

Fan Engagement Behavior: Validation of a Theory-Based Scale

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In this research, we conducted two studies to validate a multidimensional scale of fan engagement behavior. In Study 1, we generated survey items through a systematic review of the relevant literature, collected data from fans of professional baseball ($n = 319$) and soccer ($n = 301$), and provided evidence for the construct and concurrent validity of the scale composed of six dimensions. In Study 2, we reassessed construct validity in professional baseball ($n = 582$) and found that fan engagement behavior was represented by the proposed six dimensions with a final list of 21 items. Further, our predictive analysis throughout a season showed that fan engagement behavior fully mediated the relationship between predictor (team identification and awareness of fan engagement initiatives) and outcome variables (media viewing frequency, attendance frequency, and flourishing). The developed scale advances our understanding of fans' voluntary actions that are culturally embedded in spectator sport.

Keywords: customer engagement, customer engagement behavior, spectator sport, scale development

Over the past two decades, scholars have emphasized the importance of customers' engagement in various nontransactional behaviors such as customer learning, knowledge sharing, and value cocreation (Brodie et al., 2013; Dessart et al., 2015; Hollebeek et al., 2019; van Doorn et al., 2010). Conceptually, customer engagement has been discussed as a customer's voluntary act of contributing to the success of a company (Dessart et al., 2015; Jaakkola & Alexander, 2014) or a customer's attitudinal state that arises by virtue of cocreative experiences with a company and encompasses cognitive absorption, emotional dedication, and behavioral activation (Brodie et al., 2011; Hollebeek et al., 2014). The difference between these two approaches is whether customer engagement is viewed as a behavioral activity (customer engagement behavior) or a combination of cognitive, affective, and behavioral responses to a specific consumption object (customer engagement; McDonald et al., 2022).

In sport management, scholars have applied customer engagement to the participatory and spectator sport contexts (Behnam et al., 2021; Huettermann et al., 2022; Yoshida et al., 2014). To date, customer engagement in the sport context has been found to positively influence media consumption, merchandise consumption, and customer loyalty (Fathy et al., 2021; Huettermann & Kunkel, 2022; Yoshida et al., 2014). Thus, scholars and practitioners believe that engaging sport consumers in nontransactional behaviors contributes to the long-term growth and profitability of a sport organization.

While previous work has conceptualized customer engagement via cognitive evaluation, affective bonds, behavioral responses, or through an amalgamation of these (see Brodie et al., 2011), we focus on the behavioral aspects of engagement. Despite the advancements that have been made regarding customer engagement behavior in spectator sport (Huettermann et al., 2022; McDonald & Karg, 2014; Yoshida et al., 2014), existing conceptualizations and measures of fan engagement behavior (McDonald & Karg, 2014; Yoshida et al., 2014; Yun et al., 2021) are limited and incomplete because they do not reflect the latest development of customer engagement theory (Hollebeek et al., 2019; Pansari & Kumar, 2017). A key aspect of this theoretical development is the harmonization of customer engagement and service-dominant logic (SDL; Brodie et al., 2011; Hollebeek et al., 2019; Vargo & Lusch, 2004). SDL is a theoretical perspective to understand the importance of intangible operant resources (e.g., knowledge, skills, and abilities), value cocreation, and relationship marketing in the service economy (Vargo & Lusch, 2004). An integrative model of customer engagement and SDL (a) views consumers who apply specialized knowledge and skills (operant resources) and physical objects (operand resources) to create value as resource integrators and (b) considers customer engagement as a consumer's (resource integrator's) investment of operant and operand resources into consumer–company interactions in service exchanges (Hollebeek et al., 2019). Integrating fan engagement behavior with key SDL concepts is important because customer engagement theory suggests that value cocreation, operant resource development, and resource integration represent the defining elements of customer engagement (Hollebeek et al., 2019).

However, this integrative view of customer engagement and SDL is not reflected in the literature on fan engagement behavior. Existing work has examined sport fans' nontransactional extra-role behaviors such as fan rituals, management cooperation, prosocial behavior, performance tolerance, and fan community participation (McDonald & Karg, 2014; Yoshida et al., 2014;


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Yun et al., 2021), notably overlooking SDL-informed dimensions of engagement behavior. An exception is Huettermann et al.’s (2022) qualitative exploration of fan engagement behavior from an SDL perspective that identified three novel components of fan engagement behavior: fan resource integration, fan learning, and fan knowledge sharing.

Given the limitations of previous research, the purpose of this study is to reconceptualize fan engagement behavior and validate a new measurement instrument. In doing so, we make three contributions to the literature. First, our reconceptualization extends previous research by integrating work on sport spectators’ nontransactional extra-role behaviors (e.g., Yoshida et al., 2014) with SDL-informed dimensions of fan engagement (e.g., Huettermann et al., 2022) as well as recent theoretical advancements at the intersection of SDL and the engagement behavior literature (Hollebeek et al., 2019; Vargo & Lusch, 2004), hence providing a more comprehensive and richer theoretical conceptualization. Second, we generate survey items to measure fan engagement behavior, analyze the factor structure of the initial scale, and provide evidence for construct and concurrent validity. Thus, our work goes beyond recent qualitative and conceptual studies on fan engagement behavior (Huettermann et al., 2022; McDonald et al., 2022). Third, we extend previous research by testing a theoretical model that explains the antecedents and consequences of fan engagement behavior. In the following sections, we first reconceptualize fan engagement behavior. Next, our theory-based empirical approach follows Hinkin’s (1998) deductive scale development process and includes two studies using multiple samples in the context of professional sport.

Reconceptualizing Fan Engagement Behavior

Conceptual Background

Fan engagement behavior is an extended form of customer engagement behavior in the sport context (Yoshida et al., 2014). Customer engagement behavior was first defined by van Doorn et al. (2010) as “a customer’s behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers” (p. 254). A review of the recent literature regarding SDL-informed customer engagement indicates that the conceptualization of customer engagement behavior rests on several foundational processes (Hollebeek et al., 2019). In early work on SDL, eight foundational premises were proposed as theoretical underpinnings of SDL (Vargo & Lusch, 2004). More recently, SDL has been extended to 11 foundational premises and five main axioms (Vargo & Lusch, 2016). Hollebeek et al. (2019) used SDL as the theoretical lens to develop the SDL-informed framework of customer engagement that is grounded in two of the five main axioms: (a) “value is cocreated by multiple actors, always including the beneficiary” and (b) “all social and economic actors are resource integrators” (Vargo & Lusch, 2016, p. 18).

Aligning these two axioms, Hollebeek et al. (2019) identified six defining elements of customer engagement: customer resource integration, customer learning, customer knowledge sharing, customer cocreation, customer interpersonal operant resource development, and customer individual operant resource development (see Figure 1). Customer resource integration, customer learning, and customer knowledge sharing are conceptualized as

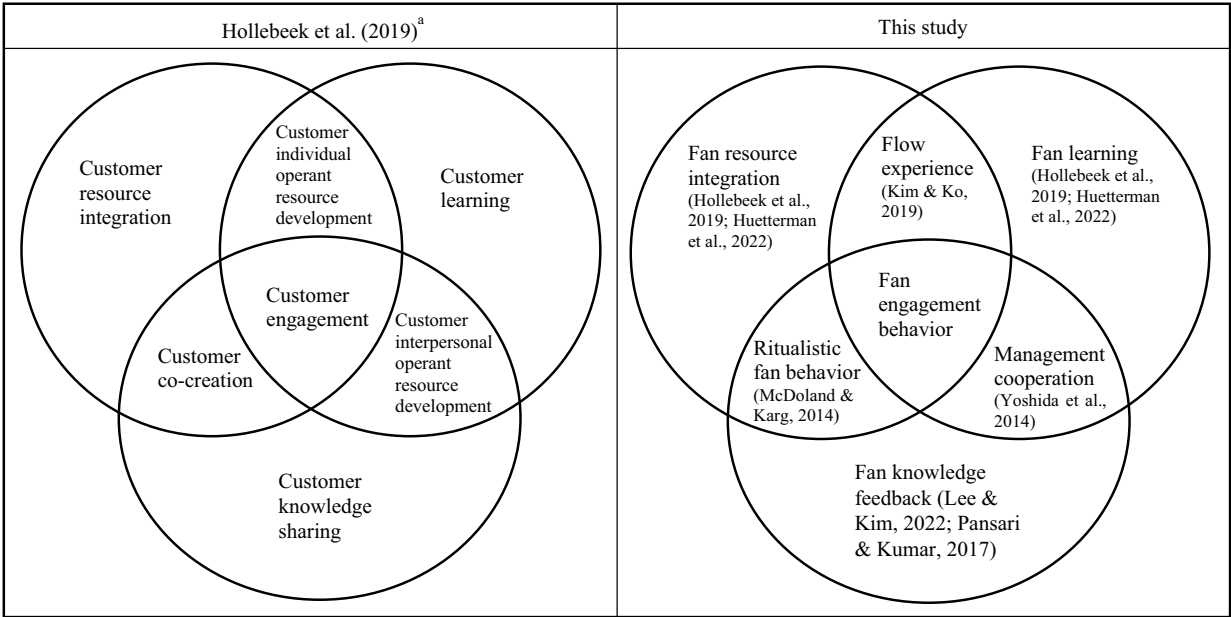


Figure 1 — Conceptual framework. ^aAccording to Hollebeek et al. (2019), customer resource integration is a set of activities in which customers deploy their operant (e.g., knowledge and skills) and operand resources (e.g., technological devices) to create valued experiences. Customer learning is a process in which customers develop mental rules and regulations for processing information related to consumption activities (Hollebeek et al., 2019). Customer knowledge sharing is the act of communicating customers’ knowledge to others in their social networks (Hollebeek et al., 2019). Customer cocreation refers to joint value creation by multiple actors in service systems that encompass configurations of people, information, and technology (Hollebeek et al., 2019). Customer interpersonal operant resource development is to develop customers’ operant resources (e.g., knowledge and skills) through social interactions with other actors (Hollebeek et al., 2019). Customer individual operant resource development is to develop customers’ operant resources (e.g., knowledge and skills) through their personal consumption experiences (Hollebeek et al., 2019).

foundational processes of customer engagement, whereas the other elements are viewed as the benefits that are derived from the three foundational processes (Hollebeek et al., 2019). Originally, the benefit dimensions of SDL-informed customer engagement (i.e., customer cocreation, customer interpersonal operant resource development, and customer individual operant resource development) are highly abstract and do not reflect the peculiarities of a specific context (e.g., spectator sport) because customer engagement “is contingent on focal context-specific characteristics” and the benefits of customer engagement “may thus vary across contextual contingencies” (Hollebeek et al., 2019, p. 173). Thus, to identify specific benefit dimensions in the spectator sport context, we focus on fans’ unique activities and incorporate them into our conceptualization. This conceptual approach is consistent with Gladden and Funk (2002) and Bauer et al. (2008) who suggested that the experiential benefits (e.g., entertainment, escape, and socializing/companionship) derived from spectator sport consumption are associated with fans’ specific activities (e.g., pre- and in-game activities occurring at the stadium). In the next section, we propose a new framework to reconceptualize fan engagement behavior in the sport context.

