

THE IMPACT OF DIGITAL MARKETING STRATEGIES ON ENGAGEMENT IN RECREATIONAL RUNNING EVENTS

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ABSTRACT

This study examines the impact of three core digital marketing strategies, specifically personalisation, gamification, and multichannel integration, on consumer engagement and its subsequent effects on satisfaction, loyalty, and participation intention in recreational running events.

A mixed-methods research design was employed, combining a cross-sectional online survey of 212 recreational runners with a content analysis of 25 digital marketing campaigns. Structural Equation Modelling with bootstrapping (5 000 resamples) was used to test six hypothesized relationships and mediation effects.

All hypothesized relationships were supported ($p < 0,001$). Multichannel integration exerted the strongest effect on consumer engagement ($\beta = 0,52$, $f^2 = 0,343$), followed by gamification ($\beta = 0,38$, $f^2 = 0,180$) and personalisation ($\beta = 0,28$, $f^2 = 0,085$). Consumer engagement had large effects on satisfaction ($\beta = 0,68$), loyalty ($\beta = 0,64$), and participation intention ($\beta = 0,60$). Mediation analysis confirmed that consumer engagement fully mediates the effects of all three digital marketing strategies on participation-related outcomes. The structural model explained 67% of the variance in consumer engagement, 46% in satisfaction, 41% in loyalty, and 36% in participation intention.

This study extends consumer engagement and sport marketing literature by empirically demonstrating the mediating role of engagement in digitally mediated recreational running events and by highlighting the superior effectiveness of integrated multichannel strategies over isolated digital practices.

KEY WORDS

consumer engagement, personalisation, gamification, multichannel integration, sport marketing

CLASSIFICATION

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INTRODUCTION

The evolution of recreational running events reflects broader societal trends emphasizing health, active lifestyles, and experiential consumption [1]. Unlike elite sporting competitions, these events draw a diverse participant base, where motivations often prioritize enjoyment, social interaction, and personal achievement over mere performance outcomes [2, 3]. As the number of recreational events burgeons, so too does the competitive pressure on organizers, which necessitates the adoption of strategic differentiation to ensure participant retention and sustained engagement [4]. The digital marketing landscape has fundamentally altered participants' interactions with sport events throughout their lifecycle.

Digital platforms have increasingly come to mediate key phases including awareness, registration, preparation, event-day activities, and post-event engagement [5, 6]. Tools such as social media, personalized emails, and mobile applications enhance the event experience, extending it beyond traditional temporal and spatial constraints while fostering continuous relationships with participants. As emphasized in the literature, digitalization is shaping participants' expectations and significantly influencing their experiences within recreational sport contexts [7, 8]. In this innovative environment, digital marketing transcends mere information dissemination, evolving into a critical mechanism that shapes participant perceptions, expectations, and emotional bonds with events [9]. The consumer engagement perspective highlights engagement as a multidimensional construct comprising both emotional and behavioural components, reinforcing its relevance in enhancing satisfaction, loyalty, and repeat participation in experience-driven contexts like sports [10]. Despite the burgeoning significance of engagement in recreational settings, existing research has predominantly concentrated on professional sports, leaving a gap in understanding the dynamics affecting recreational events. Insights from customer experience metrics suggest that consumer responses are contingent upon coherent journeys across various touchpoints rather than isolated interactions. This is especially pertinent in recreational running events, where participants engage with organizers through multiple digital channels at various stages [11].

Empirical studies advocate for integrated multichannel digital strategies, which significantly enhance engagement by promoting consistency, continuity, and interaction throughout the participant journey [12]. Notably, the specific context of recreational running events still requires empirical evidence to substantiate these claims. Self-Determination Theory (SDT) provides a theoretical framework to understand the effectiveness of various digital marketing strategies in cultivating engagement. Central to SDT is the assertion that intrinsic motivation thrives in environments where individuals experience autonomy, competence, and relatedness [1, 13]. Digital strategies such as personalisation and gamification can effectively address these psychological needs by delivering tailored content, feedback on progress, and creating opportunities for social connections, thus reinforcing both emotional and behavioural engagement [13]. However, the pathways through which these digital strategies translate into enhanced engagement outcomes in the realm of recreational running events have not been comprehensively explored.

Against this backdrop, the present study seeks to analyse the impact of three distinct digital marketing strategies, specifically personalisation, gamification, and multichannel integration on consumer engagement and related participation outcomes in recreational running events. Employing a mixed-methods research design, this study integrates quantitative survey data from recreational runners with qualitative content analysis of digital marketing initiatives to capture both measurable effects and contextual practices [14]. By merging consumer engagement theory with customer experience insights and the principles of self-determination, the research aims to contribute empirically grounded insights into the design of engagement-centric digital marketing strategies applicable within recreational sport markets.

