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Enhancing consumer participation in the context of sport events: The power of three basic psychological needs

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ABSTRACT

Consumer active participation (CP) is crucial for creating valuable experiences in tourism and event contexts. However, previous studies have focused exclusively on the physical and psychological aspects of CP, neglecting other dimensions. Moreover, a comprehensive understanding of CP has been limited due to the lack of empirical development in the context of events, particularly in terms of its drivers and consequences. Filling these gaps, this study first adopts a holistic approach to CP, encompassing physical, cognitive, emotional, and social dimensions. Second, drawing from self-determination theory, the study investigates the effect of perceived psychological benefits—autonomy, competence, and relatedness, as drivers of CP in event contexts. Lastly, it explores whether CP leads to higher behavioral intention, including revisiting and recommending the event. The conceptual model was tested empirically with a sample of 320 attendees at two major ski-flying events in 2022, hosted in Norway and Slovenia. Data were analyzed using structural equation modeling, revealing that autonomy and relatedness significantly influence CP, while competence does not. Furthermore, CP significantly impacts behavioral intentions. The study highlights that perceived psychological benefits may not consistently drive CP across various settings, acknowledging the need to consider individual and contextual factors in event studies.

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Introduction

The increasing demand for experiential events has heightened competition among organizers, making this industry a competitive landscape (Gilovich & Gallo, 2020). This has put event organizers under pressure to offer unique and memorable experiences for their consumers (Getz, 2004). Meanwhile, attendees' behavior is changing from passive recipients or buyers to active participants in event contexts (Pine & Gilmore, 1998).

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They have more willingness to engage with the event, its offerings, the atmosphere, and other people to create personalized experiences (Lee et al., 2016). This shift enhances the importance of consumer participation (CP) in event and tourism research (e.g., Mohanty & Dash, 2023; Rachão et al., 2021). Pine and Gilmore (1998) define CP as a degree to which consumers seek to partake or contribute to the experience delivery.

Previous research has mainly explored the physical and psychological dimensions of CP and their outcomes (e.g., Prebensen & Xie, 2017; C. X. Zhang et al., 2019). However, active participation in events can take various forms beyond just physical involvement; it can be emotional, social, and mental as well. The event type can influence the level and form of participation. For example, ski-flying competitions may involve less physical but more emotional and social engagement, as consumers enjoy the event's atmosphere, socialize, and cheer on the competitors. While music festivals may prioritize physical activities like dancing and navigating through the crowd. This variability in forms of participation could explain why some studies have found that CP doesn't always positively impact service outcomes (e.g., Blut et al., 2020; Haumann et al., 2015); especially when we compare the service and product with the event context. Events serve as social platforms offering various services, and depending on the way consumers engage within an event setting, their experience and their level of participation can differ significantly (Lee et al., 2016).

In addition, past research has looked at the drives of CP from various angles. From social perspectives, such as interactions between consumers and other actors (e.g., employees, other consumers) (e.g., Rachão et al., 2021); from psychological perspectives, such as consumer's thoughts and feelings (e.g., Zadeh et al., 2019); or consider the impact of the physical environment and available resources (e.g., Rachão et al., 2021). Despite the great variety in research focus, Holt (1995) claimed that consumers do not participate in an event only to have entertainment or achieve material benefits. They may have other motivational reasons, such as perceiving control (i.e., autonomy need); socializing and interacting with others (i.e., relatedness need); and learning new knowledge and skills (i.e., competence need). This idea is supported by Lee et al. (2016), arguing that events are more than just entertainment; they are spaces where people can meet their personal needs. Based on such arguments, this study draws upon the self-determination theory (SDT) (Ryan & Deci, 2017) to investigate whether higher perceived psychological benefits (autonomy, competence, and relatedness) encourage more CP across various events and settings. According to SDT, fulfilling these needs leads to self-driven behavior that is intrinsically satisfying or personally valuable. Conversely, if these needs are thwarted, it can lead to controlled motivation, a feeling of being pressured to behave in certain ways. This is important because,

according to Ryan and Deci (2017), while such needs are universal, the social environment can either support or thwart them, eventually influencing the level of CP.

Moreover, it is crucial to understand the consequences of CP and its potential to foster positive outcomes like behavioral intention within event contexts. Behavioral intentions are rooted in consumer satisfaction and loyalty (Coetzee et al., 2019; Selmi et al., 2021), which is essential for long-term business profits and success (White, 2010).

Addressing these gaps, this study makes several contributions. First, it expands the understanding of CP by considering four distinct dimensions (physical, emotional, mental, and social), building further on the prior work (Moghaddam et al., 2024) to get a holistic view of CP in sports events. Second, it delves into the psychological drivers of CP—autonomy, competence, and relatedness—and assesses their relevance across different cultures and events that are highly relevant in today's diverse society. Lastly, the study aims to clarify the link between CP and behavioral intentions, providing actionable insights for practitioners on how to enhance consumer engagement to encourage them to return to the event and recommend it to others for strategic advantage.