Conceptual Framework

Consistent with an established view, we define fan engagement behavior as a consumer’s voluntary contribution to the success and welfare of a sport team through value-adding behaviors, going beyond the mere consumption of sport products such as ticket purchase and television viewing (Dessart et al., 2015; Jaakkola & Alexander, 2014; Pansari & Kumar, 2017; van Doorn et al., 2010). To develop our conceptual model, we draw on the SDL-informed engagement framework (Hollebeek et al., 2019) and relevant concepts in previous research and propose six dimensions: fan resource integration, fan learning, fan knowledge feedback, ritualistic fan behavior, management cooperation, and flow experience (see Figure 1). As a conceptual starting point, we adopt customer resource integration and customer learning based on the SDL-informed framework (Hollebeek et al., 2019) and conceptualize them as fan resource integration and fan learning in spectator sport. In this study, fan resource integration is defined as a consumer’s voluntary act of integrating and applying operant (e.g., knowledge and skills) and operand (e.g., fan equipment and technological devices) resources to enhance sport consumption capabilities (Hollebeek et al., 2019; Huettermann et al., 2022). Fan learning refers to a consumer’s voluntary act of seeking and processing information, content, and ideas for the acquisition of knowledge or skills related to spectator sport consumption via both online and offline communication channels (Hollebeek et al., 2019; Huettermann et al., 2022).

To extend the SDL-informed framework in the sport context, we identify four unique dimensions: fan knowledge feedback, ritualistic fan behavior, management cooperation, and flow experience (see Figure 1). We include these dimensions because they are context-specific reflections of customer knowledge sharing, customer cocreation, customer interpersonal operant resource development, and customer individual operant resource development in the SDL-informed framework (Hollebeek et al., 2019). First, fan knowledge feedback is included because it is a type of knowledge-sharing behavior in customer engagement (Kumar & Pansari, 2016; Pansari & Kumar, 2017). In spectator sport, sport fans show their engagement with their favorite teams by providing suggestions for service improvement or by participating in the

development of new spectator sport products (Lee & Kim, 2022). In this study, fan knowledge feedback is defined as a consumer’s voluntary act of giving constructive feedback to a sport team and its employees to facilitate the development or improvement of its offerings (Kumar & Pansari, 2016; Pansari & Kumar, 2017).

Second, customer cocreation is part of the SDL-informed framework, but it could be conceptualized as ritualistic fan behavior from the consumer’s perspective because sport fans’ cocreation behavior has deep roots in fan rituals at spectator sport events (McDonald & Karg, 2014). It is posited that fan rituals represent cocreated group behavior in fan communities such as wearing team colors, singing fight songs, and participating in cheering activities (Gordon et al., 2021; McDonald & Karg, 2014; Yoshida et al., 2015). In the current study, we define ritualistic fan behavior as a consumer’s voluntary act of expressing formalized fan activities (e.g., praying, singing, and wearing team apparel) in an episodic sequence with seriousness, solidarity, and humor to cocreate symbolic fan experiences with their favorite teams and other fans (Rook, 1985; Wang & Tang, 2018).

Third, management cooperation is linked to customer interpersonal operant resource development. Management cooperation acts as the development and implementation of fans’ operant resources (e.g., knowledge and skills) through social interactions with event personnel and the stadium environment (Yoshida et al., 2014). For example, sport fans adhere to ethical fan conduct guidelines and assist event personnel to ensure the safety of attendees at sporting events (Yoshida et al., 2014). These considerations allow us to define management cooperation as a consumer’s voluntary act of following rules and guidelines to collaboratively participate in the value creation and service delivery processes at spectator sport events (Yoshida et al., 2014).

Finally, we include sport fans’ flow experiences as a proxy variable of customer individual operant resource development. Flow experience is the prototypical form of engagement (Coffey et al., 2016; Seligman, 2011) and refers to a subjective state in which people become highly immersed, completely absorbed, and fully engaged in an activity (Csikszentmihalyi et al., 2014). Flow experience is deemed appropriate as a reflection of sport fans’ individual operant resource development because, to achieve a state of flow in spectator sport, fans need to fully invest their attention and skilled resources (e.g., knowledge and expertise) in watching games (Kim & Ko, 2019). In this study, flow experience is defined as a consumer’s optimal experience of intensively watching an on-field performance that is intrinsically enjoyable and interesting (Csikszentmihalyi et al., 2014; Kim & Ko, 2019). Taken together, there is sufficient justification for the proposed multidimensional conceptualization which includes six dimensions. In Study 1, we developed the initial measures based on our multidimensional conceptualization.

Study 1

Item Generation

Over the past decade, many scales have been constructed to measure fan engagement behavior and its related concepts (e.g., Huettermann & Kunkel, 2022; Lee & Kim, 2022; McDonald & Karg, 2014; Wang & Tang, 2018; Yoshida et al., 2014; Yun et al., 2021). However, “if a survey instrument is an ill-defined mix of different items that are not supported by a well-established factor structure and are summarized by an average of

these items, then there is no basis for knowing what is being measured” (Marsh et al., 2020, p. 296), and thus, a reconsideration and redevelopment of fan engagement measures is warranted. To develop a concise scale that has reliable and valid empirical support for the theoretically based dimensions of fan engagement behavior, we build on the theoretical foundations of a well-established customer engagement concept: SDL-informed customer engagement (Huettermann et al., 2022; Hollebeek et al., 2019). Therefore, the objectives of Study 1 are to generate survey items for the theoretically derived dimensions and provide evidence of construct and concurrent validity for the initial scale.

To validate a theoretically derived scale for a construct, a thorough review of the relevant literature is crucial to identify survey items of various factors related to the target construct (Clark & Watson, 1995; Marsh et al., 2020). Thus, we performed a systematic literature review to generate an initial pool of survey items (Liberati et al., 2009; see Figure 2). First, we searched three databases (EBSCO, ScienceDirect, and ProQuest) using the following search formula: (sport OR sports) AND (spectator OR fan) AND (engage OR engagement). The first search resulted in 326 records. Second, we identified 618 records in the same databases using a combination of various search terms including the dimensions identified in our conceptualization: (sport OR sports) AND (spectator OR fan) AND (cocreation OR resource integration OR customer learning OR sharing OR customer participation OR fan participation OR fan experience OR cooperation OR feedback OR socializing OR advocating OR customization OR extra-role OR non-transactional OR helping OR prosocial OR citizenship). Third, we conducted a manual journal search through Google Scholar using the same bibliographic search strategy and found an additional 47 articles. This initial search yielded 902 records after removing duplicates.

Next, we performed title, abstract, and full-text reviews. Beginning with the title review, we excluded 403 records because their titles were not relevant to fan engagement behavior. During the abstract review, we further rejected 271 records that were conceptual, qualitative, nonacademic (e.g., book chapters and book reviews), or non-English papers. After the title and abstract reviews, we obtained the full texts of 228 articles for further consideration. Of the articles retrieved, 161 articles were excluded because they did not meet the following eligibility criteria: (a) quantitative studies in spectator sport, (b) studies related to fan engagement behavior with at least one of the six dimensions we propose, and (c) studies in which survey items are available. As a result, we identified 449 items from 67 articles. Further, we excluded 371 items because they were redundant, nonbehavioral, or mere consumption items (e.g., ticket purchases). At this stage, we selected 78 survey items from 37 articles as the initial item pool.