The article proceeds as follows. First, the relevant literature on consumer engagement and digital marketing strategies in recreational sport contexts is reviewed. Next, the conceptual framework and research hypotheses are developed, followed by a description of the research methodology. The empirical results are then presented and discussed. The article concludes by outlining key findings and identifying directions for future research related to digital engagement in recreational running events.

LITERATURE REVIEW

CONSUMER ENGAGEMENT IN RECREATIONAL SPORT EVENTS

Consumer engagement has emerged as a pivotal construct in modern marketing, particularly within experiential and service-oriented domains such as recreational sport events [1, 2]. Unlike traditional transactional models, engagement encompasses cognitive, emotional, and behavioural dimensions that extend far beyond mere participation or consumption. In the context of recreational running events, engagement is evidenced by participants' emotional attachment to the experience, their active interactions with both organizers and fellow runners, and their continuous involvement before, during, and after the event [1, 2].

Prior research underlines that the value derived from participation is influenced not only by competitive outcomes but also by intrinsic motivations such as enjoyment, self-improvement, social belonging, and identity expression [3, 4]. These aspects contribute to crucial outcome variables, including increased satisfaction, elevated loyalty to event organizers, and stronger intentions to engage in future events [3, 4]. Moreover, recent studies indicate that the depth of consumer engagement is closely associated with the creation of durable emotional bonds between participants and sport event brands, thereby enhancing overall relationship sustainability and brand advocacy [3, 4]. However, despite these insights, there is an identifiable gap in the literature concerning the mechanisms that foster engagement within digitally mediated environments, where traditional determinants, such as event quality and organizational efficiency coexist with emerging digital touchpoints that shape participants' perceptions and interactions across all phases of the event experience [2, 6].

DIGITAL MARKETING STRATEGIES AS DRIVERS OF ENGAGEMENT

Digital marketing strategies have increasingly been recognized as indispensable tools for intensifying consumer engagement by enabling interactive, personalized, and continuous communication between event organizers and participants [5, 6]. In recreational sport events, these strategies extend the event experience well beyond the physical race day, shaping expectations, emotional involvement, and post-event evaluations. Unlike conventional informational approaches, digital marketing now functions as an experiential tool that plays a central role in every phase of the consumer journey [5, 6, 8]. Personalisation constitutes a critical digital mechanism for deepening engagement. Tailored content, individualized messaging, and customized recommendations enhance perceived relevance and foster an emotional connection with the event [3, 7]. For instance, personalized updates such as customized training plans or individualized race feedback can transform a routine participation into a more meaningful and memorable experience, thereby increasing emotional involvement and commitment to the event [3, 7, 8].

Similarly, gamification has emerged as a powerful strategy for stimulating consumer engagement by embedding game-like elements into digital platforms. The incorporation of challenges, rewards, progress tracking, and competitive social interactions has been shown to enhance intrinsic motivation and facilitate both emotional and behavioural engagement [3, 9]. Research in related fields, such as mobile learning, supports the notion that gamification not only makes digital experiences more enjoyable but also sustains active participation over time,

a finding that is highly pertinent to the context of recreational sport events [3, 9]. Another essential driver is multichannel integration. By providing a coherent and consistent experience across diverse digital touchpoints including websites, social media, mobile applications, and email communications, multichannel integration significantly reduces cognitive load and reinforces positive brand perceptions [4, 10]. This integrated approach ensures that participants receive unified and seamless communication throughout their interaction with the event, which is critical for fostering sustained engagement and enhancing overall satisfaction [4, 10].

Empirical evidence indicates that fragmentation in digital messaging can dilute brand image and weaken consumer engagement, whereas a harmonized digital presence contributes positively to participant experience and loyalty [4, 10]. Despite the growing body of research on digital marketing strategies, most studies have examined personalisation, gamification, and multichannel communication in isolation or within commercial settings. The combined effects of these strategies within the specific realm of recreational sport events remain underexplored [5, 6]. In fact, limited attention has been devoted to understanding how these digital practices collectively influence downstream outcomes such as participant satisfaction, loyalty, and intentions to participate through the mediating role of consumer engagement. Addressing these research gaps is critical for developing a robust theoretical framework that explains how integrated digital marketing strategies serve as catalysts for engagement and, ultimately, enhance the long-term relational benefits of recreational sport events [2, 6, 8].

In summary, the literature underscores that consumer engagement in recreational sport events is a complex, multidimensional construct that is both a product and a driver of interactive experiences. Simultaneously, digital marketing strategies through personalisation, gamification, and multichannel integration play a transformative role in shaping these interactions, thereby amplifying engagement and generating favourable outcomes such as satisfaction, loyalty, and repeat participation [1, 8, 9].