Theoretical background and research hypotheses

Consumer participation and its dimensions

The concepts of “CP” and “co-creation” have a similar theoretical understanding since both focus on active participation in the creation and usage processes (Rachão et al., 2021). Our study differentiates CP from co-creation due to their distinct implications and scopes. First, co-creation is a broader concept that encompasses not just CP but also the collaboration between service providers and their network, including suppliers and other stakeholders, to collectively enhance the consumer experience (Hakanen & Jaakkola, 2012). In contrast, CP refers to participatory behaviors that emphasize the direct involvement of consumers in the value-creation process (Pralhad & Ramaswamy, 2004). This highlights the centrality of consumers in the co-creation process, emphasizing that consumer participation is a part of the co-creation process (Vargo & Lusch, 2016). In the context of events, co-creation refers to the entire lifecycle of an event—before, during, and after—providing opportunities for CP at each stage. However, it is during the event that the most impactful experiences often occur through direct interactions between consumers and the event's offerings, organizers, or other actors (e.g., other consumers and volunteers), which makes the role of CP salient in this stage. Second, CP encompasses both active and passive participation, for example, ranging from high emotional engagement (being enthusiastic at a sport event) to

lower emotional engagement (being largely detached from the activities surrounding the event). The CP term reflects the varying degrees of consumer participatory behaviors in the event co-creation process.

According to Pine and Gilmore (1998), CP exists on a continuum, ranging from low (i.e., passive responses), moderate, to high participation (i.e., active responses). Passive participants mainly act as spectators, but they still engage with the visual and aural experience of the environment, and as such, they are still considered active participants, just to a lower extent. For example, a passive participant at a football game might simply observe the game without cheering or showing much visible enthusiasm, or interacting with others. Active participants, on the other hand, seek to partake in the experience by interacting, learning, and applying knowledge. They might cheer for their favorite athletes or interact with other fans.

Pine and Gilmore (1998) noted that more engaged consumers tend to have more satisfying and memorable experiences. In line with this, our study views CP as a positive form of participation rather than something disruptive or destructive. Building on previous research by Moghaddam et al. (2024), we include four dimensions/forms of CP: physical; cognitive (or mental); emotional; and social, to get a holistic view of the phenomenon. Physical participation refers to body movement and physical effort. Mental or cognitive participation refers to the mental efforts of consumers' actions and includes information seeking and information sharing (Yi & Gong, 2013). Emotional participation refers to the level of positive emotional states, such as enthusiasm, interest, and enjoyment (Skinner et al., 2009). Social participation refers to interpersonal relations between consumers and other people (e.g., volunteers, employees, other consumers) during the experience occurs.

Three basic psychological needs and SDT

Self-determination theory (SDT) (Ryan & Deci, 2000) is a theory of human incentives and desires that explain individuals' mental growth and psychological needs as foundations for self-motivation (González-Cutre et al., 2016). Central to SDT is the concept of motivation on a continuum: at one end is autonomous motivation, characterized by high self-determination and intrinsic motivation, where behaviors are voluntary and driven by personal interest and enjoyment. At the opposite end is controlled motivation, influenced by extrinsic factors like rewards, social expectations, or obligations that motivate people to take part for reasons unrelated to the activity itself (Vansteenkiste et al., 2006). While controlled motivation can still lead to engagement, it generally tends to result in less sustainable and satisfying engagement (Ryan & Deci, 2017). According to Webb et al. (2013), autonomous motivation is a better predictor of consumer behavior

in comparison with other predictors, such as “intention,” “past behavior,” and “subjective norms.”

To enhance autonomous motivation and self-determination, SDT identifies three basic psychological needs—autonomy, competence, and relatedness—that need to be fulfilled for an individual to become intrinsically motivated and exhibit high autonomous motivation (Vansteenkiste et al., 2020). However, previous event studies have mostly applied these psychological needs limited to volunteerism. They explored how these needs can motivate and satisfy individuals who contribute as volunteers in events (Allen & Shaw, 2009; Jiang et al., 2017). Although volunteer involvement is crucial for both small-scale and large-scale events’ operations (Lachance et al., 2021), further research is needed to explore how these psychological needs impact CP beyond the volunteers’ experience.

Perceived psychological benefits and consumer participation

The act of CP in events is a dynamic interaction between the consumers and the event environment. Based on events’ characteristics, this interaction offers opportunities to perceive psychological benefits like autonomy, competence, and relatedness, which can motivate attendees to be active participants rather than passive spectators.

