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Determinants and Outcomes of Volunteer Satisfaction in Mega Sports Events

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Abstract: The role of volunteers is an important factor for the sustainability of mega sports events. Key issues in the literature on sports event volunteers are volunteer satisfaction and its determinants and outcomes. Therefore, the purpose of the current study was to investigate the effects of the fulfillment of volunteers' psychological needs and Volunteer Management Practices (VMP) on overall volunteer satisfaction, and to test their conditional effects depending on volunteer involvement. Additionally, the present study aimed to examine the effects of volunteer satisfaction on future volunteer activity, word-of-mouth, and host city visitation. For these purposes, a survey was conducted with 2442 volunteers in the context of the 2018 PyeongChang Winter Olympics in South Korea. The results of a Latent Moderated Structural Equation (LMS) revealed that the fulfillment of volunteers' general needs and volunteer satisfaction with the VMP have positive effects on overall volunteer satisfaction. Interestingly, these effects were differently moderated by the level of volunteer involvement. Overall volunteer satisfaction was found to positively affect future volunteering intention, spreading positive words regarding sports event volunteering, and intention to visit the host city as tourists. In conclusion, sports event managers need to design an optimal work environment that can fulfill volunteers' psychological needs and improve VMP to enhance the sustainability of mega sports events.

Keywords: volunteers psychological needs; involvement; satisfaction; mega sports events; re-participation intention; word of mouth intention; revisit intention

1. Introduction

Hosting mega sports events, such as the Olympics and the World Cup, can contribute to realizing the sustainable development goals of countries all over the world. The Secretary-General of the United Nations insisted that hosting mega sports events not only can advance sustainable economic growth, social development, environmental protection, and educational opportunities, but can also promote human rights and peace [1]. In line with this remark on the values of mega sports events, the existing literature has shown that hosting mega sports events generates a wide range of tangible and intangible benefits: economic legacy [2–4], reputational legacy [5,6], infrastructural legacy [7,8], sociocultural legacy [9], and environmental legacy [10,11]. Although there are skepticisms that the positive effects of mega sports events are overestimated and romanticized [12,13], hosting (mega) sports events is still catching the eyes of academics and policy-makers as a sustainable strategic option.

Among many factors that can contribute to successful and sustainable mega sports events, the role of volunteers is one of the most crucial ones that maximize the values of mega sports events [14,15]. Mega sports events rely heavily on the roles of volunteers [16], who are a core element of service delivery and sports event management [17]. Strigas [18] noted that volunteers enable sports events to offer, sustain, and expand the quality, quantity, and diversity of sports event services. Furthermore, volunteers ensure the financial success of mega sports events by relieving budget pressures and reducing costs [19,20]. Taken together, successful mega sports events are not feasible without volunteers; thus, securing volunteers is imperative to guarantee the success and sustainability of mega sports events.

Scholars have argued that volunteer dissatisfaction is a major factor that hinders host cities from securing event volunteers [21,22]. In this regard, previous studies have focused on the determinants of volunteer satisfaction [23]. Specifically, it has been found that volunteer satisfaction is influenced by volunteer motivation [24,25], needs satisfaction related to intrinsic motivations [26], involvement [27], job training [28], job assignments [29], and job environment [30,31]. A common approach to these influencers in the literature is that it solely addresses volunteers' psychological aspects (e.g., needs, motivation, and involvement) or organizational factors related to external elements surrounding volunteer activities (e.g., job training, job assignments, and job environment). This implies a lack of comprehensive theoretical models encompassing both volunteers' psychological aspects and such organizational factors to explain volunteer satisfaction.

Meanwhile, the majority of recent studies focused mainly on volunteer activity intention as an outcome of volunteer satisfaction [24,26,32]. Volunteers, however, can serve three roles after their volunteer activity, including as a labor source for future sporting events, ambassadors for the volunteer activity, and future tourists to the host city. In this respect, diverse outcomes related to these roles (e.g., future volunteer intention, word-of-mouth (WOM) intention, and host city visit intention) should also be considered in the comprehensive model to fully understand the outcomes of sports event volunteer experiences.

To fill the theoretical gaps in the existing literature, the present study aimed to develop and test a holistic theoretical model that explains the determinants and outcomes of volunteer satisfaction in mega sports events. Specifically, the purpose of the current study was to investigate the effects of volunteers' psychological aspects and organizational factors on overall volunteer satisfaction, and to test their conditional effects depending on volunteer involvement. Furthermore, the present study aimed to examine the effects of volunteer satisfaction on future volunteer activity, WOM, and host city visitation. By doing so, we can better understand the mechanism regarding volunteer satisfaction and its outcomes in the context of mega sports events and provide meaningful guidelines for sports event managers and policy-makers to enhance the feasibility and sustainability of mega sports events.

2. Theoretical Background and Hypothesis Development

2.1. Determinants of Volunteer Satisfaction in Mega Sports Events

2.1.1. Self-Determination Theory and Volunteers' Psychological Needs

Fundamentally, individuals tend to engage in a certain behavior to fulfill their psychological needs. Such needs fulfillment plays a pivotal role in overall satisfaction with the behavior and decision-making required to reengage in the same behavior [26]. In particular, psychological needs fulfillment can be achieved by engaging in meaningful and interesting activities [33]. A volunteer activity is generally defined as an uncompensated activity performed voluntarily for the benefit of the wider community [34], and sports event volunteering can be viewed as a leisure activity [35]. The general definition of volunteering (as meaningful) and the nature of sports event volunteering (interesting) imply that a volunteer activity at mega sports events is an optimal venue for individuals' psychological needs fulfillment, which is a major determinant of volunteer satisfaction.

