequently found to be talking with someone over a period of several days (an example of a spontaneous behavioral trend) than those lower on this motive. On the other hand, those with higher self-attributed affiliation motive were more likely to make relationship choices, such as choosing to live with others rather than to live alone, than their counterparts lower on this motive.

Moreover, these two types of motivation are also activated by different environmental incentives. Explicit motivation, being a reflection of self-concepts, responses to external stimuli, such as evaluative or social incentives including rewards, expectations, or demands (e.g., competition for achievements in school), while implicit motivation responses to task incentives, such as task difficulty or task interest (e.g., desire to tackle increasingly challenging activities) (Andrews, 1967; Spangler, 1992). In the absence of explicit incentives, implicit motivation leads to greater performance success than explicit motivation, especially in areas that require one to perform beyond the job description, such as managerial positions (McClelland & Boyatzis, 1982; Bray, Campbell, & Grant, 1974). Finally, weak to nil correlation between these two different measures of the ostensibly identical motivational constructs (e.g., self-report measure

and TAT measure of power motivation) has been consistently found, lending support to the proposition of two independent classes of motivation (Spangler, 1992; Schultheiss & Brunstein, 2001).

Given the evidence discussed above, implicit and explicit motives might affect volunteering in different ways. Thus, we will review the extant literature of volunteerism that concerns both types of motivation. First, research suggests that the explicit motives to volunteer are composite, comprising of both self-oriented motives (e.g., self-growth, enhanced career preparedness) and other-oriented, altruistic motives (e.g., concern for others, expression of altruistic values, and contribution to humanitarian efforts). Specifically, Clary et al. (1998) identified six self-attributed motives to volunteer and measured them using the Volunteer Functions Inventory (VFI). Guiding the development of the VFI is the functionalist theory, which emphasizes “the purposes served by action and the role of such purposes in initiating, guiding, and sustaining action” (e.g., Snyder, 1993; Snyder & Cantor, 1998). Following this functional approach, people derive their motivation to volunteer from their purposeful strivings toward personal and social goals. In other words, people volunteer to achieve some explicit goals related to voluntary helping. The VFI conceptualizes and measures six motives: one would volunteer to act on his/her humanitarian values (*values* motive), to gain knowledge and practice relevant skills (*understanding* motive), to grow and develop psychologically (*enhancement* motive), to achieve some career-related goals (*career* motive), to establish and strengthen social relationships (*social* motive), and/or to protect oneself against negative feelings or personal problems (*protective* motive). In a rigorous multi-method, multi-source qualitative study that used structured interviews, informant feedback, and focus groups, Hochstetler (2014) found support for the six functions included in the VFI. He

also found evidence for two additional functions, namely civic responsibility and debt or obligation. Research guided by the functionalist theory revealed that volunteers could be motivated by more than one motives (Kiviniemi, Snyder, & Omoto, 2002) and they generally scored higher on the volunteer functions, or motives, than non-volunteers (e.g., Clary, Snyder, & Stukas, 1996).

Despite the popularity of the VFI in volunteerism research, it is not the only model of volunteer motivations. As opposed to the functionalist approach, other models of volunteer motivation do not rely on a finite set of functions, but rather take the view that the function of volunteering is a unidimensional construct (Cnaan & Goldberg-Glen, 1991; Musick & Wilson, 2007). Still other research about volunteering motives are qualitative in nature (e.g., Batson, Ahmad, & Tsang, 2002; Yeung, 2004) and do not classify motives into a systematic or comprehensive framework.

Despite the plethora of theories on motives for volunteering, we choose to adopt the functional approach in our investigation of explicit motives for volunteering, because of three reasons. Firstly, empirical evidence suggested that the VFI's factor structure was superior to the one or two-dimensional models (Okun, Barr, & Herzog, 1998). Secondly, volunteering is an instrumental activity whereby individuals decide to volunteer to achieve ends, or functions, that are rewarding to them (Smith, 1981), hence the appropriateness of studying VFI motives. Finally, the functional approach offers a relatively straightforward solution as to how we can promote volunteerism, which is the focus of the present research. In fact, studies have found that matching of the recruitment messages to explicit volunteer motives is critical to the decision-making process at the stage of entry into volunteerism. That is, a recruitment message was more persuasive when it addressed the recipients' dominant motives for

volunteering than when it did not (Clary et al., 1998; Clary, Snyder, Ridge, Miene, & Haugen, 1994; Smith, Omoto, & Snyder, 2001).

In contrast to the wealth of research into explicit motives to volunteer, the role of implicit motives in volunteering has remained largely unexplored. Two implicit motives appear to be most relevant to the context of volunteering, and prosocial behaviors in general: the implicit power motive, defined as “a capacity to derive pleasure from having physical, mental, or emotional impact on other individuals or groups of individuals and to experience the impact of others on themselves as aversive” (Schultheiss, 2008, p.606), and the implicit affiliation motivation, defined as “a capacity to derive satisfaction from establishing, maintaining, and restoring positive relationships with others” (Schultheiss, 2008, p.605). McClelland (1975) found the implicit power motive to correlate positively with sharing and giving in mature individuals; however, whether this correlation exists for volunteering has not been directly studied. With regards to implicit affiliation motive, Winter et al. (1998) found no correlation between affiliation motive and volunteer work; however, affiliation motive interacted with the trait of extroversion to affect volunteering, such that among extroverts, affiliation motive related positively to volunteer work, while among introverts, this relation was reversed.

Recently, Aydinli and colleagues (2014) were the first to explore the interactive effects of implicit motives and explicit motives on planned helping and spontaneous helping. In these studies, they employed a measure of implicit prosocial motivation—a subtype of the implicit power motive which refers to the internal psychological need to exert physical, mental, or emotional impact on others in prosocial ways. Their results revealed that explicit prosocial motivation sufficiently predicted volunteering, regardless of implicit prosocial motivation. By contrast, with

respect to spontaneous helping, the effect of explicit prosocial motivation on helping was only significant for individuals with high implicit prosocial motivation. These findings are consistent with previous research claiming that implicit motives predict spontaneous behavioral trends, whereas explicit motives predict choice behaviors (McClelland, 1980).

Taken together, these findings suggest that implicit motives might not directly predict volunteering. However, the role of implicit motives should not be overlooked, as they could interact with other personality dimensions, such as traits, to influence volunteering.

2.4 The Theory of Planned Behavior approach

In the third approach, researchers apply the TPB (Ajzen, 1991) to predict volunteering. According to this theory, an intention to perform a behavior is the central determinant of that behaviour and such intention is determined by attitude toward the behaviour, subjective norm—perceived social approval or disapproval for the behaviour, and perceived control over the behaviour (Ajzen, 1985). These are enduring dispositions specific to the situational context of the behavior. TPB variables have been found to explain for a large variance in a wide range of behaviors (see Ajzen, 2011 and McEachan, Conner, Taylor, & Lawton, 2011 for a review), especially under high correspondence between attitudinal and behavioural entities including the target, action, context, and time elements (Ajzen & Fishbein, 1977).

In the context of volunteering, Hyde and Knowles (2013) studied university students in Australia and found that TPB variables accounted for 36% of variance in intention to volunteer. Similar results have been replicated in other studies (Okun & Sloane, 2002; Reuveni & Werner, 2015). Furthermore, a study by Greenslade and White (2005) comparing the effect of the TPB and the VFI on volunteering found that

the TPB variables accounted for significantly more variance in volunteer participation among older volunteers in Australia than the VFI motives. Taken together, these findings support the important role of the TPB variables in predicting volunteer behaviors and suggest that TPB variables may add unique effect to volunteer behaviors beyond the effect of explicit motives.

At present, the literature of volunteerism is diverse with researchers taking different approaches to examine the personality antecedents of volunteering. It is high time we pursued efforts to integrate all these different approaches and findings into a comprehensive model of personality that can explain and predict volunteer behaviors. The present research aims to achieve that objective.

CHAPTER THREE: THE PRESENT RESEARCH

3.1 The research gap

As discussed above, even though volunteerism research has received greater attention in the past decades and findings from each theoretical approach have shed new insights into the phenomenon of volunteerism, there has been a lack of an overarching theoretical framework that can explain the psychological underpinnings of volunteer behaviors. With researchers taking different approaches to examining the personality antecedents of volunteering, the volunteerism literature is generally incoherent, giving rise to some early attempts to integrate the findings from these approaches.

Carlo et al. (2005) revealed the interaction of traits and explicit motives in affecting volunteering. Results from this study indicated that the explicit values motive (i.e., concern for others as a motive to volunteer) and agreeableness jointly predicted volunteering. Indeed, values motive partially mediated the relation between agreeableness and volunteering. Regarding the relation between extroversion and volunteering, values motive was revealed to be a full mediator. However, no evidence was found to support the interaction effect of traits and explicit motives on volunteering.

In another line of research, the interactions between traits and implicit motives have been explored under the tenet of the channeling hypothesis: a proposition that explicit dispositions, or traits, shape (or channel) the specific expressions of implicit dispositions, or implicit motives (e.g., Winter et al., 1998; Bing, LeBreton, Davison, Migetz, & James, 2007; Brunstein & Maier, 2005; Lang, Zettler, Ewen, & Hülshager, 2012). With regards to volunteering, Winter et al. (1998) found a significant interaction between implicit affiliation motive and extroversion in affecting volunteer

work. Specifically, increased implicit affiliation motive was associated with greater volunteer work among extraverts, but the relationship was reversed for introverts. In other words, the extroversion trait channeled the expression of high implicit affiliation motive into involvement in volunteer activities. Another study by Lang and colleagues (2012) looking at organizational citizenship behavior—extra-role discretionary behavior intended to help at work—which is a construct conceptually related to volunteerism, also found evidence of extroversion interacting with implicit affiliation motive to predict helping behaviors at work (Lang, Zettler, Ewen, & Hülshager, 2012).

In relating the TPB variables to volunteer motives, Brayley et al. (2015) found additional effects of the VFI on willingness to volunteer beyond the effect of the components of TPB. Such finding supports the argument that potential benefits could be gained from amalgamating the different models to explain and predict volunteer behaviors.

Despite these research endeavors, a comprehensive model of personality and motivation that can integrate all the three approaches has yet to be developed, and the literature remains incoherent. To address this prevailing knowledge gap, the present research applies a model by Mowen (2000), namely the Meta-Theoretic Model of Motivation and Personality, or the 3M Model, as an overarching theoretical framework with which we integrate the three major approaches in the study of volunteer participation. We will now introduce the 3M Model, then apply this framework to develop a personality model for volunteer participation.

3.2 Proposing the theoretical model

The 3M Model of Motivation and Personality (Mowen, 2000) integrates several perspectives, most notably the control theory (Carver & Scheirer, 1990; Hyland, 1988) and the hierarchical approach to personality (Allport, 1961), to form a

meta-theory that explicates human behaviors. The control theory (Carver & Scheirer, 1990) identifies a feedback system which regulates behaviors by adjusting them to environmental influences and internal reference values such as personality traits. Adopting a hierarchical approach to personality (Allport, 1961), the 3M Model also posits that personality traits represent different levels of internal reference values organized in a hierarchical manner. Contrary to the traditional view of a hierarchical model which posits that any broad trait has facets that are narrower representations of that trait only (e.g., Costa & McCrae, 1995; Paunonen, 1998), the 3M Model employs an alternative view of broad traits combining to create narrower traits (Mowen & Spears, 1999), which received solid empirical support (for a review, see Mowen, 2000). Integrating these theories, Mowen (2000) developed the 3M Model (p.33), which explains behaviors within a task program as outcomes of a behavioral-feedback system. Within this system, the hierarchy of traits which serves as internal reference values responds to environmental forces and interacts with processes inherent in task performance, such as cognitive processes of thinking, planning, and attribution, to regulate behaviors. The processes within the 3M Model can also explain how a behavior is initiated, directed, energized, sustained, and stopped, which is the definition of motivation (Jones, 1955); therefore, it posits that motivation is inherent within the 3M Model (Mowen, 2000, p.40).

According to the 3M Model, residing at the most basic level and providing the broadest reference point for behaviors are elemental traits. These are unidimensional traits defined as “the basic, underlying predispositions of individuals that arise from genetics and a person's early learning history” (Mowen, 2000, p.20). Building on the large amount of empirical support for the Five-Factor Model of personality (e.g., Costa & McCrae, 1995), the 3M Model proposes extroversion, agreeableness, openness to

experience, conscientiousness, and neuroticism to be elemental traits. In addition, Mowen (2000) integrated the work of Buss (1988) in evolutionary psychology with the Five-Factor Model to propose three additional elemental traits pertaining to the need for resources required for human survival. These include the need for material resources, the need for arousal, and the need to protect and enhance the body. In general, the 3M Model assumes that there are only 8 elemental traits, and thus, to add any other traits to the elemental level would require considerable research to validate its position on this level.

The next level of traits comprises of compound traits, which result from the combined effect of various elemental traits and from cultural and subcultural influences. Compared to elemental traits, compound traits provide more direct guidance for behavior and have greater specificity as reference points, hence they may exist in greater number. Using an empirical means of differentiating compound traits from elemental traits, Mowen (2000) identified seven compound traits: need for arousal, need for learning, self-efficacy, self-esteem, competitiveness, task orientation, and need for play. Generally, any trait that is cross-situational in nature ought to be positioned on the compound level.

On the next levels are situational traits, defined as enduring dispositions to behave within a general situational context, followed by surface traits, which are highly specific dispositions to act within a narrow domain of behavior. Situational traits result from the combined effects of elemental and compound traits as well as situational forces, while surface traits result from combined effects of elemental, compound, and situational traits as well as the press of specific contextual forces. Given their hierarchical relationships with respect to behaviors, situational traits are predictive of surface traits, and surface traits account for high variance in behaviors

(Mowen, 2000, p.126). For example, in a study of healthy diet lifestyle reported in Mowen (2000), the enduring disposition to engage in healthy diet behaviors represent a surface trait that takes place within the general situational context of leading a healthy lifestyle. This proposition was supported by the findings that this surface trait was significantly predicted by two situational traits: health motivation and interest in innovative health products.

The 3M Model has been well validated in a series of empirical studies detailed in Mowen's (2000) book. Engaging various groups of participants who differed with respect to multiple demographic variables such as age, occupation, and cultural background, a series of confirmatory factor analyses revealed excellent fit statistics and high internal reliabilities for the measures of 8 elemental traits and 7 compound traits. Mowen (2000) also devised a set of theoretical and empirical criteria to evaluate the hierarchical relationships among traits within the 3M Model. Following these criteria, a series of structural equation modeling and hierarchical regression analysis was performed to establish the hierarchical relationships among the traits (p.55-57). Studies also demonstrated the ability of the 3M Model to account for variance in behaviors (Mowen, 2000, p.219-251). For example, a study of movie preferences found that a hierarchy of 6 elemental traits, a compound trait of chivalry, three situational traits of liking for 3 different movie genres, and a surface trait of liking for the movie *Titanic* accounted for 26% of variance in the number of times participants had watched the movie (p.226). Given the theoretical and empirical robustness of the 3M Model, we argue that this model provides excellent conceptual framework to integrate the three major approaches in volunteerism research: the trait approach, the motive approach, and the theory of planned behavior.

A series of three studies conducted by Mowen and Sujan (2005) were the first to apply the 3M Model to explain volunteer behaviors. Results indicated that a hierarchical model of compound, situational, and surface traits accounted for 18% to 44% of variance in volunteer behaviors across the studies. This model positioned need for activity, need for learning, altruism, and present time orientation on the compound level. A newly conceptualized trait of volunteer orientation, defined as an enduring disposition to participate in volunteer activities, was positioned on the situational level, and explicit motives to volunteer, measured by the VFI, were on the surface level. Structural equation modeling revealed that only volunteer orientation consistently predicted volunteer behaviors across the three studies. While the studies failed to establish altruism as a compound trait, results supported the position of volunteer orientation on the situational level and of explicit motives on the surface level. In the present research, we develop a hierarchical model of personality and motivation to predict the behavior of initiating volunteer activities by adapting the model proposed by Mowen and Sujan (2005). Adaptations include changes to the positions of some traits and inclusion of other traits whose associations with volunteerism have been established in the literature, as summarized in the previous chapter.

On the elemental level, we include all 8 elemental traits established by Mowen (2000), but we also propose to add the two implicit motives, implicit power and affiliation motives. These motives develop during early childhood and have biological as well as neural underpinnings (Schultheiss & Brunstein, 2010), making them conceptually appropriate for the elemental level. Following the channeling hypothesis, we also evaluate the interaction between the two implicit motives and two elemental traits, agreeableness and extroversion. On the compound level, we include Mowen's (2000) measures of need for learning, need for activity, and self-esteem, and Mowen

and Sujan's (2005) measure of altruism, because these have been well validated. The position of altruism on this level would be further explored in the following studies. We also propose to include empathy, helpfulness, and narcissism on the compound level because these traits are cross-situational in nature and they represent narrower facets of personality than the broad elemental traits. On the situational level, we position perceived moral obligation and volunteer role identity based on their correspondence with the general context of volunteerism. Compared to these situational-level dispositions, the TPB constructs of attitude toward volunteering, subjective norm with respect to volunteering, and perceived behavioral control over volunteering are closer in specificity to the outcome measures of volunteer intention and decisions. In fact, measures of these constructs correspond to the measure of volunteer intention in terms of the target, action, context, and time elements (Ajzen & Fishbein, 1977).

With respect to explicit motives to volunteer, Mowen and Sujan (2005) argued that these motives represent surface traits. However, there are a few issues with their argument and methodology. Mowen and Sujan's (2005) main reason for conceptualizing explicit motives as surface traits was that these motives are closely associated with volunteer behaviors because they "act like motivated justifications for a desire to volunteer" (p.175). Such argument contradicts the commonly endorsed definition of motivation as an internal process that initiates, directs, energizes, sustains, and stops behaviors (e.g., Jones, 1955; Graham & Weiner, 1996), whose implication is that motivation for a behavior precedes it and influences it, instead of justifying it. Mowen and Sujan's (2005) findings that explicit motives predicted volunteer behaviors were used to further strengthened their argument. However, their studies employed a behavioral measure of volunteer participation which required

participants to report past volunteer activities, which corresponds well with their conceptualization of motives as justifications of behaviors, making their associations more likely to occur. Another set of empirical results which Mowen and Sujan (2005) used to support explicit motives as surface traits was the relationship between the situational trait of volunteer orientation and explicit motives: volunteer orientation was found to significantly predict each of the motives. However, the scale that Mowen and Sujan (2005) developed to measure volunteer orientation was not well validated. Evidence for convergent and discriminant validity of this scale with other related and well-validated constructs such as volunteer role identity or perceived moral obligation was missing. Confirmatory factor analyses also did not evaluate measures of volunteer orientation and measures of explicit motives together, prompting questions about its validity. The findings that volunteer orientation predicted each of the motives further added to the skepticism, because these motives represent distinct functions of volunteering. Given the above reasons, we refuted Mowen and Sujan's (2005) argument that explicit motives represent surface traits.