Perceived autonomy

Autonomy refers to acting with a sense of volition and freedom. Today, consumers aim to have more autonomy, which is an essential factor in the experience creation (Zwass, 2010). Succeeding in an activity while feeling autonomous leads to both happiness and vitality (Vansteenkiste et al., 2020). In the context of events, organizers can enhance attendees’ perceived autonomy by offering a variety of choices, such as different viewing points, activities, or exclusive experiences like VIP access and behind-the-scenes tours. This sense of choice and control can result in a greater perceived level of autonomy (Ryan & Deci, 2017). Such a feeling fosters self-determination and autonomous motivation over the experience, which in turn stimulates consumers’ intrinsic motivation and makes the experience inherently enjoyable. Increased intrinsic motivation, in turn, can deepen attendees’ emotional connection to the event and the organization (Vivek et al., 2014). Thus, in an event where consumers can experience more perceived autonomy, it is likely that this will facilitate the establishment of consumer active participation. This is supported by literature indicating that higher perceived autonomy correlates with increased participation and reduced intentions to abandon activities (Bitrián et al., 2021; Hsieh & Chang, 2016). Therefore, we propose that:

H1: An increase in consumers' perceived autonomy will lead to an increase in consumer participation.

Perceived competence

The need for competence based on SDT, refers to the feeling of effectiveness in interacting with the environment through developing skills, understanding, or mastery. Experiences that develop a sense of competence, such as obtaining new skills, facing challenges, or dominating a task, are central to fulfilling this need (Ryan & Deci, 2000). Experiencing competence boosts consumers' self-confidence and their willingness to participate and interact with others (Ryan & Deci, 2017). Thus, when consumers engage in an event that promotes thoughts and actions associated with successfully accomplishing a particular task, can generate a perception of being competent for that task (Hsieh & Chang, 2016). In the context of sports events, competence can be fostered by offering workshops or training sessions for attendees that allow them to learn about the sport, its techniques, or the physics involved. These learning opportunities not only make the event more interactive and engaging but also allow spectators to feel more competent and connected with the event. Research shows that activities fostering confidence generate a sense of interest and enjoyment (An & Han, 2020), and consumers are more likely to be more active participants in an event that gives them pleasant feelings, such as delights and enjoyment. Thus, we propose that:

H2: An increase in consumers' perceived competence will lead to an increase in consumer participation

Perceived relatedness

The need for relatedness refers to a person's desire to feel a sense of belonging and connection with others. This interconnection denotes both the giving and receiving of care, resulting in a sense of connectedness. In the context of an event, perceived relatedness can be fostered through communal experiences, shared interests, and social interaction, which allows them to have a collective experience with other participants. In the context of sport events, attendees might have shared love for a particular team or athlete. This mutual interest, as documented by Kim et al. (2019), becomes a foundation for the formation of social bonds and the development of interpersonal networks. This is premised on the fact that consumers see a higher level of similarity among themselves, which can result in enhanced deeper connections (Kim et al., 2019). In events where attendees can engage in meaningful

exchanges—such as sharing personal stories or emotions—this fosters a sense of social support and belonging. This environment not only facilitates communication and knowledge sharing but also strengthens social ties and emotional attachments within the group, which can activate their engagement (Vivek et al., 2014) and result in greater active participation. Therefore, we propose that:

H3: An increase in consumers' perceived relatedness will lead to an increase in consumer participation.

Consumer participation and behavioral intentions

In this study, behavioral intention refers to the likelihood of both revisiting and recommending the event, as supported by prior research (e.g., Coetzee et al., 2019; Selmi et al., 2021). The reason is that these intentions are considered outcomes of a satisfying consumer experience (Coetzee et al., 2019; Nghiê-m-Phú et al., 2021). Revisit intention is one's readiness or willingness to make a repeat visit to the same destination (Coetzee et al., 2019). Likewise, the intention to recommend is one's propensity to suggest the destination to others (Prayag et al., 2017). When consumers spend more of their resources (e.g., time and effort) on an experience, they tend to find the experience more valuable, pleasant, and satisfying (An & Han, 2020; Prebensen & Xie, 2017). Consequently, satisfied consumers are more likely to revisit and recommend the event (Prayag et al., 2017). Previous studies also found that consumers with more active participation in the festival are more likely to develop behavioral intentions toward the festival (Zhang et al., 2019, Figure 1). Therefore, we propose that:

H4: An increase in consumer participation will lead to an increase in consumers' behavioral intention.