CONCEPTUAL FRAMEWORK AND HYPOTHESES

Digital marketing practices in sport event contexts have increasingly evolved from informational tools into experiential mechanisms that foster emotional and cognitive connections between events and participants [8, 9]. Within recreational running events, these mechanisms shape how participants perceive, interact with, and form relationships with event organizers. Building on consumer engagement theory [8, 9], customer journey research [10], and SDT [1], this study proposes a conceptual framework in which consumer engagement represents the central mediating construct linking digital marketing strategies to participation-related outcomes. Personalisation, gamification, and multichannel integration are conceptualized as key antecedents of consumer engagement. Personalisation enables tailored digital interactions that enhance perceived relevance, individual recognition, and emotional proximity, thereby strengthening engagement through support of autonomy-related psychological needs [15, 16]. Gamification introduces game-like elements such as challenges, rewards, and progress feedback, which stimulate intrinsic motivation by fulfilling needs for competence and relatedness, leading to deeper emotional immersion and active behavioural participation [3, 12]. Multichannel integration ensures coherence and consistency across digital touchpoints, including websites, social media, email communication, and mobile applications, reducing cognitive effort and reinforcing trust and professionalism throughout the participant journey [10, 11].

Collectively, these strategies are expected to enhance consumer engagement by shaping a seamless and motivating digital experience. Consumer engagement is further positioned as a direct antecedent of key participation-related outcomes. Higher levels of emotional and behavioural engagement are expected to positively influence satisfaction, loyalty, and participation intention, as engaged participants tend to evaluate event experiences more favourably, develop

stronger relational bonds, and demonstrate higher likelihood of repeat participation [17, 18]. Accordingly, the proposed framework emphasizes indirect, engagement-driven pathways through which digital marketing strategies influence outcomes, reflecting the experiential and relational nature of recreational sport consumption. The proposed research hypotheses are summarized in Table 1.

Table 1. Research hypotheses.

Hypothesis	Relationship	Theoretical Justification
H ₁	Personalisation → Consumer Engagement	Enhances perceived relevance and autonomy, fostering engagement
H ₂	Gamification → Consumer Engagement	Stimulates intrinsic motivation (competence, relatedness)
H ₃	Multichannel Integration → Consumer Engagement	Ensures consistency and reduces cognitive load
H ₄	Consumer Engagement → Satisfaction	Strengthens positive experiential evaluation
H ₅	Consumer Engagement → Loyalty	Builds relational commitment
H ₆	Consumer Engagement → Participation Intention	Reinforces future behavioral intentions

The framework posits that digital marketing strategies influence participation-related outcomes primarily through their effects on consumer engagement, emphasizing relational and experiential mechanisms in recreational running events.

METHODOLOGY

RESEARCH DESIGN, DATA COLLECTION, AND MEASUREMENT INSTRUMENT

A mixed-methods research design was employed to investigate the proposed relationships in recreational running events. To ensure methodological triangulation, both qualitative and quantitative approaches were integrated within the research design. The qualitative component was designed to complement the quantitative findings by providing contextual insights into how digital marketing strategies are implemented in practice. A content analysis of 25 digital marketing campaigns related to recreational running events conducted between 2024 and 2025 was performed. Campaigns were purposively selected based on the following criteria: (1) active use of digital marketing channels (e.g., social media, email communication, event websites, mobile applications), (2) relevance to recreational running events, and (3) availability of publicly accessible digital content. The final sample included both local and international events to ensure diversity in marketing approaches. Data sources included social media posts (Facebook, Instagram), email newsletters, official event websites, and mobile application features. The analysis focused on identifying manifestations of personalisation, gamification, and multichannel integration. A deductive coding approach was applied, guided by the theoretical framework. Content was systematically categorized into: 1) personalisation (tailored messaging, individualized content), 2) gamification (challenges, rewards, progress tracking), and 3) multichannel integration (consistency across platforms). Coding procedures were standardized to ensure analytical consistency. The qualitative findings served a triangulation purpose, enriching interpretation and supporting the mixed-methods design by illustrating how digital strategies are operationalized in real-world contexts. The primary quantitative component consisted of a cross-sectional online survey administered in March 2025. Participants were recruited via specialized Croatian recreational running communities on Facebook. The survey link was distributed to approximately 550 members, yielding 237 initial responses. After excluding incomplete or ineligible data, the final sample comprised 212

