



Compulsory volunteers' nostalgia and its relationships with positive memories, age, past experiences, and volunteer intention

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Abstract

While nostalgia has been explored in various contexts, no research has so far investigated how individuals' nostalgia can be generated by volunteer experiences in compulsory settings and how nostalgic feelings extend their future behavior. To fill this research gap, this study explored how nostalgia regarding compulsory volunteering is related to positive memories, age, and past experiences and how such nostalgia translates to volunteer intention. A total of 605 responses were collected from university students who had completed compulsory volunteering at sporting events and analyzed using structural equation modeling. Results showed that positive memories contributed to all five factors of volunteer nostalgia, while past experiences only predicted *volunteer environment*, *volunteer socialization*, and *volunteer personal identity*. Age was not a significant antecedent to any of the volunteer nostalgia factors. Nostalgia regarding *volunteer experience* and *volunteer personal identity* mediated the relationship between positive memories and volunteer intention. This study confirmed previous claims concerning the relationships among nostalgia, positive memories, age, and past experiences in the context of compulsory volunteering. Specifically, individuals can develop nostalgia for coerced experiences if they have fond memories of them. Also, past experiences are more essential to nostalgia than age but not as much as positive memories, and nostalgia can turn compulsory volunteers into continued volunteers.

Keywords Volunteer · Nostalgia · Past experiences · Positive memories · Volunteer intention · Compulsory volunteering

Introduction

Volunteer experience can provide individuals with a wide range of benefits. It can enhance subjective well-being (Tabassum et al., 2016; Yeung et al., 2018) and positive affect (Borgonovi, 2008; Musick & Wilson, 2003), promote personal development via social interaction (Rusu, 2016) or new skill acquisition (Knepper et al., 2015), and provide a sense of belonging (Gray & Stevenson, 2019). Such positive outcomes make volunteering a useful tool for wholesome education, where individuals mature not just as intellectual

beings but also as valuable and moral members of society (Sparks, 2013). Consequently, students are often required to contribute a certain amount of their time to public or non-profit organizations or activities before they graduate (Sparks, 2013).

Due to the various positive effects of volunteering, compulsory volunteering has become a popular education tool found across different institutions, countries, and cultures, such as the United States (Sparks, 2013), Singapore (Ministry of Education, 2003, 2021), Japan, Canada, or South Korea (Ozawa, 2013). Its prime goals are to help students be aware of social needs and values, use their classroom learning to support public interests, and continue their participation in community service (Hébert & Hauf, 2015; Holdsworth et al., 2010). Of different organizations and activities for compulsory volunteering, sport or cultural events are often a much-favored option. Events are usually temporary (Swarbrooke and Page, 2012); thus, it is not easy for students to make a long-term commitment to volunteer. However, volunteering at events tends to be more electrifying and hands-on than other volunteer experiences (Yudhaputri & Fatimah, 2020).

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In addition, for event organizers, compulsory volunteers can assist regular full-time staff by taking on casual and part-time tasks, and this gives added flexibility in event preparation and delivery (Ghani, 2019). As such, compulsory volunteering at events appears to be a mutually beneficial practice at least in the short term (Twynam et al., 2002).

Nevertheless, the long-term effects and outcomes of compulsory volunteering at events may be more ambiguous. Ideally, compulsory volunteering is expected to intrigue students' interests in volunteering and encourage their voluntary and continued service for public causes, including sport or cultural events (Hébert & Hauf, 2015; Holdsworth et al., 2010). The success of events relies heavily on volunteers' input, so turning compulsory volunteers into committed volunteers is crucial to individual events as well as the overall event industry (Kim & Cuskelly, 2017; Smith et al., 2014). Then, if and how do students' compulsory volunteer experiences at events promote their intentions to volunteer at future events? Answering this question is of high academic, educational, and practical importance.

According to Mehrabian and Russel (1974) Stimulus-Organism-Response (SOR) model, not all compulsory volunteer experiences at events—no matter how electrifying or enlightening they might be—would trigger positive behavioral reactions, and compulsory volunteers' approach or avoidance behaviors would depend much on emotions. In the context of compulsory volunteering, one's favorable behavioral reactions to volunteering at events (e.g., to continue volunteering at the same events or to recommend others to do so) would depend on not only how they memorize their compulsory volunteer experiences but also how they feel about the experiences. The SOR model has been shown valid in various contexts—including impulsive buying (Chang et al., 2011), sport spectatorship (Cho et al., 2019c), and online learning (Zhai et al., 2020)—and underscores the critical role of emotions in shaping behavioral reactions.

Nostalgia can be one of such emotions in the SOR model which bridge past experiences and behavioral reactions. Individuals' nostalgic feelings, or longing for the past (Davis, 1979), can emanate from their past experiences (i.e., phenomena) and memories (i.e., remembrance or recalling of the experiences) (Cho et al., 2014, 2021b; Fairley & Gammon, 2005; Sedikides et al., 2004; Wilson, 2005). It is a universal and powerful clue to behaviors, since almost everyone, if not all, holds nostalgia (Cho et al., 2014), and individuals often act to satisfy their nostalgic desires (Cho & Chiu, 2021). In addition, given that past experiences are essential to developing nostalgia (Cho et al., 2019a) and older individuals are likely to have more past experiences than the young (Goulding, 2001; Merchant & Ford, 2008; Toledo & Lopes, 2016), age can be instrumental to understanding nostalgia as well.

Despite ample research on nostalgia emerging in various contexts, nostalgia toward involuntary experiences of the past has rarely been a topic of academic examination. Nostalgia research to date has mostly focused on non-coercive objects or experiences of the past, such as personal moments of sports (Cho et al., 2019a; Fairley & Gammon, 2005), olfactory and visual stimuli (Holbrook & Schindler, 2003), or social encounters (Holbrook & Schindler, 2003). While positive memories are a prerequisite for nostalgia to evolve, not all past experiences are voluntary and some of them may happen out of coincidence or coercion (Swann et al., 2012). Nevertheless, such distinction has not been addressed in previous research, leaving the relationship between compulsion and nostalgia unexplored.