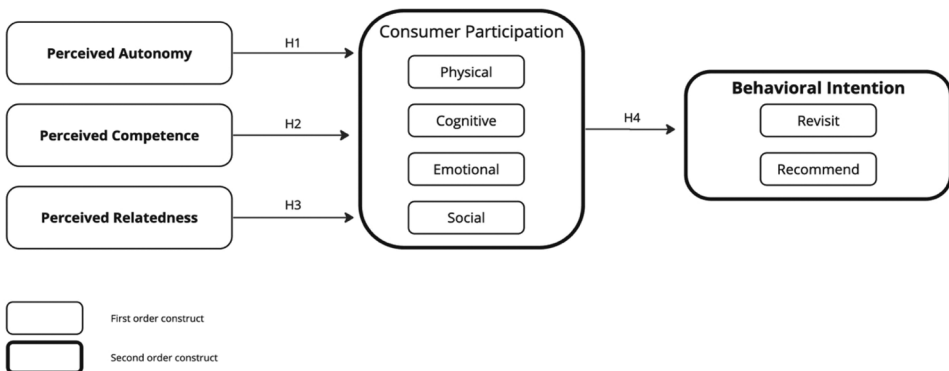


Figure 1. Proposed model for CP's drivers

Methodology

Context and study population

Our study focuses on two major ski-flying events in 2022: the FIS Ski Flying World Championships in Vikersund, Norway, and the FIS World Cup Ski Flying in Planica, Slovenia. These venues were chosen to capture the influence of diverse cultural beliefs, symbols, and behaviors on CP. Vikersund, a seasoned host of five world championships and 11 World Cup events, is a major attraction in this area, and ski flying events are a major happening for the local population as well as international audiences through the media. The venue offers more than just the ski flying hill; it includes shops, dining areas, and spectator stages. In 2013, it drew approximately 27,000 spectators (Kristiansen et al., 2015). Planica, on the other hand, is a tourist hotspot known for its ski-jumping hill, Bloudkova Velikanka, which attracts many tourists yearly with various attributes such as scenery, places, culture, and location. The event attracted many locals and internationals as it could easily be accessed from anywhere in Slovenia and neighboring countries. Attendance ranged from 20,000 on the first day to 59,000 on the last has made the area ideal for different forms of participation. Collecting data on similar events but in different countries allows for comparing CP behavior across different cultural contexts.

Data collection and procedure

The questionnaire was distributed among attendees at two ski-flying events in Vikersund, Norway (10th–13th March 2022) and Planica, Slovenia (24th–27th March 2022). In total, we collected 320 usable responses who answered at least 50% of all survey questions. Those who answered fewer than 50% of questions were eliminated (according to the AAPOR¹ (2016) rule for incomplete cases).

Measurement

We measured physical participation with three items focused on body movement and physical efforts (Moghaddam et al., 2024). Cognitive participation used four items related to information-seeking and information-sharing behaviors from S. C. Chen and Raab (2017) and Yi and Gong (2013). Emotional and social participation were each assessed with three items, adapted from Skinner et al. (2009) and Yi and Gong (2013), respectively. Higher scores indicated greater active participation. The validity and reliability of these scales were confirmed in the prior study (Moghaddam et al., 2024).

Three basic psychological need measurement scale was adapted from B. Chen et al. (2015). Behavioral intentions were assessed with two items for recommending (Prayag et al., 2017), and one item for revisiting (Um et al., 2006). This study incorporated several control variables, including gender, age, residency, and attending frequency and status (whether they participated with a company or alone). All the constructs used a 7-point scale, from 1 (“strongly disagree”) to 7 (“strongly agree”). Intention to revisit also applied a single 7-point scale, from 1 (“very unlikely”) to 7 (“very likely”). (The complete question corresponding to each item in the questionnaire is provided in Table 1).

Table 1. Descriptive statistics of all items.

Variables	Mean	Std. Deviation	Skewness	Kurtosis
Physical1: I was physically active in this event	4.39	2.056	-0.254	-1.198
Physical2: I cooperated with others in this event	4.46	1.950	-0.337	-0.938
Physical3: I used a lot of energy at this event	4.74	1.829	-0.409	-0.809
Cognitive1: I have paid attention to how others behave during this event	4.95	1.656	-0.530	-0.308
Cognitive2: I asked other people about their opinions regarding this event	4.06	1.799	-0.171	-0.788
Cognitive3: I was involved in conversations and shared information with other people at the event	4.72	1.701	-0.370	-0.535
Cognitive4: I shared my opinion about this event with others	5.18	1.688	-0.841	0.137
Emotional1: For me, being at this event was fun	6.04	1.430	-1.741	2.687
Emotional2: I was enthusiastic about this event	6.02	1.340	-1.590	2.385
Emotional3: I enjoyed participating in this event	6.18	1.180	-1.722	3.170
Social1: I was friendly toward other people at this event	6.13	1.086	-1.193	0.901
Social2: I respected other people at this event	6.13	1.140	-1.320	1.411
Social3: I did not act rudely at this event	6.30	1.019	-1.720	3.641
Autonomy1: I felt a sense of choice and freedom to do things in this event	5.54	1.564	-1.023	0.488
Autonomy2: I felt free to be who I really am at this event	5.88	1.356	-1.285	1.263
Autonomy3: I felt I have been doing what really interests me in this event	5.76	1.407	-0.970	0.148
Competence1: I felt confident by participating in this event	5.29	1.554	-0.668	-0.137
Competence2: I felt capable by participating in this event	5.22	1.472	-0.290	-0.799
Competence3: I felt effective by participating in this event	5.25	1.463	-0.449	-0.504
Relatedness1: I did not feel lonely during this event	6.06	1.347	-1.694	2.784
Relatedness2: I felt close and connected with other people in this event	5.81	1.328	-0.936	0.120
Relatedness3: I experienced togetherness with others in this event	5.87	1.320	-1.030	0.411
Revisit- How likely would you return to this event?	5.82	1.594	-1.298	0.989
Recommend1: I will recommend this event to other people (e.g., your family, friends).	6.09	1.311	-1.723	2.980
Recommend2: I will say positive things about this event to other people.	6.29	1.069	-1.663	2.794

Analysis and Results

Descriptive Statistics of Respondents

The sample of 320 respondents shows that more females participated in the survey than males or others in both events. The majority of the sample were full-time employed and attended the events with family or friends. In Vikersund, 55% were tourists, but 89% completed the survey in Norwegian, suggesting fewer international attendees compared to Planica (See [Table A1](#) in the Appendix).