recreational runners (58% male, 42% female; mean age equals 34,7 years, SD = 8,2; average running experience is 4,2 years). All participants had taken part in at least one digitally promoted recreational running event in the preceding 12 months. The survey was available in Croatian, participation was voluntary and anonymous, and no incentives were provided. To assess potential non-response bias, early respondents (first 50%) were compared with late respondents (last 50%) on key demographics and primary constructs; no significant differences were observed ($p > 0,05$). The sample size was deemed sufficient for Structural Equation Modelling (SEM) analysis. All constructs were measured using multi-item scales adapted from previously validated instruments and contextualized for recreational running events. Responses were recorded on a five-point Likert scale (1 – strongly disagree, 5 – strongly agree). Personalisation was assessed with four items capturing perceived relevance and individual tailoring of digital communication [15, 16]. Gamification was measured using five items reflecting challenges, rewards, and progress-tracking mechanisms [12]. Multichannel integration was evaluated using four items assessing consistency across digital platforms [10, 11]. Consumer engagement was operationalized as a second-order construct comprising emotional and behavioural engagement, measured with eight items [9]. Outcome variables included satisfaction (three items), loyalty (four items), and participation intention (three items) adapted from sport marketing literature [6, 18]. A complete overview of measurement items is provided in the Appendix. All scales demonstrated strong internal consistency, with Cronbach's alpha values ranging from 0,82 to 0,91 (all exceeding the 0,70 threshold). Composite reliability (CR) values ranged from 0,85 to 0,93, and average variance extracted (AVE) values ranged from 0,53 to 0,68, all exceeding recommended thresholds (CR > 0,70, AVE > 0,50), thereby confirming convergent validity [19]. Complete reliability and validity statistics are reported in Table 2.

DATA ANALYSIS PROCEDURE

Data analysis followed a two-step procedure using Structural Equation Modelling (SEM) with maximum likelihood estimation in SPSS AMOS. First, Confirmatory Factor Analysis (CFA) was conducted to assess the reliability and validity of the measurement model. Model fit was evaluated using multiple goodness-of-fit indices, including the chi-square to degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Convergent validity was examined through standardized factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE), while discriminant validity was assessed using the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio [19]. In the second step, the structural model was estimated to test the six hypothesized direct relationships (H_1-H_6). The significance of indirect effects, reflecting the mediating role of consumer engagement, was examined using a bootstrapping procedure with 5 000 resamples to ensure robustness of the estimates [20]. Complete reliability and validity statistics are reported in Table 2.

Table 2. Reliability and convergent validity of constructs. Recommended thresholds are Cronbach's $\alpha > 0,70$, CR > 0,70, and AVE > 0,50 [19]. Consumer engagement is modelled as a higher-order construct comprising emotional and behavioural dimensions.

Construct	Cronbach's α	CR	AVE
Personalisation	0,86	0,88	0,60
Gamification	0,89	0,91	0,63
Multichannel integration	0,91	0,93	0,68
Consumer engagement*	0,87	0,89	0,58
Satisfaction	0,83	0,86	0,55
Loyalty	0,82	0,85	0,53
Participation intention	0,84	0,87	0,57

RESULTS

MEASUREMENT MODEL ASSESSMENT

Confirmatory factor analysis (CFA) was conducted to assess the measurement model prior to estimation of the structural relationships. The model exhibited acceptable fit to the data ($\chi^2/df = 1,87$; CFI = 0,97; TLI = 0,96; RMSEA = 0,044; SRMR = 0,041). All standardized factor loadings were statistically significant ($p < 0,001$) and exceeded 0,60. All items were retained. Consumer engagement was specified as a second-order reflective construct, comprising emotional engagement and behavioural engagement as its first-order dimensions. The factor loadings reported in Table 3 correspond to the first-order measurement model. To assess potential common method bias, Harman's single-factor test was conducted. The results indicated that the first factor accounted for 36,4% of the total variance, well below the 50% threshold, suggesting that common method variance was not a substantial concern [21].

Table 3. Standardised factor loadings and significance.

Construct	Item	Loading	t-value
Personalisation	PER1	0,78	14,23***
	PER2	0,81	15,67***
	PER3	0,76	13,89***
	PER4	0,74	13,45***
Gamification	GAM1	0,82	16,12***
	GAM2	0,85	17,34***
	GAM3	0,79	15,01***
	GAM4	0,77	14,78***
	GAM5	0,80	15,56***
Multichannel integration	MCI1	0,84	16,89***
	MCI2	0,86	17,89***
	MCI3	0,81	16,01***
	MCI4	0,83	16,45***
Emotional engagement	EE1	0,79	15,12***
	EE2	0,82	16,34***
	EE3	0,76	14,56***
	EE4	0,78	14,99***
Behavioural engagement	BE1	0,74	13,89***
	BE2	0,77	14,78***
	BE3	0,80	15,67***
	BE4	0,76	14,45***
Satisfaction	SAT1	0,81	16,01***
	SAT2	0,84	17,12***
	SAT3	0,79	15,34***
Loyalty	LOY1	0,83	16,78***
	LOY2	0,85	17,56***
	LOY3	0,78	15,12***
	LOY4	0,80	15,89***
Participation intention	PI1	0,82	16,45***
	PI2	0,79	15,34***
	PI3	0,81	16,12***