Contrary to Mowen and Sujan's (2005) proposition, we argue that explicit motives to volunteer are better represented on the situational level. Logically, one's functional motives for volunteering give rise to a desire to volunteer, leading one to evaluate the prospect of volunteering based on one's attitude toward volunteering, perceived expectations of others, and confidence in the ability to volunteer (i.e., TPB constructs of attitude, subjective norm, and perceived behavioral control), resulting in the development of a volunteer intention and eventually a decision to volunteer. Given this logic, we created prospective, instead of retrospective, measures of volunteer intention and decision by asking participants to rate their future intention to volunteer and to report actual volunteer activities in the period that follows their participation in

the studies. We also employed a longitudinal design to capture the natural process in which personality traits and motives influence behaviors. In our model, explicit motives work in conjunction with perceived moral obligation and volunteer role identity to form the situational level of cognitive-emotional-motivation reference point that contributes to regulate volunteer behaviors. Figure 1 summarizes our proposed theoretical model.

3.3 Research questions and summary of empirical studies

In general, the present research addresses three major research questions:

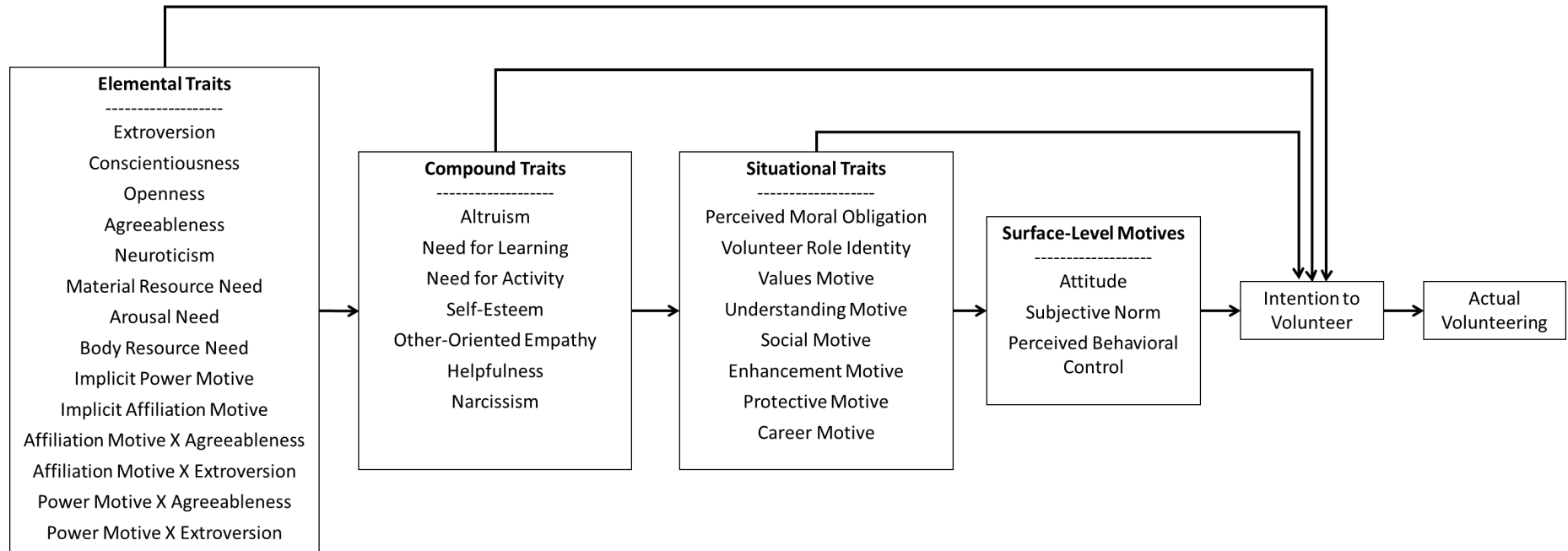
Question 1: Is the hierarchical model of personality and motivation appropriate for the purpose of predicting volunteer intention?

Question 2: Do the more distal traits in the model predict volunteer intention directly, or indirectly through the more proximal traits? In other words, which model fits the data better, the partial mediation model or the full mediation model?

Question 3: Given the relationship among the traits in the model established after addressing question 2 (i.e., full mediation model versus partial mediation model), which specific traits remain as significant predictors of volunteer intention in two cultural contexts, Singapore and the U.S.?

We conducted three studies to address our research questions. The pilot study examines a simpler version of the proposed model and investigates the role of implicit motives in the context of the proposed model. Study 1 examines the proposed model using a youth sample in Singapore. Similarly, Study 2 also examines the proposed model, but uses a youth sample in the U.S. Finally, theoretical contributions as well as practical implications of the present research will be discussed. Ethics approval for all the studies in this research was obtained from Nanyang Technological University (NTU) Institutional Review Board (see Appendix E).

Figure 1. The proposed theoretical model



CHAPTER FOUR: PILOT STUDY

The first study has two objectives. First, it examines a simpler version of the model and assesses the appropriateness of this model in addressing the questions in this research. Second, it investigates the role of implicit motives within the proposed model. The version of the proposed model investigated in this study comprises of the Big Five traits, the implicit power and affiliation motives, and the six VFI explicit motives. Informed by the findings from the literature review, we examined how implicit motives interact with the Big Five traits to predict intention and decision to volunteer and whether this relationship is mediated by explicit motives. Specifically, this study aims to test the following hypotheses:

H1: Intention to volunteer predicts actual decision to volunteer.

H2: Explicit motives predict volunteer intention.

H3: Traits and implicit motives add little to no effect to the prediction of volunteer intention after accounting for the effect of explicit motives.

H4: Social traits (i.e., agreeableness and extroversion) moderate the relationship between implicit power and affiliation motives with volunteer intention.

4.1 Method

Participants. People whose age was between 18 and 25 were eligible to participate in the study. Based on this criterion, the study recruited 44 undergraduate students within this age range (23 male and 21 female, $M_{age} = 21.18$ years, $SD = 1.60$ years) who were enrolled at a university in Singapore. The percentages of the students who were freshmen, sophomores, juniors, and seniors were 2.3%, 56.8%, 36.4%, and 4.5%, respectively. Most have done at least some volunteer work in the past two years (68.2%). Due to an oversight, information regarding participants' ethnicity was not elicited. The ethics committee approved waiver of consent at the beginning of the

study due to the need to disguise the study. Instead, informed consent was obtained at the end of the study when participants could choose to provide consent or withdraw from the study.

Measures.

Explicit motives for volunteering. The 30-item Volunteer Functions Inventory (VFI; Clary et al., 1998) was used to measure six motives for volunteering: values motive, understanding motive, enhancement motive, protective motive, social motive, and career motive. The instructions were as follows: “If you have done volunteer work before or are currently doing volunteer work, then using the 7-point scale below, please indicate how important or accurate each of the following possible reasons for volunteering is for you. If you have not been a volunteer before, then using the 7-point scale below, please indicate how important or accurate each of the following reasons for volunteering would be for you.” The 7-point Likert scale ranges from 1 (*not at all important/accurate*) to 7 (*extremely important/ accurate*). For each motive, ratings from the corresponding items were averaged to create a composite score for that motive.

Implicit motives. Following the recommendations by Schultheiss and Pang (2007), we measured the implicit power motive and the implicit affiliation motive using the Picture Story Exercise (PSE; Winter, 1994) with four picture stimuli that have high pull for either or both motives. These are couple by river, ship captain, couple sitting opposite a woman, and nightclub scene (see Appendix B). For each picture, the participants were given 10 seconds to look at the picture and then 4 minutes to write a story in response to the picture. Some questions were provided to help with the writing, such as “what is happening? Who are the people? What

happened before? What are the people thinking about and feeling? What do they want? What will happen next?”

A trained coder was tasked with the coding of these stories. This coder had demonstrated category agreement of .93 or above with calibration materials pre-scored by experts—an indication that the coder’s scoring reliability was sufficient for research purposes (Winter, 1994). The coder was trained to score words or phrases that characterize affiliation and power imageries. Affiliation imageries indicate “establishing, maintaining or restoring friendship or friendly relations among persons, groups, nations, and so forth” (Winter, 1994, p.12), while power imageries indicate “one person, group, institution, country, or other person-like entity has impact, control or influence on another person, group, institution, country, or the world at large” (p.15). The total power and affiliation motive scores were the sum of the corresponding motive scores for the four pictures. Following Schultheiss and Pang’s (2007) guidelines, the total score of each motive was multiplied with 1000 and divided by the total word count to create a final motive score that was corrected for word count. These scores represent the number of motive imageries per 1000 words and were used in subsequent analyses.

Traits. The Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) was used to measure the traits of extroversion, agreeableness, openness to experience, conscientiousness, and emotional stability. The participants rated each self-descriptive statement on a 7-point Likert scale from 1 (*disagree strongly*) to 7 (*agree strongly*). Composite scores for traits were created from averaging the scores of the corresponding items.

Volunteering outcomes. For each service project, the participants’ intention to volunteer was elicited through the question “to what extent are you willing to

participate in this volunteer project?”. To indicate their intention to volunteer, the participants were asked to place a mark on a 100-milimeter line with “not at all” on one end and “absolutely” on the other. The distance (in millimeters) between the “not at all” end and participants’ mark constituted the intention to volunteer for the corresponding project. Therefore, there were six intention scores, one for each project, which ranged from 0 to 100.

Decision to volunteer was also measured for each project. The participants indicated “yes” or “no” in response to the question “Do you want to sign up to volunteer for this initiative?”. The score of “1” denoted the decision to sign up for that initiative and the score of “0” denoted the decision not to sign up.

Procedure.

An experimenter waited outside a computer lab where some students were participating in a research experiment. As part of this experiment, students were asked to complete the measure of implicit motives for this study. As students were exiting the lab, the experimenter approached them and introduced herself as a member of a community service club. She then asked the students for 15 minutes of participation in a survey. The participants were explained the purpose of the survey, which was to gauge students’ interest in volunteering for the community service projects organized by the club. The experimenter proceeded with those who agreed to take part in the survey, while those who refused to participate were thanked and dismissed.

The students who agreed to participate were introduced to six service projects. Participants were asked to read six brochures corresponding to six projects, each of which appealed to one of the six VFI motives for volunteering (see Appendix A for the example of the Career brochure). Named in accordance with the motives to which they appealed, these projects were referred to as Values project, Understanding project,

Enhancement project, Protective project, Social project, and Career project. For each of these projects, the students filled out a form to indicate their intention and decision to volunteer for that project. They were told that they should sign up for a project only if they would commit to taking part in it and that they should not feel compelled to sign up for any project if none of the projects interested them. Finally, the participants were given a personality questionnaire, which included measures of traits and explicit motives. It was explained to them that the organizers of the service projects would rely on their responses to the questionnaire to understand who the potential volunteers were, so that they could plan the projects in ways that would be suitable for the volunteers.

Upon the completion of the questionnaire, the true purpose of the survey was revealed to the participants and the reason for using a cover story in the study was explained. At this point, the participants were asked to indicate on a form whether they would give their consent to continue their participation in the study or they wanted to withdraw their responses (see Appendix D for the consent form). None of the participants decided to withdraw. They were then debriefed, thanked, and dismissed.

4.2 Results

Analytic strategy. To examine whether intention to volunteer predicts actual decision (H1), we conducted logistic regression analyses on each of the six decision scores (i.e., decision scores for each of the six service projects) with its corresponding intention score as the independent variable. Then, a series of hierarchical multiple regressions were used to investigate the effect of explicit motives on volunteer intention (H2) and any additional effect of traits and implicit motives (H3). In each regression, the dependent variable was an intention score, control variables were entered in the first block, followed by explicit motives in the second block, and traits

and implicit motives in the last block. At the next step, hierarchical multiple regression was employed again test the effect of each interaction term on each measure of intention (H4). In each regression, a motive score and a trait score were entered in the first step while their interaction term was entered in the second step. All analyses were performed in IBM SPSS.

Data screening and transformation.

Two participants had missing data and each of them missed one data point. The number of missing data point was small, so it was replaced with the mean of the variables which contained the missing values.

Before conducting regression analyses, the assumptions of multiple regression were checked. First, scatterplots confirmed that the relationships between volunteer intention as the dependent variable with the independent variables (i.e., measures of implicit motives, traits, and explicit motives) were linear. Second, we evaluated Fisher's measures of skewness and kurtosis for all the variables. These were obtained by dividing each skewness statistic by the standard deviation for skewness, and each kurtosis statistic by the standard deviation for kurtosis. If the resulting values are between 1.96 and -1.96, it is not unreasonable to assume normality (Ashcraft, 1998). For the variables in which these values fell out of the above range, square root transformation was performed on positively skewed variables and square transformation was performed on negatively skewed variables. After data transformation, the assumption of normality was met for all variables in the study. Third, the magnitude of the correlation coefficients in Table 1 was less than .80 for any pair of variables, hence the issue of multicollinearity may not be likely. Finally, scatterplots of standardized residuals versus predicted values for each of the outcome measures suggested that points were equally distributed across all values of the

independent variables, hence the assumption of homoscedasticity was tenable. Table 1 summarizes the descriptive statistics for all variables in this study.

Table 1

Means, SDs, and inter-correlations of key variables in Pilot Study

Variable	1	2	3	4	5	6
1. Values intention	-					
2. Understanding intention	.32*	-				
3. Social intention	.49***	.44*	-			
4. Enhancement intention	.21	.47*	.40*	-		
5. Protective intention	.31*	.35*	.41*	.40*	-	
6. Career intention	.25	.48*	.32*	.43*	.10	-
7. Values motive	.37*	-.24	.22	-.02	.28†	-.04
8. Understanding motive	.30†	-.06	.37*	.07	.09	-.02
9. Social motive	.12	-.34*	.24	-.11	.14	-.18
10. Enhancement motive	.09	-.30†	.16	-.07	.22	-.12
11. Protective motive	.17	-.16	0.26†	.00	.41*	-.05
12. Career motive	-.03	-.09	-.01	.17	.12	.40*
13. Power motive	.21	.07	.02	.00	.17	.30†
14. Affiliation motive	.04	.06	.01	-.05	.13	-.12
15. Extroversion	.11	-.03	.25†	-.12	.00	.07
16. Agreeableness	.31*	.04	.00	.06	.07	-.05
17. Openness	-.02	-.25	-.07	-.15	-.01	-.02
18. Conscientiousness	-.09	-.03	-.04	-.09	-.17	-.17
19. Emotional stability	-.01	.26†	.08	.02	-.12	.06
<i>M</i>	52.39	52.41	51.09	47.52	33.63	51.05
<i>SD</i>	25.55	20.29	19.84	22.11	24.71	25.83
<i>Cronbach's alpha</i>	-	-	-	-	-	-

Table 1

Continued

Variable	7	8	9	10	11
7. Values motive	-				
8. Understanding motive	.76***	-			
9. Social motive	.34*	.25	-		
10. Enhancement motive	.70***	.52***	.45*	-	
11. Protective motive	.58**	.41*	.50***	.76***	-
12. Career motive	.09	-.03	.39*	.29†	.24
13. Power motive	.18	.04	.06	.05	.05
14. Affiliation motive	.07	.00	-.12	.18	.09
15. Extroversion	.29†	.36*	0.23	.14	.13
16. Agreeableness	.43*	0.34*	.05	.18	.09
17. Openness	.36*	.38*	.12	.04	.00
18. Conscientiousness	.13	.18	.12	.31*	.10
19. Emotional stability	-.25	-.12	-.33*	-.23	-.23
<i>M</i>	5.01	27.23	3.88	20.72	3.85
<i>SD</i>	.83	7.49	1.19	7.84	1.09
<i>Cronbach's alpha</i>	.80	.76	.87	.74	.79

Table 1

Continued

Variable	12	13	14	15	16	17
12. Career motive	-					
13. Power motive	.03	-				
14. Affiliation motive	-.04	-.08	-			
15. Extroversion	-.06	.01	-.01	-		
16. Agreeableness	-.02	.06	-.12	.38*	-	
17. Openness	-.10	-.04	-.07	.42*	.11	-
18. Conscientiousness	-.06	.02	-.06	-.01	.32*	-.10
19. Emotional stability	-.12	-.29†	.09	.05	-.08	.09
<i>M</i>	3.94	2.43	3.26	3.92	4.94	4.81
<i>SD</i>	1.32	1.02	.79	1.32	.95	1.04
<i>Cronbach's alpha</i>	.90	-	-	.68	.18	.32

Table 1

Continued

Variable	18	19
18. Conscientiousness	-	
19. Emotional stability	.16	-
<i>M</i>	4.92	4.76
<i>SD</i>	.87	1.09
<i>Cronbach's alpha</i>	.15	.57

Note. N = 44.

† $p < .01$, * $p < .05$, *** $p < .001$

Predicting decision to volunteer from volunteer intention.

To examine the relationship between volunteer intention and volunteer decision (H1), a series of logistic regressions were run for each of the six binary measures of decision. In each logistic regression, the dependent variable was one of the decision scores and the independent variable was the corresponding intention score. Table 2 summarizes the results from these analyses. For all the models, statistically significant test of the overall models indicated that the logistic models fitted the data better than the intercept-only models. Moreover, the Hosmer-Lemeshow tests of goodness-of-fit were nonsignificant, suggesting that the logistic models fitted to the data well. The tests of individual regression coefficients β s also produced significant statistics, suggesting that volunteer intention significantly predicted volunteer decision in all the analyses. Positive β s indicated that the higher the intention to volunteer for a service project, the more likely that a participant would decide to sign up for that project.

Table 2

Predicting decision to volunteer from volunteer intention (Pilot Study)

Predictor	Values decision			Understanding decision		
	β (SE)	Wald's χ^2 (df)	p	β (SE)	Wald's χ^2 (df)	p
Values intention	.10 (.03)	11.41 (1)	.001			
Understanding intention				.04 (.02)	4.46 (1)	.035
Enhancement intention						
Protective intention						
Social intention						
Career intention						
Percentage of correct classification	81.82%			59.09%		
Overall model evaluation						
χ^2	26.73			5.76		
df	1			1		
p	<.001			.018		
Goodness-of-fit test (Hosmer & Lemeshow)						
χ^2	5.64			5.45		
df	8			8		
p	.687			.709		
Cox & Snell R^2	.46			.12		
Nagelkerke R^2	.62			.16		

Table 2

Continued

Predictor	Enhancement decision			Protective decision		
	β (SE)	Wald's χ^2 (df)	p	β (SE)	Wald's χ^2 (df)	p
Values intention						
Understanding intention						
Enhancement intention	.09 (.03)	9.03 (1)	.003			
Protective intention				.10 (.05)	4.71 (1)	.030
Social intention						
Career intention						
Percentage of correct						
classification	77.27%			93.19%		
Overall model evaluation						
χ^2	17.73			11.59		
df	1			1		
p	<.001			.001		
Goodness-of-fit test						
(Hosmer & Lemeshow)						
χ^2	5.80			.72		
df	8			8		
p	.669			.999		
Cox & Snell R^2	.33			.23		
Nagelkerke R^2	.47			.51		

Table 2

Continued

Predictor	Social decision			Career decision		
	β (SE)	Wald's χ^2 (df)	p	β (SE)	Wald's χ^2 (df)	p
Values intention						
Understanding intention						
Enhancement intention						
Protective intention						
Social intention	.10 (.03)	8.92 (1)	.003			
Career intention				.08 (.03)	9.67 (1)	.002
Percentage of correct classification	77.27%			72.73%		
Overall model evaluation						
χ^2	17.22			19.61		
df	1			1		
p	<.001			<.001		
Goodness-of-fit test (Hosmer & Lemeshow)						
χ^2	3.64			10.94		
df	8			8		
p	.888			.205		
Cox & Snell R^2	.21			.36		
Nagelkerke R^2	.44			.49		

Note. N = 44.