Volunteers are primarily motivated by intrinsic rewards, such as the positive feelings fostered by doing a good job and a sense of doing something worthwhile [36,37]. Cnaan and Goldberg-Glen [38] stated that individuals engage in a volunteer activity as long as the experience is intrinsically rewarding and satisfies their unique needs. In this regard, self-determination theory (SDT) [39] provides a useful theoretical lens through which to understand the role of psychological needs fulfillment in volunteer satisfaction. According to SDT, individuals are motivated to engage in a certain behavior based on intrinsic or extrinsic motivations. Specifically, intrinsic motivations are more salient when people seek inherent pleasure, positive feelings, and basic needs fulfillment from a certain behavior per se, whereas extrinsic motivations are activated when people seek extrinsic rewards or avoid penalties by doing or not doing a certain behavior [40]. SDT highlights the importance of fulfilling three psychological needs to theorize human behavior based on intrinsic motivations, including autonomy, competence, and relatedness needs fulfillment. In particular, individuals are motivated to engage in sports event volunteering to the extent that these psychological needs are fulfilled [37].

The autonomy need is defined as an individual's desire to experience ownership of his or her behavior and to act with a sense of volition [40], which an individual can feel by having the opportunity to make a personal choice while doing a certain activity [41]. They can experience the intrinsic pleasure of the activity by feeling the sense of volition [42,43]. In line with this notion, sports event volunteers are likely to be satisfied with their volunteer activity when their need for autonomy is fulfilled. For example, Oostlander, Güntert, and Wehner [44] reported that the autonomy-supportive leadership of supervisors not only leads to general need satisfaction of volunteers but also substantially enhances volunteer satisfaction. This implies that autonomy need satisfaction is a core element of general needs satisfaction of sports event volunteers as well as a major determinant of overall volunteer activity satisfaction.

Second, the need for competence refers to the desire to have the opportunity to express or experience effectiveness when interacting with the environment [40]. The concept of need for competence originates from cognitive evaluation theory [45], which suggests that interpersonal structures (e.g., positive feedback), while demonstrating a behavior, determine an individual's competence need fulfillment [46]. Prior studies have suggested that competence need fulfillment is an index for general needs satisfaction [43,47] and a critical determinant of job satisfaction that is driven mainly by extrinsic rewards [48]. The fulfillment of competence needs also plays a significant role as an enhancer of satisfaction in intrinsically motivated behaviors, such as sports event volunteering. For example, Kim, Park, and Kim [26] reported that when volunteers at the PyeongChang Winter Olympics had as many opportunities to express their competence as possible, they were more satisfied with the overall volunteer activity.

Third, the need for relatedness is defined as an innate desire to feel connected to other individuals and to form and maintain positive relationships with others [40]. According to Baumeister and Leary [49], a human being as a social entity has a strong desire to belong to social groups. The relatedness need fulfillment is an indispensable factor in individuals' psychological well-being because individuals experience negative psychological states, such as anxiety, loneliness, or depression, when their need for relatedness is not fulfilled [49,50]. In particular, the need for relatedness is important in a wide range of sports contexts (e.g., sports event attendance, sports participation, and sports event volunteering). For example, the need for relatedness can be fulfilled via the social values of sports spectatorship and is a major determinant of spectatorship satisfaction [51–54]. Additionally, interaction with other individuals has been considered a major motivation for engaging in sports event volunteering [55]. This implies that relatedness need fulfillment is a core element of sports event volunteers' general needs satisfaction and a major determinant of their volunteer activity satisfaction.

Overall, the current study conceptualizes general needs satisfaction as a psychological state in which the needs for autonomy, competence, and relatedness are fulfilled by engaging in sports event volunteering. Additionally, based on the discussion of SDT and the existing literature, the present study specifies general needs satisfaction as a determinant of overall volunteer satisfaction in mega sports events. Therefore, we propose the following hypothesis.

Hypothesis 1. *Sports event volunteers' general needs satisfaction will positively influence overall volunteer activity satisfaction in the context of mega sports events.*

2.1.2. Volunteer Management Practices (VMP)

Volunteer Management Practices (VMP) [56], such as job training, job assignment, and job environment, have been found to influence overall job satisfaction [57,58]. The components of VMP are more controllable from the perspective of sports organizations and significantly enhance overall volunteer satisfaction in the context of mega sports events [57]: specifically, job training refers to a systematic educational program designed to help trainees develop positive attitudes and acquire knowledge and skills for an assigned job [59]. The performance and efficiency of an organization can be maximized by matching members' behaviors to organizational goals, and job training is viewed as such a matching process. In this sense, job training plays an important role in successful sports event management. Previous studies have reported that job training also plays an important role in overall job satisfaction [58,60–62]. For example, Lowry, Simon, and Kimberley [60] found that employees who received job training scored higher on measures of overall job satisfaction than those who had not. Additionally, Schmidt [58] found that job training satisfaction significantly enhances overall job satisfaction. In the context of sports event volunteering, Kim and Kim [57] reported that job training satisfaction has a positive effect on overall volunteer satisfaction in the context of mega sports events. In sum, job training as a component of the VMP can be viewed as a determinant of overall volunteer satisfaction in mega sports events.

Next, Strategic Human Resource Management (SHRM) [63] highlights the importance of fit between an organization's strategy and the characteristics of diverse employees (i.e., person–job fit). Such fit can be achieved by efficiently and effectively allocating human resources [64]. In this sense, efficient and effective job assignment is a crucial factor in successful SHRM that enhances an organization's performance. Additionally, the existing literature has shown a positive relationship between the person–job fit and overall job satisfaction of employees [65–67]. This implies that appropriate job assignment (job assignment satisfaction) can be viewed as a determinant of the overall job satisfaction of employees because it enhances the person–job fit by matching employees' skills and personal characteristics to what the assigned job requires [68–70]. Job assignment satisfaction varies depending on employees' personal characteristics (e.g., skills, motivations, and needs) even within the same job, and thus overall job satisfaction is expected to fluctuate depending on satisfaction with the job assignment. In line with this notion, we suggest that job assignment satisfaction, as a core component of VMP, significantly enhances overall volunteer activity satisfaction in the context of mega sports events.