In that respect, compulsory volunteering, as self-contradicting as it sounds, is a unique setting that can lead to a deeper understanding of nostalgia in general as well as specific to volunteering. Can involuntary experiences of the past—more precisely, memories of such experiences—trigger nostalgic feelings thereby resulting in favorable behavioral responses? If so, how does age affect the outcomes? Answering these questions can lead to much academic and practical insight. Therefore, this study examined (a) how nostalgia regarding compulsory volunteering (hereafter 'volunteer nostalgia') hinges upon positive memories, age, and past experiences of compulsory volunteering and (b) how volunteer nostalgia translates into future volunteer intention. Findings from this study would help clarify the interwoven relationships among positive memories, age, past experiences, and nostalgia and unveil how different factors of volunteer nostalgia contribute to future volunteer intention, especially in the context of coerced experiences. In a practical sense, this study would shed light on the long-term educational outcomes of compulsory volunteering and suggest managerial implications to turn compulsory volunteers into committed volunteers for events.

Compulsory Volunteering

Volunteering can provide a range of benefits, especially for adolescents and young adults. According to Smith (1999) and Steinberg et al. (1996), via volunteering, adolescents can improve their self-esteem and perception of control over the environment, which then may further promote their academic motivation and performance. Likewise, students who participated in community service reported improvement in patience, leadership, communication, and time management (Waringer, 2005). Furthermore, Jenkins et al. (2008) noted that community service experiences allowed students to contemplate the meaning of their professional goals and missions to themselves and others, thereby building the relevance between their learning and life.

Granted the educational outcomes of volunteering, compulsory volunteering has been a popular educational tool found across different institutions, countries, and cultures. It is not unusual for high schools in the United States to mandate students to complete certain hours of volunteering before they graduate, and students often double or even triple their required hours (Ain, 2003). Higher education institutions in Canada, Japan, Korea, or Singapore also utilize compulsory volunteering, making it a universal tool for education (Ministry of Education, 2021; Ozawa, 2013; Wong, 2016). For example, in 2000, Singapore Management University students needed 80 hours of community service completed before their graduation (Wong, 2016).

The prime educational goal of compulsory volunteering is to develop students into contributing and compassionate members of society. Students can recognize communal needs, relate personal capacity to public interests, and foster long-term commitment to community service (Allahwala et al., 2013; Wagner & Mathison, 2015) by participating in volunteer activities, such as manual labor, tutoring, fundraising, or awareness-raising (Duguid et al., 2019). Often, compulsory volunteering is closely tied to occupational education or experiential learning (Alsop, 2007), thus, students can use classroom learning to help others. For instance, occupational therapy students may need to provide consultation services to those in need before taking higher-level courses or training (Jenkins et al., 2008).

Compulsory volunteering can be a useful, flexible, and immediate asset for organizations as well, especially those underfunded or shorthanded. Although their service may be temporary and casual, compulsory volunteers can come with essential knowledge and training (O'Brien & Sarkis, 2014) and support regular staff (Ghani, 2019; Brudney & Meijs, 2014). Casual volunteer-organization relationships may also advance to formal employee-employer relationships (Simon et al., 2013). Even if organizations cannot offer career opportunities to compulsory volunteers, they can rely on compulsory volunteers to generate positive publicity for the organizations or their activities (Gazley et al., 2012). For these reasons, sport or cultural events, which demand much casual labor and high publicity, tend to depend heavily on compulsory volunteers (Twynam et al., 2002).

Regardless of the intended outcomes, the effectiveness of compulsory volunteering in cultivating altruistic attitudes or prosocial behaviors is questionable. Compulsory volunteering may not lead to sustained interest in community service (Warburton & Smith, 2003; Yang, 2017), and disinterested individuals are likely to remain apathetic about community service (Stukas et al., 1999). Furthermore, compulsory volunteering may make students think that they should help others only when there are immediate rewards (e.g., course grade or graduation eligibility), thus discouraging intrinsic motivations to volunteer in their later stages of life

(Stukas et al., 1999). Similarly, Beehr et al. (2010) noted that self-motivated volunteers showed greater commitment, motivation, and satisfaction than those who were coerced to volunteer.

Without solid evidence, the long-term educational benefits of compulsory volunteering may only be ephemeral or elusive. At its worst, coercing students to volunteer may infuse improper impressions about community service and distance themselves more from it. Given the importance of compulsory volunteering and the doubts about its actual long-run outcomes, it is vital to understand if and how students' compulsory volunteer experiences contribute to their volunteer intention. Specifically, how compulsory volunteer experiences are reflected upon and what emotional reactions the experiences entail may have substantial impacts on individuals' approach or avoidance intention to volunteering.

Volunteer Nostalgia

Nostalgia was initially understood as a psychological disorder or illness (Hofer, 1934). However, over the last decades, there has been much progress in research concerning the nature and role of nostalgia, which led to an alternative and improved conception of the construct (Cho et al., 2019d). Today, nostalgia is viewed as a bittersweet emotion that consists of both positive and negative emotions (Baker & Kennedy, 1994; Batcho, 2013), although the portion of positive aspects is disproportionately greater than the negative side (Cho et al., 2019d; Sedikides et al., 2004; Stephan et al., 2014). As such, nostalgia can be considered a predominantly positive emotion, which is derived from pleasant memories of past experiences (Cho et al., 2019d; Sedikides et al., 2004).