Content Analysis

Through our systematic review, we adapted 78 items used in previous studies. To assess content validity, six experts in sport marketing were invited to evaluate the relevance of each item to the construct definition using a 4-point scale ranging from *Not relevant* (1) to *Highly relevant* (4) (Polit & Beck, 2006). We then used the item-content validity index, which can be calculated by counting the number of experts who gave a rating of 3 or 4 and dividing that number by the total number of experts (Polit & Beck, 2006). When there are six experts, the minimum value of the item-content validity index is 0.78 (Polit & Beck, 2006). After computing the item-content validity index for all items, 23 items exceeded this cutoff point. In addition, revisions were made to four items in terms of the wording because some experts provided suggestions for

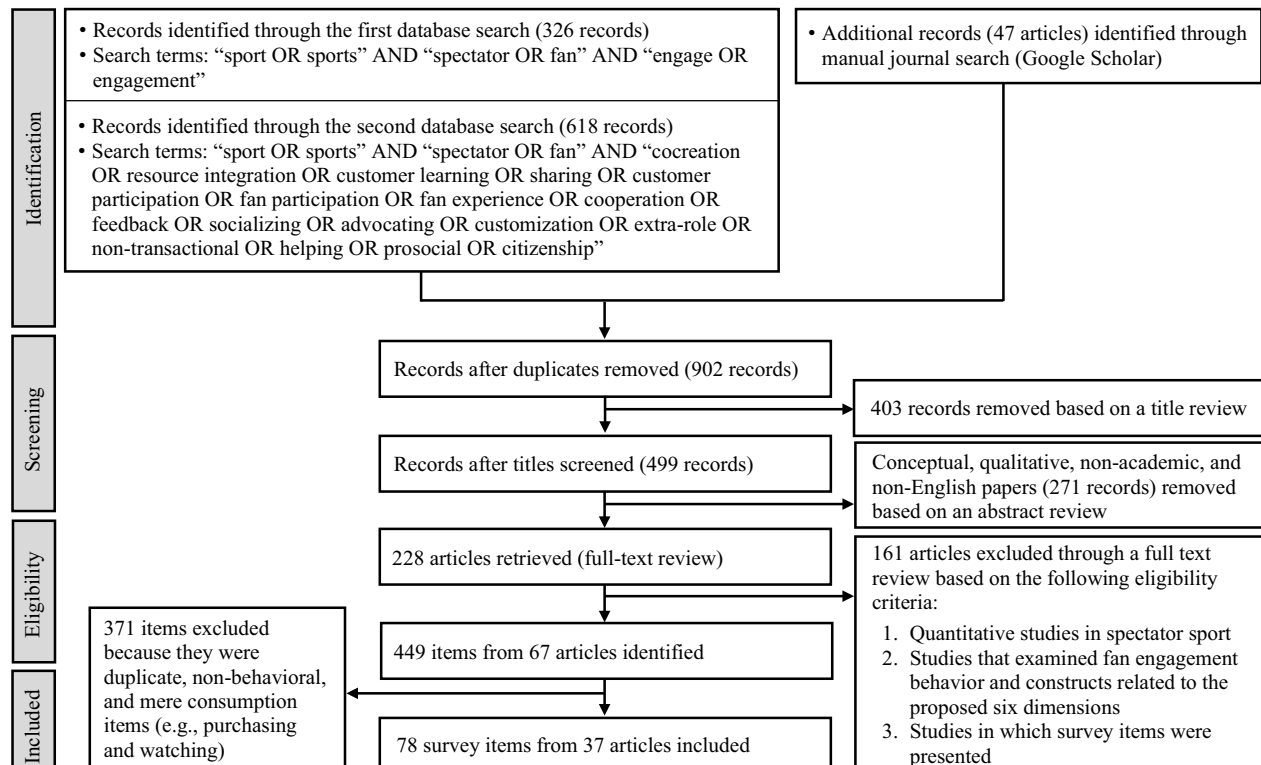


Figure 2 — Search strategy for systematic review in item generation.

changing words. At this stage, we eliminated 55 items, leaving 23 items.

Back Translation

We generated the survey items in English and then collected data in Japan. To assess the equivalence between the original English instrument and the translated Japanese instrument, we used a back-translation technique (Douglas & Craig, 2007). First, the English items were translated into Japanese by one of the authors who is bilingual in Japanese and English. Second, back translation from Japanese into English was conducted by a paid translator who is bilingual in Japanese and English. Third, one of the authors, who is a native English speaker, evaluated the meaning equivalence between the original and back-translated versions. The comparison of the two instruments indicated that there were no discrepancies between the two forms. For further analysis, the 23 items were transformed into a questionnaire using 7-point rating scales ranging from *strongly disagree* (1) to *strongly agree* (7).

Research Setting and Data Collection

Study 1 was conducted in two Japanese professional sport settings: professional baseball and professional soccer. Data were collected by Macromill, Inc., a major internet research agency in Japan. After the baseball season was over in November 2021, invitation emails were sent by the internet research agency to a panel of about 30,000 individuals who were local residents of the following two teams: the Hanshin Tigers (the second-ranked team in the six-team league) and the Yokohama DeNA BayStars (the sixth-ranked team in the same league). We purposively selected these teams because we attempted to validate our results including both the winning and losing teams.¹ To identify respondents with sufficient experiences as a sport fan, we utilized two screening questions in both settings: (a) following these teams and (b) attending games of these teams in the past 3 years (2019–2021). We used these screening questions until 5,000 respondents were determined to be eligible for this study. Although our retrospective questionnaires could not measure fan engagement behavior in real time, the precision of recall for the target information can be improved by asking the respondents about a specific sport context and recent consumption experiences (Kim & Choi, 2013). Thus, our two screening questions were deemed constructive to enhance recall accuracy because the subjects' responses to the survey items were based on the actual games they had attended in recent years.

Next, from November 26th to November 28th, the survey continued until approximately 330 fans of the two teams (165 fans of each team) completed the questionnaire. Collectively, we gathered 338 responses in the baseball setting. Among the questionnaires returned, 19 subjects were eliminated because many items were left blank, yielding a usable sample of 319 participants. The demographic characteristics of the respondents showed that 65.6% were male. The average age of the respondents was 45.12 years ($SD = 13.57$).

In the soccer setting, after the regular season ended in December 2021, the same research firm invited approximately 60,000 registered members who lived in the franchise cities of the following winning and losing clubs: the Kawasaki Frontale (the first-ranked club in the 20-team league) and the Gamba Osaka (the 13th-ranked team in the same league). We employed similar procedures used in the baseball setting and collected data from spectators following the two clubs from December 10th to

December 12th. The responses from the two clubs were combined, resulting in a total of 332 subjects in the soccer setting. Among the 332 forms returned, 31 were rejected due to the large number of missing values. Overall, data were collected from 301 respondents. Of the soccer sample, 64.8% of the subjects were male. The average age and SD of the respondents were 44.83 ± 14.70 years.

To ensure the representativeness of our samples, we compared our baseball and soccer sample characteristics with those of large survey projects that collected data from stadium attendees at professional soccer games ($n = 17,329$; League, 2020)² and residents of Japan ($n = 3,000$; Sasakawa Sports Foundation, 2016).³ The gender distributions of our baseball (male = 65.6%, female = 34.4%) and soccer (male = 64.8%, female = 35.2%) samples were parallel to stadium attendees at professional soccer games (male = 61.5%, female = 38.5%; League, 2020) and those watching at least one game at stadiums or arenas in the past 12 months (male = 56.9%, female = 43.1%; Sasakawa Sports Foundation, 2016). The average ages of our baseball ($M = 45.12$) and soccer ($M = 44.83$) samples were also similar to the ages of those attending professional soccer events ($M = 42.8$; League, 2020) and those attending games of various sports at least once a year ($M = 46.9$; Sasakawa Sports Foundation, 2016). Therefore, our samples were deemed representative of the population of Japanese sport spectators.

Results

We conducted a confirmatory factor analysis with Muthén and Muthén's Mplus (version 7.31) using two samples from the professional baseball and professional soccer settings. We analyzed the factor structure of the two samples independently because we wanted to test whether the proposed dimensions were consistent across the two samples from a cross-validation perspective. In this section, we report the results of construct and concurrent validity tests.

Construct Validity

Overall, the model fit is acceptable when evaluating all the fit indices in the baseball ($\chi^2/df = 2.27$, comparative-fit index = .96, Tucker–Lewis index = .95, root mean square error of approximation = .063, standardized root mean square residual = .041) and soccer ($\chi^2/df = 3.46$, comparative-fit index = .93, Tucker–Lewis index = .91, root mean square error of approximation = .090, standardized root mean square residual = .057) contexts (Hu & Bentler, 1999). Table 1 shows factor loadings (λ), composite reliability, and average variance extracted values. For both samples, the factor loading of one item to measure management cooperation was smaller than 0.70.⁴ Also, another item for ritualistic fan behavior in the baseball setting did not exceed the factor loading of 0.70. After eliminating these two items (Hair et al., 2006), the factor loadings ranged from 0.76 to 0.91 for the baseball sample and from 0.75 to 0.95 for the soccer sample. In both settings, the composite reliability values were greater than the cutoff point of 0.60 (Bagozzi & Yi, 1988). The average variance extracted values were also above the recommended value of 0.50 for the two samples (Fornell & Larcker, 1981). Thus, convergent validity was indicated. Discriminant validity was examined by comparing the square root of the average variance extracted value of each dimension with its correlations with the other dimensions (see Table 2). In the baseball setting, none of the correlations exceeded the square roots of the average variance extracted values. In the soccer setting, the square roots of the average variance extracted values were greater than any correlations in 14 cases out of a total of 15 correlations. In one case,