Predicting volunteer intention from traits and motives.

Results of Pearson correlation indicated that 5 out of 7 measures of intention correlated with measures of explicit motives to the level of statistical significance and marginal significance (see Table 1). The only exception was in the case of the Enhancement project in which volunteer intention was not associated with any of the explicit motives. Furthermore, there was a significant positive association between values intention and values motive, $r(44) = .37, p = .013$; between protective intention and protective motive, $r(44) = .41, p = .005$; and between career intention and career motive, $r(45) = .40, p = .008$. The association between understanding intention and understanding motive, social intention and social motive, and between enhancement intention and enhancement motive were not statistically significant. In brief, for 3 out of 6 service projects, the intention to volunteer was associated with the motive to which the projects appealed. Measures of volunteer intention were also associated with some measures of traits and implicit motives. There was a positive association between values intention and agreeableness, $r(44) = .31, p = .038$; understanding intention and emotional stability, $r(44) = .26, p = .085$; social intention and extroversion, $r(44) = .25, p = .096$; and between career intention and power motive, $r(44) = .30, p = .050$.

In testing H2 and H3, we conducted a hierarchical multiple regression for each measure of intention. In the first step, control variables including age, year of study, and previous volunteerism were entered. Measures of explicit motives were added in the second step, and measures of traits and implicit motives were added in the third step. Table 3 summarizes the results of these hierarchical regressions. Findings indicated that for the Values project, the participants who volunteered more in the past 2 years and those who were less senior in university had greater intention to volunteer

(Model 1 in the regressions). Moreover, evidence for the relationship between explicit motives and volunteer intention (H2) was found (Model 2 in the regressions). Results from Model 2 in the hierarchical regressions indicated that in five out of six service projects, the model predicted volunteer intention to the level of statistical significance or marginal significance, and one or more explicit motives in the model predicted volunteer intention to the level of statistical significance or marginal significance. The only model that was non-significant was the model pertaining to the Enhancement project. Finally, evaluating Model 3 in the regressions revealed that adding traits and implicit motives did not result in a statistically significant model for most service projects. The only exception was the model for the Career project, which significantly predicted volunteer intention ($R^2 = .57$, $F(16, 27) = 2.21$, $p = .033$), with higher implicit power motive associated with greater intention ($\beta = .35$, $p = .032$). Taken together, the findings here suggest that traits and implicit motives added little effect to the prediction of volunteer intention from explicit motives, hence H3 was supported.

Table 3

Predictors of intention to volunteer (Pilot Study)

Predictor	Values Intention ^a			Understanding Intention ^a		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Age	.00	.11	.19	-.12	-.13	-.15
Year of study	-.34*	-.44*	-.39†	-.27	-.17	-.12
Previous volunteerism	.35*	.30†	.37†	.11	.28	.37
Values motive		.39	.20		-.54†	-.72†
Understanding motive		.07	.17		.43†	.48†
Social motive		.21	.25		-.29	-.34
Enhancement motive		-.50†	-.39		-.31	-.33
Protective motive		.21	.17		.33	.39
Career motive		.00	.01		.14	.21
Power motive			.18			.23
Affiliation motive			-.05			.01
Extroversion			.04			.17
Agreeableness			.21			.11
Openness			-.18			-.10
Conscientiousness			-.24			.05
Emotional stability			.08			.01
<i>F</i> total	4.02*	2.61*	1.67	2.11	2.07†	1.35
<i>R</i> ²	.23	.41	.50	.14	.35	.44
(<i>df</i> , <i>df</i>)	(3, 40)	(9, 34)	(16, 27)	(3, 40)	(9, 34)	(16, 27)

Table 3

Continued

Predictor	Social Intention ^a			Enhancement Intention ^a		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Age	.04	.11	.24	-.01	.03	.13
Year of study	-.12	-.20	-.25	-.26	-.19	-.11
Previous volunteerism	.28 [†]	.42*	.40 [†]	-.07	.05	-.13
Values motive		-.41	-.13		-.11	.15
Understanding motive		.57*	.52*		.26	.28
Social motive		.23	.24		-.17	.01
Enhancement motive		-.36	-.36		-.28	-.22
Protective motive		.39 [†]	.28		.20	.05
Career motive		.11	.10		.28	.17
Power motive			.09			.02
Affiliation motive			-.12			-.07
Extroversion			.36 [†]			-.016
Agreeableness			-.22			.14
Openness			-.39 [†]			-.31
Conscientiousness			-.16			-.25
Emotional stability			.31			.38
<i>F</i> total	1.25	1.99 [†]	1.67	1.11	.66	.59
<i>R</i> ²	.09	.35	.50	.08	.15	.26
(<i>df</i> , <i>df</i>)	(3, 40)	(9, 34)	(16, 27)	(3, 40)	(9, 34)	(16, 27)

Table 3

Continued

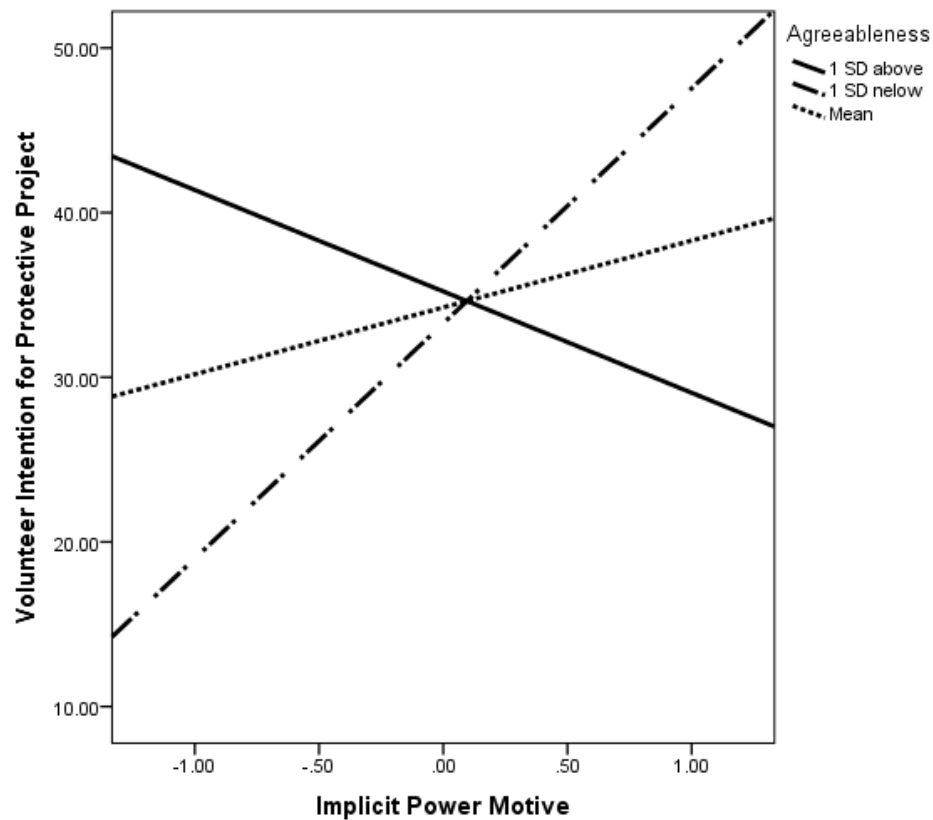
Predictor	Protective Intention ^a			Career Intention ^a		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Age	-.28	-.23	-.25	-.11	.25	.32†
Year of study	-.06	-.10	-.06	-.23	-.08	-.07
Previous volunteerism	.15	.13	.33	-.26†	-.04	.12
Values motive		.25	-.20		.18	.09
Understanding motive		-.18	-.07		.12	.16
Social motive		-.07	-.13		-.38*	-.43*
Enhancement motive		-.24	-.14		-.54*	-.48†
Protective motive		.57*	.65*		.24	.24
Career motive		.03	.12		.66*	.73***
Power motive			.20			.35*
Affiliation motive			.06			-.14
Extroversion			-.01			.25
Agreeableness			.12			-.16
Openness			.21			-.13
Conscientiousness			-.08			-.11
Emotional stability			-.14			.10
<i>F</i> total	1.94	2.00†	1.14	1.66	2.49*	2.21*
<i>R</i> ²	.13	.35	.40	.11	.40	.57
(<i>df</i> , <i>df</i>)	(3, 40)	(9, 34)	(16, 27)	(3, 40)	(9, 34)	(16, 27)

Note. N = 44. ^a Standardized beta coefficients.

† $p < .01$, * $p < .05$, *** $p < .001$

At the last step, we evaluated the interaction of traits (i.e., extroversion and agreeableness) and implicit motives (i.e., power motive and affiliation motive) in predicting volunteer intention. Four interaction terms were created from combining each of the two traits with each of the two motives. Each interaction term was obtained from centering measures of a motive and a trait around their means and then multiplying them. A series of hierarchical multiple regressions were conducted to test the effect of each interaction term on each measure of intention. In all the analyses, a motive score and a trait score were entered in the first step while their interaction term was entered in the second step. Results indicated that two interaction effects were statistically significant while the other effects were statistically non-significant. The first significant effect was the interaction between power motive and agreeableness in predicting volunteer intention for the Protective project. Adding the interaction term to the regression of agreeableness and power motive on volunteer intention score for this project created a model that accounted for a significant variance in intention to volunteer for this project, $R^2 = .18$, $F(3, 40) = 4.16$, $p = .012$; the interaction term significantly predicted intention ($\beta = -.45$, $p = .002$). This interaction is illustrated in Figure 2. The interaction was probed by testing the conditional effects of power motive at three levels of agreeableness: one standard deviation below the mean, at the mean, and one standard deviation above the mean. As shown in Table 4, power motive was significantly related to intention to volunteer for the Protective project when agreeableness was one standard deviation below the mean ($p = .003$), but not when agreeableness was at the mean and one standard deviation above the mean ($p = .231$ and $p = .187$, respectively). These results suggest that among highly disagreeable people, those with greater implicit power motive had greater intention to volunteer for the Protective project.

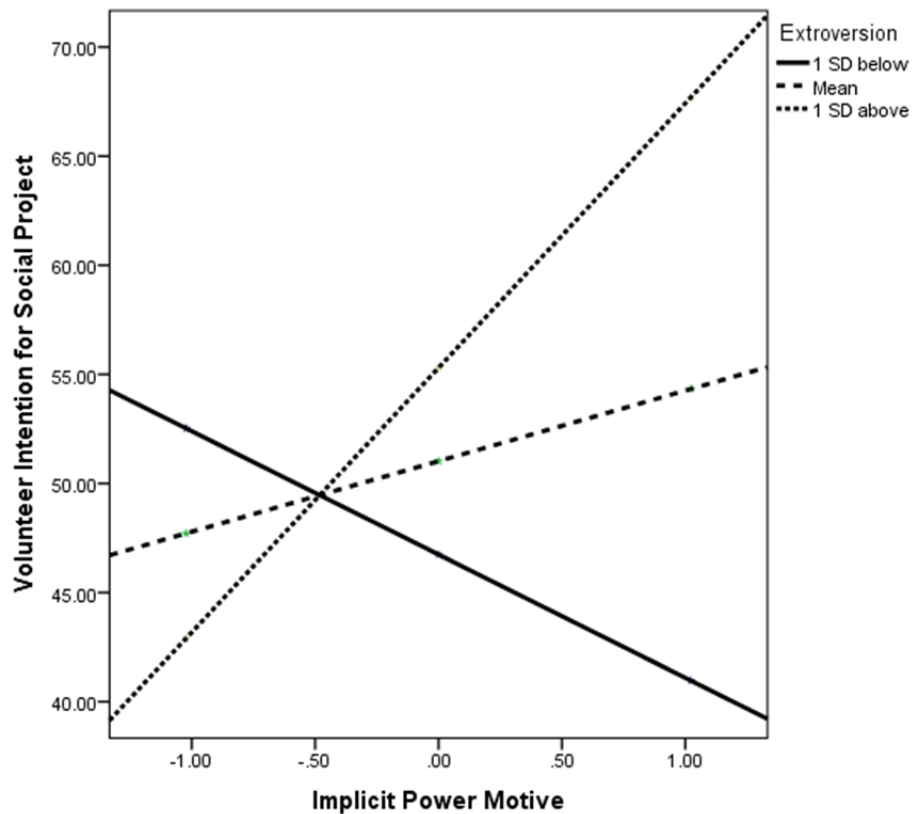
Figure 2. Agreeableness interacts with power motive to predict volunteer intention for Protective project (Pilot Study)



The second significant effect was the interaction between extroversion and power motive in predicting volunteer intention for the Social project. The model that included the interaction term accounted for a marginally significant variance in volunteer intention for this project, $R^2 = .09$, $F(3, 40) = 2.45$, $p = .078$; the interaction term significantly predicted volunteer intention ($\beta = .33$, $p = .045$). This interaction is illustrated in Figure 3. As shown in Table 5, testing the conditional effects of power motive at three levels of extroversion revealed that the association between power motive and volunteer intention was marginally significant when extroversion was one standard deviation above the mean ($p = .063$), but not when extroversion was at the mean and one standard deviation below the mean ($p = .308$ and $p = .172$, respectively).

These results suggest that among extroverts, those with higher implicit power motive had greater intention to volunteer for the Social project.

Figure 3. Extroversion interacts with power motive to predict volunteer intention for Social project (Pilot Study)



4.3 Pilot Study brief discussion

Findings from this study suggest that the hypotheses received partial empirical support. In general, this version of the model was found to be appropriate because of two sources of evidence. First, intention to volunteer was found to predict decision to volunteer consistently across different service projects. Second, in five out of six service projects, one or multiple explicit motives were found to predict volunteer intention, while traits and implicit motives added little to no effect to the prediction of volunteer intention. Taken together, the hierarchical model in which explicit motives

reside at a level that is more proximal to behavioural intention (i.e., the situational level) than traits and motives (proposed to reside at the more distal, elemental level) was partially supported.

Another objective of this study is to investigate the role of implicit motives in relation to the proposed model. Interaction effect of traits and motives was found for 2 service projects: agreeableness interacted with power motive to predict volunteer intention. With respect to the Protective project, among highly disagreeable people, having greater implicit power motive predicted having greater intention to volunteer. With respect to the Social project, among extroverts, those with higher implicit power motive had greater volunteer intention. In summary, the findings here suggest that although traits and implicit motives—the more distal, higher-level predispositions—may have little effect on volunteer intention beyond the effect of explicit motives—the more proximal, lower-level predispositions, they may have unique effect (e.g., interaction effect) that should not be overlooked.

Although the findings provide some support for the proposed model, they should be examined in consideration of the study's limitations, which would be addressed and improved in subsequent studies. First, despite the small sample size, some support for the proposed model was found. Subsequent studies would collect larger samples to better examine the proposed model. Low Cronbach's alphas for measures of the Big Five traits also prompted the replacement of these measures in subsequent studies. Next, eliciting volunteer intention for several service projects at the same time may be problematic because the cognitive processes underlying intention are not independent of one another. When people deliberate the intention to volunteer, they may consider several factors such as time commitment, financial resources, or emotional cost. Therefore, indicating intention to volunteer for one

project may affect intention to volunteer for the other projects, as they compete for the above-mentioned resources. This is a possible explanation for the lack of support for the effects of explicit motives on volunteer intention. Therefore, studies 2 and 3 employ a more general measure of volunteer intention, instead of eliciting intention for specific service projects. In practical sense, such conceptualization of intention is more realistic, because actual service projects often appeal to more than one motives for volunteering. For example, a service project in which volunteers visit and organize social events for the elderly may be interesting to those motivated by having social interaction (i.e., social motive), by gaining insights into the life of the elderly (i.e., understanding motive), and/or by seeking internship experience (i.e., career motive). Finally, emerging evidence suggests that the explicit motivational profiles of today's youths differ from those of the past, resulting in changes in the structure of the VFI model for recent samples of university students (Francis, 2011; Gage & Thapa, 2012). Thus, in studies 2 and 3, the factor structure of the VFI would be evaluated, as well as the factor structure of the other trait predictors and the outcome measures of volunteerism in the model.

Table 4

Conditional effects of power motive on volunteer intention for the Protective project at different levels of agreeableness (Pilot Study)

Agreeableness	β	p	95% CI
One SD below mean	.63	.003	(.222, 1.031)
At the mean	.18	.231	(-.118, .475)
One SD above mean	-.27	.187	(-.678, .137)

Note. N = 44.

Table 5

Conditional effects of power motive on volunteer intention for the Social project at different levels of extroversion (Pilot Study)

Extroversion	β	p	95% CI
One SD below mean	-.31	.172	(-.751, .139)
At the mean	.18	.308	(-.168, .518)
One SD above mean	.66	.063	(-.037, 1.349)

Note. N = 44.

CHAPTER FIVE: STUDY 1

In this study, we examine the effect of the full hierarchical model on volunteer outcomes within the cultural context of Singapore. All three research questions were addressed in this study (see Chapter 3). The first question regarding the appropriateness of the proposed model was addressed by fitting the proposed hierarchical model to the data using structural equation modeling techniques. The second question regarding the relationship of the traits in the model was addressed by comparing two versions of the model. First, the full mediation model represents a pattern of relationship in which the traits at each of the intermediate levels fully mediate the effects of the traits at the higher and preceding level. Second, the partial mediation model represents a pattern in which each trait may influence volunteer outcomes directly as well as indirectly via the intermediate traits (see Figure 1). Finally, regression weights from the best fitted model would shed light on specific traits that are most important in predicting volunteerism, hence addressing the third research question.

5.1 Method

Participants. At the first wave of data collection, a total of 480 undergraduate students in Singapore (346 women and 134 men), aged from 14 to 29, participated in the study. Among them, 38.2% of the students were in the first year of study, 29.6% in the second year, 17.1% in the third year, and 15% in the final year. The majority of the participants were ethnically Chinese (87.7%), and the remaining were Malay (4.8%), Indian (3.1%), Eurasian (1.5%), Caucasian (1.3%), and other Asian ethnic groups (1.7%).

At the second wave of data collection, 456 participants remained in the study and 24 participants dropped out, resulting in an attrition rate of 5%. At the last wave of

data collection, 432 participants remained, and an addition of 24 participants dropped out, resulting in an attrition rate of 10% between the first and last wave. Only participants who were between 18 and 25 years old and who participated in the study in its entirety were included in data analysis.

Data from the remaining 432 students were screened for evidence of disengaged responses. Standard deviations of responses to rating items in the same page of the survey were calculated, and values of zero suggested possible lack of engagement. Participants who had standard deviation scores of zero for more than 2 of the survey pages were omitted from all subsequent analyses. The final sample had 408 participants (307 women, 101 men, aged 18 to 25). Among them, 40.9% were first-year students, 29.7% second-year students, 15.9% third-year students, and 13.5% final-year students. Ethnically, most students were Chinese (88.2%), followed by Malay (4.9%), Indian (2.5%), Eurasian (1.5%), Caucasian (1.0%) and the remaining were of other Asian ethnicity (2.0%).