Exploratory factor analysis

We first conducted exploratory factor analysis (EFA) using SPSS version 28.0.0 to validate CP's dimensions and measurement scale (Hair et al., 2013). Applying principal component extraction with varimax rotation (Pallant, 2010), suggested the removal of one item from the cognitive participation dimension for low loading (0.410). The final eight factors accounted for 78% of the total variance and had a Kaiser's criterion of 0.897, confirming that the variability of each original item is well captured by this factorial solution (Pallant, 2010). All factors had a Cronbach's alpha above .70, indicating strong internal consistency (See [Table A2](#) in the Appendix).

Confirmatory factor analysis

We conducted a confirmatory factor analysis (CFA) using Mplus 8.5 to identify latent variables for CP, basic psychological needs, and behavioral intention. Maximum likelihood estimates were used, and fit indices like RMSEA (0.050), CFI (0.942), TLI (0.928), and SRMR (0.053) confirmed the model's good fit with the sample data (See [Table A3](#) in the Appendix).

Measurement validity and reliability

Several approaches have been established to estimate the relative amount of convergent validity and reliability among different variables. The Average Variance Extracted (AVE) for each factor surpassed the minimum threshold of 0.5, as did the composite reliability and factor loadings, confirming the internal consistency of our measurements (Bagozzi & Yi, 1988; Fornell & Larcker, 1981) (See [Table A4](#) in the Appendix).

We also assessed discriminant validity, which ensures that a construct is truly distinct from other constructs in terms of how much it correlates with them. To establish this, we first examined the bivariate correlations for all items within each construct, finding them to be significant ($p < 0.001$). We then compared the square root of each construct's AVE to its

correlations with other constructs. The results indicated that discriminant validity was established, as the square root of the AVE for each construct was greater than its correlations with other constructs, aligning with the commonly accepted criteria for confirming discriminant validity (Fornell & Larcker, 1981).

To address the issue of common method variance (CMV), we employed both procedural and statistical methods in line with Podsakoff et al. (2003). Procedurally, the survey questions were randomized to mitigate the likelihood of bias, although items within the same construct were grouped for easier response. Participation was voluntary and anonymous to further minimize bias. Furthermore, we followed the guidelines of Henseler et al. (2015), which suggest CMV is a concern if a single factor accounts for over 50% of the variance. Our EFA indicated the first factor, emotional participation, accounted for 38.4% of the variance, below the 50% threshold, indicating CMV is unlikely to significantly impact our study.

Hypotheses testing

Competing model testing

We employed Structural Equation Modeling (SEM) to assess our model. While SEM is robust, it does not confirm the model as the definitive explanation for our study. To address this, we evaluated alternative models using criteria from Morgan and Hunt (1994): 1) overall model fits; 2) the percentages of the supported hypotheses; and 3) the difference in Chi-Square using the Satorra-Bentler scaled.

Our proposed model outperformed rival models, with 75% of hypotheses supported, compared to 62.5% and 55% in alternatives. Chi-square difference tests showed no significant edge for rival models, confirming our model's adequacy (see Table 2). We applied the maximum likelihood robust estimator for its robustness against non-normal data distribution, especially in smaller sample sizes (J. Wang & Wang, 2019).

Our findings revealed that perceived autonomy and relatedness significantly influenced CP, supporting Hypotheses H1 and H3 ($\beta=0.516$, $p < .001$ and $\beta=0.419$, $p < .001$, respectively). Perceived competence did not significantly affect CP, rejecting H2. Additionally, CP significantly affected behavioral intention, supporting H4 ($\beta=0.654$, $p < .001$). Control variables showed no significant impact on CP (see Table 2).

Multigroup structural equation modeling analysis

We tested our model in two different locations, Vikersund in Norway, and Planica in Slovenia, to see how our result may vary. Prior research, like

Table 2. Competing models testing.