Table 1 The Confirmatory Factor Analysis Results in Study 1

Construct	Item	$\lambda_{\text{baseball}}^a$	$\lambda_{\text{soccer}}^b$
Fan learning ($CR_{\text{baseball}} = 0.86$; $AVE_{\text{baseball}} = 0.68$; $CR_{\text{soccer}} = 0.82$; $AVE_{\text{soccer}} = 0.60$)			
	1. I regularly read sports news about what might take place in the upcoming game.	0.83	0.76
	2. I regularly track the statistics of specific players.	0.84	0.81
	3. I read posts, forum threads, and comments of others about [team name] on social media.	0.80	0.75
Fan resource integration ($CR_{\text{baseball}} = 0.91$; $AVE_{\text{baseball}} = 0.71$; $CR_{\text{soccer}} = 0.89$; $AVE_{\text{soccer}} = 0.68$)			
	1. I use my knowledge to engage in conversations with other fans about [team name].	0.83	0.85
	2. I bring up things I have seen at [team name]'s games in conversations with other fans.	0.81	0.88
	3. I use my knowledge to analyze the performance of [team name].	0.89	0.81
	4. I spend a significant amount of time discussing issues related to [team name] with friends.	0.85	0.76
Ritualistic fan behavior ($CR_{\text{baseball}} = 0.89$; $AVE_{\text{baseball}} = 0.67$; $CR_{\text{soccer}} = 0.92$; $AVE_{\text{soccer}} = 0.73$)			
	1. I regularly wear or hold something lucky before watching the games of [team name].	0.86	0.87
	2. I wear team apparel on a regular basis.	0.79	0.88
	3. I regularly participate in communal activities with other fans of [team name].	0.81	0.86
	4. I decorate (or paint) any part of my body with team colors when attending the games of [team name].	0.81	0.83
	5. I sing or chant with other members of the crowd at [team name]'s games. ^c	—	—
Flow experience ($CR_{\text{baseball}} = 0.89$; $AVE_{\text{baseball}} = 0.74$; $CR_{\text{soccer}} = 0.91$; $AVE_{\text{soccer}} = 0.78$)			
	1. When watching [team name]'s games, I watch every play of every game.	0.84	0.89
	2. When I watch [team name]'s games, time goes by very quickly.	0.83	0.85
	3. I am absorbed intensely when watching the games of [team name].	0.91	0.91
Management cooperation ($CR_{\text{baseball}} = 0.84$; $AVE_{\text{baseball}} = 0.64$; $CR_{\text{soccer}} = 0.87$; $AVE_{\text{soccer}} = 0.70$)			
	1. I try to work cooperatively with [team name] when attending the games of [team name].	0.76	0.81
	2. I do things to make [team name]'s event management easier.	0.85	0.86
	3. While at [team name]'s game, the employees of the team get my full cooperation.	0.79	0.83
	4. I strictly obey the rules of how spectators should behave at the stadium. ^c	—	—
Fan knowledge feedback ($CR_{\text{baseball}} = 0.91$; $AVE_{\text{baseball}} = 0.77$; $CR_{\text{soccer}} = 0.95$; $AVE_{\text{soccer}} = 0.85$)			
	1. I often offer my ideas to [team name] for developing new products or services related to the team.	0.85	0.92
	2. If I have a useful idea on how to improve [team name]'s products or services, I let the team know about it.	0.89	0.95
	3. When I experience a problem at the games of [team name], I let the team know about it.	0.90	0.91

Note. CR = composite reliability; AVE = average variance extracted.

^a $\chi^2(df) = 352.05(155)$, $p < .01$; $\chi^2/df = 2.27$; comparative-fit index = .96; Tucker–Lewis index = .95; root mean square error of approximation = .063; standardized root mean square residual = .041. ^b $\chi^2(df) = 535.76(155)$, $p < .01$; $\chi^2/df = 3.46$; comparative-fit index = .93; Tucker–Lewis index = .91; root mean square error of approximation = .090; standardized root mean square residual = .057. ^cTwo items were eliminated because their factor loadings were less than 0.70 (Hair et al., 2006).

the correlation between fan learning and ritualistic fan behavior ($\phi = .82$) was greater than the square root of the average variance extracted value of fan learning (0.77). Nevertheless, the correlation coefficient between these constructs was lower than the suggested criterion of .85 (Kline, 2005).

Also, using Muthén and Muthén's Mplus (version 7.31), we employed the Wald Test of Parameter Constraints for the soccer sample and compared a model in which the correlation between fan learning and ritualistic fan behavior was equal to 1.00 with an unconstrained model in which the correlation was allowed to vary freely (Anderson & Gerbing, 1988). The result showed a significant difference between the two models (Wald $\chi^2[1] = 41.73$, $p < .01$), indicating that the unconstrained model ($\chi^2/df = 3.46$) was significantly better than the constrained model ($\chi^2/df = 3.80$). Altogether, the results provide evidence for discriminant validity.

Concurrent Validity

Concurrent validity is concerned with the extent to which an instrument is associated with other established instruments that

measure similar constructs when testing at the same time (Cronbach & Meehl, 1955). We assessed the concurrent validity of our scale by examining the relationships between the proposed six dimensions and team brand engagement that was measured by seven items adapted from Keller's (2003) active brand engagement scale. This scale has been used in previous sport management research (Gordon & James, 2017; Tsordia et al., 2018). Examples of the items include: "I regularly talk about [team brand name] to others" and "I often let others know I passionately support [team brand name]." The meaning equivalence between the English and Japanese versions of this scale was assessed and confirmed by the same back-translation procedures used for the proposed fan engagement behavior scale. The composite reliability and average variance extracted values for team brand engagement were 0.92 and 0.62 in the baseball setting and 0.94 and 0.70 in the soccer setting. In both settings, each dimension was found to be significantly related to team brand engagement at the .01 significance level (see Table 3). The strength of these relationships ranged between 0.55 and 0.77 for the baseball sample and between 0.61

Table 2 Correlations, the Average Variance Extracted Values, and Descriptive Statistics Among Professional Baseball ($n = 319$) and Professional Soccer ($n = 301$) Spectators in Study 1

Construct	ϕ matrix					
	1	2	3	4	5	6
1. Fan learning	.82/.77	.76	.82	.62	.65	.70
2. Fan resource integration	.80	.84/.82	.59	.48	.78	.41
3. Ritualistic fan behavior	.64	.64	.82/.85	.77	.55	.84
4. Flow experience	.70	.68	.57	.86/.88	.52	.75
5. Management cooperation	.77	.78	.69	.66	.80/.84	.41
6. Fan knowledge feedback	.58	.55	.80	.43	.59	.88/.92
$M_{\text{professional baseball}}$	4.42	4.01	4.10	3.46	4.27	3.15
$SD_{\text{professional baseball}}$	1.55	1.74	1.54	1.72	1.49	1.74
$M_{\text{professional soccer}}$	4.09	4.20	3.49	4.61	4.45	3.42
$SD_{\text{professional soccer}}$	1.57	1.51	1.74	1.44	1.52	1.71

Note. We obtained correlations from ϕ matrix using Muthén and Muthén's Mplus (version 7.31). The correlation coefficients for the baseball sample are presented in the lower triangle of the ϕ matrix, whereas the correlation coefficients for the soccer sample are depicted in the upper triangle of the ϕ matrix. The square root of the average variance extracted value for each latent construct in the baseball (left) and soccer (right) settings is shown in boldface on the diagonal. The mean scores and SDs for the six dimensions were calculated using IBM SPSS Statistics (version 28.0).

and 0.86 for the soccer sample. These findings support the concurrent validity of the six dimensions.

Discussion of Study 1

Study 1 serves as the initial effort to factor analyze the proposed multidimensional reconceptualization of fan engagement behavior. The results provided evidence of convergent and discriminant validity regarding our measurement instrument in both settings (see Tables 1 and 2). We also found evidence for concurrent validity by correlating the proposed six dimensions to an external measure of team brand engagement. The results suggest that our multidimensional scale adequately represents the target domain of fan engagement behavior as it has strong correlations with team brand engagement for both samples (see Table 3).

One limitation of Study 1 was that we examined the relationship between fan engagement behavior and a related construct (team brand engagement) based only on correlational data. Thus, in Study 2, we endeavor to overcome this limitation by (a) developing hypotheses linking fan engagement behavior to predictor and outcome variables and (b) testing nomological validity based on data from two different periods.

Study 2

In Study 2, we aim to (a) develop a theoretical model of the relationships between fan engagement behavior and its antecedents and consequences and (b) provide evidence for the construct and nomological validity of the proposed multidimensional scale.

Theoretical Model

Nomological validity refers to the accuracy of the relationships between a construct of interest and other concepts in a theoretical model (Hair et al., 2006). Our theoretical model is shown in Figure 3. In the study of attitude–attitude relationships, creating a temporal separation (time lag) between the measurement of the focal construct and its criterion variables is important for

controlling for common method bias (Podsakoff et al., 2000). Thus, we propose a predictive model at two different periods, identify the antecedents (team identification and awareness of fan engagement initiatives) of fan engagement behavior in Time 1 (t_1), and include fan engagement behavior, its consequences (media viewing frequency, attendance frequency, and flourishing), and control variables in Time 2 (t_2). Below, we generate research hypotheses in a nomological network of related concepts.

Team Identification

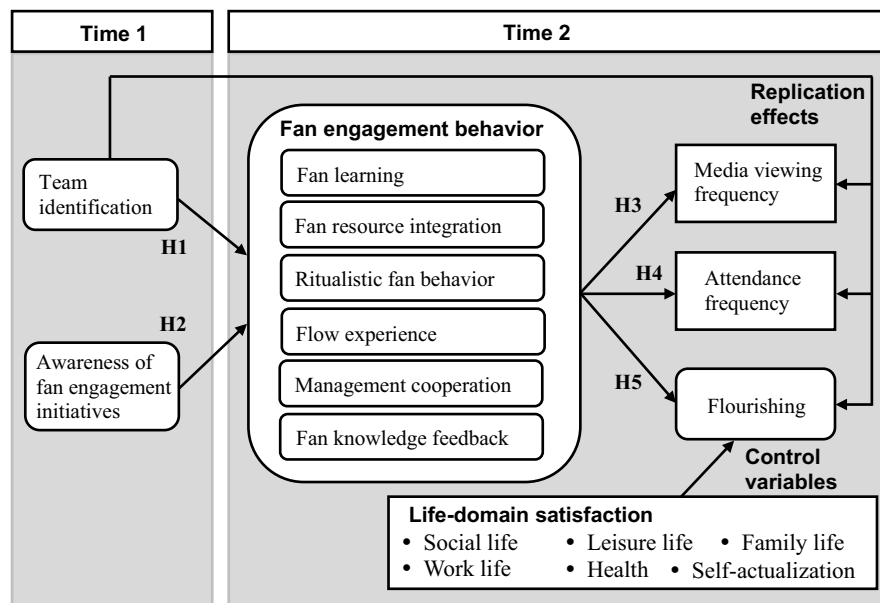
Team identification is an enduring sense of group membership and refers to the degree to which spectators regard themselves as psychologically intertwined with their favorite sport team and experience the team's successes and failures as their own (Gwinner & Swanson, 2003; Yoshida et al., 2023). Organizational identification theory (Ashforth & Mael, 1989) and the extended model of team identification (Sutton et al., 1997) explain that (a) consumers identify with prestigious and distinctive sport teams and (b) highly identified fans engage in supportive behaviors that can benefit their favorite teams. In the sport management literature, research has shown that team identification leads not only to the long-term consumption of spectator sport (e.g., watching, attending, reading, and purchasing; Heere et al., 2011; Sutton et al., 1997) but also to nontransactional fan engagement behaviors such as flow experience, performance tolerance, management cooperation, prosocial behavior, and fan citizenship behavior (Lee et al., 2017; Yoshida et al., 2014). The underlying rationale is that team identification helps people have meaning in their lives and invest themselves in unselfish behavior (Delia et al., 2022; Inoue et al., 2015). This is because individuals feel more purpose-driven in their communal consumption activities and engage in prosocial behavior when they find the overlap between their personal values and the characteristics of the sport team that they identify with (Bhattacharya & Sen, 2003). Simply put, we posit fans will engage in value-adding behaviors that are perceived as meaningful by finding similarities between the consumers and their favorite sport teams. Thus, the following hypothesis is developed based on the reasoning presented above:

Table 3 Assessing Concurrent Validity in Study 1: Correlations (*t* Values)

Proposed dimensions	Criterion variable: Team brand engagement (Keller, 2003)	
	Professional baseball (<i>n</i> = 319)	Professional soccer (<i>n</i> = 301)
Fan learning	.77** (24.85)	.81** (27.21)
Fan resource integration	.73** (22.86)	.77** (27.38)
Ritualistic fan behavior	.73** (21.75)	.86** (42.55)
Flow experience	.72** (22.30)	.61** (14.49)
Management cooperation	.71** (19.74)	.70** (20.19)
Fan knowledge feedback	.55** (12.43)	.70** (20.46)

Note. *t* values are given in parentheses. Correlations were taken from ϕ matrix of a confirmatory factor analysis composed of the proposed six dimensions and team brand engagement (Keller, 2003).

** $p < .01$.

**Figure 3** — Hypothesis development.

H1: Team identification positively affects fan engagement behavior.

Awareness of Fan Engagement Initiatives

Customer engagement initiatives are defined as “organizational initiatives that facilitate firm–customer interactions or interactions among customers, with the primary goal of fostering an emotional and psychological bond between customers and the firm” (Gill et al., 2017). Such initiatives include informative (e.g., customer reviews and online Q&A activities) and entertaining initiatives (e.g., entertainment opportunities and hedonic experiences) to guide consumers’ voluntary contribution to an organization’s marketing functions (Eigenraam et al., 2021; Harmeling et al., 2017).

In the spectator sport industry, fan–team interactions on social media sites (e.g., Twitter, which is now referred to as X, and Instagram) generated through team initiatives such as videos or quizzes posted are examples of fan engagement initiatives that develop a capability to guide sport fans’ voluntary contributions to marketing communications. As another example, professional

sport teams implement experiential marketing practices (Funk, 2017; Yoshida, 2017) consisting of pre- and in-game activities, social interaction opportunities in fan communities, and mobile applications related to the core product (e.g., game statistics and replay) and ancillary services (e.g., facility navigation and team merchandising products). In this study, we conceptualize these engagement initiatives as awareness of fan engagement initiatives from the consumer’s point of view and define it as a consumer’s awareness of organizational initiatives that facilitate fan–team and fan-to-fan interactions, with the primary goal of fostering an emotional and social bond between fans and their favorite teams. We use consumer awareness because sport fans easily recognize fan engagement initiatives not only through game-day experiences but also through sharing information on social media, interactive websites, and mobile applications in today’s hyperconnected world (Eigenraam et al., 2021; Harmeling et al., 2017). From a theoretical standpoint, awareness involves linking fan engagement initiatives to consumers’ memory (Keller, 2003) and acts as a cognitive operant resource to process the product information they have (Hollebeek et al., 2019). According to social exchange theory (Blau, 1964), when

individuals receive valuable resources from an activity, they in turn invest their resources in engaging with the activity. Therefore, consumer awareness as a cognitive resource derived from fan engagement initiatives will provide motivation for fans to engage in value-adding behaviors.

In spectator sport, awareness of fan engagement initiatives helps consumers personally use both task-based and entertaining information because these initiatives include valuable information for each consumer by answering their questions (Harrigan et al., 2020). This explanation suggests that if sport fans are aware of the information on both informative and entertaining initiatives, they are likely to engage in value-adding behaviors due to the personally valuable information accrued from these initiatives. Thus, we hypothesize the relationship between individuals' awareness of fan engagement initiatives and fan engagement behavior as follows:

H2: Awareness of fan engagement initiatives positively influences fan engagement behavior.

Sport Consumption Outcomes

Fan engagement behavior boosts transactional sport consumption outcomes such as sport media viewing and attendance frequency (Fathy et al., 2021; Yoshida et al., 2014). First, highly engaged sport fans are more likely to watch games on TV (or via the internet). Watching mediated sport is meaningful and engaging because it generates positive emotions after dealing with daily hassles (Yoshida et al., 2023). According to Gantz and colleagues' idea of sport fandom (Gantz & Lewis, 2014; Gantz & Wenner, 1995), most fans watch games at home, enjoy games on large screen TV, and focus on following the action while viewing. In recent years, "[m]any fans turn to newer media screens while watching sports" because "[n]ewer media allow fans to extend their fandom in different and meaningful ways" (Gantz & Lewis, 2014, p.26). Through media consumption, spectators vicariously engage in imaginary interactions with players, coaches, and referees (Holt, 1995), and newer media screens enhance the various experiences of watching sport (Gantz & Lewis, 2014). Consistent with this view, we anticipate that fans who are high in fan engagement behavior will be more strongly motivated to watch mediated games in today's digital media environment. Thus, we posit the following hypothesis.

H3: Fan engagement behavior positively influences media viewing frequency.

We also contend that fan engagement behavior positively influences stadium attendance frequency. Fan engagement behavior includes a variety of preparatory (previewing) activities, such as checking websites (fan learning), integrating an upcoming game in conversations with others (fan resource integration), and wearing team apparel (ritualistic fan behavior). These preparatory activities are goal-directed, observable specifically among fanatical and devoted fans, and motivate them to attend sporting events (Holt, 1995; Hunt et al., 1999). Furthermore, highly engaged fans expand their repertoire of engagement behavior (van Doorn et al., 2010). In spectator sport, a wide array of fan engagement behavior (e.g., fan resource integration, ritualistic fan behavior, and management cooperation) is related to fan experiences at stadiums. Engaging in these behaviors can provide fans with high levels of enjoyment (Holt, 1995), enable them to have favorable attitudes toward stadium consumption (Bristow & Sebastian, 2001), and stimulate their desire to

continue attending games (Yoshida et al., 2014). From this logic, we propose the following hypothesis:

H4: Fan engagement behavior positively influences attendance frequency.

Well-Being Outcome

We also posit that fan engagement behavior positively affects human flourishing, defined as positive functioning that arises from meaningful life, mental health, and quality social relationships (Diener et al., 2010). In this study, we view flourishing as a proxy variable for psychological well-being because it represents a comprehensive construct of overall well-being (Diener et al., 2010).

Theoretically, "aspects of cognition, affect, and behavior are associated with subjective well-being as a result of engaging in recreational activities" (Sirgy et al., 2017, p. 207). This assumption is based on the bottom-up theory of subjective well-being (Newman et al., 2014) that suggests overall well-being is entirely derived from individual life domains such as leisure, family, work, and health. Previous research has shown that leisure activities, including spectator sport consumption, serve as a core ingredient for overall well-being (Inoue et al., 2020; Newman et al., 2014). One rationale for this relationship is the fulfillment of psychological needs (e.g., autonomy, meaning, mastery, affiliation, and detachment-recovery) when engaging in leisure activities acts as a significant pathway to enhanced overall well-being (Newman et al., 2014). In empirical research, leisure engagement has been found to exert a positive influence on overall well-being (Kuykendall et al., 2015). Consistent with the bottom-up perspective, we consider the influence of fan engagement behavior on flourishing as a bottom-up effect. Thus, we hypothesize the following:

H5: Fan engagement behavior positively affects flourishing.

Control Variables and Replication Effects

In addition to the hypothesized effect of fan engagement behavior on flourishing, other variables may affect this well-being outcome. For example, life-domain satisfaction, defined as satisfaction with key life domains (e.g., social life, family, work, and health), has been found to enhance individuals' overall well-being (Sato et al., 2017; Yoshida et al., 2023), indicating that satisfaction with life domains will be associated with flourishing. Therefore, we control for satisfaction with other key life domains (i.e., social life, leisure life, family life, work life, health, and self-actualization). Also, consistent with previous research, we replicate the impact of team identification on media viewing frequency (Heere et al., 2011), attendance frequency (Yoshida et al., 2021), and flourishing (Wann et al., 2017).

Method

Research Setting and Data Collection

Study 2 was conducted during the 2022 season of Japanese professional baseball. Working with a Japanese major internet research company (Macromill, Inc.), we collected data from local residents within the franchise areas of five teams including both winning and losing teams. To increase the generalizability of our findings, we used different baseball teams than Study 1.