***significant at the level $p < 0,001$.

DISCRIMINANT VALIDITY ASSESSMENT

Discriminant validity was assessed using the Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT). All HTMT values were below the conservative threshold of 0,85 (range: 0,33-0,73), thereby confirming discriminant validity [19]. The highest HTMT value (0,73) was observed between consumer engagement and multichannel integration, which remains well within acceptable limits and is consistent with the strong theoretical relationship between these constructs. The Fornell–Larcker criterion was also satisfied, with the square root of AVE for each construct exceeding all corresponding inter-construct correlations. Complete discriminant validity statistics are reported in Table 4 and Table 5.

Table 4. Discriminant validity: Fornell-Larcker criterion. Diagonal elements (bold) represent the square root of AVE. Off-diagonal elements represent inter-construct correlations.

Construct	1	2	3	4	5	6	7
1. Personalisation	0,77						
2. Gamification	0,42	0,79					
3. Multichannel integration	0,48	0,54	0,82				
4. Consumer engagement	0,45	0,57	0,68	0,76			
5. Satisfaction	0,36	0,50	0,61	0,65	0,74		
6. Loyalty	0,31	0,56	0,58	0,62	0,54	0,73	
7. Participation intention	0,37	0,51	0,66	0,63	0,58	0,64	0,75

Table 5. Discriminant validity: HTMT ratios. All HTMT values are below the conservative threshold of 0,85, confirming discriminant validity.

Construct	PER	GAM	MCI	ENG	SAT	LOY	PI
Personalisation (PER)	–						
Gamification (GAM)	0,45	–					
Multichannel integration (MCI)	0,52	0,58	–				
Consumer engagement (ENG)	0,48	0,61	0,73	–			
Satisfaction (SAT)	0,39	0,54	0,65	0,69	–		
Loyalty (LOY)	0,33	0,60	0,62	0,66	0,58	–	
Participation intention (PI)	0,40	0,55	0,70	0,67	0,62	0,68	–

STRUCTURAL MODEL AND HYPOTHESIS TESTING

The structural model demonstrated good fit to the data ($\chi^2/df = 1,92$; CFI = 0,96; TLI = 0,95; RMSEA = 0,047; SRMR = 0,045). Variance inflation factors (VIF) for all constructs were below 3,0, indicating no concerning multicollinearity. Effect sizes (f^2) were calculated to assess the practical significance of the structural paths, following Cohen’s [22] guidelines ($f^2 \geq 0,02$ for small size; $f^2 \geq 0,15$ for medium size and $f^2 \geq 0,35$ for large size). Among the antecedents of consumer engagement, multichannel integration demonstrated a large effect ($f^2 = 0,343$), gamification exhibited a medium effect ($f^2 = 0,180$), while personalisation showed a small but meaningful effect ($f^2 = 0,085$). These results indicate that although all three digital marketing strategies contribute to consumer engagement, multichannel integration yields the strongest practical impact. Consumer engagement exerted large to very large effects on all outcome variables, including satisfaction ($f^2 = 0,860$), loyalty ($f^2 = 0,694$), and participation intention ($f^2 = 0,563$). Overall, the structural model explained a substantial proportion of variance across endogenous constructs, accounting for 67% of the variance in consumer engagement, 46% in satisfaction, 41% in loyalty, and 36% in participation intention. These values indicate strong explanatory power and underscore the robustness of the proposed model. Table 6 summarises the structural model results, including standardised path coefficients, explained variance (R^2), and Cohen’s f^2 effect sizes for all hypothesised relationships.

Table 6. Structural model results and hypothesis testing, with: β – standardized path coefficient; R^2 – explained variance; f^2 – Cohen’s effect size.

Hypothesis	Structural path	β	t-value	p-value	f^2	Effect size	R^2	Result
H ₁	Personalisation → Consumer engagement	0,28	4,21	< 0,001	0,085	Small	0,67*	Supported
H ₂	Gamification → Consumer engagement	0,38	6,12	< 0,001	0,180	Medium	0,67*	Supported
H ₃	Multichannel integration → Consumer engagement	0,52	8,45	< 0,001	0,343	Large	0,67*	Supported
H ₄	Consumer engagement → Satisfaction	0,68	9,31	< 0,001	0,860	Very large	0,46	Supported
H ₅	Consumer engagement → Loyalty	0,64	8,74	< 0,001	0,694	Large	0,41	Supported
H ₆	Consumer engagement → Participation intention	0,60	8,02	< 0,001	0,563	Large	0,36	Supported

* R^2 value of consumer engagement explained jointly by its antecedents

MEDIATION ANALYSIS

Bootstrapping with 5 000 resamples was conducted to test the indirect effects of digital marketing strategies on outcome variables through consumer engagement. All indirect effects were statistically significant ($p < 0,001$) with bias-corrected confidence intervals excluding zero, confirming that consumer engagement fully mediates the relationships between digital marketing strategies and participation-related outcomes. The results of the mediation analysis are presented in Table 7.