Hypotheses	Estimate path		
	Proposed model	Rival model 1	Rival Model 2
Autonomy→participation	0.516***	–	–
Competence→participation	0.056	–	–
Relatedness→participation	0.419***	–	–
participation→behavioral intention	0.654***	–	–
Autonomy→physical	–	–0.120	–
Autonomy→cognitive	–	–0.146	–
Autonomy→emotional	–	0.650***	–
Autonomy→social	–	0.452**	–
Competence→physical	–	0.367***	–
Competence→cognitive	–	0.273*	–
Competence→emotional	–	–0.044	–
Competence→social	–	–0.227*	–
Relatedness→physical	–	0.370**	–
Relatedness→cognitive	–	0.510***	–
Relatedness→emotional	–	0.231*	–
Relatedness→social	–	0.358*	–
physical→behavioral intention	–	0.091	–
cognitive→behavioral intention	–	0.126	–
emotional→behavioral intention	–	0.432***	–
social→behavioral intention	–	0.108	–
physical→behavioral intention	–	–	0.027
Psychological→behavioral intention	–	–	1.260***
Autonomy→physical	–	–	–0.085
Autonomy→psychological	–	–	0.296***
Competence→physical	–	–	0.474***
Competence→psychological	–	–	–0.006
Relatedness→physical	–	–	0.542**
Relatedness→psychological	–	–	0.269***
Control variables			
Attending frequency→participation	–0.016		
Age→participation	–0.047		
Gender→participation	–0.026		
Residency→participation	0.02		
Attending Status→participation	–0.047		
Model Fits			
Chi-square (df)	476.882 (241)	454.358 (233)	585.484 (238)
(Chi-square /df)	1.98	1.95	2.46
RMSEA	0.055	0.054	0.068
CFI	0.923	0.928	0.921
TLI	0.912	0.915	0.909
SRMR	0.067	0.066	0.068

$N=452$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Krishen et al. (2021), suggests that basic psychological needs may differ by cultural contexts. For instance, Norwegians may prioritize personal freedom due to their individualistic culture, while Slovenians may emphasize relationships in their more community-oriented society.

In our study, we found that perceived autonomy significantly impacted CP, but only in Vikersund ($\beta=0.551$, $p < .01$). Perceived competence had no notable effect on CP in either setting. Perceived relatedness positively influenced CP in both Vikersund ($\beta=0.459$, $p < .01$) and Planica ($\beta=0.514$, $p < .001$), with a stronger effect size in Planica. Additionally, CP positively influenced behavioral intention in both Vikersund ($\beta=0.507$, $p < .001$) and Planica ($\beta=0.808$, $p < .001$) (see Table 3).

Table 3. Comparative results among two countries/events.

Hypotheses Event (place)	Estimate path	
	Ski-flying (Vikersund)	Ski-flying (Planica)
Autonomy→participation	0.551**	0.237
Competence→participation	-0.008	0.242
Relatedness→participation	0.459**	0.514***
participation→behavioral intention	0.507***	0.808***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Discussion

This study investigated the influence of three basic psychological needs on CP in the context of ski-flying events and its subsequent impact on behavioral intentions. Our empirical findings indicate that perceived autonomy and relatedness positively affect CP, supporting the first and third hypotheses, respectively. However, perceived competence did not significantly impact CP; thus, the second hypothesis was rejected. This unexpected result might stem from the nature of ski-flying events, in which the focus is more on athletes and competition rather than on skill development for attendees, making the perception of competence less relevant in such a context. This is in line with the study by Kaplanidou et al. (2013), who argued that sports events are not a competence need-supportive setting. Furthermore, this study confirms that higher CP leads to stronger behavioral intentions, supporting the fourth hypothesis. This finding supports the study of Prebensen and Xie (2017), who posited that active involvement leads to greater satisfaction and valuable experiences, which are the indicators of behavioral intentions.

To determine if the results of the proposed hypotheses vary between the two ski-flying events, multigroup analyses were conducted. Our analysis revealed two significant variations in the SEM results. Firstly, perceived autonomy had a substantial impact on CP in Vikersund, Norway, but not in Planica, which might be attributed to cultural differences. Norway's individualistic culture places a high value on autonomy and independence (Hofstede, 2011). In such a culture, autonomy is seen as a preserving need, and people greatly value personal choice and control in decision-making (Hofstede, 2011). This finding aligns with Krishen et al. (2021), who found that autonomy and independent decision-making are prioritized in individualistic countries. Secondly, perceived relatedness significantly affects CP in both events, but its magnitude was higher in Planica. This result first of all suggests that perceived relatedness is more influential than perceived autonomy and competence in enhancing CP in these events. This finding is reasonable because, as Schwab et al. (2022) noted, events provide opportunities for building a sense of community and belonging among attendees, where they can connect with others who share similar values and interests. However, the variation in effect size might be due

to the differences in the size of the events and audience types. Planica, unlike Vikersund, attracted a larger international audience and was set in a vast area, with its ski-flying hill located 6 km away from the city center. This location served as both an official and unofficial venue for social interaction, transforming the event into more than just a sports competition; it became a large-scale festival that celebrated national identity and attracted a diverse crowd (Podovšovnik & Lesjak, 2016). This difference in size and the international profile of the Planica event likely created a unique social atmosphere, which might have amplified the role of relatedness in influencing CP. Such findings support Richards (2020), who emphasized the significant role of event size and location in shaping consumer experiences. This variation in the effects of three psychological needs on CP in two ski-flying events confirms the cognitive evaluation theory (Deci & Porac, 2015) that explains social context can either support or thwart basic psychological needs. Last but not least, our findings also revealed a consistent positive effect of CP on behavioral intentions across both events. This aligns with previous research, which has identified CP as a key driver of positive outcomes in the event and tourism literature (Filo et al., 2018; Ribeiro et al., 2023).