Meanwhile, job satisfaction can be represented as an outcome of the interaction between employees and their job environment [71]. Job environment is a comprehensive concept [72], and it is broadly defined as comprising the characteristics of the overall organization setting in which employees must perform the assigned job [71]. Among the diverse aspects of work environment (physical, psychological, and social aspects) in particular, the current study focuses on the physical aspect of the job environment because it can be easily standardized and controlled from the perspective of organizations, and thus it better fits the conceptualization of VMP. In the present study, therefore, job environment refers to the physical objects, surroundings, and stimuli that volunteers encounter and interact with during their volunteer activity [73]. A growing body of literature has linked job environment to diverse outcomes, such as job satisfaction and job turnover [57,72,73]. A common finding of the literature is that a well-designed job environment substantially enhances the overall job satisfaction of employees. Similarly, Kim and Kim [57] reported that when sports event volunteers were satisfied with their physical work environment, they evaluated their volunteering experiences in the mega sports event more positively.

Taken together, the current study conceptualizes VMP as job training, assignment, and environment and assumes that well-designed VMP significantly enhance overall volunteer activity

satisfaction. In other words, when volunteers are satisfied with the VMP consisting of job training, assignment, and environment, they are more likely to be satisfied with their volunteering experience. Accordingly, we propose the following hypothesis.

Hypothesis 2. *Satisfaction with Volunteer Management Practices (VMP) will positively influence overall volunteer activity satisfaction in the context of mega sports events.*

2.2. The Role of Volunteer Involvement in Volunteer Satisfaction

The concept of involvement is generally defined as the perceived relevance of an object to an individual based on his or her inherent needs, interests, and values [74]. In other words, the level of personal involvement represents an individual's perceived importance and interest regarding a target object. Personal involvement has been conceptualized variously depending on research contexts (e.g., issue involvement, product involvement, and sports involvement) and has been found to elicit different responses to a target object by activating certain motivational states [75] and changing information processing [76]. Considering the research topic, the present study focuses on volunteering involvement as a determinant of volunteer activity satisfaction and conceptualizes it as the volunteers' perceived importance of and interest in volunteer activities.

Individuals who are highly involved in a target object or activity tend to evaluate the object or activity more positively. For example, Mittal [77] reported that consumers' product involvement positively affects their shopping experience. Similarly, the literature on sports fan behavior found that sports spectators who are highly involved in the target sport tend to be intrinsically motivated to engage in their watching experience and thus to evaluate their spectator experiences more positively [53,78]. In the context of volunteer activity, Harrison, Xiao, Ott, and Bortree [79] showed that the increased level of involvement in volunteering with an organization leads to enhanced trust, commitment, mutuality, and satisfaction regarding the organization. Based on the literature, the current study assumes that greater involvement in volunteer activities stimulates volunteers' intrinsic motivations to engage in volunteer activities (seeking intrinsic rewards from volunteering) and posits that highly involved volunteers positively assess their volunteering experience.

Hypothesis 3. *The level of involvement in volunteer activities will positively influence overall volunteer activity satisfaction in the context of mega sports events.*

Volunteer involvement has another role in evaluating volunteer activity experiences because it changes volunteers' information processing. The Elaboration Likelihood Model (ELM) [76] suggests that individuals tend to follow a central route or peripheral route depending on their involvement in a target object. Specifically, when individuals are highly involved in a target object, they focus more on central cues to evaluate the target object, whereas those who have low level of involvement focus more on peripheral information about the target object. For example, Martín, Camarero, and José [80] showed that online shoppers who are highly involved in shopping tend to focus more on information directly related to the target product, such as warranty, service quality, and safety, to evaluate their shopping experience. In contrast, shoppers who are less involved in shopping focus more on information irrelevant to the product, such as website interactivity. In the volunteer activity context, Smith and colleagues [81] found that student volunteers focus on different values of volunteer activity depending on their level of volunteer involvement (e.g., altruistic values for high involvement, social values for medium involvement, and instrumental values for low involvement). This implies that sports event volunteers are likely to evaluate their volunteering experience based on different informational cues depending on their involvement level. Accordingly, the present study assumes that highly involved volunteers would focus more on intrinsic values of sports event volunteering, such as general needs satisfaction (central cues) to assess their volunteering experience, whereas less-involved

sports volunteers would focus more on VMP (peripheral cues) to evaluate their volunteering experience. Therefore, we propose the following hypotheses.

Hypothesis 4. *The level of volunteer involvement will moderate the effect of general needs satisfaction on overall volunteer activity satisfaction; the effect will increase as the level of involvement increases.*

Hypothesis 5. *The level of volunteer involvement will moderate the effect of Volunteer Management Practices (VMP) on overall volunteer activity satisfaction; the effect will decrease as the level of involvement increases.*

2.3. Outcomes of Volunteer Satisfaction in Mega Sports Events

Satisfaction is defined as a cumulative product of discrete experiences regarding a target activity [82]. In the social science literature, the concept of satisfaction has been widely used to explain and predict diverse human behaviors. The reasoning behind the wide use of satisfaction as a predictor of human behaviors is that individuals make decisions based on diverse information, and their evaluation of previous experiences serves as a powerful informational cue for their decision-making [83]. For example, consumer learning theory [84,85] posits that individuals tend to estimate the quality of future consumption experience based on past consumption experiences. This proposition implies that positive experiences in a certain behavior serve as a diagnostic cue to estimate the valence (i.e., positive or negative) of future experiences, thereby motivating (or demotivating) individuals to engage in a certain behavior in the future, depending on the estimation. In line with this notion, sports event volunteers are likely to engage in future volunteer activities when they are satisfied with their past volunteer activities. Indeed, numerous studies have suggested that volunteer satisfaction is a robust predictor of future volunteer activity involvement [86–89]. Hence, we suggest intention to reengage in sports event volunteering as an outcome of overall volunteer satisfaction.