Nostalgia can be classified into four components based on its structure and purpose (Cho et al., 2014). The first component, nostalgia as experience, represents the longing for direct and integral elements of past experiences. People, venue, or aural and olfactory stimuli that individuals experience during events would be relevant to this component (Fairley, 2003). Nostalgia may also emerge from memories of social moments of past experiences, representing nostalgia as socialization. Traveling to events or socializing at events with others may only be an auxiliary part of event experiences, but recollecting such social elements can trigger nostalgia (Fairley, 2003; Fairley & Gammon, 2005). The third component is nostalgia as personal identity, which is tied to memories of personal role, achievements, and advancement. Attending events often requires much time, money, and enthusiasm, which makes attendance itself an accomplishment (Wann & Branscombe, 1993). Furthermore, sporting events (e.g., marathons) are rarely separable from achieving personal goals (Shipway & Jones, 2007). Last, nostalgia as group identity is related to past experiences of

togetherness. Collective emotions, beliefs, or behaviors—frequently observed at events—can bind individuals together (Slowikowski, 1991) and help them form group identity (Cho et al., 2014; Fairley 2003, 2009).

Events provide multi-faceted and intense experiences and stimuli to spectators, participants, or volunteers, which can be relevant to the various components of nostalgia that Cho et al. (2014) suggested. Based on Cho et al.'s (2014) classification, Cho and Lee (2021) recently developed a volunteer nostalgia scale, consisting of five factors: *volunteer experience*, *volunteer environment*, *volunteer socialization*, *volunteer personal identity*, and *volunteer group identity*. The two factors of *volunteer experience* and *volunteer environment* were derived from nostalgia as experience in Cho et al.'s (2014) classification. Specifically, *volunteer experience* represents individuals' psychological and experiential state (e.g., enjoyment or excitement), whereas *volunteer environment* encapsulates physical (e.g., architecture or equipment) and perceptual (e.g., sound or lighting) attributes of the volunteer setting. Third, *volunteer socialization* refers to social elements of volunteer experiences, such as social interaction with other volunteers or participants at past events. The fourth and fifth factors, respectively, embody one's self-perceptions as a volunteer (*volunteer personal identity*) and identification with other volunteers as a member of a particular group or organization (*volunteer group identity*).

Positive Memories and Volunteer Nostalgia

Individuals can develop nostalgic feelings when they have fond memories of meaningful personal and social experiences from the past (Abeyta et al., 2015; Ali, 2015; Triantafillidou & Siomkos, 2014; Wildschut et al., 2006). Positive memories may remain at a more personal level, such as being fully engaged in a marathon race (i.e., personal enjoyment), completing the full length of it (i.e., sense of accomplishment), or being recognized as the winner of the race (i.e., personal identity). Nevertheless, the social side of past experiences, which might be pleasant memories of enjoying social gatherings before or after the race (i.e., social interaction) or building camaraderie with other runners or team members (i.e., group identity), can also generate nostalgia (Cho et al., 2014). Also, recollecting environmental attributes, such as songs, lyrics (Cheung et al., 2013), or scents (Reid et al., 2015)—which are universal to all events—can activate nostalgia.

Given that positive memories can trigger nostalgic feelings (Cho et al., 2014, 2021b), volunteers, even in compulsory volunteering, may develop volunteer nostalgia toward past experiences that they view favorably (Cho & Lee, 2021). For example, feeling bonded to a group (e.g., other staff, volunteers, or participants) or developing a better

sense of self is likely to occur in any event volunteering, making the experience more memorable and conducive to volunteer nostalgia. (Cho & Lee, 2021). In addition, in relation to volunteer environments, previous research has shown that physical settings, such as stadiums or museums, can hold meaning (Goulding, 2001) and facilitate nostalgia (Leong et al., 2015). Positive social experiences at events can also make them feel nostalgic about volunteering (Fairley, 2003; Fairley et al., 2007). Based on these theoretical and empirical grounds, the following hypothesis was developed:

- H₁: Volunteers' positive memories toward compulsory volunteering positively affect their nostalgia toward volunteering.

Age, Past Experiences, and Volunteer Nostalgia

Given that nostalgia is essentially a feeling directed toward past experiences (Cho et al., 2014), age can be crucial to its emergence and extent. Those who lived longer are more likely than the young to have greater experiences, to which memories and nostalgia can be directed (Merchant & Ford, 2008; Toledo & Lopes, 2016). Furthermore, as individuals become older and weaker, they tend to feel less empowered and enthusiastic about their remaining days, and this may add to their nostalgic feelings (Goulding, 1999). The positive association between age and nostalgia—where older individuals tend to be more nostalgic—has been widely validated in studies concerning aesthetic consumption (Goulding, 2001), reaction to a corporate merger (Toledo & Lopes, 2016), or philanthropic decisions (Merchant & Ford, 2008).

However, there also have been questions over the conventional understanding of the age-nostalgia relationship. Holbrook (1993) noted that individuals of the same age can differ in their degrees of nostalgia. Sedikides et al. (2015) and Anderson et al. (2019) also asserted that nostalgia is not regulated by age or gender. More recently, Cho et al. (2019a) found no significant relationship between sport tourists' age and their nostalgia and claimed that age may be of little influence on nostalgia related to non-routine, high-involvement experiences. Furthermore, as Oba et al. (2016) claimed, for individuals to experience nostalgia, there should be an interactive process between memory and reward systems inside their brain. As such, not everyone in the same age span may have comparable experiences, and past experiences may not always be commensurate with age (Cho et al., 2019a).

Then, what truly matters, instead of age, might be the amount and intensity of past experiences or the way they are memorized. Furthermore, due to memory decay, age is often inversely related to the memory of past experiences (Talamini & Gorree, 2012). Although the age-nostalgia

relationship has been neither discussed nor examined in the context of volunteering in general, the theoretical and empirical evidence supports an insignificant relationship between the two constructs, especially when compulsory volunteering at events is a non-routine experience that Cho et al. (2019a) mentioned. On the other hand, given the significance of past experiences in evoking nostalgia (Cho et al., 2014; Fairley & Gammon, 2005; Sedikides et al., 2004; Wilson, 2005), it is reasonable to suspect a positive relationship between past experiences and volunteer nostalgia. Therefore, this study postulated the following hypotheses:

- H₂: Volunteers’ age does not affect their nostalgia toward volunteering.
- H₃: Volunteers’ past experiences of compulsory volunteering positively affect their nostalgia toward volunteering.