Procedure. Undergraduate students were recruited from two sources: the research participation pool at one of the local universities and an online recruitment campaign using e-flyers and emailing list. Participants in the research participation pool participated in exchange for 2 course credits, while others were compensated with monetary rewards through a lucky draw.

Data was obtained at three different points of time which were approximately one month apart. Measures of trait predictors were obtained only at time 1, the measure of volunteer intention was obtained at all three time points, and the measure of actual volunteer participation was obtained only at time 3. At time 1, participants were provided with a URL to access the first online survey. This survey started off with the informed consent form and participants were asked to read and choose the

appropriate options depending on whether they agreed to provide informed consent to participate. Those who consented to participating would proceed with the next part of the survey, while the survey would terminate for those who wish not to consent. At the next step, participants generated unique IDs known only to them and use such IDs in future surveys in the study. At time 2 and time 3, emails with the URL to access the second and third surveys were sent to the participants. Upon completion of the third survey, participants were sent a debriefing letter via email and were encouraged to ask for any clarification regarding the study.

Measures.

Appendix C summarizes the measures used in this study. All ratings were done using a 9-point Likert scale. Descriptive statistics and inter-correlations of these measures are included in Table 5.

Trait predictors. Measures of trait predictors were administered only at time 1 via an online survey designed in Qualtrics, which allowed configuration of Likert scales, text boxes and timed presentation of picture stimuli, and thus allowed measures of all traits and motives to be set up within this survey. At the elemental level, we included measures of 8 elemental traits (i.e., extroversion, agreeableness, openness, conscientiousness, neuroticism, arousal, need for material resources, need for arousal, and need for bodily resources) and 2 implicit motives (i.e., power motive and affiliation motive). The procedure to measure implicit motives was the same in this study as in Pilot Study, but in this study, six pictures were used (i.e., couple by river, ship captain, nightclub scene, trapeze artists, women in laboratory, and boxer) and two trained coders were involved. The coders scored 10% of the stories together and obtained two-way random effects intraclass correlation coefficients of .91 and .93 for implicit power and affiliation motives, respectively.

At the compound level, we included measures of altruism, self-esteem, need for activity, need for learning. Additionally, we propose to include on this level a measure of narcissism, and measures of the 7 components of the Prosocial Personality Battery (Penner, 2002). These components are social responsibility, empathetic concern, perspective taking, other-oriented moral reasoning, mutual concern moral reasoning, personal distress, and self-reported altruism.

At the situational level, measures of volunteer role identity, perceived moral obligation to volunteer, and six explicit motives to volunteer (i.e., values motive, understanding motive, social motive, enhancement motive, protective motive, and career motive) were included.

Finally, at the surface level, we included measures of attitude, perceived behavioral control, and subjective norm. Following the guidelines by Ajzen (2002), these measures were constructed to correspond to the measures of intention in terms of target, action, context, and time.

Volunteer intention. Participants' intention to volunteer were measured at three time points. According to the Ajzen (1985), a behavior is defined in terms of its target, action, context, and time. Thus, a measure of intention to engage in this behavior needs to correspond to these dimensions. In this study, we were more interested in the action (i.e., to volunteer) and the time (e.g., in the coming month) dimensions than the target (e.g., to help the elderly) and the context (e.g., at a particular social service organization) dimensions, hence the latter were not specified.

Volunteer participation. Participants' actual volunteer participation was measured at time 3. Participants indicated "yes" or "no" in response to the question "During the past two months, since your participation in this study, did you engage in

any volunteer work?”. The score of “1” denoted volunteer participation and the score of “0” denoted no volunteer participation.

Table 6

Descriptive statistics and inter-correlations of key variables in Study 1

Variable	1	2	3	4	5	6	7
1. Extroversion	-						
2. Agreeableness	-.07	-					
3. Openness	-.15**	.28**	-				
4. Conscientiousness	.11*	.30**	.10*	-			
5. Neuroticism	.23**	-.11*	.06	.01	-		
6. Body need	-.15**	.16**	.30**	.24**	-.01	-	
7. Material need	-.06	-.04	.05	.01	.36**	.15**	-
8. Arousal need	-.31**	.02	.32**	-.07	.03	.50**	.09
9. Learning need	-.14**	.30**	.55**	.16**	-.04	.43**	.01
10. Activity need	-.24**	.25**	.31**	.33**	.00	.46**	.06
11. Self-esteem	-.25**	.32**	.40**	.33**	-.24**	.33**	-.02
12. Altruism	-.19**	.75**	.33**	.24**	-.09	.22**	-.10*
13. Empathetic concern	-.25**	.56**	.13**	-.03	-.14**	.00	-.23**
14. Moral reasoning	-.11*	.66**	.22**	.20**	-.10*	.11*	-.18**
15. Narcissism	-.41**	-.07	.25**	-.04	.01	.20**	.25**
16. Volunteer role identity	-.10*	.26**	.01	.09	-.18**	.12*	-.21**
17. Perceived moral obligation	-.04	.28**	.09	.07	.10	.15**	.06

Table 6

Continued

Variable	1	2	3	4	5	6	7
18. Other-oriented motive	-.06	.49**	.20**	.14**	-.11*	.21**	-.16**
19. Self-oriented motive	.06	.36**	.10*	.09	.07	.25**	.13**
20. Social motive	.00	.32**	.15**	.12*	.00	.27**	.08
21. Career motive	.01	.23**	.15**	.15**	-.04	.26**	.03
22. Attitude	-.13**	.35**	-.02	.15**	-.15**	.17**	-.16**
23. Subjective norm	.08	-.25**	.08	-.10*	.17**	-.10	.13*
24. Perceived behavioral control	-.06	.00	-.08	.05	-.07	-.01	-.21**
25. Intention at Time 1	.06	.21**	.00	.09	-.05	.10	-.08
26. Intention at Time 2	.00	.14**	-.07	.02	.01	.05	-.07
27. Intention at Time 3	-.02	.33**	.05	.11*	-.06	.11*	-.18**
<i>M</i> ^a	3.34	6.13	5.82	6.14	4.51	3.77	3.12
<i>SD</i> ^a	1.24	1.12	1.44	1.54	1.57	1.12	1.62
<i>Min</i> ^a	.20	2.44	1.56	1.96	.57	1.04	.19
<i>Max</i> ^a	6.27	8.36	9.65	9.83	8.18	6.87	7.33

Table 6

Continued

Variable	8	9	10	11	12	13	14
8. Arousal need	-						
9. Learning need	.35**	-					
10. Activity need	.33**	.69**	-				
11. Self-esteem	.23**	.43**	.30**	-			
12. Altruism	.18**	.47**	.42**	.41**	-		
13. Empathetic concern	-.05	.18**	.17**	.08	.50**	-	
14. Moral reasoning	.02	.34**	.25**	.22**	.75**	.55**	-
15. Narcissism	.29**	.23**	.16**	.28**	.01	-.08	-.10*
16. Volunteer role identity	.18**	.14**	.19**	.16**	.32**	.36**	.24**
17. Perceived moral obligation	.06	.11*	.20**	.13*	.37**	.22**	.29**
18. Other-oriented motive	.18**	.46**	.31**	.36**	.52**	.46**	.54**
19. Self-oriented motive	.14**	.15**	.20**	.15**	.37**	.14**	.39**
20. Social motive	.18**	.16**	.33**	.23**	.38**	.05	.32**
21. Career motive	.19**	.25**	.32**	.27**	.26**	.00	.25**
22. Attitude	.14**	.22**	.22**	.25**	.44**	.33**	.37**
23. Subjective norm	.02	.00	-.04	-.21**	-.36**	-.15**	-.25**
24. Perceived behavioral control	.00	-.06	.01	.12*	.10*	-.02	.02

Table 6

Continued

Variable	8	9	10	11	12	13	14
25. Intention at Time 1	.06	.14**	.16**	.15**	.30**	.14**	.19**
26. Intention at Time 2	.12*	.07	.11*	.07	.24**	.22**	.19**
27. Intention at Time 3	.13*	.29**	.23**	.19**	.40**	.36**	.37**
<i>M</i> ^a	4.72	6.24	4.37	5.09	5.01	4.12	4.76
<i>SD</i> ^a	1.84	1.24	1.22	1.36	1.04	.96	.89
<i>Min</i> ^a	.77	2.72	1.04	1.16	1.75	.37	2.48
<i>Max</i> ^a	9.21	9.15	7.63	7.95	7.33	6.47	6.91

Table 6

Continued

Variable	15	16	17	18	19	20	21
15. Narcissism	-						
16. Volunteer role identity	-.08	-					
17. Perceived moral obligation	-.10	.46**	-				
18. Other-oriented motive	-.01	.52**	.33**	-			
19. Self-oriented motive	-.07	.32**	.51**	.57**	-		
20. Social motive	-.05	.45**	.57**	.48**	.65**	-	
21. Career motive	.02	.27**	.39**	.57**	.68**	.64**	-
22. Attitude	-.03	.60**	.35**	.65**	.37**	.37**	.34**
23. Subjective norm	.03	-.34**	-.35**	-.30**	-.27**	-.49**	-.29**
24. Perceived behavioral control	.02	.21**	-.07	.18**	.00	.12*	.04
25. Intention at Time 1	-.07	.56**	.40**	.40**	.35**	.38**	.24**
26. Intention at Time 2	-.08	.45**	.36**	.31**	.23**	.26**	.13**
27. Intention at Time 3	-.09	.60**	.35**	.55**	.30**	.34**	.28**
<i>M</i> ^a	.22	5.58	3.92	6.78	6.34	4.03	5.12
<i>SD</i> ^a	.16	1.69	1.61	1.05	1.79	1.30	1.50
<i>Min</i> ^a	-.05	1.27	.74	3.26	1.96	.93	1.10
<i>Max</i> ^a	.72	9.45	8.70	8.90	10.76	7.55	9.28

Table 6

Continued

Variable	22	23	24	25	26	27
22. Attitude	-					
23. Subjective norm	-.62**	-				
24. Perceived behavioral control	.49**	-.47**	-			
25. Intention at Time 1	.70**	-.61**	.42**	-		
26. Intention at Time 2	.50**	-.43**	.27**	.69**	-	
27. Intention at Time 3	.60**	-.32**	.15**	.62**	.60**	-
<i>M</i> ^a	6.51	1.94	4.41	5.45	4.64	6.39
<i>SD</i> ^a	1.39	1.44	1.60	2.25	2.22	1.78
<i>Min</i> ^a	2.55	-1.20	.04	1.12	.92	1.78
<i>Max</i> ^a	9.21	5.82	7.55	9.38	8.84	9.34

Note. N = 408.* $p < .05$, ** $p < .01$

^a These statistics were obtained after data transformation following Templeton's (2011) two-step procedure.

5.2 Results

Analytic strategy.

First, the data was screened for missing values and unengaged responses. Only participants without missing data and evidence of unengaged responses were considered in subsequent analyses. We also evaluated measures of skewness and kurtosis for all the continuous variables and transformed the data to meet the assumption of normality.

At the next step, we began to evaluate the measurement model by first conducting exploratory factor analyses (EFA) on all the constructs measured with multiple items (i.e., latent constructs). Based on the EFA results, decisions were made whether to drop any of the items and whether to combine any of the constructs due to their highly correlated items. We then conducted confirmatory factor analyses (CFA) on the measurement model obtained from the EFAs to check for model fit and for validity and reliability of all latent constructs. Goodness of fit was evaluated using the χ^2 statistic, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and standardized root mean square residual (SRMR). Factor scores were imputed from the final CFA model.

Having established the goodness of fit of the measurement model and obtained factor scores for the latent constructs, we conducted a logistic regression to investigate whether intention to volunteer predicts actual volunteer participation. In addition, the factor scores were used in a series of multiple regression to evaluate the traits that we added to the compound level against Mowen's (2000) criteria for compound traits. These analyses contributed to empirically establish the place of these traits in the hierarchical model.

Finally, we employed structural equation modelling (SEM) to examine the effect of the hierarchical personality model on the outcome variables of volunteer intention. Embedded within this SEM model was a latent growth curve (LGC) model which comprised of outcome measures at three time points. The LGC model allowed us to investigate whether participants differed in their initial volunteer intention (i.e., the intercept in the LGC model) and in the rate of change of their intention over time (i.e., the slope in the LGC model). Then, SEM models were evaluated to shed light on how personality traits and motives influence such individual differences. Two SEM models were evaluated at this step: a full mediation model and a partial mediation model. In the full mediation model, direct paths were drawn from the elemental traits to the compound traits, the compound traits to the situational traits, the situational traits to the surface traits, and the surface traits to the intercept and slope of the outcome variables. In the partial mediation model, additional paths were added to the full mediation model. These were direct paths from the elemental traits, the compound traits, and the situational traits to the intercept and slope of the outcome variables. Control variables such as age, year of study, and time spent on academic work were included in both models. All analyses were conducted using IBM SPSS and IBM SPSS AMOS software.

With respect to sample size requirement in SEM, Jackson (2003) proposed the $N:q$ rule, where N is the number of cases and q is the number of parameters to be estimated, and recommended the ratio between 20:1 and 10:1. In the model used in this study and Study 2, there are roughly 600 parameters in the full mediation model and 700 parameters in the partial mediation model, thus the minimum sample size recommended by Jackson (2003) is approximately 7000 participants. A study of such scale would require tremendous amount of time and effort and thus exceed the length

of a doctoral program. However, because of the theoretical and practical significance of the present research, we proceeded with data analyses and interpreted the results in consideration of the potential issues with small sample sizes.

We did not include actual volunteering as an outcome variable in the SEM models because of two reasons. First, including actual volunteering in the SEM models requires drawing additional paths from each trait to this variable, because traits functioning as reference values for behaviors can influence both volunteer intention and volunteer behaviors. Given the small sample sizes in this study and the next one, we decided to first establish volunteer intention as the immediate antecedent of actual volunteering and then focus mainly on exploring the relationship between the hierarchy of traits and volunteer intention. The second reason for our decision is because a person's actual behaviors or actions are influenced by an intricate interplay of a multitude of factors, which can be categorized as factors internal to the person (e.g., volunteer intention, traits and motives as reference points for forming such intention) and those external to the person (e.g., being asked to volunteer, knowledge of available volunteer positions). The influence of external factors on actual volunteering can be difficult to control. For example, a person may intend to volunteer, but do not do so because he/she does not know of any volunteer opportunity or because other ongoing commitments deter him/her from volunteering. In the present research, we did not investigate external factors that influence actual volunteer participation. Instead, we focused on exploring the interplay of different internal factors, including volunteer intention and the hierarchy of traits. For this reason, we did not include actual volunteering in the SEM models. Future studies with more adequate sample sizes can explore how the hierarchy of traits interact with external, environmental factors to predict actual volunteering.

Data screening and transformation.

After screening for unengaged responses and excluding participants who did not complete the second and third survey, a sample of 408 participants remained and the data set was complete without any missing values. We then examined Fisher's measures of skewness and kurtosis for all the continuous variables. These were obtained by dividing each skewness statistic by the standard deviation for skewness, and each kurtosis statistic by the standard deviation for kurtosis. For the variables in which these values were between 1.96 and -1.96, it is not unreasonable to assume normality (Ashcraft, 1998). All of our continuous variables fell out of the above range, so we followed Templeton's (2011) two-step procedure to transform these non-normally distributed continuous variables to statistical normality. According to this procedure, these variables were first transformed to statistical uniformity using the percentile rank function, and then transformed to statistical normality using the inverse normal distribution function. Assumption of normality for all the continuous variables were met after data transformation.

Evaluating the measurement models.

To evaluate the measurement model of the latent constructs, we conducted two sets of exploratory factor analyses using maximum likelihood extraction and Promax rotation. In the first set of analyses, we included all measures of traits. Results from the first analysis revealed many items that loaded simultaneously on two or more latent factors. Then, a series of factor analysis were conducted and in each of these analyses, a cross-loaded item was dropped. This process resulted in a clean factor structure with 23 latent trait constructs, accounting for 68.72% of the variance. The Kaiser-Meyer-Olkin measure of sampling adequacy was .89 and Bartlett's test of

sphericity was significant ($\chi^2(4465) = 29407.45, p < .05$). The diagonals of the anti-image correlation matrix were all over .70. Finally, the communalities were all above .41. According to this factor structure, only the subscale of empathetic concern in the Prosocial Personality Battery was retained while the subscales of other-oriented moral reasoning and mutual concern moral reasoning were collapsed into a single construct of moral reasoning. Similarly, in the Volunteer Functions Inventory, measures of understanding motive and values motive were collapsed into the construct of other-oriented motive and measures of enhancement motive and protective motive were collapsed into the construct of self-oriented motive. Table 7 summarizes the factor loadings for 23 latent trait constructs.

In the second set of analyses, we followed a similar process to evaluate the factor structure of the outcome variables (i.e., measures of volunteer intention at three time points). The final structure revealed 3 latent factors, accounting for 87.16% of the variance. The Kaiser-Meyer-Olkin measure of sampling adequacy was .92 and Bartlett's test of sphericity was significant ($\chi^2(66) = 6664.51, p < .05$). The diagonals of the anti-image correlation matrix were all over .89. Finally, the communalities were all above .76. Table 7 summarizes the factor loadings for 3 latent outcome constructs.

Consequently, a confirmatory factor analysis was run on 23 traits and 3 measures of intention to evaluate the goodness of fit of the full measurement model. Modification indices greater than 20 were used to improve the model fit, resulting in specifying covariances between some pairs of items which measured the same latent constructs. The final model had acceptable goodness of fit, $\chi^2(5334) = 8947.33, p < .001$; CFI = .90; TLI = .89; RMSEA = .04; SRMR = .05. Critical ratios for all constructs were greater than 9.48, and standardized regression weights for all constructs were greater than .46. The average variance extracted (AVE) for all

constructs was greater than .54, and the square root of the AVE for all constructs was greater than the absolute value of all the intercorrelations. Taken together, the evidence supported convergent and discriminant validity of our latent constructs. Maximal reliability of most constructs was greater than .80, with only two exceptions: maximal reliability of perceived behavioral control and empathetic concern was .75 and .71, respectively. Factor scores for 23 trait constructs and 3 intention constructs were imputed at the last step of the analysis.