Beyond direct volunteer participation, understanding the word of mouth (WOM) of volunteers to recommend volunteer activities to others has important implications for sports event managers because it has diverse spin-offs, such as awareness, knowledge, and persuasion [90]. In particular, WOM from a family, relative, or close friend is an important motivator of volunteering [91]. Wisner, Stringfellow, Youngdahl, and Parker [92] argued that when potential volunteers hear positive comments (WOM) from current volunteers, they are more likely to engage in volunteer activities. Despite the importance of WOM as a means of recruiting volunteers, only a few studies have examined the WOM of volunteers as an outcome of volunteer satisfaction [92,93]. Of particular relevance to the present study, Wisner and colleagues [92] reported that volunteers' satisfaction is positively associated with the intent to recommend volunteer activities in nonprofit organizations to their friends and acquaintances. The present study adds to this research by examining the effect of overall volunteer satisfaction on WOM in the context of mega sports events.

Meanwhile, from the perspective on volunteer tourism, sports event volunteers can be viewed as potential tourists to the host city of mega sports events. Volunteer tourism refers to using discretionary income and time to travel out of the space of regular activity and engage in volunteer activities to contribute to the local, national, or global community [94,95]. A majority of sports event volunteers are tourists and travel long distances to contribute to the success of the mega sports event through their volunteer activities [96]. In this sense, overall volunteer satisfaction can be an indicator of volunteer tourism satisfaction because volunteer activities represent a huge part of volunteer tourism. A tremendous body of literature has consistently showed that tourism satisfaction is a major determinant of revisit intentions [97–100]. Based on this logic, the present study proposes that the intention to revisit the host city of a mega sports event is an outcome of overall volunteer satisfaction. Taking the discussion on the outcomes of overall volunteer satisfaction together, we propose the following hypotheses. Additionally, a research model consisting of relationships between constructs of interest is developed (Figure 1), and it addresses all hypotheses in the current study.

Hypothesis 6. Overall volunteer satisfaction will positively influence the intention to engage in future volunteer activities for mega sports events.

Hypothesis 7. Overall volunteer satisfaction will positively influence the intention to recommend volunteer activities for mega sports events to others.

Hypothesis 8. Overall volunteer satisfaction will positively influence the intention to visit the host city of the mega sports event.

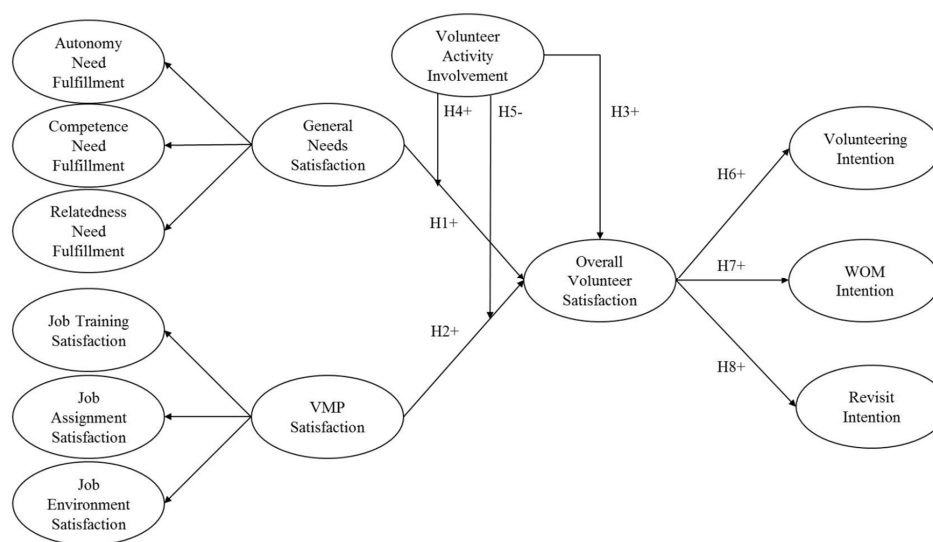


Figure 1. A research model illustrating the hypotheses.

3. Methods

3.1. Participants and Procedure

The current study was conducted in the context of the 2018 PyeongChang Winter Olympics in South Korea. The target population for the present study was volunteers in mega sports events. Three-thousand volunteers were randomly chosen from the list of Korean volunteers at the PyeongChang Winter Olympics provided by the Korean Sport & Olympic Committee (KOC). An online survey, which was developed using Qualtrics survey software, was distributed via email to the 3000 volunteers after the Olympics concluded. Specifically, the email included a message inviting the recipients to participate in the survey and a link to the Qualtrics survey system in which participants can fill out the questionnaire. The questionnaire consisted of a brief description of the purpose of the study, the planned procedure, instructions for completion of the questionnaire, and an informed consent form in the first section of the questionnaire. In the second section of the questionnaire, participants were instructed to fill out the questions regarding general needs fulfillment (autonomy, competence, and relatedness), satisfaction with the VMP (job training, assignment, and environment), overall volunteer satisfaction, outcome constructs (intention to volunteer at future sports events, intention to recommend volunteering to others, and intention to revisit the host city), and demographic information. In the last section, participants were debriefed and thanked. A total of 2442 participants completed the questionnaire (a response rate of 81.4%). The participants consisted of 685 males (29%) and 1757 females (71%). The average age of the participants was 25.56 (SD = 12.38). In terms of education level, 888 participants (36.4%) have a high school diploma, 1436 participants (58.8%) have a bachelor's degree, and 118 participants (4.8%) have a graduate school degree.