Future Volunteer Behavior

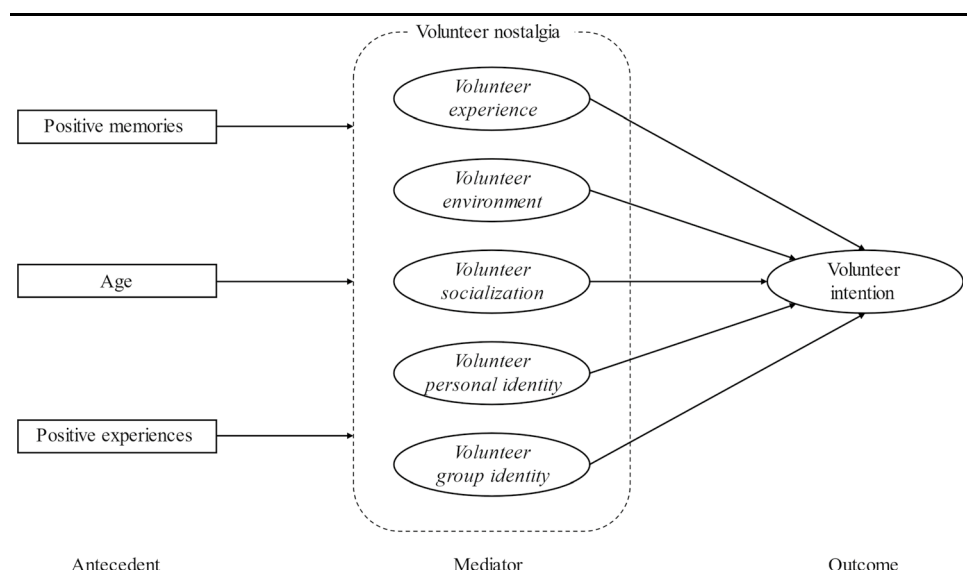
The SOR model asserts that an environment or experience—featuring various stimuli (S)—can trigger an emotional process (i.e., organism) (O), which eventually leads to behavioral responses (R) (Mehrabian and Russel, 1974). In the context of this study, volunteer experiences and surrounding environments would correspond to S, whereas volunteer nostalgia would be O. Any approach or avoidance behaviors or intentions resulting from volunteer nostalgia would parallel R. The SOR model has helped understand the behaviors of sport tourists (Chen et al., 2013; Cho et al., 2019a) or general consumers (Alakwe & Okpara, 2017; Manganari et al., 2011), highlighting how emotions can fuel behavioral responses. Similarly, multiple studies on volunteering have

shown how environmental (e.g., social culture or organizational support) and emotional (e.g., emotional evaluative process) factors are important to the intention to volunteer (Cho et al., 2020; McBey et al., 2017; Waikayi et al., 2012).

Numerous studies have shown that nostalgia generated by positive memories can dictate behaviors in diverse contexts (Chen et al., 2014; Kessous et al., 2015; Kim et al., 2019; Leong et al., 2015; Osbaldiston, 2012). Stephan et al. (2014) especially explained that nostalgia can increase one’s approach motivations and behaviors. Volunteering at events provides an abundance of experiences or stimuli which individuals can reminisce once the events are over, and from such memories, different components of volunteer nostalgia can emerge (Cho et al., 2014, 2019d). Thus, nostalgia could act as a driver of volunteer intention (Cho, 2020; Cho et al., 2019b), bridging positive memories, past experiences, and behavioral intentions. Based on the empirical findings that advocate the relationships among positive memories, past experiences, nostalgia, and intention to volunteer, this study proposes the following hypotheses and the conceptual model shown in Fig. 1:

- H₄: Volunteers’ positive memories and past experiences toward compulsory volunteering positively affect their intention to volunteer through volunteer nostalgia.
- H₄₋₁: Nostalgia regarding *volunteer experience* mediates the relationships between positive memories and intention to volunteer and between past experiences and intention to volunteer.
- H₄₋₂: Nostalgia regarding *volunteer environment* mediates the relationships between positive memories and intention to volunteer and between past experiences and intention to volunteer.

Fig. 1 Conceptual model



- H_{4.3}: Nostalgia regarding *volunteer socialization* mediates the relationships between positive memories and intention to volunteer and between past experiences and intention to volunteer.
- H_{4.4}: Nostalgia regarding *volunteer personal identity* mediates the relationships between positive memories and intention to volunteer and between past experiences and intention to volunteer.
- H_{4.5}: Nostalgia regarding *volunteer group identity* mediates the relationships between positive memories and intention to volunteer and between past experiences and intention to volunteer.

Methods

Participants

The population of this study was university students who had completed compulsory volunteering at sporting events in Singapore. To reduce the risk of memory bias, only those who had volunteered within the last five years were able to participate in the survey. Data were collected through a face-to-face mode before the COVID-19 pandemic. Students attending a Singaporean university were invited via weekly email newsletters as well as by two research assistants stationed at populated places like classrooms, cafeterias, and libraries. All participants were given a S\$5 retail voucher as an incentive. This process resulted in an initial sample size of 605.

Survey Instrument

To measure individuals' nostalgia toward volunteering, this study utilized Cho and Lee's (2021) volunteer nostalgia scale. The scale consists of five factors (i.e., *volunteer experience*, *volunteer environment*, *volunteer socialization*, *volunteer personal identity*, and *volunteer group identity*) measured by 20 items. The items were rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Next, to measure positive memories of compulsory volunteering, a single item (i.e., "Do you have any positive memories regarding your compulsory volunteer experience at sporting events in the past?") on a 7-point Likert scale of 1 (i.e., "I do not have any positive memories.") and 7 (i.e., "I have a lot of positive memories.") was used. Past experiences of compulsory volunteering ("How many years have you volunteered mandatorily for sports events?") and age were each measured using one open-ended question. Finally, two items from Kim et al.'s (2009) study were used to measure intention to volunteer. These items were also presented in a 7-point Likert scale format, ranging from 1 (strongly disagree) to 7 (strongly agree).