Table 7

Factor loadings (Study 1), AVE and MaxR for all latent constructs (Studies 1 and 2)

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
1. Extroversion	Timid more than others.	.69	.90	.66	.91	.94	.77	.95
	Shy.	.89						
	Quiet when with people.	.89						
	Introverted.	.84						
2. Agreeableness	Kind to others.	.73	.93	.79	.94	.94	.81	.95
	Tender-hearted with others.	.91						
	Sympathetic.	.94						
	Soft-hearted.	.84						
3. Openness	Feel highly creative.	.94	.89	.67	.90	.88	.64	.91
	Imaginative.	.85						
	Find novel solutions.	.75						
	More original than others.	.71						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
4. Conscientiousness	Orderly.	.90	.87	.64	.91	.89	.67	.91
	Precise.	.74						
	Organized.	.91						
	Efficient.	.50						
5. Neuroticism	Moody more than others.	.81	.91	.72	.93	.94	.78	.94
	Temperamental.	.93						
	Get irritated more easily than others.	.86						
	Emotions go way up and down.	.84						
6. Body need	Focus on my body and how it feels.	.57	.83	.57	.89	.91	.72	.94
	Devote time each day to improving my body.	.92						
	Feel that making my body look good is important.	.56						
	Work hard to keep my body healthy.	.85						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
7. Material need	Enjoy buying expensive things.	.86	.86	.58	.91	.88	.63	.91
	Enjoy owning luxurious things.	.94						
	Acquiring valuable things is important to me.	.51						
	Like to own nice things more than most people.	.72						
8. Arousal need	Drawn to experiences with an element of danger.	.72	.89	.73	.94	.86	.69	.93
	Like the new and different more than the tried and true.	.86						
	Enjoy taking risks more than others.	.97						
	Enjoy learning new things more than others.	.63	.84	.55	.87	.90	.69	.91
9. Learning need	Enjoy working on new ideas.	.61						
	Information is my most important resource.	.74						
	Tasks that require thinking are fun.	.79						
	Enjoy buying expensive things.	.86	.86	.58	.91	.88	.63	.91

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
10. Activity need	Try to cram as much as possible into a day.	.72	.87	.64	.90	.88	.68	.94
	Extremely active in my daily life.	.62						
	Always like to be doing something.	.85						
	Keep really busy doing things.	.94						
11. Self-esteem	I feel a great deal of self-respect.	.78	.94	.79	.95	.94	.81	.95
	In almost every way, I'm very glad to be the person I am.	.92						
	I feel very positive about myself.	.95						
	I feel that I'm a person of worth, at least on an equal plane with others.	.86						
12. Altruism	Altruistic.	.72	.91	.71	.92	.89	.69	.91
	Giving to others.	.93						
	Sacrifice myself to help others.	.82						
	Selfless in giving time to others.	.62						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
13. Empathetic concern	Other people's misfortunes do not usually disturb me a great deal. ^b	.44	.69	.55	.71	.74	.62	.76
	When I see someone being treated unfairly, I sometimes don't feel very much pity for them. ^b	.59						
14. Volunteer role identity	Volunteering is something I rarely even think about. ^b	.72	.77	.65	.83	.71	.58	.74
	I really don't have any clear feelings about volunteering. ^b	.79						
15. Perceived moral obligation	It would go against my principles if I do not volunteer.	.92	.88	.71	.89	.92	.81	.93
	I would feel guilty if I do not volunteer.	.83						
	It would be morally wrong for me not to volunteer.	.83						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
16. Moral reasoning	My decisions are usually based on my concern for other people.	.76	.90	.64	.92	.93	.73	.94
	I choose a course of action that maximizes the help other people receive.	.77						
	My decisions are usually based on concern for the welfare of others.	.75						
	I choose alternatives that are intended to meet everybody's needs.	.88						
	I choose a course of action that considers the rights of all people involved.	.81						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
17. Other- oriented motive	I can learn more about the cause for which I am working.	.72	.91	.55	.92	.94	.66	.95
	Volunteering allows me to gain a new perspective on things.	.87						
	Volunteering lets me learn things through direct, hands on experience.	.75						
	I can learn how to deal with a variety of people.	.79						
	I can explore my own strengths.	.65						
	I am concerned about those less fortunate than myself.	.50						
	I am genuinely concerned about the particular group I am serving.	.66						
	I feel compassion toward people in need.	.61						
	I can do something for a cause that is important to me.	.76						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
18. Self-oriented motive	Volunteering makes me feel important.	.87	.89	.60	.91	.90	.67	.92
	Volunteering increases my self-esteem.	.65						
	Volunteering makes me feel needed.	.81						
	Volunteering makes me feel better about myself.	.85						
	By volunteering I feel less lonely.	.66						
	Doing volunteer work relieves me of some of the guilt over being more fortunate than others. ^c	.62						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
19. Social motive	My friends volunteer.	.79	.87	.56	.87	.92	.70	.93
	People I'm close to want me to volunteer.	.64						
	People I know share an interest in community service.	.74						
	Others with whom I am close place a high value on community service.	.69						
	Volunteering is an important activity to the people I know best.	.51						
20. Career motive	Volunteering can help me to get my foot in the door at a place where I would like to work.	.80	.83	.54	.83	.90	.65	.90
	I can make new contacts that might help my business or career.	.69						
	Volunteering allows me to explore different career options.	.59						
	Volunteering will help me to succeed in my chosen profession.	.68						
	Volunteering experience will look good on my resume.	.57						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
21. Attitude	For me, to volunteer in the next month is: - harmful:beneficial	.46	.89	.67	.87	.91	.76	.97
	For me, to volunteer in the next month is: - pleasant:unpleasant ^b	.90						
	For me, to volunteer in the next month is: - good:bad ^b	.77						
	For me, to volunteer in the next month is: - enjoyable:unenjoyable	.83						
22. Subjective norm	People who are important to me think I: - should volunteer in the next month.:should not volunteer in the next month.	-.59	.75	.61	.80	.76	.67	.87
	People who are important to me would: - approve of my volunteering in the next month.:disapprove of my volunteering in the next month.	-.72						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
23. Perceived behavioral control	How confident are you that you will be able to volunteer in the next two months?	.70	.89	.55	.75	.96	.80	.95
	How much personal control do you feel you have over volunteering in the next two months? ^d	.54						
	I believe I have the ability to volunteer in the next two months.	.95						
	To what extent do you see yourself as being capable of volunteering in the next two months?	.92						
	If it were up to me, I am confident I would be able to volunteer in the next two months?	.74						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
25. Time 1	I intend to volunteer in the next month.	.96	.96	.88	.97	.96	.88	.98
Volunteer	I will make an effort to volunteer in the next month.	.99						
Intention ^e	I want to volunteer in the next month.	.90						
	To what extent would you be willing to volunteer in the next month?	.83						
26. Time 2	I intend to volunteer in the next month.	.98	.96	.87	.97	.95	.82	.97
Volunteer	I will make an effort to volunteer in the next month.	.97						
Intention ^e	I want to volunteer in the next month.	.91						
	To what extent would you be willing to volunteer in the next month?	.80						

Table 7

Continued

Construct	Item	Factor loading ^a	Study 1			Study 2		
			α	AVE	MaxR	α	AVE	MaxR
25. Time 3	I intend to volunteer in the future.	.94	.96	.85	.96	.96	.84	.97
Volunteer	I will make an effort to volunteer in the future.	.92						
Intention ^e	I want to volunteer in the future.	.92						
	To what extent would you be willing to volunteer in the future?	.88						

Note. ^a Factor loadings were only obtained in Study 1. ^b Item was reverse-coded. ^c Item was dropped in Study 2 due to issue with discriminant validity. ^d Item was not included in Study 2 due to an oversight. ^e Exploratory factor analyses on measures of intention was done separately from traits and motives in the proposed hierarchical model.

AVE = average variance extracted. MaxR = Maximal reliability

Predicting actual volunteering from volunteer intention.

At the next step, a logistic regression was conducted to investigate whether intention is the immediate determinant of behavior. In this regression, the dependent variable was the binary measure of whether participants engaged in any volunteer activities over the course of the study. The independent variables were measures of volunteer intention at three time points. Results indicated that all three measures of intention significantly predicted actual volunteering, $\chi^2(3) = 153.55, p < .001$, Nagelkerke $R^2 = 42.7\%$ ($\beta = .34, p < .001$; $\beta = .31, p < .001$; and $\beta = .24, p < .05$ for intention at time 1, time 2, and time 3, respectively).

Establishing compound traits.

Additionally, multiple regression analyses were run to assess whether altruism, empathetic concern, moral reasoning, and narcissism reside at the compound level. Mowen (2000) specified 4 criteria of a compound trait: (1) unidimensional, (2) good reliability, (3) a set of two or more elemental traits should account for substantial portions of their variance, at least 25%, (4) the combination of the elemental traits with appropriately selected compound traits should account for more variance in situational traits than the elemental traits can alone. Previous analyses suggested that altruism, empathetic concern, moral reasoning, and narcissism met the first 2 criteria. Results from a series of multiple regression analyses indicated that these constructs also met the last 2 criteria. Taken together, empirical evidence supported the proposition that altruism, empathetic concern, moral reasoning, and narcissism are compound traits.

Evaluating the full model with mediation effects.

In the final set of analyses, we examined the effect of the hierarchical model of personality and motivation on volunteer intention. At the first step, a LGC model was fitted to the measures of volunteer intention at three time points. To identify this

model, the intercepts of all manifest variable were set to zero and the errors of the same item at two adjacent time points were allowed to covary. Fit indices were acceptable, $\chi^2(50) = 326.33, p < .001$; CFI = .96; TLI = .95; RMSEA = .12; SRMR = .04. Results revealed significant estimates of mean ($\kappa = 4.93, p < .001$) and variance ($\Phi = 3.81, p < .001$) of the intercept, and significant estimates of mean ($\kappa = .51, p < .001$) and variance ($\Phi = .38, p < .05$) of the slope. Hence, it can be inferred that individual differed in both their intention to volunteer at time 1 and in the rate of change in intention from over time.

At the second step, two SEM models were investigated to examine individual differences in initial volunteer intention and rate of change of intention over time. The full mediation model had acceptable goodness of fit, $\chi^2(6190) = 10828.66, p < .001$; CFI = .87; TLI = .87; RMSEA = .04; SRMR = .07. Comparatively, the partial mediation model also had slightly better fit, $\chi^2(6142) = 10693.91, p < .001$; CFI = .88; TLI = .87; RMSEA = .04; SRMR = .06. A chi-square difference test indicated that the two models were statistically different, $\Delta\chi^2(48) = 134.75, p < .001$, hence the partial mediation model was chosen as the better fitted model. The path coefficients derived from the partial mediation model are summarized in Table 8. According to the results, significant predictors of volunteer intention at time 1 were perceived behavioral control ($\beta = .65, p < .001$), perceived moral obligation ($\beta = .11, p < .05$), and need for body resources ($\beta = -.07, p < .05$). Additionally, significant predictors of rate of change in intention over time were perceived behavioral control ($\beta = -.92, p < .001$), subjective norm ($\beta = .30, p < .01$), and volunteer role identity ($\beta = .89, p < .05$).

Finally, to investigate whether extroversion and agreeableness moderates the effect of affiliation motive and power motive on volunteer intention, we included four interaction terms, each created from one trait and one motive, in the partial mediation

SEM model. The new model had acceptable fit, $\chi^2(6538) = 11184.9, p < .001$; CFI = .87; TLI = .86; RMSEA = .04; SRMR = .06. Results indicated that only one of the interaction effects was statistically significant: extroversion moderated the effect of affiliation motive on rate of change in intention ($\beta = .10, p = .029$), while the other interaction effects were not statistically significant. The interaction between extroversion and affiliation motive is illustrated in Figure 4.

Figure 4. Extroversion interacts with implicit affiliation motive to predict the rate of change in volunteer intention over time (Study 1)

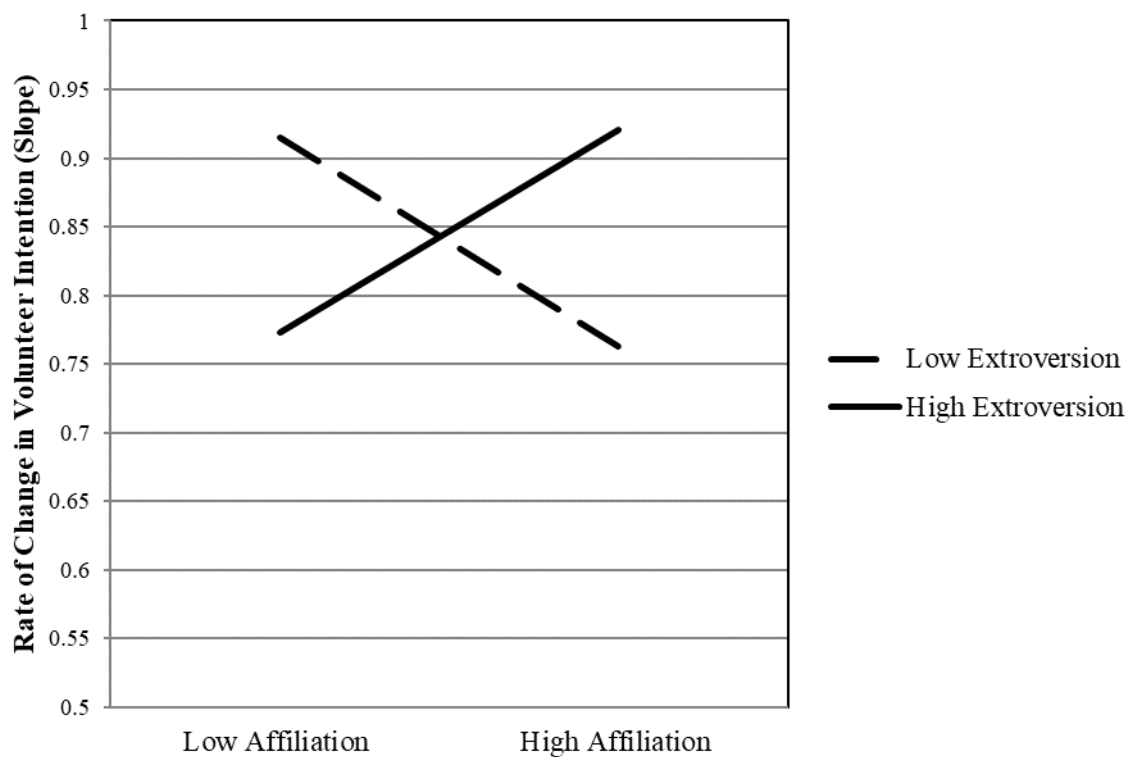


Table 8

*Antecedents of initial volunteer intention and rate of change in intention over time**(Studies 1 and 2)*

	Singapore Sample		U.S. Sample	
	(Study 1)		(Study 2)	
	β	p	β	p
Predicting initial intention				
Attitude	-.05	.684	.19*	.041
Subjective norm	.00	.945	-.01	.930
Perceived behavioral control	.65***	< 0.001	.58***	< 0.001
Volunteer role identity	.37	.090	.18	.372
Perceived moral obligation	.11*	.046	.17*	.002
Other-oriented motive	.12	.077	.16	.179
Self-oriented motive	.00	.996	.02	.859
Social motive	-.05	.658	.09	.392
Career motive	-.10	.330	-.09	.186
Altruism	-.01	.974	-.09	.317
Activity need	.04	.655	.17*	.029
Learning need	.05	.401	-.12	.085
Self- esteem	-.05	.479	-.11	.063
Empathetic concern	-.08	.826	.02	.784
Moral reasoning	.02	.916	-.06	.387
Narcissism	-.06	.218	.01	.870
Neuroticism	-.02	.616	-.05	.330

Table 8

Continued

	Singapore Sample ^a		U.S. Sample ^a	
	(Study 1)		(Study 2)	
	β	p	β	p
Predicting initial intention				
Conscientiousness	-.02	.627	-.04	.418
Agreeableness	-.05	.460	-.07	.430
Extroversion	.06	.156	.11*	.023
Openness	.00	.974	.13*	.017
Body need	-.07*	.043	.04	.429
Arousal need	.03	.442	.07	.216
Material need	.05	.187	-.08	.091
Implicit power motive	.01	.854	-.05	.193
Implicit affiliation motive	-.01	.612	.10*	.025
Implicit achievement motive	.00	.882	.03	.527
Predicting rate of change				
Attitude	-.27	.178		
Subjective norm	.30*	.004		
Perceived behavioral control	-.92***	< 0.001		
Volunteer role identity	.89*	.027		
Perceived moral obligation	.02	.822		
Other-oriented motive	.26	.050		
Self-oriented motive	.07	.785		
Social motive	.29	.189		

Table 8

Continued

	Singapore Sample ^a		U.S. Sample ^a	
	(Study 1)		(Study 2)	
	β	p	β	p
Predicting rate of change				
Career motive	.26	.180		
Altruism	-.45	.180		
Activity need	-.25	.132		
Learning need	.21	.091		
Self- esteem	-.10	.432		
Empathetic concern	1.07	.151		
Moral reasoning	-.30	.326		
Narcissism	.12	.202		
Neuroticism	.08	.181		
Conscientiousness	.00	.966		
Agreeableness	-.01	.910		
Extroversion	.01	.899		
Openness	-.13	.069		
Body need	.05	.482		
Arousal need	.06	.384		
Material need	-.07	.331		
Implicit power motive	-.03	.617		
Implicit affiliation motive	-.01	.840		
Implicit achievement motive	-.01	.887		

Table 8

Continued

Note. ^a Standardized regression weights were reported.

* $p < .05$, *** $p < .001$

5.3 Study 1 brief discussion

Three tentative conclusions could be drawn from the results of Study 1. First, the hierarchical model which we developed following the theoretical framework of Mowen's (2000) Meta-Theoretic Model of Motivation and Personality was appropriate in the prediction of volunteer intention. Two sources of empirical evidence supported this model: the newly proposed compound traits met the criteria to be classified as compound-level traits and the structural equation models, including both the full mediation model and the partial mediation model, had acceptable goodness of fit. Second, the partial mediation model had slightly better fit than the full mediation model, suggesting that broader, higher-level traits influenced volunteer intention indirectly via the more proximal, context-specific traits, as well as directly on intention.

Third, although all the traits included in the model have been found to associate with volunteerism in previous research, examining these traits in the context of Singapore revealed that only some of them emerged as important predictors of volunteer intention. Results indicated that having greater perception of behavior control and moral obligation to volunteer, as well as lower need to protect and enhance the body, significantly predicted higher volunteer intention at time 1. Additionally, greater rate of change in intention was predicted by perceiving less approval to volunteer from significant others and less behavioral control, as well as having a volunteer role identity. In addition, some support was found for the interaction of implicit affiliation motive and extroversion in predicting volunteer intention: for extroverts, having greater affiliation motive was associated with experiencing greater change in volunteer intention over time, while for introverts, having greater affiliation motive was associated with experiencing less change in volunteer intention. These

results are consistent with the predictions of the channeling hypothesis (e.g., Winter et al., 1998). However, the effect of the interaction between agreeableness and extroversion with implicit power motive, which was found in Pilot Study, was not replicated in this study.

Taken together, in a specific cultural context, traits may differ in how much they contribute to the prediction of youth volunteerism: some traits remain as significant predictors of volunteerism while others do not. This proposition is further examined in Study 2, which investigates the hierarchical model in another cultural context, that is, the American culture.

CHAPTER SIX: STUDY 2

This study aims to address the same research questions as those addressed in Study 1, but in a different cultural context (i.e., the American culture), so that the prediction of youth volunteerism can be evaluated with respect to cross-cultural similarities and differences. American participants were recruited from Amazon's Mechanical Turk (MTurk), which is an efficient way to reach the target sample size in a shorter time compared to traditional lab procedure (e.g., Mason & Suri, 2012). The quality of MTurk data for academic research has also been established (e.g., Rouse, 2015; Buhrmester et al., 2011; Paolacci et al., 2010).