3.2. Measures

All constructs were measured using multiple items adopted from the existing literature and modified by teaming up with the representatives from volunteer management in the Korean Sport & Olympic Committee (KOC). These were 7-point Likert scale items anchored by 1 (not at all) and 7 (very much), except for the items measuring volunteer involvement (semantic differential scale). Specifically, we measured general needs satisfaction using the Need Satisfaction Scale [101]. This scale consists of three domains of needs satisfaction (autonomy, competence, and relatedness need fulfillment), and each domain was measured using three items. To measure satisfaction with VMP, we adapted three items for job training satisfaction from the Job Training Satisfaction Scale [102], three items for job assignment satisfaction from the Work Assignment Scale [103], and eight items for job environment satisfaction from the Physical Work Environment Questionnaire [104]. Overall volunteer satisfaction was measured using three items adopted from Mitchell, Holtom, Lee, Sablinski, and Erez's [105] Job Satisfaction Scale. In terms of the outcomes of overall volunteer satisfaction, we adopted three items from Bang, Lee, and Swart [106] to measure volunteering intention; three items from Zeithaml, Berry, and Parasuraman [107] to measure WOM intention; and two items from Brown, Smith, and Assaker [108] to measure revisit intention. Lastly, volunteer involvement was measured using four items adopted from the involvement scale [109].

The original items were translated into the Korean language by three bilingual Korean scholars, who then compared the original version of the items with the translated ones in order to identify potential cross-cultural differences. The researchers resolved the identified cross-cultural differences by carefully following the suggestions from the scholars and KOC. In so doing, the researchers made modifications to the original items to ensure item equivalence between the two versions and then developed the final version of measurement items. All measurement items are show in Table 1.

Table 1. Summary results of measurement model validation.

Measurement Items	λ	CR	AVE
Volunteer Management Practices (VMP)			
(Job Training) I was satisfied with the educational contents, methods, and textbooks.	0.91	0.91	0.77
(Job Training) I was satisfied with the instructors' teaching skills and attitude.	0.88		
(Job Training) The job training was helpful for the volunteer work.	0.84		
(Job Assignment) I was assigned to what I applied for.	0.72	0.85	0.65
(Job Assignment) The volunteer work fitted my skills.	0.93		
(Job Assignment) I was satisfied with the job assignment.	0.75		
(Job Environment) I was satisfied with the food provided during the volunteer work.	0.60	0.89	0.50
(Job Environment) I was satisfied with the accommodation provided during the volunteer work.	0.62		
(Job Environment) I was satisfied with the transportation during the volunteer work.	0.60		
(Job Environment) I was satisfied with the work maintenance during the volunteer work.	0.67		
(Job Environment) I was satisfied with the insurance provided during the volunteer work.	0.72		
(Job Environment) I was satisfied with the uniform provided during the volunteer work.	0.67		
(Job Environment) I was satisfied with the security provided during the volunteer work.	0.84		
(Job Environment) I was satisfied with the welfare provided during the volunteer work.	0.88		
General Needs Satisfaction			
(Autonomy) I was able to make decisions regarding the volunteer work by myself.	0.84	0.82	0.60
(Autonomy) I was able to express my thoughts and opinions during the volunteer work.	0.80		
(Autonomy) I had many opportunities to make decision by myself during the volunteer work.	0.67		
(Competence) I felt very competent during the volunteer work.	0.89	0.94	0.84
(Competence) I had many opportunities to express how competent I am.	0.93		
(Competence) Volunteering at the PyeongChang Winter Olympics made me frequently feel competent.	0.93		
(Relatedness) I enjoyed working with other volunteers at the PyeongChang Winter Olympics.	0.88	0.92	0.79
(Relatedness) I had good relationship with other volunteers at the PyeongChang Winter Olympics.	0.91		
(Relatedness) I felt that other volunteers were friendly to me at the PyeongChang Winter Olympics.	0.87		
Overall Volunteer Satisfaction			
Overall, I was satisfied with my volunteer job at the PyeongChang Winter Olympics.	0.92		
Overall, I was satisfied with my decision to participate in the volunteer work at the PyeongChang Winter Olympics.	0.85		
Overall, I liked working as a volunteer at the PyeongChang Winter Olympics.	0.85		
Volunteer Involvement (Moderator)			
Volunteering is unimportant/important for me.	0.84		
Volunteering is irrelevant/relevant to me.	0.82		
Volunteering means nothing/a lot to me.	0.87		
Volunteering is boring/interesting to me.	0.83		

Table 1. Cont.