Theoretical Implications

This study extends the CP literature within the context of sport events, a less-explored area compared to traditional service and product settings (e.g., Chan et al., 2022; Wang et al., 2020). While the concept of co-creation includes stakeholder collaboration at all stages of events, CP is the actual and in-role behavior of consumers within the co-creation process, especially during an event where the most memorable experiences occur. By distinguishing CP from co-creation, our study not only clarifies conceptual boundaries but also underscores the critical role of CP in enhancing consumer experiences in the one-site co-creation process. This distinction can be transferred to other literature settings where experience is exchanged between providers and consumers rather than products or services such as leisure and tourism-related activities. In addition, we incorporated a comprehensive approach that examines CP through its four dimensions—physical, cognitive, emotional, and social—to gain a more holistic understanding of CP in the event setting. This multifaceted approach contributes significantly to the theoretical framework of event studies, providing a deeper insight into attendee behavior and engagement in sport event settings.

The application of SDT in the sports event context advances our understanding of how basic psychological needs—competence, autonomy, and relatedness—act as drivers to enhance CP in the context of events. This study not only confirms the validity and relevance of SDT in the sports

event context but also highlights the various ways in which these psychological needs influence CP. While previous research, such as, Huang et al. (2020), has recognized the benefits of fulfilling these needs in event settings, our findings reveal that their influence is not uniform across different contexts. The comparative analysis between Norway and Slovenia vividly demonstrates how cultural and event-specific characteristics can significantly shape the effectiveness of these psychological drivers on CP. This type of research is essential for identifying similarities and differences in consumer behavior across different social and cultural contexts, which helps to broaden our understanding of the factors that influence consumer behavior in events. Another notable contribution of this study is the emphasis on the universal importance of perceived relatedness in fostering CP across both events, underscoring its crucial role regardless of cultural and event-specific differences. Finally, the consistently positive impact of CP on behavioral intentions in both event settings verifies the fundamental role of CP in creating positive outcomes in the event literature.

Managerial implications

In recent years, consumers have increasingly valued experiential purchases, such as attending leisure events or traveling (Gilovich & Gallo, 2020). This shift has led to an increase in the number of events, posing a challenge for organizers to distinguish themselves from competitors and create valuable experiences for their consumers. Studies have highlighted the importance of attendees' active participation in shaping such experiences (Prebensen & Xie, 2017). Our study offers actionable insights for sporting event management, by identifying autonomy and relatedness as key drivers of CP. To apply these insights, managers should integrate practices that support these needs into their planning. Particularly, the consistent significance of the need for relatedness in both event settings suggests that for ski-flying and similar winter sports events, creating a sense of community is essential. This can be achieved through team-building activities and open communication (Huang et al., 2020) such as designing spaces like ski lodges or chalets with an open fire and regional food that provides a special winter atmosphere that is cozy and friendly (Priporas et al., 2015). Such environments can encourage interactions and shared experiences, which is crucial for building a community spirit.

However, practitioners should account for contextual differences to optimize CP effectively. For example, in countries like Norway, where independence and personal choice are highly valued, offering a variety of choices and interactive elements can elevate attendees' sense of autonomy and, consequently, their CP. In winter sports events, team-based activities do not necessarily have to be directly related to core skiing activities. Providing

facilities that enable in-lodge game playing could help families keep their children entertained while indoors. Additionally, outdoor activities can be family-friendly snowboarding and snowmobiling (Priporas et al., 2015).

This study underscores the crucial role of CP for event managers, highlighting its link to positive outcomes such as attendees' intention to revisit and recommend events. The study suggests that focusing solely on physical participation is insufficient; a more inclusive approach is needed (Azara et al., 2023). Event portfolios should integrate various participatory behaviors, including physical, cognitive, emotional, and social aspects, to improve the event's design and execution, thereby optimizing CP. Physical participation can be achieved by designing event spaces that encourage active movement, exploration, and interaction with the event and consumers (Smilansky, 2017). For winter sporting events, providing different skiing areas, as regards the size and diversity of slopes or other snow-independent winter activities such as ice skating (Bausch & Unsel, 2018). Cognitive participation can be encouraged through mentally engaging sessions and workshops on skiing, ice skating, and other winter activities that can stimulate information seeking and information sharing, which are consumers' cognitive needs (Hsu et al., 2015). For emotional participation, interactive activities such as discussions can be instrumental. These allow attendees to fully express themselves, engaging with the event on a more personal and emotional level that puts them in a deeper processing and leads to meaningful experience (Boswijk et al., 2007). Social participation can be fostered by creating varied dining and socializing zones to offer an environment where attendees can have community building and dialogue, thus strengthening interpersonal relationships (Luonila et al., 2019). For winter sporting events, it can be high-capacity ropeways and *Après ski*, and open-air discotheques, which can be attractive even for non-skiers (Bausch & Unsel, 2018). By implementing a holistic approach to CP and some of these practices, managers can create an environment that enables consumers to actively shape their own experiences.