6.1 Method

Participants. A total of 609 participants in the U.S. (427 women and 182 men, aged 18 to 63) were recruited through MTurk. Only participants who were U.S. citizens, between 18 and 25 years old, and passed the test of attentiveness were included in the analyses, resulting in a sample of 442 participants in the first wave of data collection. Among them, 313 were women and 129 were men. At the time of participation, the majority were enrolled in a university (80.3%), and the remaining were enrolled in a high school (15.2%) or a graduate program (4.5%). Participants came from various ethnic backgrounds: Caucasian (72.9%), Black and African (9.3%), Hispanic and Latino (4.1%), Asian (9.0%), other ethnicity or mixed ethnicity (4.7%).

At the second wave of data collection, 123 participants discontinued while 319 participants remained in the study, resulting in an attrition rate of 38.6%. At the last wave of data collection, an additional 56 participants dropped out. Attrition rate between the first and last wave was 40.5%. Only participants who took part in three waves of data collection were included in data analysis.

Hence, the final sample had 263 participants (197 women, 66 men, aged 18 to 25). Among them, 14.8% were high school students, 81% university students, and 4.2% graduate students. Most students were Caucasian (69.6%) while others were Black and African (9.1%), Hispanic and Latino (5.3%), Asian (9.9%), and of other ethnicity or mixed ethnicity (6.1%).

Procedure. Eligible participants were recruited on the MTurk platform. Each participant had a unique ID associated with his/her MTurk account. Participants were informed that any work on MTurk could be linked to the user's public profile page and hence, they may want to restrict what information they choose to share in their public profile. They were also informed that the ID would be used to link data from time 1, time 2, and time 3 surveys and for compensation purposes, but it would not be associated with the survey responses. Participants were not asked to provide their names or any other identifying information in the surveys. The MTurk participants were paid upon the completion of each of the three surveys and were given a bonus for completing all three surveys. The compensation was done through their Amazon accounts.

Similar to Study 1, data was obtained at three different points of time which were approximately one month apart. The Turk Prime platform was used concurrently with MTurk to manage collection of longitudinal data. At the second and third wave of data collection, messages were sent to participants via Turk Prime to announce when the surveys became available. The surveys used in this study were similar to those used in Study 1. The only difference was that measures of attitude, perceived behavioral control, and subjective norm were taken at all three time points in this study (in Study 1, these measures were only present in the first survey). Hence, averaging corresponding items in measures of attitude, subjective norm, and perceived

behavioral control created scores that are conceptually the same as the measures in Study 1. Upon completion of the third survey, the students received a debriefing letter using the message function in Turk Prime.

Measures.

Study 2 contained similar measures of trait predictors and outcome variables as Study 1. All surveys were designed in Qualtrics. Appendix C lists the measures used in this study. Descriptive statistics and inter-correlation of all the measures are provided in Table 9.

Table 9

Descriptive statistics and inter-correlations of key variables in Study 2

Variable	1	2	3	4	5	6	7
1. Extroversion	-						
2. Agreeableness	.09	-					
3. Openness	.04	.33**	-				
4. Conscientiousness	.04	.22**	.29**	-			
5. Neuroticism	.17**	-.17**	.03	-.16**	-		
6. Body need	-.28**	.21**	.34**	.26**	-.06	-	
7. Material need	.00	.03	.04	-.03	.16**	.03	-
8. Arousal need	-.31**	-.01	.22**	.00	.18**	.33**	.31**
9. Learning need	-.12*	.37**	.55**	.31**	-.07	.52**	.06
10. Activity need	-.24**	.36**	.36**	.35**	-.09	.59**	.09
11. Self-esteem	-.29**	.27**	.37**	.35**	-.52**	.39**	-.05
12. Altruism	.06	.74**	.30**	.21**	-.12	.31**	-.02
13. Empathetic concern	.01	.71**	.11	-.03	-.07	.14*	-.05
14. Moral reasoning	.04	.62**	.31**	.15*	-.14*	.20**	-.04
15. Narcissism	-.11	-.32**	-.14*	-.24**	.18**	.00	.08
16. Volunteer role identity	-.05	.50**	.20**	.03	-.09	.28**	-.09
17. Perceived moral obligation	.05	.31**	.11	.14*	-.04	.24**	.10

Table 9

Continued

Variable	1	2	3	4	5	6	7
18. Other-oriented motive	.00	.65**	.34**	.19**	-.13*	.30**	.05
19. Self-oriented motive	-.03	.48**	.31**	.14*	-.09	.26**	.07
20. Social motive	-.12*	.35**	.30**	.15*	-.14*	.32**	.05
21. Career motive	-.08	.39**	.22**	.20**	-.11	.15*	.09
22. Attitude	-.07	.46**	.29**	.18**	-.17**	.28**	-.12*
23. Subjective norm	-.01	-.24**	-.15*	-.12	.04	-.17**	.11
24. Perceived behavioral control	-.07	.30**	.17**	.14*	-.20**	.28**	-.12
25. Intention at Time 1	-.01	.36**	.26**	.13*	-.13*	.31**	-.13*
26. Intention at Time 2	.02	.30**	.23**	.16**	-.08	.31**	-.05
27. Intention at Time 3	.01	.44**	.25**	.13*	-.03	.27**	-.10
<i>M</i> ^a	2.46	5.07	3.74	3.53	1.99	2.60	2.10
<i>SD</i> ^a	.98	.98	.96	.96	.97	.97	.95
<i>Min</i> ^a	.41	2.15	1.19	.88	.14	.40	.39
<i>Max</i> ^a	4.20	6.60	5.72	5.47	4.27	4.57	4.39

Table 9

Continued

Variable	8	9	10	11	12	13	14
8. Arousal need	-						
9. Learning need	.31**	-					
10. Activity need	.37**	.74**	-				
11. Self-esteem	.06	.43**	.41**	-			
12. Altruism	.13*	.51**	.50**	.25**	-		
13. Empathetic concern	-.14*	.35**	.29**	.12	.64**	-	
14. Moral reasoning	-.02	.47**	.42**	.20**	.70**	.55**	-
15. Narcissism	.11	-.11	-.14*	-.06	-.29**	-.27**	-.28**
16. Volunteer role identity	.01	.33**	.35**	.19**	.50**	.64**	.52**
17. Perceived moral obligation	.17**	.27**	.40**	.10	.46**	.22**	.45**
18. Other-oriented motive	.11	.56**	.54**	.35**	.76**	.66**	.72**
19. Self-oriented motive	.17**	.45**	.48**	.32**	.58**	.41**	.54**
20. Social motive	.22**	.35**	.46**	.35**	.49**	.20**	.39**
21. Career motive	.07	.33**	.39**	.28**	.42**	.23**	.49**
22. Attitude	.02	.38**	.49**	.31**	.58**	.49**	.52**
23. Subjective norm	.07	-.23**	-.25**	-.19**	-.34**	-.20**	-.39**
24. Perceived behavioral control	.02	.31**	.35**	.34**	.40**	.27**	.34**

Table 9

Continued

Variable	8	9	10	11	12	13	14
25. Intention at Time 1	.07	.34**	.45**	.27**	.47**	.37**	.42**
26. Intention at Time 2	.14*	.33**	.41**	.21**	.38**	.30**	.32**
27. Intention at Time 3	.09	.33**	.39**	.21**	.51**	.44**	.42**
<i>M</i> ^a	1.98	4.05	3.03	2.97	4.51	4.12	4.23
<i>SD</i> ^a	.97	.96	.97	.99	.96	.92	.97
<i>Min</i> ^a	.31	1.08	.70	.66	1.72	1.20	1.44
<i>Max</i> ^a	4.47	5.90	5.02	4.70	6.47	6.03	6.28

Table 9

Continued

Variable	15	16	17	18	19	20	21
15. Narcissism	-						
16. Volunteer role identity	-.18**	-					
17. Perceived moral obligation	-.05	.52**	-				
18. Other-oriented motive	-.23**	.70**	.53**	-			
19. Self-oriented motive	-.12	.61**	.55**	.84**	-		
20. Social motive	-.05	.53**	.55**	.62**	.78**	-	
21. Career motive	-.14*	.38**	.29**	.69**	.73**	.70**	-
22. Attitude	-.28**	.65**	.47**	.66**	.55**	.52**	.40**
23. Subjective norm	.11	-.50**	-.39**	-.40**	-.40**	-.58**	-.36**
24. Perceived behavioral control	-.09	.60**	.48**	.49**	.44**	.54**	.41**
25. Intention at Time 1	-.15*	.71**	.58**	.61**	.56**	.59**	.39**
26. Intention at Time 2	-.11	.55**	.51**	.46**	.41**	.49**	.29**
27. Intention at Time 3	-.22**	.68**	.48**	.57**	.47**	.51**	.37**
<i>M</i> ^a	3.20	3.15	2.12	4.53	3.32	2.22	3.10
<i>SD</i> ^a	1.88	.90	.97	.98	.97	.97	.96
<i>Min</i> ^a	.92	.96	.46	2.04	1.07	.32	.71
<i>Max</i> ^a	8.33	5.07	4.25	6.22	5.22	4.32	5.09

Table 9

Continued

Variable	22	23	24	25	26	27
22. Attitude	-					
23. Subjective norm	-.62**	-				
24. Perceived behavioral control	.66**	-.69**	-			
25. Intention at Time 1	.72**	-.66**	.80**	-		
26. Intention at Time 2	.65**	-.59**	.79**	.68**	-	
27. Intention at Time 3	.67**	-.57**	.68**	.66**	.77**	-
<i>M</i> ^a	3.96	1.17	2.66	2.27	2.47	3.31
<i>SD</i> ^a	.99	.95	.98	.99	.99	.99
<i>Min</i> ^a	1.26	-.60	.38	.57	.58	1.06
<i>Max</i> ^a	5.54	3.77	4.42	3.61	4.01	4.55

Note. N = 408.* $p < .05$, ** $p < .01$ ^a These statistics were obtained after data transformation following Templeton's (2011) two-step procedure.

6.2 Results

Analytic strategy.

We first conducted a confirmatory factor analysis to investigate whether the measurement model established in Study 1 could be replicated in Study 2.

Subsequently, the analytic strategies and procedures to examine the effect of intention on actual behavior, establish compound traits, and examine the mediation models that were the same as those employed in Study 1. All analyses were also conducted using IBM SPSS and IBM SPSS AMOS software.

Data screening and transformation.

The data was screened for missing values and skewness and kurtosis of all the continuous variables. The data did not contain any missing values. Evaluation of Fisher's measures of skewness and kurtosis revealed that all continuous variables had their skewness or kurtosis statistics out of the range between 1.96 and -1.96, and thus normality could not be assumed. Two-step procedure by Templeton (2011) was employed to transform the data, resulting in all continuous variables meeting the assumption of normality.

Evaluating the measurement models.

A confirmatory factor analysis was run on 23 traits and 3 measures of intention to replicate the measurement model established in Study 1. Modification indices greater than 20 suggested that covariances between some pairs of items which measured the same latent constructs needed to be specified. The model's fit was acceptable, $\chi^2(5229) = 8771.57, p < .001$; CFI = .88; TLI = .87; RMSEA = .05; SRMR = .06. An issue with discriminant validity of self-oriented motive was discovered and an item was taken out from the measure of self-oriented motive (see Table 7 notes). Factor analysis was re-run, resulting in acceptable goodness of fit of the new

measurement model, $\chi^2(5124) = 8574.85, p < .001$; CFI = .88; TLI = .87; RMSEA = .05; SRMR = .06. For all the items, critical ratios were greater than 10.88, and factor loadings were greater than .61. The average variance extracted (AVE) for all constructs was greater than .58, and the square root of the AVE for all constructs was greater than the absolute value of all the intercorrelations. Taken together, the evidence supported convergent and discriminant validity of our latent constructs. Maximal reliability was greater than .87 for all constructs, except for volunteer role identity and empathetic concern, whose maximal reliability was .74 and .77, respectively. At the final step, factor scores for 23 trait constructs and 3 intention constructs were imputed.

Predicting actual volunteering from volunteer intention

Similar to Study 1, a logistic regression was conducted to investigate whether intention to perform a behavior predicts the actual behavior. Results indicated that all three measures of intention significantly predicted actual volunteering, $\chi^2(3) = 131.53, p < .001$, Nagelkerke $R^2 = 53.0\%$ ($\beta = .41, p < .01$; $\beta = 1.30, p < .001$; and $\beta = .55, p < .05$ for intention at time 1, time 2, and time 3, respectively).

Establishing compound traits.

Similar multiple regression analyses were run to assess whether altruism, empathetic concern, moral reasoning, and narcissism reside at the compound level. Results replicated the conclusion in Study 1 that these traits met the criteria for compound-level traits.

Evaluating the full model with mediation effects.

In the final set of analyses, we first fitted a LGC model to the measures of volunteer intention over time before examining a full mediation SEM model and a partial mediation SEM model. To identify the LGC model, the intercepts of all

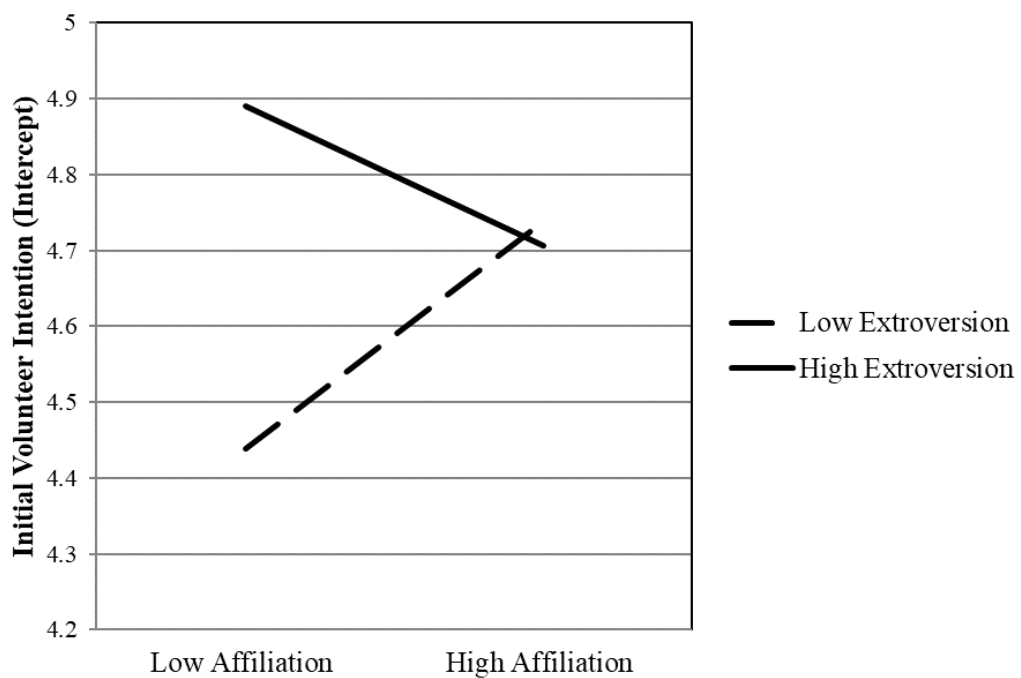
manifest variables were set to zero and the errors of the same item at two adjacent time points were set to covary. Fit indices were acceptable, $\chi^2(50) = 442.39, p < .001$; CFI = .91; TLI = .88; RMSEA = .17; SRMR = .04. Results revealed significant estimates of mean ($\kappa = 5.27, p < .001$) and variance ($\Phi = 3.75, p < .001$) of the intercept, a significant estimate of the slope's mean ($\kappa = .63, p < .001$), and a non-significant estimate of the slope's variance ($\Phi = .24, p > .10$) of the slope. Hence, it can be inferred that participants differed in their intention to volunteer at time 1, but not in the rate of change in intention over time.

At the next step, two SEM models were evaluated to examine individual differences in initial volunteer intention. The full mediation model had acceptable goodness of fit, $\chi^2(6076) = 10535.19, p < .001$; CFI = .85; TLI = .84; RMSEA = .05; SRMR = .08. Comparatively, the partial mediation model had slightly better fit, $\chi^2(5917) = 10245.55, p < .001$; CFI = .85; TLI = .84; RMSEA = .05; SRMR = .07. A chi-square difference test indicated that the two models were statistically different, $\Delta\chi^2(159) = 289.64, p < .001$, hence the partial mediation model was chosen as the better fitted model. The path coefficients derived from the partial mediation model were summarized in Table 8. Results suggested that some traits contributed significantly to the differences between individuals in the initial volunteer intention. They were attitude toward volunteering ($\beta = .19, p < .05$), perceived behavioral control ($\beta = .58, p < .001$), perceived moral obligation ($\beta = .17, p < .01$), need for activity ($\beta = .17, p < .05$), extroversion ($\beta = .11, p < .05$), openness ($\beta = .13, p < .05$), and implicit affiliation motive ($\beta = .10, p < .05$). A meta-analysis conducted by Drescher and Schultheiss (2016) suggested that implicit affiliation motive carries a sizeable gender effect in which women scored higher on this motive than men, so we included an additional analysis in which the affiliation-gender interaction term was added to the

model. Results from this analysis did not support the role of gender as moderator in the relationship between implicit affiliation motive and initial volunteer intention, ($\beta = .01, p > .05$).

Finally, we investigated whether extroversion and agreeableness moderate the effect of affiliation motive and power motive on volunteer intention. Four interaction terms were added in with the partial mediation SEM model. The new model had acceptable fit, $\chi^2(6305) = 10909.95, p < .001$; CFI = .84; TLI = .83; RMSEA = .05; SRMR = .07. Results indicated that only the interaction effect of implicit affiliation motive and extroversion on the intercept was marginally significant ($\beta = -.07, p = .099$), while the other interaction effects were not statistically significant. The interaction of extroversion and affiliation motive is illustrated in Figure 5.

Figure 5. Extroversion interacts with implicit affiliation motive to predict initial volunteer intention (Study 2)



6.3 Study 2 brief discussion

Results from this study confirmed the appropriateness of the hierarchical model in predicting volunteer intention and further supported the partial mediation model in which each trait influences volunteer outcome directly as well as indirectly via the intermediate traits. However, the set of predictors of volunteer intention identified in this study differed from the set of predictors identified in Study 1, reflecting possible cultural distinctiveness in personality antecedents of volunteering. The results of this study suggested that there were significant individual differences in initial volunteer intention, but not in the growth trajectories of intention over time. Some traits were found to account for individual differences in initial intention: those with more positive attitude toward volunteering, greater perception of behavioral control and moral obligation to volunteer, and greater need for activity had greater intention to volunteer. Similarly, people high in the extroversion, openness and affiliation motive also had greater volunteer intention. The relationship between implicit affiliation motive and volunteer intention was not due to a gender effect.

This study also found some support for the interaction effect of extroversion and implicit affiliation motive in predicting initial volunteer intention. The pattern of interaction suggests that among those who were highly motivated by the affiliation need, extroverts were just as likely as introverts to intend to volunteer. However, among those who are less motivated by the affiliation need, extroverts had much higher volunteer intention than introverts. Although such results supported the channeling hypothesis, the directions of the interactive relationships were different from those of Winter et al. (1998). In both samples of midlife women, Winter et al. (1998) found that among extroverts, those with greater affiliation need volunteered more than those with lower affiliation need, while among introverts, those with greater

affiliation need volunteered less because being introverted directed them to activities that required less social interaction to satisfy their affiliation need. This study, however, examined the interaction effect on a measure of actual volunteer activities, which differs from our measure of volunteer intention. Therefore, differences in the interaction patterns may reflect the discrepancy between volunteer intention and actual engagement in volunteering.