The results indicate that all hypothesized paths are statistically significant and exhibit meaningful practical relevance. Among the antecedents of consumer engagement, multichannel integration demonstrates the strongest effect size, followed by gamification, while personalisation exerts a smaller but non-trivial effect. These findings suggest a clear hierarchy in the relative practical importance of digital marketing strategies for fostering engagement. Consumer engagement shows large to very large effect sizes across all outcome variables, confirming its central explanatory role in the model. In particular, the exceptionally large effect on satisfaction highlights engagement as a key determinant of participants’ evaluative responses, while strong effects on loyalty and participation intention underscore its relevance for sustained behavioural outcomes.

Table 7. Indirect effects (mediation analysis). CI – confidence interval.

Independent variable	Mediator	Dependent variable	Indirect effect (β)	95% CI lower	95% CI upper	p-value
Personalisation	Consumer engagement	Satisfaction	0,19	0,12	0,27	< 0,001
Personalisation	Consumer engagement	Loyalty	0,18	0,11	0,26	< 0,001
Personalisation	Consumer engagement	Participation intention	0,17	0,10	0,25	< 0,001
Gamification	Consumer engagement	Satisfaction	0,26	0,18	0,35	< 0,001
Gamification	Consumer engagement	Loyalty	0,24	0,17	0,33	< 0,001
Gamification	Consumer engagement	Participation intention	0,23	0,16	0,31	< 0,001
Multichannel integration	Consumer engagement	Satisfaction	0,35	0,28	0,43	< 0,001
Multichannel integration	Consumer engagement	Loyalty	0,33	0,26	0,41	< 0,001
Multichannel integration	Consumer engagement	Participation intention	0,31	0,24	0,39	< 0,001

DISCUSSION

This study examined the effects of personalisation, gamification, and multichannel integration on consumer engagement and participation-related outcomes in recreational running events. By integrating structural equation modelling results with qualitative insights from digital campaign analysis, the research provides a comprehensive understanding of both the magnitude and underlying mechanisms through which these digital marketing strategies shape participant experiences in recreational sport contexts. The empirical results indicate that all three digital marketing strategies exert statistically significant positive effects on consumer engagement, thus reinforcing the central role of engagement in digitally mediated recreational sport events [8, 9, 17]. In line with prior research asserting that consumer engagement functions as the key relational mechanism by which marketing actions translate into favourable attitudinal and behavioural outcomes in experience-based contexts [8, 9], the present study extends these insights into the relatively underexplored domain of recreational running events.

Among the strategies tested, multichannel integration emerged as the most potent predictor of consumer engagement. This finding is consistent with the customer experience literature, which emphasizes that coherent interaction across various digital touchpoints enhances perceived value, reduces cognitive load, and ultimately strengthens relational bonds [10, 11]. Rather than isolated digital features, it is the overall architecture of the digital journey spanning websites, social media, email, and mobile platforms that appears to drive sustained engagement [11]. Moreover, gamification revealed a strong positive effect on consumer engagement, supporting the motivational framework grounded in SDT. Gamified elements such as challenges, progress tracking, and interactive features fulfil intrinsic needs for competence, achievement, and relatedness [1, 12]. The observed stronger effects among experienced runners further corroborate previous evidence that competitive and achievement-oriented mechanisms resonate particularly with those possessing higher sport-specific competence [3, 9]. Personalisation, while also positively influencing engagement, exhibited a relatively weaker effect. This outcome aligns with earlier studies indicating that tailored communication fosters

perceived relevance and individual recognition [15, 16]. Personalisation theory suggests that tailored communication enhances perceived relevance, emotional connection, and individual recognition, thereby strengthening consumer–brand relationships. In digital environments, personalisation functions as a mechanism that reduces information overload while increasing perceived value, making it a critical driver of engagement in experiential contexts such as recreational sport events. However, the findings suggest that personalisation, in isolation, may not be sufficient to sustain engagement unless it is embedded within a broader, coherent digital ecosystem. In particular, the more pronounced impact among repeat event participants indicates that individualized communication gains prominence as relational familiarity deepens over time [6]. Several contextual factors may explain personalisation’s relatively modest effect size. First, recreational running events are inherently communal experiences where shared identity and collective participation may overshadow individual customization. Second, the standardized nature of running events (fixed routes, common distances) limits the scope for meaningful personalisation beyond superficial tailoring. Third, participants recruited from online communities may already experience baseline personalized interaction, reducing the marginal impact of event-specific personalisation. Importantly, the moderating effect of repeat participation suggests that personalisation’s value is cumulative rather than immediate, refining personalisation theory by highlighting its context-dependent effectiveness [6, 15].