Measurement Items	λ	CR	AVE
Future Volunteering Intention			
		0.93	0.82
If I had the opportunity, I would re-volunteer at the Olympics in the future.	0.93		
If the Olympics management contacted me for volunteer participation, I would gladly participate in the volunteer program.	0.91		
I definitely plan to re-participate in the Olympics Volunteer program.	0.89		
Word-Of-Mouth Intention			
		0.95	0.86
I would recommend the Olympics volunteer program to friends and others.	0.95		
If my friends were looking for a volunteer job, I would recommend that they seek volunteer jobs at the Olympics.	0.95		
I would talk positively about my Olympics volunteer experience to others.	0.87		
Host City Revisit Intention			
		0.93	0.86
I will visit PyeongChang.	0.92		
I will visit tourist attractions in PyeongChang.	0.94		

3.3. Data Analysis

We performed a Confirmatory Factor Analysis (CFA) to validate the theorized measurement model using Mplus 8. The measurement model was assessed using comparative fit index (CFI), Tucker Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) as model fit indices [110]. To evaluate the reliability of the measurement model, we used composite reliability (CR) coefficients for congeneric measurement models over the Cronbach's coefficient alpha [111] for tau-equivalent ones because the measurement model of the present study is essentially a congeneric model [112]. The convergent validity was evaluated by examining average variance extracted (AVE) values and factor loadings [110]. Additionally, we assessed discriminant validity by comparing the AVE values of each construct to the squared correlations between a construct and any other constructs [113].

Meanwhile, we conducted a latent moderated structural equations (LMS) modeling to test the hypotheses. Since the conventional model fit criteria are not applicable for structural models based on LMS, we adopted the two-step approach to model fit assessment, as suggested by Klein and Moosbrugger [114]. Specifically, in the first step, a structural model (hereafter referred to as Model 0) without latent interaction terms is estimated and evaluated using the conventional model fit indices (e.g., CFI, TLI, RMSEA, and SRMR). Once the model fit indices ensure an acceptable fit of Model 0, the second model (hereafter referred to as Model 1) with an interaction term(s) is estimated in the second step. To evaluate the model fit of Model 1, the log-likelihood difference test is performed by using a formula ($D = -2[\log\text{-likelihood value of model 0} - \log\text{-likelihood value of model 1}]$) and a degree of freedom (df) calculated by subtracting the df of Model 0 from the df of Model 1. If the log-likelihood difference test is statistically significant, we can use and interpret path coefficients of Model 1. The path coefficients of Model 1 provide the information about the moderating role(s) of a certain variable(s) in a hypothesized structural model.

4. Results

4.1. Measurement Model Validation

A seven-factor measurement model, in which two factors were second-order factors (general needs satisfaction and VMP), was examined via CFA using Mplus8. The results of CFA indicated an acceptable fit between the specified measurement model and the data; $\chi^2(638) = 4737.27$, CFI = 0.946, TLI = 0.940, RMSEA = 0.051, and SRMR = 0.052. All factor loadings turned out to be statistically significant and above 60 (Table 1). The composite reliability values ranged from 0.75 (VMP) to 0.95 (word-of-mouth). The AVE values of the theorized factors ranged from 0.50 (VMP) to 0.86 (revisit intention). Additionally, each AVE value of each construct was greater than the squared correlations between each construct and any other constructs in the measurement model. These results represented reliability as well as convergent and discriminant validity of the measurement model [80].

4.2. Hypothesis Testing

A latent moderated structural equations (LMS) modeling was conducted to test the hypotheses. Following the two-step approach to the assessment of the LMS models [114], we estimated a structural model (Model 0) without the two latent interaction terms: (1) volunteer involvement \times general needs satisfaction and (2) volunteer involvement \times VMP. The results indicated an acceptable model fit between the specified model and the data; χ^2 (647) = 5079.04, CFI = 0.941, TLI = 0.936, RMSEA = 0.053, and SRMR = 0.061. Therefore, we proceeded to the second step, in which Model 1 with the two latent interaction terms was estimated. Following this, we conducted a log-likelihood difference test using the log-likelihood values and df values obtained from Model 0 and Model 1. The result showed that Model 1, with the latent interaction terms, was statistically better than Model 0; $114.608 = -2[126382.795 - 126325.491]$ with $df = 2$. Accordingly, we interpreted the path coefficients from Model 1 to test the hypotheses.

Specifically, the results revealed that the path coefficients from general needs satisfaction (standardized $\gamma = 0.518, p < 0.001$) and VMP (standardized $\gamma = 0.415, p < 0.001$) to overall volunteer satisfaction were statistically significant. Hence, Hypotheses 1 and 2 were supported. The path coefficient from volunteer involvement to overall volunteer satisfaction, however, was not statistically significant (standardized $\gamma = 0.001, p = 0.935$). Therefore, H3 was not tenable. In terms of the moderating roles of volunteer involvement (Hypotheses 4 and 5), the results indicated that the path coefficient from the latent interaction term between volunteer involvement and general needs satisfaction to overall volunteer satisfaction was marginally significant ($\gamma = 0.071, p = 0.074$). Additionally, the path coefficient from the latent interaction term between volunteer involvement and VMP to overall volunteer satisfaction was statistically significant ($\gamma = -0.379, p < 0.001$). Accordingly, Hypotheses 4 and 5 were supported. Lastly, the path coefficients from overall volunteer satisfaction to future volunteering (standardized $\gamma = 0.699, p < 0.001$), WOM (standardized $\gamma = 0.798, p < 0.001$), and host city revisit (standardized $\gamma = 0.552, p < 0.001$) intentions were statistically significant. Taken together, H6, H7, and H8 were supported. All path coefficients are summarized in Figure 2.