CHAPTER SEVEN: GENERAL DISCUSSION

7.1 Discussion of main findings

The present research aims to conduct a comprehensive evaluation of the role of personality traits and motives in predicting youth volunteerism. Several traits and motives that associate with volunteerism were identified from the review of personality and volunteerism literature. However, a coherent framework to explain how these traits and motives contribute jointly to the prediction had not been examined. Therefore, the present research proposed and tested a theoretical model which represents a hierarchical relationship among traits and motives in predicting youth volunteerism across two cultures. A series of three studies were conducted to (1) evaluate the goodness of fit of the model to the data, (2) explore the relationship between the model and volunteer outcomes, and (3) investigate the effect of specific traits and motives on volunteer outcomes across cultures.

First, the studies provide empirical support for the model's fit. Consistent with the proposition of the Theory of Planned Behavior (Ajzen, 1985), volunteer intention was found to predict actual volunteer behavior in all the studies. Although Pilot Study only examines the smaller version of the model within a small sample, some support was obtained for the proposition that within the hierarchical model, explicit motives (i.e., situational traits in the model) are more proximal to volunteer intention than traits and motives (i.e., elemental traits in the model). When the full model's fit was evaluated in Study 1 and Study 2, fit indices suggested acceptable goodness of fit. Hence, the appropriateness of the model in predicting volunteerism was confirmed. This suggests that the hierarchy of traits and motives serve as different levels of internal reference values to guide volunteer behaviors. When deliberating possible engagement in a volunteer activity, a person relies most heavily on his/her self-

perception with respect to the activity (i.e., surface traits), then on his/her self-perception with respect to volunteerism in general (i.e., situational traits), and perhaps less heavily on his/her general tendency to behave across different contexts (i.e., compound traits and elemental traits).

Second, two patterns of relationship between the model and volunteer intention were evaluated. The full mediation model represents a pattern in which the higher-level traits influence volunteer intention only through the effect of the lower-level traits. In the partial mediation model, however, additional direct effects of the higher-level traits on volunteer intention were considered. Results from the three studies supported the partial mediation model. In Pilot Study, the interactions between the two elemental traits, extroversion and agreeableness, and implicit power motive were found to directly influence volunteer intention. Study 1 and Study 2, which employed larger samples, found that the partial mediation model fitted the data better than the full mediation model. In fact, the elemental trait of body resources need was found to have direct effect on volunteer intention in the Singapore sample (Study 1). In the U.S. sample, the direct effects on intention were found for some elemental traits (i.e., extroversion, openness to experience, and implicit affiliation motive), one compound trait (i.e., activity need), and one situational trait (i.e., perceived moral obligation to volunteer) (Study 2). Taken together, the findings suggest that, as internal reference values for behaviors, traits and motives at all levels of the hierarchy simultaneously influence behaviors. Although the effect of higher-level traits on specific behaviors may be modest (Omoto & Snyder, 1995), their unique contribution to the prediction of a choice behavior may prevail within the situational and cultural context of that behavior.

Third, when all the traits and motives which have been previously found to associate with volunteerism were evaluated jointly in this research, only a few emerged as key predictors of volunteerism and these may differ across cultures. Because participants in Study 1 and Study 2 were youths between 18 and 25 years old and most were enrolled in universities, possible confounding effects of age, years of study, and time spent on academic activities were controlled. Gender was not included as a control variable because existing research found little sex differences in volunteering although women scored higher on some traits and motives associated with helping (Einolf, 2011). After controlling for these potential confounders, results based on the Singapore and the U.S. samples (Study 1 and Study 2, respectively) suggest that some traits predicted volunteer intention in both cultures, while some other traits predicted intention in one culture but not in the other. Across both cultures, perceiving greater behavioral control (i.e., confidence in one's ability to volunteer) and greater moral obligation to volunteer predicted greater volunteer intention among youths. These findings are consistent with previous research. For example, in a study of Australian students' intention to volunteer, Hyde and Knowles (2013) reported that perceived behavioral control significantly predicted the students' intention and perceived moral obligation contributed significantly to the prediction. Perception of behavioral control and moral obligation also predicted volunteer intention in other studies of volunteers (Harrison, 1995; Warburton & Terry, 2000).

The interactive effects of traits and motives were also found in the studies. In Pilot Study, implicit power motive was found to interact with agreeableness and extroversion to influence volunteer intention for specific volunteer projects. These interaction effects, however, were not replicated in Study 1 and Study 2. This replication failure may stem from differences in the specificity of the intention

measure: by eliciting volunteer intention for a specific volunteer project, Pilot Study might have directed participants to use a slightly different set of traits and motives as references for their decision, compared to when participants were asked to indicate a general intention to volunteer (Study 1 and Study 2). Across Study 1 and Study 2, the interactive effect of extroversion and implicit affiliation motive on volunteer intention was supported, which highlights the role of implicit motives in predicting a choice behavior such as volunteer initiation. Despite these results, there is a possibility that the lack of statistical power associated with replicating interaction effects may have resulted in false positives or false negatives (e.g., Open Science Collaboration, 2015). Future studies with larger samples can further examined each of the interaction effects found in these studies.

Results in Study 1 and Study 2 also indicate that some traits predicted volunteer intention among youths in Singapore but not those in the U.S., and vice versa. In Singapore (Study 1), intention to volunteer was greater among youths who had lesser need to protect and enhance their bodies. One possible explanation is that among youths in Singapore, commitment to keeping fit and healthy may compete with other commitments, especially those that demand a lot of commitment in terms of personal time and resources such as volunteering. This explanation is plausible because the majority of teenagers and young adults in Singapore participate regularly in sports and the numbers are increasing every year, according to statistics by Sport Singapore (2015). Consistent with this explanation, those who had lesser need for body resources may have greater volunteer intention because preference for volunteer activities prevails over preference for physical activities and exercises. Results in Study 1 also show that as volunteer intention increased on average over time, greater rate of change was found among those who had greater volunteer role identity,

perceived less subjective norm (i.e., social approval of volunteering) and less behavioral control. Because the construct of volunteer role identity captures the extent to which the social role of volunteer is part of an individual's self-concept, it is meaningful to find that those who identified themselves with the role of volunteer more would also have greater intention to volunteer over time. Consistent with our findings, volunteer role identity was also found to predict time spent volunteering and length of service in a study of sustained volunteerism (Finkelstein et al., 2005). Perhaps more surprising was the effect of subjective norm and perceived behavioral control on the rate of change in volunteer intention. Previous research found that subjective norm and perceived behavioral control predicted volunteer intention (e.g., Hyde & Knowles, 2013; Okun & Sloane, 2002), but the present research is the first to explore their effects on change of intention over time. Results indicate that as volunteer intention increased on average over time, changes were more prevalent among those who initially perceived less social approval and less behavioral control. The knowledge that volunteer intention can be enhanced for those who score low on antecedents of intention is encouraging for volunteer-dependent organizations because it suggests that actions can be taken to increase volunteer intention among youths in Singapore and thus, boost volunteerism in the country.

In the U.S. (Study 2), a different set of traits were found to predict volunteer intention. Although the participants in this study did not differ in the rate of change of intention over time, they differed in initial volunteer intention. Greater intention was found among those who were more extroverted, more open to experience, more driven by the need to be active, and more affiliation motivated. Results for extroversion and openness were consistent with findings from other studies in the U.S. (Kosek, 1995; Burke & Hall, 1986; Smith & Nelson, 1975). Arguably, volunteering is inherently a

social activity which involves interacting with different types of people (e.g., beneficiaries, volunteer coordinators, fellow volunteers), managing novel situations, and engaging physically and mentally with a variety of people and activities, it may appeal more to those who are outgoing, gregarious, active, imaginative, and open to novel experiences. The positive association of attitude toward volunteering and volunteer intention is also consistent with findings from previous research (e.g., Okun & Sloane, 2002). The result for affiliation motive, on the other hand, is intriguing and it is not due to the gender effect in which women scored higher on average than men (Drescher & Schultheiss, 2016). Conceptually, it is not unreasonable to assume that those whose primary incentive is being with people (i.e., people high in implicit affiliation motive) would be interested in volunteering, since many volunteer activities involve providing human services. It is intriguing, however, that this study is the first to find the direct effect of affiliation motive, although implicit affiliation motive has been found to interact with extroversion in predicting volunteer work (Winter et al., 1998). However, it is worth noting that the literature on implicit motives and prosocial behaviors in general, and implicit motives and volunteerism in particular, is scant. Further research is needed to establish the relationship between affiliation motive and volunteerism.

Arguably, different patterns of results between the Singapore and the U.S. samples can be explicated in terms of the differences in cultural values between collectivistic and individualistic societies. According to Hofstede Insights (2017), Singapore's culture is characterized by collectivism, a cultural value which emphasizes interdependence among individuals and prioritization of collective interests over individual desires (Triandis, 2001). This is hardly surprising given Singapore's rich Asian heritage comprising of three major ethnicities: Chinese,

Malaysian, and Indian. By contrast, American culture with its rich Western heritage, is characterized by individualism (Hofstede Insights, 2017) which emphasizes autonomy, independence, and prioritization of private interests (Triandis, 2001). Research has found that both collectivism and individualism are associated with volunteering (e.g., Parboteeah, Cullen, & Kim, 2004; Kemmelmeier, Jambor, & Letner, 2006), but collectivists often volunteer to serve in-group members (Batson, Ahmad, & Tsang, 2002), while individualists volunteer to work with diverse groups of people (Glaser-Segura & Anghel, 2002). In a series of studies, Finkelstein (2010; 2011) found that collectivists and individualists did not differ in their willingness to volunteer, but in their reasons for volunteering: individualism was more strongly associated with career-related volunteer motive, while collectivism was more strongly associated with having altruistic motivation, a strong social network, and a desire to strengthen social ties through volunteerism. Moreover, collectivists, but not individualists, are likely to develop a volunteer role identity (Finkelstein, 2010), because collectivists are particularly responsive to normative expectations, which is a precursor to the development of volunteer identity (Penner, 2002).

Results from our studies are reflective of the distinctions between collectivism and individualism. Several personal attributes at the elemental and compound levels of the hierarchy (i.e., extroversion, openness, activity need, affiliation motivation), which represent less situational influences than those at the situational and surface levels, were found to significantly predict volunteer intention in the U.S. sample, but not in the Singapore sample, suggesting that it was important for individualists to consider how their personal attributes align with volunteer participation before deciding to volunteer. This is consistent with individualists' tendency to prioritize individual interests over collective interests, making broad personal attributes more salient than

situation-specific traits, such as social norms and role identity, in the process of decision-making. On the contrary, collectivists define themselves in terms of their group membership and thus, they pay great attention to norms and role identity while submerging personal interests. For this reason, we saw the greater role of situation-specific traits that correspond to the norm-related aspect of volunteerism (i.e., volunteer role identity and perceived normative expectation) in influencing volunteer intention among participants in Singapore, but not in the U.S. Taken together, the present research found some evidence for the effect of culture in the relationship between personality and volunteer behaviors.

7.2 Theoretical contribution

The present research uniquely contributes to the literature of personality and volunteerism through its provision of empirical support for a theoretical framework that integrates both broad and narrow predispositions in predicting a specific behaviour, that is, volunteer. In particular, it confirms the applicability of the Meta-Theoretic Model of Motivation and Personality (Mowen, 2000) in the study of volunteerism. Moreover, the present research contributes to consolidating a large repertoire of trait predictors of volunteerism by identifying only the key predictors of volunteer intention in specific cultures. The findings from three studies highlight the importance of examining traits and motives jointly, as well as accounting for culture-specific effects, so that a coherent understanding of the volunteerism phenomenon can be achieved.

7.3 Limitation and future direction

One major caveat in the present research is the relatively small sample sizes. Although the sample sizes in Study 1 and Study 2 are much larger than the sample size in Pilot Study, they are considered relatively small for studying the complex model

proposed in this research (Wolf, Harrington, Clark, & Miller, 2013). The small samples also limit the ability to further investigate how lower level traits mediate the relationship between higher level traits and volunteer behaviors. These mediation links will provide greater insights into the relationship of traits and volunteer participation, making it worthwhile for future studies which employ larger samples to replicate the personality predictors of volunteerism identified in the present research and explore the mechanism underlying their relationship.

In addition, although the studies in this research found cross-cultural similarities and differences in trait predictors of volunteerism, their ability to explain the cultural drivers underlying these similarities and differences is limited by the lack of an investigation into the effects of specific cultural values on volunteer participation. Future studies can measure the individualism-collectivism value dimension and investigate the interaction between this cultural value and traits in predicting volunteer intention and behaviors. Besides the individualism-collectivism dimension, prominent cultural value frameworks such as Hofstede's (1980) and Schwartz's (1994) articulate other cultural dimensions, such as masculinity (Hofstede, 1980) and autonomy (Schwartz, 1994), whose effects on volunteer participation can also be explored. These efforts will contribute to better our understanding of how specific cultural values interact with personality traits to influence volunteer participation.

Finally, this research identified personality antecedents of general volunteerism, which may not translate to personality predictors of specific volunteer activities. It is possible that personality traits associated with one type of volunteer activities, such as fundraising for a charity, may be different from traits associated with another type of volunteer activities, such as providing hospice care. Similarly,

personality antecedents of volunteer involvement in serving different beneficiary groups (e.g., children, elderly, people with disabilities) may also differ. Therefore, efforts to promote participation in a specific volunteer activity or in serving a specific beneficiary group may require further research to identify major trait predictors.

7.4 Practical implication

Despite the limitations discussed above, the present research highlights the importance of understanding who the volunteers are in the efforts to engage more people in volunteerism and tackle the problem of inaction. Most importantly, the present research provides an integrative theoretical framework and a new methodological and analytical approach to investigate trait predictors of volunteer participation. The framework and the method discussed here can also be applied to studying trait predictors of sustained volunteerism. Therefore, such framework and method can be useful to government agencies, educational institutions, corporations, and especially social service agencies in their efforts to promote and sustain volunteerism through identifying personal characteristics that increase individuals' propensity for volunteering and working effectively with these personalities. Moreover, findings from the present research also provide three major insights with important practical value for the management of youth volunteers and the promotion of the volunteer movement.

First, psychological factors that influence initial volunteerism may be culture-specific and thus, any effort to boost volunteerism needs to consider relevant cultural drivers within a specific society. For example, an effective strategy to increase volunteerism rate in collectivistic societies may leverage the effect of normative expectation and volunteer identity. Norms can be fostered through group volunteerism. Schools can do so by creating opportunities for members of student clubs to volunteer

together. Corporates can develop the culture of volunteering by organizing group volunteer activities for teams and departments. In fact, volunteering can be incorporated into team building programs in schools and in the workplace. Volunteer role identity can be developed through orchestrated attempts by schools, corporates, and governments to engage various media platforms in packaging volunteer participation as a socially desirable activity typical of a model citizen. This can contribute to incorporating volunteerism into the identities that youths strive to develop. Individualistic societies, on the other hand, should use a different strategy to promote volunteerism. Our findings suggest that personal characteristics are of important consideration in individualists' decisions about volunteer engagement. Therefore, efforts to boost volunteerism should focus on highlighting the match between volunteer activities and volunteers' personalities. This can be done by using the mass media to portray volunteers as having the personalities that have been found to predict volunteer participation (e.g., extroverted, open to experience, active, affiliation-motivated). Doing so can attract more people with these personality profiles to become volunteers, but it can also fuel a belief that volunteering is only suitable for certain people—a dangerous stereotype which may restrain people with other personality traits to consider volunteering. A better way is for mass media communications to highlight that there are different volunteer activities suitable for different people. For example, extroverts may find interest in volunteer activities that involve extensive social interactions such as hosting events for the elderly, while introverts may feel comfortable volunteering to help with administrative tasks to support the operation of social service agencies or providing one-on-one befriending services. Our findings also suggest that individualistic societies can promote volunteerism through fostering a positive attitude toward volunteering among their

citizens. The literature on attitude change indicates that for people to change their attitude toward a behavior, they need to first associate that behavior with a positive stimulus, value, or consequence (e.g., Petty, Wheeler, & Tormala, 2003). Such principle can be applied to instill a positive attitude toward volunteerism. For example, governments and social service agencies can launch media campaigns to repeatedly associate volunteer participation with positive stimulus such as happiness, sense of fulfillment, career success, or others' respect and love. Schools and corporates can present employee volunteers and student volunteers financial rewards or recognitions to foster the association between volunteering and positive consequences.

Second, the findings that volunteerism may appeal to some people more than others have implication for recruiting volunteers. When resources for volunteer recruitment are limited, recruitment may focus on appealing to people who are more likely to volunteer. For example, in the U.S., a recruitment message for a volunteer position can focus on attracting extroverts by highlighting opportunities for social interaction and networking. In Singapore, volunteer-dependent agencies may save resources by avoiding recruiting volunteers through sport clubs, as the evidence suggested that these people may be less likely to volunteer.

Finally, the findings that situation-based traits play a significant role in influencing volunteer intention suggest that the spirit of volunteerism can also be cultivated in individuals. Similar patterns of results across the two cultures highlight the importance of fostering young people's perception of efficacy for volunteering and developing a sense of moral obligation toward volunteer participation. Prospective volunteers can have more confidence in their ability to volunteer when information about a volunteer position includes details of the skills relevant to the position, available training opportunities to help volunteers acquire these skills, and possible

solutions to barriers facing volunteers, such as time constraints or emotional cost of volunteering. Schools and corporates can assist students and employees in seeking volunteer opportunities that match their skill sets. Schools can also launch service-learning courses to encourage students to apply and improve their knowledge and skills through the services they provide to communities (Smith et al., 2009). Mass media can build people's confidence in volunteering by portraying how people from all walks of life and with all levels of skill attainment contribute meaningfully as volunteers in their communities. Perception of increased capacity for volunteering can also be achieved through making volunteer opportunities readily available and volunteer participation easily accomplished. The effectiveness of such strategy was demonstrated in the massive increase in new volunteer sign-ups following the "Volunteer to Promote Volunteering" campaign conducted by Leo Burnett Melbourne for Seek Volunteer in Australia ("Volunteer to Promote Volunteering," 2013). This campaign asked for a simple act of volunteering: through two mouse clicks, people can dedicate a digital space for a promotion message, "This space was volunteered to promote volunteering." The act was so simple that almost every communication channel in Australia quickly caught on and the message was widely broadcasted. As the result of this tremendous media success, the number of new volunteer sign-ups skyrocketed on Seek Volunteer's website, allowing this not-for-profit organization to match volunteers and volunteer opportunities at charities across Australia and to eventually create more sustainable volunteer engagement. With respect to developing moral obligation, an effective strategy to instill moral obligation for volunteering is the use of persuasive messages that appeal to cultural or subcultural values (e.g., religious values) to impose a sense of duty to do good for the communities (Ferrari & Leippe, 1992; Ortberg, Gorsuch, & Kim, 2001). Moral obligation can also be cultivated

through initiatives that create and foster the culture of giving within various social circles. Such culture can contribute to establishing a moral norm which then enhances the sense of moral obligation to volunteer among young people. Schools and businesses can enlist people in volunteer programs to create normative pressure for others to join as volunteers. On the national level, doing-good movements such as SG Cares in Singapore, which provides guidance and support to individuals and organizations who wish to do good for others through acts of kindness, philanthropy, and volunteering, are examples of initiatives that develop the culture of giving (Ming, 2017).