Data were gathered from panel surveys at two time periods. In June 2022, the survey company sent invitation emails to approximately 50,000 research panels who lived in the market areas (i.e., Hokkaido, Chiba, Saitama, Osaka, and Fukuoka) of the five teams. To reach our target sample, we used two screening questions: (a) following one of the five teams and (b) attending games of the favorite team in the past 12 months. These screening questions continued until 5,000 respondents met these criteria. From June 24 to June 26, the first survey was then carried out among the 5,000 individuals. As a result, a total of 1,124 respondents (approximately 220 fans of each team) participated in the first survey and answered questions regarding their demographic characteristics and the predictors of fan engagement behavior (team identification and awareness of fan engagement initiatives). In Study 2, we attempted to reduce potential problems with recall inaccuracy by limiting the period (12 months), whereas the period used in Study 1 was 3 years (2019–2021) because the COVID-19 pandemic did not allow people to attend games specifically in 2020.

After the 2022 season was over (5 months later), the survey company asked the same research panels to rate their fan engagement behavior, media viewing frequency, attendance frequency, flourishing, and life-domain satisfaction over 3 days. In the second stage of data collection, we asked the respondents about the following items to further enhance the accuracy of recall for fan engagement behavior: (a) following the same sport team chosen in the first data collection, (b) the number of games watched on television or the internet in the current season ($M = 43.40 \pm 42.36$), and (c) the number of games attended in the current season ($M = 6.64 \pm 12.94$).

This sampling procedure resulted in the collection of 635 subjects. Of these, 53 were rejected because many items were not completed, yielding a usable response rate of 51.8% ($n = 582$). Of the respondents, 68.6% were male. The average age along with the SD of the respondents was 47.02 ± 12.81 years. The sample consisted of those aged 18–19 (0.3%), 20–29 (9.6%), 30–39 (20.3%), 40–49 (26.1%), 50–59 (26.6%), and ≥ 60 years (17.0%). These sample characteristics are comparable to those in Study 1, indicating that the Study 2 sample also represents the overall population for Japanese spectator sport in terms of age and gender.

Measures

Team identification was operationalized using a six-item scale adapted from Mael and Ashforth's (1992) organizational identification scale. Five items measuring awareness of fan engagement initiatives were adapted from Harrigan et al.'s (2020) scale, which captures consumer–company communication initiatives and consumer-to-consumer conversation initiatives. The wording was modified to reflect fan engagement initiatives from the consumer's perspective. These two constructs were measured in the first survey (t_1).

The second survey (t_2) measured fan engagement behavior, its consequences, and the control variables. As Study 1 did not strongly support the discriminant validity between fan learning and ritualistic fan behavior, we added one item ("I read posts, forum threads, and comments of others about [team name] on the Internet") to the fan learning measure because this item assesses internet use which is applicable to all respondents. For the other dimensions of fan engagement behavior, the same items used in Study 1 were administered in Study 2.

To measure sport media viewing, we asked the respondents about the number of games watched on television or the internet for their favorite teams in the season (Yoshida et al., 2023). Following

previous sport consumer research, we operationalized attendance frequency by asking the subjects to report the number of games attended in the season (Yoshida et al., 2018). Furthermore, we included the Japanese version of Diener et al.'s (2010) eight-item flourishing scale (Sumi, 2014). As control variables, we measured satisfaction with six life domains (social life, leisure life, family life, work life, health, and self-actualization; Sato et al., 2017; Yoshida et al., 2023) using an 11-point response scale, ranging from *strongly dissatisfied* (0) to *strongly satisfied* (10). The items for the other latent constructs were operationalized utilizing a 7-point Likert-type scale, ranging from *strongly disagree* (1) to *strongly agree* (7).

Results

Measurement Model

First, using Muthén and Muthén's Mplus (version 7.31), we performed a confirmatory factor analysis to assess the construct validity of the nine latent constructs (see Table 4). The measurement model demonstrated excellent model fit statistics: $\chi^2/df = 2.50$, comparative-fit index = .95, Tucker–Lewis index = .94, root mean square error of approximation = .051, standardized root mean square residual = .034. All constructs showed convergent validity according to their composite reliability and average variance extracted values (Bagozzi & Yi, 1988; Fornell & Larcker, 1981). Further, an examination of the Fornell–Larcker criterion, which compares the average variance extracted values with the squared correlations between pairs of the constructs (Fornell & Larcker, 1981), indicated that discriminant validity was established for all cases with one exception (see Table 5). The average variance extracted value of ritualistic fan behavior was 0.67, which was equal to the square of its correlation with fan knowledge feedback (0.67). Therefore, we additionally performed the Wald Test of Parameter Constraints and compared a model in which the correlation between these two constructs to be equal to 1.00 with an unconstrained model in which the correlation was freely estimated (Anderson & Gerbing, 1988). The result showed that the unconstrained model was significantly better than the constrained model, Wald $\chi^2(1) = 135.75$, $p < .01$. Collectively, we found evidence for discriminant validity.

Structural Model

In hypothesis testing, we modeled fan engagement behavior as a second-order construct reflected by the six first-order dimensions (see Figure 4). This integrative way has been supported by previous research (Itani et al., 2019; Kumar & Pansari, 2016) that suggests customer engagement behavior is a second-order construct consisting of first-order dimensions related to specific engagement behaviors. We found the first-order dimensions of fan engagement significantly loaded onto its unobserved second-order construct, ranging from 0.81 to 0.93. The fit indices for this structural model were acceptable ($\chi^2/df = 2.49$, comparative-fit index = .92, Tucker–Lewis index = .92, root mean square error of approximation = .051, standardized root mean square residual = .088).

The results indicated that team identification (t_1 ; $\beta = .47$, $p < .01$) and awareness of fan engagement initiatives (t_1 ; $\beta = .12$, $p < .05$) significantly predicted fan engagement behavior (t_2), in support of H1 and H2. Also, fan engagement behavior (t_2) was found to be positively associated with media viewing frequency (t_2 ; $\beta = .21$, $p < .01$), attendance frequency (t_2 ; $\beta = .24$, $p < .01$), and flourishing (t_2 ; $\beta = .37$, $p < .01$), whereas the influences of team

Table 4 The Confirmatory Factor Analysis Results in Study 2 ($n = 582$)

Construct	Item	λ
Team identification (CR = 0.92, AVE = 0.67)		
	1. I am very interested in what others think about [team name].	0.76
	2. When someone criticizes [team name], it feels like a personal insult.	0.80
	3. When I talk about [team name], I usually say “we” rather than “they.”	0.85
	4. [Team name]’s successes are my successes.	0.89
	5. When someone praises [team name], it feels like a personal compliment.	0.84
	6. If a story in the media criticized [team name], you would feel embarrassed.	0.76
Awareness of fan engagement initiatives (CR = 0.95, AVE = 0.80)		
	1. [Team name] maintain regular contact with fans.	0.87
	2. [Team name] share and exchange, in a two-way manner, information with fans.	0.91
	3. [Team name] provide fans with opportunities to have social interactions with other fans at the stadium.	0.90
	4. [Team name] enable fans to have interactive communications with each other through digital media.	0.91
	5. [Team name] securely use fans’ information as a basis for communicating with fans.	0.89
Fan learning (CR = 0.87, AVE = 0.62)		
	1. I regularly read sports news about what might take place in the upcoming game.	0.69
	2. I regularly track the statistics of specific players.	0.78
	3. I read posts, forum threads, and comments of others about [team name] on social media.	0.84
	4. I read posts, forum threads, and comments of others about [team name] on the internet. ^a	0.83
Fan resource integration (CR = 0.92, AVE = 0.75)		
	1. I use my knowledge to engage in conversations with other fans about [team name].	0.87
	2. I bring up things I have seen at [team name]’s games in conversations with other fans.	0.86
	3. I use my knowledge to analyze the performance of [team name].	0.87
	4. I spend a significant amount of time discussing issues related to [team name] with friends.	0.87
Ritualistic fan behavior (CR = 0.89, AVE = 0.67)		
	1. I regularly wear or hold something lucky before watching the games of [team name].	0.81
	2. I wear team apparel on a regular basis.	0.79
	3. I regularly participate in communal activities with other fans of [team name].	0.83
	4. I decorate (or paint) any part of my body with team colors when attending the games of [team name].	0.85
Flow experience (CR = 0.88, AVE = 0.72)		
	1. When I watch [team name]’s games, I watch every play of every game.	0.80
	2. When I watch [team name]’s games, time goes by very quickly.	0.84
	3. I am absorbed intensely when watching the games of [team name].	0.90
Management cooperation (CR = 0.87, AVE = 0.69)		
	1. I try to work cooperatively with [team name] when attending the games of [team name].	0.78
	2. I do things to make [team name]’s event management easier.	0.86
	3. When attending the games of [team name], the employees of the team get my full cooperation.	0.85
Fan knowledge feedback (CR = 0.92, AVE = 0.80)		
	1. I often offer my ideas for developing new products or services related to [team name].	0.89
	2. If I have a useful idea on how to improve [team name]’s products or services, I let the team know about it.	0.93
	3. When I experience a problem at the games of [team name], I let the team know about it.	0.86
Flourishing (CR = 0.94, AVE = 0.65)		
	1. I lead a purposeful and meaningful life.	0.81
	2. My social relationships are supportive and rewarding.	0.78
	3. I am engaged and interested in my daily activities.	0.83
	4. I actively contribute to the happiness and well-being of others.	0.82
	5. I am competent and capable in the activities that are important to me.	0.83
	6. I am a good person and live a good life.	0.83
	7. I am optimistic about my future.	0.71
	8. People respect me.	0.81

(continued)

Table 4 (continued)

Construct	Item	λ
χ^2 (df)		1,757.01 (704)
χ^2/df		2.50
Comparative-fit index		.95
Tucker–Lewis index		.94
Root mean square error of approximation		.051
Standardized root mean square residual		.034

Note. CR = composite reliability; AVE = average variance extracted.

^aThis item was additionally included in Study 2 to improve the construct validity of fan learning.