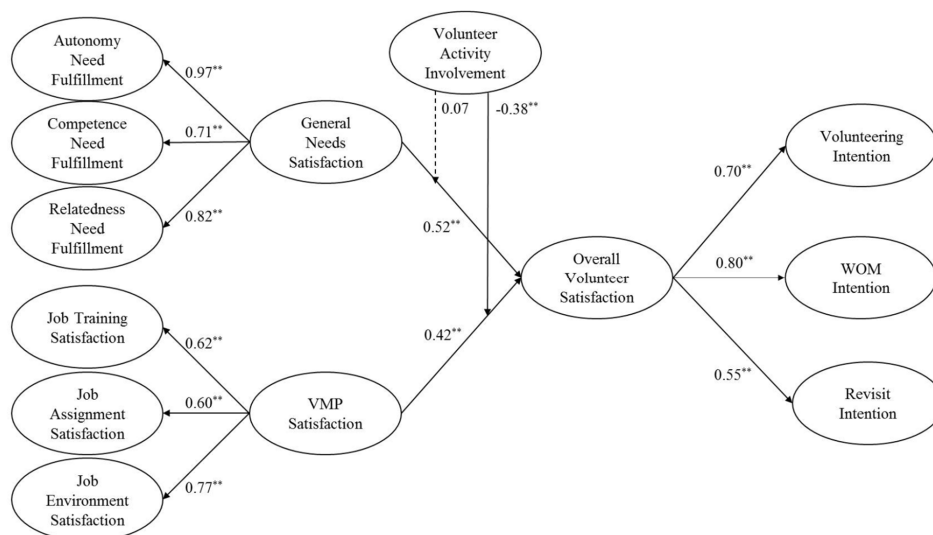


Figure 2. Summary results of hypothesis testing. The italicized figures represent unstandardized path coefficients. The dotted line indicates the marginal significance of the hypothesis testing. ** $p < 0.001$.

5. Discussion

The findings of the present study demonstrate that volunteers’ general needs satisfaction achieved by fulfilling autonomy, competence, and relatedness needs during their volunteer work plays a pivotal role in overall volunteer satisfaction. These findings are consistent with self-determination theory

(SDT) [39], highlighting the importance of three basic needs in intrinsically motivated behaviors (e.g., volunteer activity). In particular, the findings imply that autonomy and relatedness needs fulfillment substantially reflect volunteers' general needs satisfaction in their volunteer activity and thus that satisfaction of these needs can significantly enhance overall volunteer satisfaction. Indeed, autonomy need fulfillment is viewed as the most significant dimension of self-determined behaviors in SDT [43], and relatedness need fulfillment is a major motivational dimension for sports event volunteers [55].

The second dimension—VMP—reflects sports event managers' strategic planning and practices designed to enhance volunteers' job performance and efficiency. Hence, this dimension is important for successful sports events from the perspective of event managers and sports organizations. The results of the present study demonstrated that such strategic planning and practices are also important for the overall volunteer satisfaction. In this regard, this dimension can be viewed as a mutual benefit for both volunteers and sports event managers. Of the subdimensions of VMP, job environment explains the greatest portion of the variance in the VMP. This implies that enhancing physical aspects of job environment, such as food, transportation, and accommodation, are imperative for the successful volunteer management and can significantly enhance volunteer satisfaction.

Meanwhile, the present study also provides insight into the role of volunteer involvement in overall volunteer satisfaction. In contrast to the prediction, volunteer involvement did not influence overall volunteer satisfaction in the context of mega sports events. This can be interpreted as suggesting that volunteer satisfaction is more strongly influenced by the variable aspects of volunteer activity per se and volunteer management than by the invariable characteristics of volunteers. This interpretation is in line with the conception of satisfaction that it is a cumulative product of distinct experiences regarding a target activity [82] rather than pre-estimation of the target behavior depending on an individual's characteristics. Although volunteers who are highly involved in volunteering tend to be intrinsically motivated to engage in sports event volunteering [79], such intrinsic motivation seems not necessarily to lead to volunteer activity satisfaction.

Volunteer involvement did not directly affect volunteer satisfaction, but it was found to modulate the effects of general needs satisfaction and VMP on overall volunteer satisfaction. The moderating role of volunteer involvement is interesting in that it moderates each effect in different directions. Specifically, the effect of VMP on overall volunteer satisfaction escalates as the level of volunteer involvement decreases, whereas the effect of general needs satisfaction on overall volunteer satisfaction escalates as the level of volunteer involvement increases. These findings can be interpreted as suggesting that volunteers evaluate their volunteering experience weighting different informational cues depending on the perceived importance of volunteering (i.e., volunteer involvement). In other words, VMP are more important for those who are less involved in volunteering, while intrinsic rewards (general needs satisfaction) from sports event volunteering are more important for those who are highly involved in volunteering to evaluate their volunteering experience. This interpretation corresponds to the principle of the elaboration likelihood model (ELM) [76], which posits different information processes depending on the level of involvement in a target object. Furthermore, the existing literature on the roles of different informational cues in experience evaluation supports this interpretation [26,78,80]. Taken together, we conclude that volunteer involvement may not directly influence overall volunteer satisfaction but that it is a boundary condition for the effects of two distinct judgmental cues (general needs satisfaction and VMP) on overall volunteer satisfaction.

In terms of the outcomes of sports event volunteers' satisfaction, the findings revealed that when sports event volunteers are satisfied with their past volunteer activity, they are more likely to participate in future sports event volunteering, to recommend sports event volunteering to others, and to visit the host city as tourists. These findings imply that sports event volunteers can function as a labor force for sporting events, ambassadors of sports event volunteering, and a resource for tourists to the host city. In particular, the results of the current study revealed that overall volunteer satisfaction more strongly affects future volunteering intention and WOM intention compared to the effect of overall volunteer satisfaction on revisit intention. This can be interpreted as suggesting that overall

volunteer satisfaction is a direct diagnostic cue for decision-making in terms of future participation in sports event volunteering and spreading positive comments on sports event volunteering to others.