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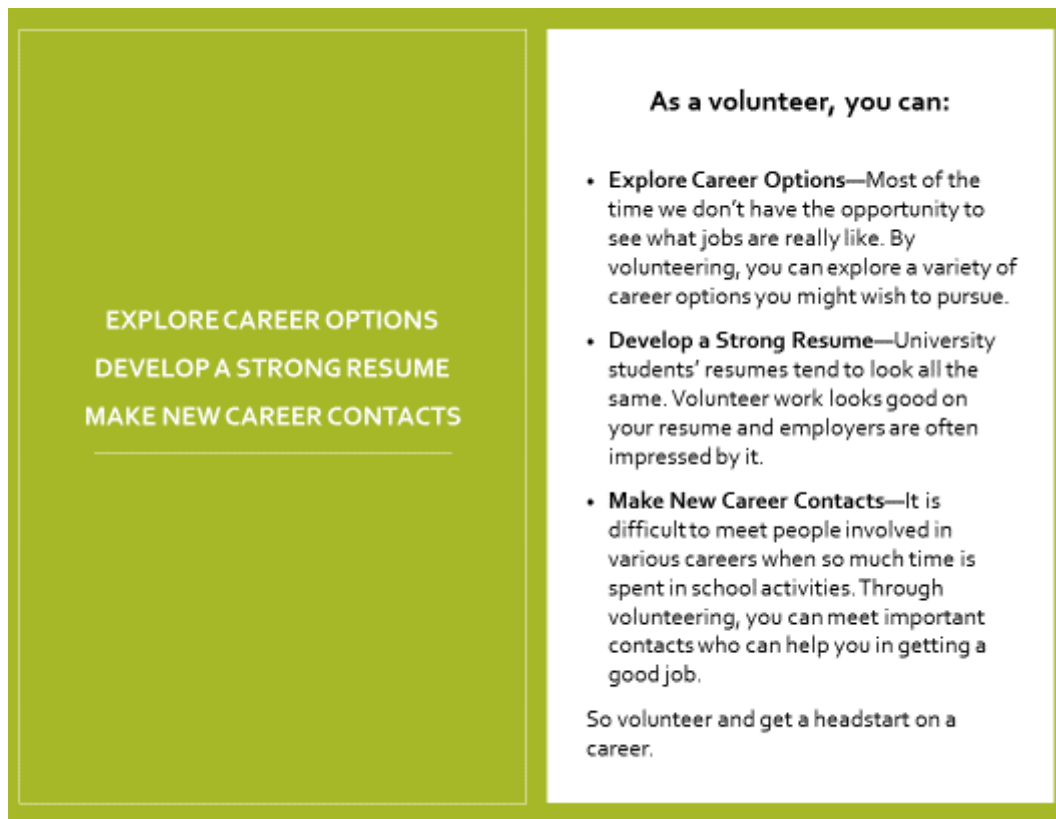
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APPENDIX

Appendix A: The Example of the Career Brochure



Panel 1

Panel 2

Call for Volunteers in Community Outreach!

We are recruiting volunteers for several community outreach events.

As a volunteer, you will commit to **2 hours a week, once a week for 8 weeks (2 months)**.

You will assist in several activities to reach out to disadvantaged communities across Singapore.

Specific time and location of your service will be worked out between you and a volunteer coordinator in consideration of your availability and your conveniences.

Examples of Volunteer Activities

Prepare and distribute community education materials

Join door-knocking events to gather information about a particular community

Plan and execute an awareness campaign

Act as a team leader overseeing a particular service activity

Become a befriender and do fun and enjoyable activities with a befriender

File paperwork and perform other clerical duties



Panel 3

Panel 4

Appendix B: Picture Stimuli for the Picture Story Exercise



Couple by River



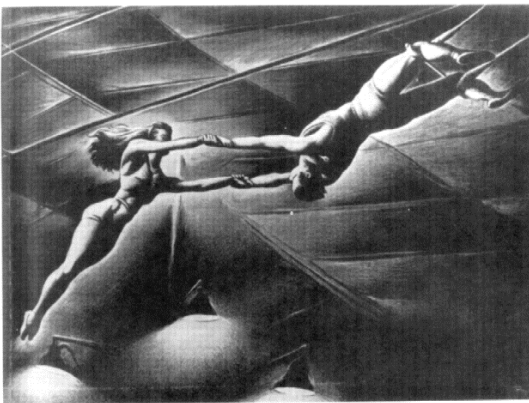
Ship Captain



Couple Sitting Opposite a Woman



Nightclub Scene



Trapeze Artists



Women in Laboratory



Boxer

Appendix C: Psychometric Instruments of All Variables in Studies 1 and 2

Latent construct	Scale
1. Extroversion	4-item Extroversion (Mowen, 2000)
2. Agreeableness	4-item Agreeability (Mowen, 2000)
3. Openness	4-item Openness to Experience (Mowen, 2000)
4. Conscientiousness	4-item Conscientiousness (Mowen, 2000)
5. Neuroticism	4-item Emotional Instability (Mowen, 2000)
6. Body need	4-item Need for Body Resources (Mowen, 2000)
7. Material need	4-item Need for Material Resources (Mowen, 2000)
8. Arousal need	4-item Need for Arousal (Mowen, 2000)
9. Learning need	4-item Need for Learning (Mowen, 2000)
10. Activity need	4-item Need for Activity (Mowen, 2000)
11. Self-esteem	4-item Self-Esteem (Mowen, 2000)
12. Altruism	4-item Altruism (Mowen & Sujan, 2005)
13. Empathetic concern	4-item Empathetic Concern subscale of the Prosocial Personality Battery (PPB; Penner, 2002)
14. Moral reasoning	3-item Other-Oriented Moral Reasoning and 3-item Mutual Concern Moral Reasoning subscales of PPB
15. Volunteer role identity	5-item scale adapted from Callero et al., 1987
16. Perceived moral obligation	3-item scale adapted from Hyde and Knowles (2013)
17. Other-oriented motive	5-item Values and 5-item Understanding subscales of Volunteer Functions Inventory (VFI; Clary et al., 1998)

18. Self-oriented motive	4-item Enhancement Motive and 5-item Protective Motive subscales of VFI
19. Social motive	5-item Social Motive subscales of VFI
20. Career motive	5-item Career Motive subscales of VFI
21. Attitude	7-item scale adapted from Hyde and Knowles (2013) and Ajzen and Fishbein (1980)
22. Subjective norm	3-item scale adapted from Hyde and Knowles (2013) and Ajzen and Fishbein (1980)
23. Perceived behavioral control	6-item scale adapted from Hyde and Knowles (2013) and Ajzen and Fishbein (1980)
24. Narcissism	16-item Narcicistic Personality Inventory (Ames et al., 2006) in Study 1. The Single-Item Narcissism Scale (Konrath et al., 2014) in Study 2.
25-27. Intention at Time 1, Time 2, and Time 3	5-item scale adapted from Hyde and Knowles (2013) and Ajzen and Fishbein (1980)

Appendix D: Informed Consent Forms in All Studies

Informed Consent Form (Pilot Study)

The title of our study is "The Motivation to Initiate Volunteering".

Principal Investigators: Joyce Pang, Thuy-Anh Ngo

This Informed Consent Form has two parts:

- Information (to share information about the research with you)
- Certificate of Consent (for signatures if you agree to take part)

PART I: INFORMATION

This study aims to investigate whether perceived match between the motivation to volunteer and the proposed benefits for volunteers predict initiation of volunteering.

As an implication, this study contributes to enhance voluntary welfare organizations' process of recruiting volunteers through insights into volunteers' motivation.

Voluntary Participation and Confidentiality

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose to participate in this research project, your responses will be kept strictly confidential and your identity will not be revealed to anyone. We can inform you about the results of the survey if requested. Any information about you will have a number on it instead of your name.

Right to Refuse or Withdraw

You do not have to take part in this research if you do not wish to do so. You may also stop participating in the research at any time you choose. It is your choice and all of your rights will still be respected. In the event that you choose to withdraw from the

study, all the information you have provided will be destroyed and omitted from data analyses.

Who to Contact

If you have any questions, you may contact any of the following:

Thuy Anh Ngo | Phone: 8693-3400 | Email: ngothuya001@e.ntu.edu.sg

Joyce Pang | Phone: 6790-6745 | Email: joycepang@ntu.edu.sg

If you have any further queries about the ethical considerations of this study, you may contact the Institutional Review Board of Nanyang Technological University at:
irb@ntu.edu.sg

PART II: CERTIFICATE OF CONSENT

I have read the above information. I have also had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.

☐ I consent voluntarily to PARTICIPATE in this study.

☐ I would like to WITHDRAW from this study.

Informed Consent Form (Study 1, for research participant pool)

Thank you for your interest in participating in our study—Personality Differences in Community Involvement.

PURPOSE OF STUDY

This study aims to examine the differences in personality between volunteers and non-volunteers.

PROCEDURES

If you consent to participate in this study, you will be asked to do the following tasks:

1. Fill up this online Informed Consent form: You will be instructed to read and indicate your consent before the commencement of the study.
2. Complete an online questionnaire that takes 45-60 minutes.
3. Complete two online follow-up surveys one month and two months after the first questionnaire. Each survey takes 3-5 minutes.

Towards the end of the study, you will be debriefed via email and you may clarify any doubts you have with the researcher.

PARTICIPATION AND WITHDRAWAL

Your participation in this research, including your participation in follow-up surveys, is entirely voluntary. You will receive 2 RP credits upon the completion of all three segments of the study. If you don't want to participate in this study or any other studies available for the RP participants, you can contact your course instructor to discuss possible replacement.

POTENTIAL RISKS / BENEFITS

The benefit of participation is purely educational, as participants get to experience first-hand how psychological research is conducted. The risks anticipated for participating in this research are no greater than those ordinarily encountered in daily life.

CONFIDENTIALITY

If you choose to participate, any information that can be identified with you will be kept strictly confidential and will be disclosed only with your permission or as required by law. You will not be asked for your name or other identifying information in the surveys, and there is no way to identify you, personally, with the answers you provide. You will generate an ID number known only to yourself and use this ID to access all the online surveys.

During the time of the study, we will retain your name and email address in a separate file unconnected to the survey responses solely for the purpose of contacting you for follow-up surveys. Upon the completion of all data collection, all names and identifying information will be destroyed. Future written reports may use the results of this study. The reports will be written such that your name will not be associated with any of the information within. We can inform you about the results of the study if requested.

QUESTIONS AND CONCERNS

If you have any question or doubt about the study, please feel free to contact Ms. Ngo Thuy Anh at ngothonya001@e.ntu.edu.sg.

Should you have any concerns or questions regarding the ethical use of human participants in this research, you can contact the NTU Institutional Review Board at irb@ntu.edu.sg.

SIGNATURE

Please indicate below whether or not you consent to participating in this study.

☐ I acknowledge that I am participating in this study of my own free will. I understand that I may refuse to participate or stop participating at any time without penalty.

☐ I don't consent to participating in this study and wish to terminate at this point.

Informed Consent Form (Study 1, for other participants)

Thank you for your interest in participating in our study—Personality Differences in Community Involvement.

PURPOSE OF STUDY

This study aims to examine the differences in personality between volunteers and non-volunteers.

PROCEDURES

If you consent to participate in this study, you will be asked to do the following tasks:

1. Fill up this online Informed Consent form: You will be instructed to read and indicate your consent before the commencement of the study.
2. Complete an online questionnaire that takes 45-60 minutes.
3. Complete two online follow-up surveys one month and two months after the first questionnaire. Each survey takes 3-5 minutes.

Towards the end of the study, you will be debriefed via email and you may clarify any doubts you have with the researcher.

PARTICIPATION AND WITHDRAWAL

Your participation in this research, including your participation in follow-up surveys, is entirely voluntary. Upon the completion of all three segments of the study, you will be eligible for a lucky draw of one \$200 cash prize, and two \$100 cash prizes.

POTENTIAL RISKS / BENEFITS

The benefit of participation is purely educational, as participants get to experience first-hand how psychological research is conducted. The risks anticipated for participating in this research are no greater than those ordinarily encountered in daily life.

CONFIDENTIALITY

If you choose to participate, any information that can be identified with you will be kept strictly confidential and will be disclosed only with your permission or as required by law. You will not be asked for your name or other identifying information in the surveys, and there is no way to identify you, personally, with the answers you provide. You will generate an ID number known only to yourself and use this ID to access all the online surveys.

During the time of the study, we will retain your name and email address in a separate file unconnected to the survey responses solely for the purpose of contacting you for follow-up surveys. Upon the completion of all data collection, all names and identifying information will be destroyed. Future written reports may use the results of this study. The reports will be written such that your name will not be associated with any of the information within. We can inform you about the results of the study if requested.

QUESTIONS AND CONCERNS

If you have any question or doubt about the study, please feel free to contact Ms. Ngo Thuy Anh at ngothonya001@e.ntu.edu.sg.

Should you have any concerns or questions regarding the ethical use of human participants in this research, you can contact the NTU Institutional Review Board at irb@ntu.edu.sg.

SIGNATURE

Please indicate below whether or not you consent to participating in this study.

☐ I acknowledge that I am participating in this study of my own free will. I understand that I may refuse to participate or stop participating at any time without penalty.

☐ I don't consent to participating in this study and wish to terminate at this point.

Informed Consent Form (Study 2)

Thank you for your interest in participating in our study—Personality Differences in Community Involvement.

PURPOSE OF STUDY

This study aims to examine the differences in personality between volunteers and non-volunteers.

PROCEDURES

If you consent to participate in this study, you will be asked to do the following tasks:

4. Fill up this online Informed Consent form: You will be instructed to read and indicate your consent before the commencement of the study.
5. Complete an online questionnaire that takes 45-60 minutes.
6. Complete two online follow-up surveys one month and two months after the first questionnaire. Each survey takes 3-5 minutes.

Towards the end of the study, you will be debriefed along with the completion of the last survey and you may clarify any doubts you have with the researcher.

PARTICIPATION AND WITHDRAWAL

Your participation in this research, including your participation in follow-up surveys, is entirely voluntary. Upon the completion of every segment of the study, you will be compensated. The amount of compensation are as follows: 1 USD for completing survey 1, 2 USD for completing survey 2, and 2 USD for completing survey 3.

POTENTIAL RISKS / BENEFITS

The benefit of participation is purely educational, as participants get to experience first-hand how psychological research is conducted. The risks anticipated for participating in this research are no greater than those ordinarily encountered in daily life.

CONFIDENTIALITY

If you choose to participate, any information that can be identified with you will be kept strictly confidential and will be disclosed only with your permission or as required by law. You will need to use your worker ID to access all the online surveys. Any work that you do on MTurk can be linked to your public profile page, so you may wish to restrict what information you choose to share in your public profile. Your worker ID will only be collected for the purpose of distributing compensation and connecting the surveys. It will not be associated with the survey responses. You will not be asked for your name or other identifying information in the surveys. Future written reports may use the results of this study. The reports will be written such that your worker ID will not be associated with any of the information within. We can inform you about the results of the study if requested.

QUESTIONS AND CONCERNS

If you have any question or doubt about the study, please feel free to contact Ms. Ngo Thuy Anh at ngothuya001@e.ntu.edu.sg.

Should you have any concerns or questions regarding the ethical use of human participants in this research, you can contact the NTU Institutional Review Board at irb@ntu.edu.sg.

SIGNATURE

Please indicate below whether or not you consent to participating in this study.

☐ I acknowledge that I am participating in this study of my own free will. I understand that I may refuse to participate or stop participating at any time without penalty.

☐ I don't consent to participating in this study and wish to terminate at this point.

Appendix E: Ethics Approval Letter for All Studies

Ethics Approval Letter for Pilot Study



Research Support Office

Reg. No. 200604393R

IRB-2015-07-024

27 August 2015

Associate Professor Joyce Pang Shu Min
School of Humanities and Social Sciences

NTU INSTITUTIONAL REVIEW BOARD APPROVAL

Project Title: The Explicit and Implicit Motivation to Initiate Volunteering

I refer to your application for ethics approval with respect to the above project.

The Board has deliberated on your application and noted from your application that your research involves collecting behavioral data from participants using surveys.

The documents reviewed are:

- a) NTU IRB application form dated **20 July 2015**
- b) Data collection form: **version 1** dated **20 July 2015**

The Board is therefore satisfied with the bioethical consideration for the project and approves the ethics application under **Expedited** review. The approval period is from **27 August 2015** to **26 August 2016**. The NTU IRB reference number for this study is **IRB-2015-07-024**. Please use this reference number for all future correspondence.

The following protocol and compliances are to be observed upon NTU IRB approval

1. No deviation from, or changes of, the protocol should be initiated without prior written NTU IRB approval of an appropriate amendment.
2. The Principal Investigator should report promptly to NTU IRB regarding:
 - a. Deviation from, or changes to the protocol.
 - b. Changes increasing the risk to the subjects and/or affecting significantly the conduct of the trial
 - c. All serious adverse events (SAEs) which are both serious and unexpected.
 - d. New information that may affect adversely the safety of the subjects of the conduct of the trial.
 - e. Completion of the study.
3. Continuing Review Request/ Notice of Study completion form should be submitted to NTU IRB for the following:
 - a. Annual review: Status of the study should be reported to the NTU IRB at least annually using the Continuing Review Request/ Notice of Study completion form.

Blk N2.1, B4-01, 76 Nanyang Drive, Singapore 637331 Nanyang Avenue, Singapore 639798
Tel : +65 6791 9857, Fax: 6793 2019
www.ntu.edu.sg



Research Support Office

- b. Study completion or termination: Continuing Review Request/ Notice of Study completion form is to be submitted within 4 to 6 weeks of study completion or termination.
4. All Principal Investigators should comply with existing legislation that would have an impact on the domain of their research.

A handwritten signature in black ink, appearing to read "Lee Sing Kong".

Professor Lee Sing Kong,
Chair, NTU Institutional Review Board
encl.

cc Chair, School of Humanities and Social Sciences
Members, NTU Institutional Review Board

Ethics Approval Letter for Studies 1 and 2



IRB-2016-09-005-02

23 October 2017

Associate Professor Ring Joyce Pang Shu Min
School of Social Sciences

NTU INSTITUTIONAL REVIEW BOARD APPROVAL

Project Title: Applying a hierarchical model of personality to understand students' initiation of volunteering.

I refer to your application for ethics approval with respect to the above project.

The Board has deliberated on this application and accepted the change in:

1. Procedures
2. Research sites
3. Informed consent
4. Increase in number of subjects by 1000
5. End date to 31 August 2018

The Board is therefore satisfied with the bioethical considerations for the project and approves the ethics application.

A handwritten signature in black ink, appearing to read "Lionel Lee".

Professor Lionel Lee
Chair, NTU Institutional Review Board
encl.

Research Integrity and Ethics Office, NTU Institutional Review Board

50 Nanyang Avenue, NS4-05-92A, Singapore 639798, T: (65) 6592-2495, www.ntu.edu.sg