Table 5 Correlations, the Average Variance Extracted Values, and Descriptive Statistics in Study 2

Construct	ϕ matrix (n = 582)								
	1	2	3	4	5	6	7	8	9
1. Team identification (t ₁)	.67	.32	.20	.26	.31	.12	.12	.26	.07
2. Awareness of fan engagement initiatives (t ₁)	.57	.80	.13	.11	.11	.10	.11	.11	.06
3. Fan learning (t ₂)	.45	.36	.62	.59	.46	.48	.50	.41	.18
4. Fan resource integration (t ₂)	.51	.34	.77	.75	.66	.58	.67	.60	.23
5. Ritualistic fan behavior (t ₂)	.56	.33	.68	.81	.67	.57	.51	.67	.20
6. Flow experience (t ₂)	.34	.31	.70	.76	.75	.72	.60	.33	.24
7. Management cooperation (t ₂)	.35	.33	.71	.82	.72	.78	.69	.39	.26
8. Fan knowledge feedback (t ₂)	.51	.33	.64	.77	.82	.58	.62	.80	.17
9. Flourishing (t ₂)	.27	.24	.42	.48	.44	.49	.51	.42	.65
<i>M</i>	4.09	4.39	4.06	3.89	3.59	4.32	4.24	3.38	4.49
<i>SD</i>	1.50	1.49	1.64	1.62	1.63	1.54	1.56	1.73	1.24

Note. Correlations (ϕ) were estimated by Muthén and Muthén's Mplus (version 7.31). Correlations are depicted in the lower triangle of ϕ matrix, whereas squared correlations are presented in the upper triangle of ϕ matrix. The average variance extracted value for each latent construct is shown in boldface on the diagonal. The mean scores (*M*) and *SD*s for the nine latent constructs were computed by IBM SPSS Statistics (version 28.0). All correlations are statistically significant at the .01 level. t₁ and t₂ denote two time points.

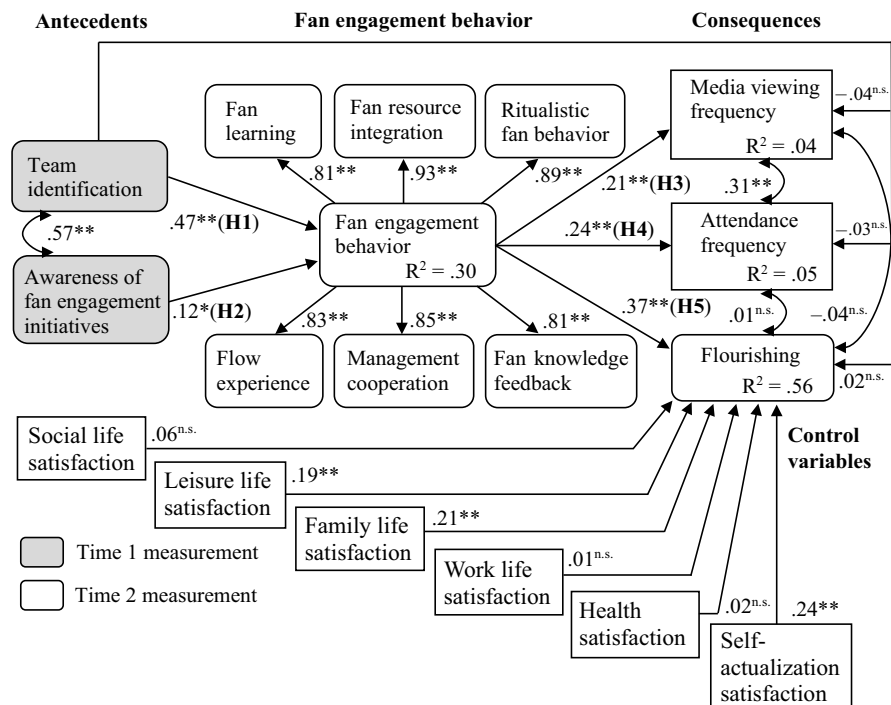


Figure 4 — Hypothesis testing in Study 2 (n = 582). Note. $\chi^2/df = 2.49$, comparative-fit index = .92; Tucker–Lewis index = .92; root mean square error of approximation = .051; standardized root mean square residual = .088; n.s. = not significant. * $p < .05$. ** $p < .01$.

identification (t_1) on these outcome variables were not significant. Thus, we found support for H3, H4, and H5. Moreover, we examined whether the inclusion of life-domain satisfaction affected the findings. The results indicated leisure life satisfaction (t_2 ; $\beta = .19$, $p < .01$), family life satisfaction (t_2 ; $\beta = .21$, $p < .01$), and self-actualization satisfaction (t_2 ; $\beta = .24$, $p < .01$) were positively associated with flourishing (t_2). To account for the variations in the outcome variables, we evaluated R^2 values. The R^2 values for fan engagement behavior, media viewing frequency, attendance frequency, and flourishing were .30, .04, .05, and .56, respectively.

Indirect Effects

Our hypothesized model suggests that fan engagement behavior mediates the relationship between the predictor and outcome variables. Thus, we tested this mediation mechanism using the bootstrapping method based on 5,000 resamples (Preacher & Hayes, 2008; see Table 6). The 95% confidence intervals (CIs) for the indirect effects of team identification (t_1) on media viewing frequency (t_2), attendance frequency (t_2), and flourishing (t_2) through fan engagement behavior (t_2) did not contain zero ($CI_{\text{media viewing frequency}} = [0.787, 5.282]$; $CI_{\text{attendance frequency}} = [0.067, 1.773]$; $CI_{\text{flourishing}} = [0.101, 0.226]$), indicating these indirect effects were significant. Similarly, the 95% CIs for the indirect effects of awareness of fan engagement initiatives (t_1) on the same three outcome variables excluded zero ($CI_{\text{media viewing frequency}} = [0.114, 1.806]$; $CI_{\text{attendance frequency}} = [0.033, 0.554]$; $CI_{\text{flourishing}} = [0.004, 0.069]$), indicating there are sequential relationships between awareness of fan engagement initiatives (t_1), fan engagement behavior (t_2), and the three outcome variables (t_2).

Discussion of Study 2

In Study 2, the results supported that the six dimensions were an accurate representation of different aspects of fan engagement behavior and could be regarded as distinct constructs from other psychological constructs (team identification and flourishing). Further, in hypothesis testing, we modeled fan engagement behavior as a second-order latent construct that played a fully mediating role in the relationship between the predictor and outcome variables. That is, as consumers highly identify with their favorite teams and have favorable perceptions of the teams' effort to manage fan engagement initiatives, their fan engagement behavior increases and leads to greater stadium attendance, media consumption, and flourishing. Our results provide empirical support for the theoretical perspective of previous research that suggests customer

engagement behavior fully mediates the impact of brand identification on brand loyalty (Dessart et al., 2015).

The results of Study 2 extend the literature on fan engagement and team identification because sport consumption and well-being outcomes (attendance frequency, media viewing frequency, and flourishing) were more strongly influenced by fan engagement behavior than by team identification. It is also important to note that the impact of fan engagement behavior on flourishing was robust to the inclusion of life-domain satisfaction. These findings indicate that when promoting sport consumption behavior and well-being through spectator sport, fostering a psychological sense of team identification is not enough. Individuals' engagement in nontransactional value-adding behaviors (e.g., preparatory, concomitant, and postevent behaviors) is a significant prerequisite of long-term sport consumption and overall well-being.

General Discussion

Theoretical Implications

This research has presented two studies to reconceptualize fan engagement behavior and validate its theory-based scale. To achieve this purpose, we developed a 21-item scale that was intended to measure the six dimensions of fan engagement behavior (the final items are shown in Table 4). The developed scale has several advantages over existing measures used in previous research (Huettermann & Kunkel, 2022; Jones et al., 2019; Yoshida et al., 2014). We discuss important advantages that emerge from this scale development study as follows.

First, previous studies have examined specific aspects of fan engagement behavior, ranging from two to four dimensions (Huettermann & Kunkel, 2022; Jones et al., 2019; Yoshida et al., 2014). Existing conceptualizations and measures are incomplete because SDL-informed factors (e.g., fan learning, fan resource integration, and fan knowledge sharing) and sport-specific factors (e.g., ritualistic fan behavior and flow experience) have been examined independently in prior studies (Huettermann & Kunkel, 2022; Kim & Ko, 2019; McDonald & Karg, 2014). In this research, we provided a more comprehensive conceptualization of fan engagement behavior based on SDL-informed customer engagement (Huettermann et al., 2022; Hollebeek et al., 2019) and fans' unique behavioral responses (Kim & Ko, 2019; McDonald & Karg, 2014). Further, we validated a multidimensional scale representing our theoretical reconceptualization and highlighted its nomological validity using data from two different points in time. Fan resource integration, fan learning, ritualistic fan

Table 6 Indirect Effects of the Proposed Structural Model in Study 2 ($n = 582$)

Indirect effect	Bootstrap estimate			95% CI	
	Standardized effect	Unstandardized effect	SE	Lower	Upper
Team ID → Engagement → Media viewing	0.10*	3.37*	0.89	0.787	5.282
Team ID → Engagement → Attendance	0.11*	1.12*	0.27	0.067	1.773
Team ID → Engagement → Flourishing	0.18*	0.15*	0.03	0.101	0.226
Initiatives → Engagement → Media viewing	0.03*	0.73*	0.41	0.114	1.806
Initiatives → Engagement → Attendance	0.03*	0.24*	0.13	0.033	0.554
Initiatives → Engagement → Flourishing	0.04*	0.03*	0.02	0.004	0.069

Note. The 95% CIs are presented in the third decimal place because some values are very low. Team ID = team identification; Initiatives = awareness of fan engagement initiatives; Engagement = fan engagement behavior; Media viewing = media viewing frequency; Attendance = attendance frequency; CI = confidence interval.