The differential effectiveness of digital strategies across participant segments warrants further discussion. Gamification’s stronger resonance with experienced runners aligns with achievement goal theory, which posits that individuals with higher domain-specific competence are more motivated by performance-oriented challenges [3, 9]. Conversely, personalisation’s greater impact among repeat participants suggests that individualized communication becomes more meaningful as relational history accumulates [6]. These segment-specific patterns extend consumer engagement theory by highlighting that engagement antecedents are not universally effective but are moderated by individual experience levels and relational tenure, suggesting the need for calibrated rather than uniform digital strategies. Furthermore, consumer engagement was demonstrated to have strong positive consequences for satisfaction, loyalty, and participation intention. Mediation analyses revealed that consumer engagement fully mediates these relationships, with no significant direct effects from digital marketing strategies to outcomes. This full mediation pattern positions engagement not merely as one pathway among many, but as the necessary relational mechanism through which digital marketing creates value in experiential contexts [8, 9, 17].

Unlike transactional service contexts where direct effects are common, participant sports require engagement as the psychological state through which participants internalize and evaluate their event interactions, making it the critical bridge between marketing inputs and participation outcomes. Qualitative insights from the content analysis further reinforce these quantitative findings. High-performing digital campaigns consistently integrated personalisation and gamification within a unified multichannel framework, emphasizing contextual relevance, progressive engagement mechanisms, and participant co-creation. Such strategic alignment is essential in transforming isolated digital practices into seamless and lasting consumer experiences [11, 13].

PRACTICAL IMPLICATIONS FOR EVENT ORGANIZERS AND MARKETERS

The findings offer clear, actionable guidance for organizers of recreational running events and sport marketers. First and foremost, multichannel integration should be the foundational priority in digital marketing strategy. Event organizers must invest in creating a unified digital ecosystem where communication across websites, social media, email, and mobile applications is consistent, complementary, and seamless. This involves not only visual and tonal consistency

but also functional integration (e.g., allowing social media sign-ups to sync with the event app). The dominance of multichannel integration suggests that isolated efforts on a single platform are insufficient; the overall coherence of the digital journey is paramount for reducing participant friction and building trust. Second, gamification should be strategically deployed to activate and sustain engagement. The medium-to-large effect size of gamification indicates that elements like virtual badges, progress trackers, leaderboards, and social challenges are powerful tools for tapping into participants' intrinsic motivations for achievement and belonging. For maximum impact, gamification should be tailored to different participant segments; for instance, experienced runners may respond better to competitive challenges, while newcomers might be more motivated by milestone rewards and social encouragement. Third, although personalisation exhibited a smaller independent effect compared to multichannel integration and gamification, it plays a crucial role in deepening long-term relationships with participants, particularly repeat attendees. Unlike broad engagement drivers, personalisation operates cumulatively by enhancing relational continuity over time. Event organizers should leverage customer relationship management systems and participant data to deliver tailored communication, such as individualized training recommendations, personalized race feedback, and targeted event suggestions based on prior participation history. For example, returning participants can receive customized progress summaries or milestone recognition, reinforcing emotional attachment and perceived recognition. Importantly, personalisation is most effective when integrated within a broader multichannel strategy rather than applied in isolation. Its value lies not in immediate engagement stimulation but in fostering loyalty, strengthening relational bonds, and increasing lifetime participant value. Personalisation becomes increasingly valuable as the relationship matures, helping to transform one-time participants into loyal brand advocates. Finally, the full mediation role of consumer engagement underscores that these digital strategies should not be viewed as direct sales tools but as investments in building long-term relational capital. Marketing efforts should therefore focus on creating emotionally resonant and interactive digital experiences that foster a sense of community and belonging, which in turn drives satisfaction, loyalty, and future participation.

Overall, this study contributes to both consumer engagement and sport marketing literature by empirically demonstrating how digital marketing strategies jointly influence engagement and participation-related outcomes in recreational running events. By positioning consumer engagement as the mediating construct, the research offers a coherent framework for understanding how digitally mediated experiences transform into enhanced satisfaction, loyalty, and continued participation, thereby extending current theory into an underexplored empirical domain [8, 9].