Data Analyses

To begin with, missing values were treated with the Expectation-Maximization (EM) algorithm. Then, two responses were discarded as Mahalanobis distance identified them as containing multivariate outliers. Next, Mardia's (1975) multivariate kurtosis coefficient was utilized to test the normality of data; a value of 95.77 indicated that the data had a non-normal distribution. To address the non-normality, the Satorra-Bentler scaled chi-square (S-B χ^2) and robust standard errors were used when evaluating the goodness of measurement and structural models (Satorra & Bentler, 1994).

To see if the measurement scales functioned as expected in the data that this study used and to establish a measurement model with acceptable reliability and validity, confirmatory factor analysis (CFA) was first carried out. Next, structural equation modeling (SEM) analysis was conducted to test the hypothesized relationships between positive memories, age, past experiences, the factors of volunteer nostalgia, and volunteer intention. As advised by Hu and Bentler (1999), standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), comparative fit index (CFI), and non-normed fit index (NNFI) were utilized to evaluate the adequacy of measurement and structural models. Also, Monte Carlo simulation (Preacher & Selig, 2012) was used to test the mediation effects of the volunteer nostalgia factors. Finally, effect sizes (f^2) of exogenous variables on endogenous variables were calculated as below:

$$f^2 = \frac{R^2_{\text{included}} - R^2_{\text{excluded}}}{1 - R^2_{\text{included}}}$$

where R^2_{included} and R^2_{excluded} , respectively, are the R^2 values of the outcome variable with or without the selected exogenous variable in the model. Cohen's (1988) guideline of weak (.02), moderate (.15), and large (.35) was used when assessing an effect size.

Results

Participant Overview

The average age of the participants (N = 605) was 23.4 years (SD = 2.4), and more than half of them were female (51.4%, n = 331). Chinese (82.1%, n = 497) was the most dominant ethnic group, followed by Malay (8.4%, n = 51), Indian (6.6%, n = 40), and others (2.6%, n = 16). Nearly everyone was single (97.5%, n = 590), and had an average of 1.7 (SD = 2.8) years of compulsory volunteer experiences at sporting events. Notable examples of the sporting events where they

had volunteered include the Youth Olympic Games, Southeast Asian Games, and the Asia Pacific Youth Tchoukball Championships. Some participants also mentioned school and local sporting events involving sports like track and field, football, or powerlifting.

Measurement Model

A measurement model encompassing all factors and items were built and tested for its overall model fit. The data fit the initial model well: S-B $\chi^2_{(df)} = 451.05_{(194)}$, CFI = .95, NNFI = .94, RMSEA = .05, and SRMR = .06 (90% CI of RMSEA = .041 - .053). However, one item from *volunteer environment* (i.e., “The apparels that I received evoke my nostalgic feelings.”) was deleted as it undermined the convergent validity of the factor. The revised model also showed a nice fit: S-B $\chi^2_{(df)} = 414.35_{(174)}$, CFI = .95, NNFI = .94, RMSEA = .05, and SRMR = .06 (90% CI of RMSEA = .04 - .05).

Next, the reliability, convergent validity, and discriminant validity of the revised model were assessed. Rho coefficients ranged from .81 (*volunteer environment*) to .91 (*volunteer group identity*), exceeding the cut-off of .70 for acceptable reliability (Fornell & Larcker, 1981) (Table 1). Cronbach's alpha values ranged from .82 (*volunteer environment*) to .93 (*volunteer personal identity*), satisfying Nunnally's (1978) cut-off of .70 (Table 1). The convergent validity was confirmed via average variance extracted (AVE) values of between .53 (*volunteer environment*) and .79 (*intention to volunteer*), which were all above .50 (Hair et al., 2010) (Table 1). Finally, the discriminant validity was evaluated by comparing the square root of each AVE value with its corresponding inter-factor correlation coefficients (Fornell & Larcker, 1981). No inter-factor correlation coefficients were greater than the square root of AVE values, indicating acceptable discriminant validity (Fornell & Larcker, 1981) (Table 2).

Table 1 Factor loading (λ), Rho coefficient, and AVE values from the final measurement model

Factor and item	λ	Cronbach's alpha	Rho	AVE
<i>Volunteer experience</i> (M = 5.0, SD = 1.0)		.86	.86	.67
Volunteer experience that I enjoyed	.81			
Moments of learning volunteer knowledge	.79			
My exciting volunteer experience in the past	.86			
<i>Volunteer environment</i> (M = 4.2, SD = 1.1)		.82	.81	.53
Equipment I used during the volunteer activity	.72			
Architectural design of the event I volunteered	.82			
Size of the place I volunteered	.77			
Memorable weather during the volunteer activity	.57			
<i>Volunteer socialization</i> (M = 5.1, SD = 1.1)		.88	.89	.67
Meeting new volunteers	.78			
Socializing with others during the compulsory volunteer activity	.90			
Building friendships with other volunteers during the compulsory volunteer activity	.90			
Getting useful information by talking to others during the compulsory volunteer activity	.66			
<i>Volunteer personal identity</i> (M = 5.1, SD = 1.1)		.93	.93	.73
Sense of accomplishment as a volunteer	.86			
My value as a volunteer	.87			
Feeling of achievement during the compulsory volunteer activity	.88			
Positive feelings about myself as a volunteer during the compulsory volunteer activity	.85			
Pride in being a volunteer of the event that I compulsorily attended	.81			
<i>Volunteer group identity</i> (M = 4.2, SD = 1.3)		.90	.91	.77
Volunteer group rituals at the event	.90			
The traditions of the volunteer group	.95			
Unique characteristics of the volunteer social group	.78			
<i>Intention to volunteer</i> (M = 4.3, SD = 1.4)		.88	.88	.79
I will volunteer for the event next year.	.86			
If I have an opportunity, I would be volunteering for the event for a long time	.92			

All volunteer nostalgia items were presented as follows: “Remembering [each nostalgia item] evoke(s) my nostalgic feelings.”