Limitations and future research

This study has some limitations that open avenues for future research. First, we tested this study only in two ski-flying competitions, where there might be limited competence opportunities for the consumers. This could explain the non-significant effect size of competence on CP. Future research should consider events like arts and culture, where there are more avenues for fulfilling the need for competence.

Second, data from only two European countries limits our understanding of how culture, event specifics, or a combination of both influences CP. Future research should explore the role of attendees' cultural background

on satisfaction with basic psychological needs, and its subsequent impact on CP, perhaps by comparing Asian and Western countries with large cultural differences.

Lastly, the study does not address how the impact of basic psychological needs on CP may change over time. Because these needs are intrinsic, their effect on CP may diminish over time (Ryan & Deci, 2017). Future research should apply longitudinal data to determine any long-term changes or improvements of these three drivers on CP in the event context. Our study was limited in this regard due to the varying locations of world championship events.

Notes

1. American Association for Public Opinion Research.

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Appendix 1

Table A1. Demographic information of the respondents.

Sample (%) (N=320)	Vikersund (Ski-flying)	Planica (Ski-flying)
N	196	124
Gender (%)		
Male	44%	43%
Female	53%	51%
Others	3%	6%
Age (mean: 37)		
≤25	40%	18%
26–35	14%	33%
36–45	17%	18%
46–55	16%	9%
56+	13%	22%
Occupation		
Student	32%	21%
Full-time employee	51%	68%
Part-time employee	2%	2%
Unemployed	3%	3%
Retired	8%	3%
Others	4%	4%
Type of participant		
Tourist	55%	56%
Resident	45%	44%
Familiarity with the event		
First time	50%	28%
1–3 times	36%	36%
3+	14%	36%
Participation status		
Participating with company	85%	86%
Participating alone	15%	14%
Survey language		
English	11%	–
Norwegian	89%	–

Table A2. Exploratory factor analysis: sample ($N=320$).

Factors and items	Factor loadings	Variance explained (%)	Cronbach's alpha
Physical participation		5.16	0.809
Physical1	0.850		
Physical2	0.807		
Physical3	0.745		
Cognitive participation		4.02	0.751
Cognitive2	0.868		
Cognitive3	0.769		
Cognitive4	0.568		
Emotional participation		38.4	0.873
Emotional3	0.800		
Emotional2	0.778		
Emotional1	0.737		
Social participation		7.5	0.866
Social3	0.874		
Social2	0.830		
Social1	0.806		
Autonomy		3.04	0.849
Autonomy1	0.798		
Autonomy2	0.672		
Autonomy3	0.511		
Competence		8.9	0.860
Competence2	0.849		
Competence1	0.777		
Competence3	0.772		
Relatedness		4.8	0.819
Relatedness1	0.820		
Relatedness2	0.748		
Relatedness3	0.655		
Behavioral intention		5.9	0.840
Recommend1	0.869		
Revisit	0.839		
Recommend2	0.697		

Table A3. Confirmatory factor analysis: sample ($n=320$).

Factors and items	Standardized loading	CR	AVE
Physical participation		0.810	0.587
Physical1	0.785		
Physical3	0.777		
Physical2	0.735		
Cognitive participation		0.772	0.535
Cognitive3	0.856		
Cognitive4	0.720		
Cognitive2	0.596		
Emotional participation		0.880	0.711
Emotional2	0.871		
Emotional3	0.870		
Emotional1	0.785		
Social participation		0.868	0.688
Social3	0.852		
Social2	0.838		
Social1	0.797		
Autonomy		0.854	0.661
Autonomy2	0.858		
Autonomy3	0.818		
Autonomy1	0.760		
Competence		0.863	0.678
Competence2	0.850		
Competence3	0.811		
Competence1	0.809		
Relatedness		0.823	0.609
Relatedness2	0.840		
Relatedness3	0.811		
Relatedness1	0.681		
Behavioral intention		0.863	0.679
Recommend1	0.909		
Recommend2	0.798		
Revisit	0.757		

Table A4. Discriminant validity.

	1	2	3	4	5	6	7	8
1.Emotional	0.843^a							
2.Social	.441**	0.829^a						
3.Physical	.317**	.317**	0.766^a					
4.Cognitive	.378**	.338**	.437**	0.732^a				
5.Behavioral Intention	.509**	.340**	.279**	.301**	0.824^a			
6.Autonomy	.677**	.477**	.289**	.310**	.474**	0.813^a		
7.Competence	.456**	.259**	.431**	.402**	.390**	.578**	0.824^a	
8.Relatedness	.533**	.431**	.353**	.398**	.494**	.592**	.521**	0.780^a

**Correlation is significant at the 0.01 level (2-tailed).

^aSquare root of AVE