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

CONCLUSION

This study enhances the understanding of digital marketing effectiveness in recreational running events by illustrating how personalisation, gamification, and multichannel integration collaboratively shape consumer engagement and related participation outcomes. The findings reveal that digital marketing strategies chiefly influence satisfaction, loyalty, and participation intention through their capacity to foster emotional and behavioural engagement, highlighting engagement as a central relational mechanism in digitally mediated recreational sport contexts. Among the strategies assessed, multichannel integration stands out as the most influential driver of engagement, followed closely by gamification and personalisation. This hierarchy signifies the importance of coherent and consistent digital ecosystems in crafting participant experiences, suggesting that isolated digital features are less potent when not embedded within

an integrated communication framework. By empirically positioning consumer engagement as a mediating construct, this study advances the literature on consumer engagement and sport marketing into the relatively unexplored arena of recreational running events. From a theoretical perspective, this study contributes to SDT by empirically demonstrating how digital marketing strategies support core psychological needs in recreational sport contexts. Specifically, gamification enhances competence and relatedness, personalisation supports autonomy and individual recognition, while multichannel integration facilitates a coherent and supportive experiential environment. By linking these mechanisms to consumer engagement, the study extends SDT into digitally mediated sport experiences and highlights its relevance for understanding engagement-driven participation behavior.

LIMITATIONS

Despite these critical contributions, several limitations warrant acknowledgment. First, the cross-sectional design of the research restricts causal inference; while the proposed theoretical model is supported, longitudinal data would be necessary to confirm the directionality of relationships and examine engagement dynamics over time. Second, the research relies on self-reported data, which may be susceptible to common method bias. Although procedural remedies (e.g., anonymization, varied scale anchors) and statistical checks (Harman's single-factor test) were implemented, the potential for bias cannot be entirely ruled out. Third, the study's geographic and contextual focus on Croatian recreational runners participating in digitally mediated events may limit the generalizability of findings to other cultural contexts, sports disciplines, or events with less digital integration. Fourth, the use of convenience sampling from online communities may introduce selection bias, as participants were likely more digitally savvy and engaged than the average recreational runner.

FUTURE RESEARCH DIRECTIONS

Future studies should address these limitations and extend the current research in several directions. Methodologically, longitudinal or experimental designs could provide stronger evidence for causal relationships and capture the evolution of engagement across the event lifecycle. Contextually, research should examine whether the observed hierarchy of digital strategies holds in different sport settings (e.g., cycling, triathlon) and cultural environments. Theoretically, future work could explore potential moderators, such as participant age, experience level, or technological readiness, which may influence the effectiveness of digital engagement strategies. Technologically, as digital tools evolve, research should investigate the impact of emerging technologies like artificial intelligence, virtual reality, and wearable integration on consumer engagement in recreational sports. Finally, incorporating objective behavioural data (e.g., app usage metrics, click-through rates, social media interactions) alongside self-reports would provide a more comprehensive understanding of engagement dynamics.

APPENDIX

Table 8. Complete overview of measurement items.

Construct	Item code	Item wording
Personalisation	PER1	Digital communication related to the event was tailored to my personal needs and preferences.
	PER2	Event-related messages were relevant to my goals and interests.
	PER3	I felt that the event organisers addressed me as an individual participant.
	PER4	Digital content reflected my previous participation and experience.
Gamification	GAM1	Digital platforms motivated me through challenges or achievements.
	GAM2	Progress tracking features increased my motivation.
	GAM3	Rewards or badges made participation more engaging.
	GAM4	Competitive or social features increased my involvement.
	GAM5	Gamified elements made the event experience more enjoyable.
Multichannel integration	MCI1	Communication across digital channels felt coherent.
	MCI2	Information provided across platforms was consistent.
	MCI3	Digital channels complemented each other effectively.
	MCI4	Interaction across channels felt seamless.
Emotional engagement	EE1	I felt emotionally connected to the event.
	EE2	The event generated excitement and enjoyment.
	EE3	I felt attached to the event.
	EE4	The event experience was emotionally engaging.
Behavioural engagement	BE1	I actively interacted with the event's digital platforms.
	BE2	I shared event-related content online.
	BE3	I followed event updates before and after the event.
	BE4	I actively engaged with event-related activities.
Satisfaction	SAT1	Overall, I am satisfied with the event experience.
	SAT2	The event met my expectations.
	SAT3	I evaluate the event positively.
Loyalty	LOY1	I intend to participate in future editions of the event.
	LOY2	I would recommend the event to others.
	LOY3	I feel committed to this event.
	LOY4	I prefer this event over similar alternatives.
Participation intention	PI1	I intend to participate in similar events in the future.
	PI2	I am likely to register for upcoming events.
	PI3	I plan to continue participating in recreational running events.

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