Table 2 Inter-factor correlation coefficients and the square root of all AVE values

	(1)	(2)	(3)	(4)	(5)	(6)
(1) <i>Volunteer experience</i>	.81					
(2) <i>Volunteer environment</i>	.59	.73				
(3) <i>Volunteer socialization</i>	.61	.38	.81			
(4) <i>Volunteer personal identity</i>	.68	.50	.54	.85		
(5) <i>Volunteer group identity</i>	.47	.53	.45	.47	.88	
(6) Volunteer intention	.56	.44	.39	.56	.39	.89

The square root of each AVE value is on the bold diagonal line.

Structural Model

For hypothesis testing, the final measurement model was converted into a structural model. The structural model showed acceptable fit: S-B $\chi^2_{(df)} = 483.68_{(221)}$, CFI = .95, NNFI = .94, RMSEA = .05, and SRMR = .06 (90% CI of RMSEA = .04 - .05). To begin with, the impact of the three antecedents on the volunteer nostalgia factors were examined. First, positive memories had positive influences on all five factors of volunteer nostalgia (*volunteer experience*: $\beta = .59$, SE = .04, $p < .001$; *volunteer environment*: $\beta = .33$, SE = .04, $p < .001$; *volunteer socialization*: $\beta = .34$, SE = .04, $p < .001$; *volunteer personal identity*: $\beta = .33$, SE = .04, $p < .001$; *volunteer group identity*: $\beta = .25$, SE = .05, $p < .001$), thus supporting H₁ (Table 3). This study further calculated the effect sizes. According to the results, the effect size of positive memories' impact was large for *volunteer*

experience ($f^2 = .52$), whereas it had weak influences on other volunteer nostalgia factors with the f^2 values ranging from .08 (*volunteer group identity*) to .14 (*volunteer environment*) (Table 4). Age was not a significant antecedent to any of the volunteer nostalgia factors (Table 3). Past experiences had significant effects on nostalgia regarding *volunteer environment* ($\beta = .13$, SE = .02, $p < .01$), *volunteer socialization* ($\beta = .10$, SE = .02, $p < .01$), and *volunteer personal identity* ($\beta = .12$, SE = .02, $p < .01$). However, *volunteer experience* ($\beta = .02$, SE = .01, $p > .05$) and *volunteer group identity* ($\beta = .02$, SE = .02, $p > .05$) were not related to past experiences, leading to partial support for H₃ (Table 3). The effect sizes were weak, as the f^2 values were between .01 (*volunteer socialization*) and .03 (*volunteer environment*) (Table 4).

Next, the total effects of the volunteer nostalgia factors on volunteer intention were examined and showed that

Table 3 Results from the structural model

Independent variable	Dependent variable					
	<i>Volunteer experience</i>	<i>Volunteer environment</i>	<i>Volunteer socialization</i>	<i>Volunteer personal identity</i>	<i>Volunteer group identity</i>	Volunteer intention
Positive memories	.59*** (.04)	.33*** (.04)	.34*** (.04)	.33*** (.04)	.25*** (.05)	.15** (.05)
Age	.05 (.01)	.06 (.02)	-.02 (.02)	.01 (.02)	.04 (.02)	.02 (.02)
Past experiences	.02 (.01)	.13** (.02)	.10** (.02)	.12** (.02)	.02 (.02)	-.05 (.02)
<i>Volunteer experience</i>	-	-	-	-	-	.17* (.13)
<i>Volunteer environment</i>	-	-	-	-	-	.10 (.08)
<i>Volunteer socialization</i>	-	-	-	-	-	-.01 (.07)
<i>Volunteer personal identity</i>	-	-	-	-	-	.32*** (.08)
<i>Volunteer group identity</i>	-	-	-	-	-	.07 (.06)
Indirect effect						
	Indirect path			β	SE	Monte Carlo CI
Positive memories → <i>Volunteer experience</i> → Volunteer intention				.10*	.05	[.01, .19]
Positive memories → <i>Volunteer personal identity</i> → Volunteer intention				.11*	.03	[.05, .17]
Past experiences → <i>Volunteer personal identity</i> → Volunteer intention				.02*	.01	[.01, .04]

β = standardized coefficients (values outside the parentheses); SE = standard error (values inside the parentheses); CI = confidence interval; * $p < .05$; ** $p < .01$; *** $p < .001$ (2-tailed)

R² values for *volunteer experience* = .35; *volunteer environment* = .13; *volunteer socialization* = .13, *volunteer personal identity* = .13, *volunteer group identity* = .07, and volunteer intention = .40

Table 4 Effect sizes

Exogenous variable	Endogenous variable	R ² _{included}	R ² _{excluded}	f ²
Positive memories	<i>Volunteer experience</i>	.35	.01	.52
	<i>Volunteer environment</i>	.13	.01	.14
	<i>Volunteer socialization</i>	.13	.02	.13
	<i>Volunteer personal identity</i>	.12	.02	.11
	<i>Volunteer group identity</i>	.07	.00	.08
Past experiences	<i>Volunteer experience</i>	.35	.35	.00
	<i>Volunteer environment</i>	.13	.10	.03
	<i>Volunteer socialization</i>	.13	.12	.01
	<i>Volunteer personal identity</i>	.12	.12	.00
	<i>Volunteer group identity</i>	.07	.07	.00
Age	<i>Volunteer experience</i>	.35	.34	.00
	<i>Volunteer environment</i>	.13	.12	.00
	<i>Volunteer socialization</i>	.13	.13	.00
	<i>Volunteer personal identity</i>	.12	.12	.00
	<i>Volunteer group identity</i>	.07	.06	.00
Positive memories	Volunteer intention	.40	.38	.03
Past experiences	Volunteer intention	.40	.40	.00
Age	Volunteer intention	.40	.40	.00
<i>Volunteer experience</i>	Volunteer intention	.40	.39	.02
<i>Volunteer environment</i>	Volunteer intention	.40	.39	.01
<i>Volunteer socialization</i>	Volunteer intention	.40	.40	.00
<i>Volunteer personal identity</i>	Volunteer intention	.40	.36	.07
<i>Volunteer group identity</i>	Volunteer intention	.40	.40	.00