* $p < .05$.

behavior, and flow experience are related to the consumption of the core sport product and reflect sport-specific dimensions of customer engagement that are properly grounded in the professional sport context. Our scale is a comprehensive tool for assessing the behavioral characteristics of fan engagement in spectator sport.

Second, our results revealed sport consumption outcomes (media viewing frequency and attendance frequency) were more strongly influenced by fan engagement behavior than by team identification. Theoretically, fan engagement behavior enables fans not only to develop intellectual, cultural, skillful, and social resources (e.g., fan learning, ritualistic fan behavior, flow experience, management cooperation, and fan knowledge feedback) but also to integrate these operant resources as a critical capability (e.g., fan resource integration) that is required for enduring and meaningful sport consumption (Huettermann et al., 2022). While team identification may act as a social resource (e.g., group membership and a sense of belonging), fan engagement behavior helps individuals build more intangible operant resources that can be used to create rich sport consumption experiences. In this respect, we extend fan engagement research by explaining the reason why fan engagement behavior plays a mediating role in the relationship between team identification and sport consumption.

Third, in Study 2, we provided evidence supporting the positive influence of fan engagement behavior on human flourishing in everyday life. Our results indicated that fan engagement behavior was the dominant factor in enhancing flourishing, while three life-domain satisfaction dimensions (leisure life, family life, and self-actualization) were also significantly associated with flourishing. This reinforces recent findings that indicate specific aspects of sport consumption (behavior) rather than team identification itself (cognition) contribute to well-being (Delia et al., 2022; Yoshida et al., 2023). While team identification reflects the need to belong and be self-confident, fan engagement behavior not only satisfies these needs but also fulfills additional psychological needs such as autonomy, meaning, and mastery and eventually contributes to people's well-being (Newman et al., 2014). Overall, our empirical evidence extends past studies (Delia et al., 2022; Yoshida et al., 2023) by showing how team identification influences well-being through enhancing fan engagement behavior. Using this theoretical implication, sport management researchers can develop and test hypotheses about the relationship between fan engagement behavior and different types of well-being such as hedonic, eudaimonic, and social well-being (Inoue et al., 2020; Yoshida et al., 2023). The current research provides opportunities for future studies to examine how fan engagement behavior enables sport fans to achieve higher levels of well-being in life domains.

Managerial Implications

Our new scale provides sport teams with a practical tool to assess fan engagement behavior in a comprehensive way. Such diagnostic information can be integrated into the management of fan engagement behavior by implementing informative and entertaining (experiential) initiatives. For example, informative initiatives will be effective in facilitating the three foundational dimensions of fan engagement behavior (Hollebeek et al., 2019) because these dimensions (i.e., fan learning, fan resource integration, and fan knowledge feedback) are primarily information-driven. We urge sport teams to use informative fan engagement initiatives, such as mobile news delivery, social media conversations specifically related to star players and team success, and online customer

reviews and surveys, to increase the foundational dimensions of fan engagement behavior (Weimar et al., 2022). In today's digital world, sport teams can develop capabilities for utilizing informative initiatives through the internet, social media platforms, and new technologies such as advanced mobile applications (e.g., YinzCam) and customer journey mapping software (e.g., LAVA). Given the postpandemic return to sports and changing nature of fan behavior, the importance of these engagement initiatives cannot be understated since many fans intend on experiencing "a hybrid world of 'live' experiences whereas virtual experiences create novel ways for fans to engage in their favorite sporting event experiences" (Lefton, 2021).

The other three dimensions (i.e., ritualistic fan behavior, flow experience, and management cooperation) of fan engagement behavior are experience-driven and reflect the benefits that stem from the three foundational dimensions of fan engagement behavior (Hollebeek et al., 2019). Of particular importance is that sport teams engage their fan base by offering social interaction opportunities in fan communities both virtually and physically (Yoshida et al., 2014). In virtual environments, Annamalai et al.'s (2021) social media framework provides useful classifications of content type (e.g., information, entertainment, social, and remuneration) and content vividness (e.g., text, photo, video, and link) and identifies social content, photos, and videos as significant drivers of sport fan engagement behavior. Thus, we recommend that sport teams should facilitate fan-to-fan social interactions (e.g., online dialogs and an exchange of questions and answers) by allowing fans to share team-related photos and videos (e.g., visual content related to star players and team success; Weimar et al., 2022).

In physical (stadium) environments, sport teams need to be aware that sport fans can engage in flow experiences by watching sport in a clean, comfortable, and exciting stadium environment where fans can fully focus their attention on game actions (Wakefield et al., 1996). An additional managerial implication that stems from our findings and extends Funk's (2017) sport experience design (SX) framework is that sport teams should use scoreboards, digital signage, mobile devices, and other new technologies (e.g., on-field sport monitoring systems) not only as promotional tools associated with sponsorship activation and ancillary services but also as complementary tools that are tailored to real-time on-field performance to enhance fans' flow experiences. Further, the incorporation of plazas into new sport facility design has become a recent trend that highlights the importance of "social" spaces as a means of fan engagement. Specifically, plazas have been incorporated into new facility projects in the National Hockey League (Edmonton and Detroit), National Football League (Las Vegas and Minneapolis), and Major League Baseball (Chicago and Atlanta) where they act as community centers for the team and are one of the most coveted social gathering spaces both in-season and during nonsporting events in the offseason (Muret, 2016).

Our results also suggest that the outcome of fan engagement behavior is more than just the consumption of spectator sport. Practitioners need to find a way to enhance human flourishing through fan engagement behavior. For example, creating a positive brand image associated with engaging and meaningful fan behaviors will enable sport teams to establish a socially desirable fan base and, in a broader sense, to contribute to the sustainable development goals, specifically Goal 3: good health and well-being (United Nations, 2015). Merely looking at traditional sport marketing outcomes such as stadium attendance and media

consumption might result in missed opportunities for sport teams to promote spectator sport consumption in today's complex society (Inoue et al., 2020). Fan engagement behavior is a key factor for enhancing fans' well-being in a meaningful and socially impactful way because highly engaged fans can find the personal (e.g., mental health) and social (e.g., social justice) meanings of spectator sport by following their favorite sport teams (Delia et al., 2022). An integration of fan engagement behavior and well-being will help practitioners have an accurate understanding of how and why spectator sport contributes to people's well-being in their lives.

Limitations and Directions for Future Research

This research has limitations that warrant future research. First, we carried out research in deductive reasoning to develop a theory-based fan engagement scale. We did not undertake qualitative research to inductively explore sport fans' views on their engagement behavior. While we generated the initial survey items by performing a systematic review of the relevant literature, sport fans may have additional unique behavioral characteristics and patterns during and after the COVID-19 pandemic. For example, virtual reality and player-tracking data will help fans enhance their flow and learning experiences, whereas anthems, fight songs, ceremonies, and group movements in stadium environments will boost ritualistic fan behavior. Our six-factor model represents general aspects of fan engagement behavior. Considering that customer engagement is context-specific (Brodie et al., 2011; Hollebeek et al., 2019), qualitative research is needed to further explore and identify factors that reflect unique sport contexts and act as an additional dimension of fan engagement behavior.

Second, we measured fan engagement behavior retrospectively. Although we used several screening questions to ensure high recall accuracy of fan engagement behavior in the past, our retrospective questionnaires did not allow us to measure sport fans' dynamic engagement behavior in real time. Future research needs to examine whether the proposed six dimensions of fan engagement behavior based on retrospective experiences are different from or similar to those based on real-time, dynamic experiences.

Third, our scale was developed only in the team sport context. Future studies need to apply our scale to the engagement behavior of fans who follow individual sports (e.g., golf, tennis, cycling, and track and field). In our research, the main object to engage was not an individual athlete, but a sport team. Specifically, the dimension of ritualistic fan behavior needs further development in individual sport settings because it focuses primarily on fan rituals in fan communities that surround professional sport teams.

Fourth, although we found a positive relationship between fan engagement behavior and human flourishing, we encourage scholars to further examine how fan engagement behavior contributes to individuals' work and civic engagement in the occupational and social life domains. For example, research suggests that positive emotions associated with spectator sport enhance fans' job engagement and job performance in the work domain (Gkorezis et al., 2016). Also, volunteering at spectator sport events has been found to be effective in facilitating civic engagement in local communities (e.g., support for and participation in community activities; Bang et al., 2022). A suggestion from these findings is that future

research should focus on the role of fan engagement behavior as a source of work and civic engagement in a broader context.

Conclusion

The central thesis of this research is that fan engagement behavior can be conceptualized and measured as a multidimensional construct based on SDL-informed customer engagement and the experiential benefits associated with spectator sport. In conclusion, the foundational dimensions of fan engagement behavior (fan learning, fan resource integration, and fan knowledge feedback), combined with the benefit-related dimensions in the spectator sport context (ritualistic fan behavior, management cooperation, and flow experience), result in further improvement not only to extend previous models (Huettermann et al., 2022; Yoshida et al., 2014) but also to better enhance sport consumption and well-being outcomes. Our theory-based scale provides conceptual and empirical clarity to guide future research as well as actionable guidance to sport marketing practitioners.

Notes

1. There are six teams in this league (the Central League of Japanese Professional Baseball).
2. League (2020) conducted a questionnaire survey using a stratified two-step sampling method based on gender and age, targeting home game attendance of 55 clubs in all divisions (three divisions) in the 2019 season.
3. The Sasakawa Sports Foundation (2016) carried out a questionnaire survey of general adults over the age of 20 across Japan, using quota sampling by considering the area of residence and the population size.
4. In our six-factor model, we eliminated items with factor loadings below the cutoff point of 0.70 because Hair et al. (2006) suggested that "a larger loading is needed given a factor solution with a larger number of factors" (p. 129) and "loadings exceeding +.70 are considered indicative of well-defined structure" (p. 128).

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