5.1. Theoretical Implications

The present study makes several meaningful theoretical contributions to the literature on sports event management and volunteer behaviors. First, the current study provides a comprehensive model encompassing both volunteers' psychological needs fulfillment and VMP and their effects on overall volunteer satisfaction. As discussed, the existing literature focuses solely on either volunteers' psychological aspects or VMP as a determinant of overall volunteer satisfaction. By incorporating the two distinct determinants of overall volunteer satisfaction into the comprehensive model, the current study provides a new perspective on how volunteers' responses to the volunteer activity per se (psychological needs fulfillment) and VMP enhance overall volunteer satisfaction.

Second, the current study extends the literature by pinpointing the role of volunteer involvement in sports event volunteers' experiences. Previous studies on sports event volunteers mainly tested either the direct or indirect effects of several factors on volunteer satisfaction. As a result, little is known regarding when (or to whom) such effects are amplified or diminished depending on a third variable (i.e., a moderator). Understanding the conditional (i.e., moderating) effects is theoretically and practically important because it helps us glean new insight into effective work conditions for highly involved or less involved volunteers. Therefore, the findings of the present study extend the literature on volunteer satisfaction by uncovering the moderating role of volunteer involvement in overall volunteer satisfaction.

Third, the present study also contributes to the existing literature on sports event volunteers by empirically demonstrating the diverse outcomes of overall volunteer satisfaction. Specifically, in addition to testing the common belief regarding the positive relationship between volunteer satisfaction and future volunteer intention, this study empirically demonstrates that volunteer satisfaction can also lead volunteers to recommend sports event volunteering to others and to visit the host city in the future. These findings enhance our understanding of event volunteer behaviors and provide new perspectives on the diverse roles of volunteers in the sustainability of mega sports events.

5.2. Managerial Implications

The findings of the current study offer several managerial implications. First, sports event managers should not only enhance the quality of job training and physical job environment but also assign volunteers to the appropriate job positions by fully understanding volunteers' personal characteristics in order to amplify overall volunteer satisfaction. These can be accomplished, for example, by hiring high-quality job trainers; enhancing the quality of food, accommodation, and uniform; and consulting volunteers in order to identify their optimal job positions. In particular, among these factors, sports event managers need to invest more resources into physical environments because satisfaction with this practice most strongly reflects the evaluation of VMP. Second, volunteer management should design a positive volunteering environment that fully satisfies volunteers' psychological needs. In particular, they should guarantee as much volition in volunteer jobs as possible to sports event volunteers to meet their autonomy needs and provide friendly job settings in which volunteers actively interact with each other to meet their relatedness needs. Third, volunteer management should consider volunteers' past volunteering experience when assigning them to the appropriate job environments because it usually represents their volunteer involvement; individuals who are highly involved in a target object tend to have more experience of the target object than those who are less involved in it [115,116]. Based on the information regarding volunteers' past experience, volunteer managers should assign highly involved sports event volunteers to job environments in which psychological needs fulfillment can be promoted. For example, it is more effective to assign those who are highly involved in volunteer activities to job positions in which they can have many opportunities to show their skills (competence need fulfillment) or can cooperate and interact with

other volunteers (relatedness need fulfillment). In contrast, volunteer managers should pay more attention to physical job environments, job assignment, and job training for those who are less involved in volunteer activities to maximize their overall satisfaction.

6. Limitations and Future Research Directions

Despite the theoretical and managerial implications of the present study, several limitations should be discussed to suggest future research opportunities. First, the findings of the current study should be cautiously interpreted and applied to other sports event contexts due to the single research context (the Winter Olympics, PyeongChang, South Korea) and the limitations of cross-sectional design. In particular, the research design allowed us to measure behavioral intentions instead of actual behaviors. A recent study has pointed to the limitations of measuring behavioral intentions; they do not necessarily lead to actual behaviors [117]. Therefore, future studies need to test the proposed model in diverse sports event contexts to enhance the generalizability of the current study and use a longitudinal design to investigate volunteers' actual behaviors.

Second, the moderating role of volunteer involvement on the effect of general needs satisfaction on overall volunteer satisfaction should also be cautiously interpreted because of the marginal significance of the moderating effect. There is a possibility that the moderating effect may not hold in a low sample size. In this case, the effect of general needs satisfaction on overall volunteer satisfaction seems important for both highly involved volunteers and less-involved ones. Hence, future studies should further investigate the moderating role of involvement on the effect of general needs satisfaction on overall volunteer satisfaction.

Third, the psychometric soundness of the measurement model should be enhanced since some of the factor loadings are somewhat low. In particular, we conceptualized VMP as an index of job training, assignment, and environment based on the existing literature and suggestions from the representatives of Korean Sport & Olympic Committee (KOC). Although the authors carefully developed measurement items based on this conceptualization and provided evidence of the reliability and validity of the measurement model, there is still room for improving measurement errors that may be caused by modifications during the translation into the Korean language. Therefore, in future research, the measurement model should be refined to enhance the psychometric property or reconceptualized to better reflect VMP.

7. Conclusions

The current study sheds light on the determinants and outcomes of sports event volunteers' satisfaction and the moderating role of volunteer activity involvement on the effects of the identified determinants on volunteer satisfaction. It also provides meaningful insights into the distinct dimensions of general needs satisfaction and VMP, which are both key determinants of overall volunteer satisfaction. In particular, it can be concluded that VMP is more important for those who are less involved in volunteering whereas general needs satisfaction is more important for those who are highly involved in it. Meanwhile, it is noteworthy that overall volunteer satisfaction leads to diverse positive outcomes, including future volunteering intention, WOM intention, and intention to revisit the host city. Accordingly, we conclude that volunteer satisfaction is a key factor in the sustainability of mega sports events by enabling sports event managers to secure a large enough labor force via a direct (re-participation) and indirect route (WOM).

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