R²_{included} = R² value of the outcome variable with the selected exogenous variable in the model; R²_{excluded} = R² value of the outcome variable without the selected exogenous variable in the model; f² = effect size

nostalgia regarding *volunteer experience* ($\beta = .17$, SE = .13, $p < .05$) and *volunteer personal identity* ($\beta = .32$, SE = .08, $p < .001$) had significant effects. However, the remaining volunteer nostalgia factors had no significant impacts on volunteer intention as follows: *volunteer environment* ($\beta = .10$, SE = .08, $p > .05$), *volunteer socialization* ($\beta = -.01$, SE = .07, $p > .05$), and *volunteer group identity* ($\beta = .07$, SE = .06, $p > .05$) (Table 3). The effect size of *volunteer personal identity* ($f^2 = .07$) on volunteer intention was slightly greater than others but still was weak (Table 4).

Finally, this study used a Monte Carlo approach (Preacher & Selig, 2012) and identified the mediating effects of *volunteer experience* and *volunteer personal identity*. Since the other factors of volunteer nostalgia were not significant predictors of volunteer intention, they were not considered in this mediation analysis (H₄₋₂, H₄₋₃, and H₄₋₅ rejected). According to the results, nostalgia regarding *volunteer experience* ($\beta = .10$, SE = .05, Monte Carlo CI = [.01, .19], $p < .05$) and *volunteer personal identity* ($\beta = .11$, SE = .03, Monte Carlo CI = [.05, .17], $p < .05$) mediated the relationship between positive memories and volunteer intention (Table 3). Similarly, the indirect impact of past experiences on volunteer intention was significant and was mediated through *volunteer personal identity* ($\beta =$

.02, SE = .01, Monte Carlo CI = [.01, .04], $p < .05$) (H₄₋₄ supported) but not via *volunteer experience* (H₄₋₁ partially supported) (Table 3). To see if the mediation was full or partial, the direct paths from positive memories, age, and past experiences to volunteer intention were considered. Positive memories ($\beta = .15$, SE = .05, $p < .01$) had a direct impact on volunteer intention, but age ($\beta = .02$, SE = .02, $p > .05$) and past experiences ($\beta = -.05$, SE = .02, $p > .05$) did not directly influence volunteer intention (Table 3). From this, it was concluded that the impact of positive memories on volunteer intention was partially mediated, whereas the influence of past experiences was subject to full mediation. The model explained 40% of the variance in volunteer intention and 13 - 35% of the variance in the volunteer nostalgia factors (Table 3).

Discussion

Focusing on compulsory volunteering at sporting events, this study addressed the following research questions: (a) how do positive memories, age, and past experiences predict volunteer nostalgia? and (b) how does volunteer nostalgia, in turn, contribute to intention to volunteer? To answer them,

this study first investigated how volunteer nostalgia was related to positive memories, age, and past experiences and took a step further to test the relationships between the factors of volunteer nostalgia and volunteer intention.

According to the results, positive memories significantly predicted all factors of volunteer nostalgia. In addition, although age did not significantly affect any factors of volunteer nostalgia, past experiences had positive influences on three factors, including *volunteer socialization*, *volunteer environment*, and *volunteer personal identity*. Of the two significant predictors, positive memories substantially outperformed past experiences in explaining volunteer nostalgia. Positive memories not only contributed to all five volunteer nostalgia factors but also its standardized coefficients were substantially larger (i.e., .25 - .59) than those of past experiences (i.e., .10 - .13). The results indicate that the quantity of experience alone may only provide a partial understanding of volunteer nostalgia, and it is the quality of experience, as manifested via positive memories, that may matter more. In line with Cho et al.'s (2019a) study, those with little experience may still develop significant volunteer nostalgia if they hold overly positive memories of the experience. Possibly, past experiences may provide the soil for positive memories to evolve but it is memorable moments, as Kim and Ritchie (2014) suggested, that have a bigger influence on perceptions or behaviors.

Of the five volunteer nostalgia factors, positive memories were especially pivotal to nostalgia associated with *volunteer experience* ($\beta = .59$, $p < .001$; $f^2 = .52$), whereas the standardized coefficients and effect sizes for the other factors did not exceed $\beta = .34$ (*volunteer socialization*) or $f^2 = .14$ (*volunteer environment*). This might be due to the single-item scale used for positive memories which considered the degree of positive memories in general without specifying what they were about. This could have prevented participants of this study from establishing more solid associations between positive memories and the other volunteer nostalgia factors that are more specific than felt enjoyment or excitement (*volunteer experience*). Alternatively, for compulsory volunteers, nostalgia regarding *volunteer environment*, *volunteer socialization*, *volunteer personal identity*, or *volunteer group identity* may come less salient. However, this does not mean compulsory volunteers only feel nostalgia related to *volunteer experience* and not the others. In fact, depending on the type of activities they participate in at events, volunteers may meditate on the environmental attributes or social interaction with others (Cho & Lee, 2021; Fairley, 2007; Smith, 1994; Wilson & Musick, 1997).

The insignificance of age to volunteer nostalgia was as hypothesized, and the result conformed to what Cho et al. (2019a) claimed and validated. While there have been studies suggesting age as a reliable predictor of nostalgia (Goulding, 2001; Merchant & Ford, 2008; Toledo & Lopes, 2016), age, in fact, is little related to nostalgia toward non-regular,

high involvement activities (Cho et al., 2019a). Unlike repeated, habitual, or common activities—such as grocery shopping or family dinner—compulsory volunteering only happens in certain instances and for limited durations. Furthermore, compulsory volunteers usually need to make efforts to identify and arrange their volunteer activities, and this places them in a high-involvement situation. In light of such characteristics of compulsory volunteering, the result seems reasonable.

Participants of this study showed salience in all five volunteer nostalgia factors, while only *volunteer experience* and *volunteer personal identity* meaningfully translated into volunteer intention. In a broader sense, the positive connections between the two volunteer nostalgia factors and volunteer intention resonate well with previous findings that identified nostalgia as a significant antecedent of behavioral responses (Chen et al., 2014; Cho, 2020; Cho & Chiu, 2021; Cho et al., 2021a; Kessous et al., 2015; Kim et al., 2019; Leong et al., 2015). Especially, in the context of volunteering, Green et al. (2021) found that university students' nostalgia regarding their university experience positively influenced their intention to volunteer for their alma mater. The result indicates that compulsory volunteering, despite some concerns about its outcomes, can achieve the educational outcomes it intends (Stukas et al., 1999).

At the same time, the results that positive longing for environmental, social, or group aspects of a compulsory volunteer experience did not enhance volunteer intention present additional insights about volunteer nostalgia. Quite possibly, what truly matters is the experience itself (i.e., *volunteer experience*) and the feelings of achievement and self-enhancement as a volunteer (i.e., *volunteer personal identity*). Environmental, social, or group aspects of a compulsory volunteer experience may be secondary to *volunteer experience* or *volunteer personal identity*. This seems sensible as environment, socialization, or group identity are contextual to each volunteer setting and background; thus, compulsory volunteers are more likely to focus on their roles and achievements as a volunteer and innate psychological outcomes from the experience.

Theoretical and Practical Implications

This study suggests several theoretical and practical implications. First, age is an insufficient predictor of nostalgia, especially when the feeling is directed toward irregular and unusual activities which require high involvement. When discussing nostalgia in general, age may correlate well with the construct. However, in more specific contexts like compulsory volunteering or sport tourism (Cho et al., 2019a), the age-nostalgia relationship may be insubstantial and spurious. As such, positive memories or past experiences would be a more valid and reliable predictor of nostalgia in such

instances, and research should consider the nature of nostalgia (i.e., general or specific) when deciding what constructs to use as a predictor. Second, the findings from this study reiterate the positive relationship between nostalgia and intention, but more importantly, suggest differential impacts of the volunteer nostalgia factors on volunteer intention. The positive relationship between volunteer nostalgia and intention to volunteer can serve as evidence for using compulsory volunteering for education. However, the results, in scrutiny, also indicate a multi-layered structure of nostalgia, at least in the current study context. That is, *volunteer experience* and *volunteer personal identity* can be more universal and integral to different volunteer experiences, whereas the other factors of volunteer nostalgia stay less salient or influential.

For event organizers, the findings suggest that they should focus on making volunteer activities not only memorable but also rewarding. Positive memories may hinge upon multiple elements at events, such as environmental attributes, active socialization, or a sense of belonging. However, as shown above, nostalgic feelings toward such elements may have little influence on the long-term commitment to volunteering. As such, event organizers may emphasize the overall quality of volunteer experiences or their self-developmental outcomes. They may choose not only to bolster such elements for compulsory volunteers at events (e.g., giving challenging but enjoyable tasks) but also glamorize such moments after the events conclude (e.g., sharing pictures and stories of such elements). For instance, compulsory volunteers are more likely to become continued volunteers if they are given more rights and responsibilities. Such autonomous experiences can nurture strong intrinsic motivations of compulsory volunteers (Ryan & Deci, 2000) and increase their nostalgic feelings. Also, it is critical to support them to have a sense of achievement, accomplishment, and pride, as those components can form the basis of *volunteer personal identity* and generate volunteer nostalgia (Cho & Lee, 2021). At the same time, from the insignificance of *volunteer environment*, *volunteer socialization*, and *volunteer group identity* to volunteer intention, it is possible to assume that compulsory volunteers may not expect to relive the same social or environmental moments in future volunteer occasions. Therefore, event organizers must take follow-up measures to figure out compulsory volunteers' constraints and needs and invent ways to make *volunteer environment*, *volunteer socialization*, and *volunteer group identity* more meaningful to volunteer intention.

Limitations of the Study and Future Research Suggestions

Nevertheless, the theoretical and practical implications of this study come with the following limitations. First and foremost, this study used participants from a single

university as a sample. While students make up the major body of compulsory volunteers, not including other compulsory volunteers from various institutions or cultures may make the findings less generalizable. Had there been high school students, other institutions, or cultures involved in this study, there could have been additional insight. Second, this study used a single-item scale for positive memories and an open-ended question for past experiences. This not only limited the types of statistical analysis this study could use but also the depth of knowledge it could achieve. Had the scales had multiple items touching upon various aspects of positive memories and past experiences, results could have been more enriching and reliable. Finally, the effect sizes of the independent variables in this study were mostly moderate ($< .15$) or weak ($< .01$) as per Cohen (1988), especially in the link between the volunteer nostalgia factors and volunteer intention. While the nostalgia-behavior association has been widely supported and proven, participants of this study might have found it more elusive to gauge their future intention to participate in or recommend volunteering. Future studies may consider additional types of intention such as providing financial or verbal support.

Data Availability The data that support the findings of this study are available from the first author upon reasonable request.

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Declarations

Conflicts of Interest The authors declare no potential conflicts of interest.

Informed Consent Participants of this study were provided with an informed consent form and signed it before their participation.

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