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BUILDING LOYALTY THROUGH QUALITY: PERCEIVED VALUE AS MEDIATOR AMONG GEN Z PARTICIPANTS IN RUNNING EVENTS

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ABSTRACT

This study investigates the mediating role of perceived value in the relationships between service quality, programme quality, and loyalty intention among Generation Z (Gen Z) participants in certified running events in Malaysia. Grounded in the Stimulus-Organism-Response (S-O-R) framework, the study positions perceived value as the central evaluative mechanism through which service quality and programme quality shape participants' loyalty intention. A quantitative cross-sectional design was employed using data collected from 553 Gen Z respondents aged 18–25 who had participated in the certified running event between 2023 until 2025. Data were gathered using a structured questionnaire and analyzed with SPSS version 26 and PROCESS Macro Model 4 with 5,000 bootstrap resamples. The findings indicate that both programme quality and service quality significantly predict perceived value, and perceived value significantly predicts loyalty intention. The indirect effects of both quality dimensions on loyalty intention were significant, while the direct effects were non-significant, indicating full mediation. The results further show that programme quality exerts a stronger influence on perceived value than service quality, suggesting that Gen Z participants place greater emphasis on experiential and engagement-related aspects of running events than on operational delivery alone. These findings contribute to event and consumer-behaviour literature by demonstrating that loyalty intention among young participants is formed primarily through value appraisal rather than direct quality perceptions, extending the S-O-R framework into a youth-focused participatory sport event context. Practically, event organizers should prioritize programme design elements

such as atmosphere, fairness, and memorability that strengthen participants perceived value, alongside maintaining sound operational service delivery. The study's originality lies in its focus on Gen Z participants in certified Malaysian running events, its analytical separation of service quality from programme quality, and its positioning of perceived value rather than satisfaction as the primary loyalty mechanism in this context.

Keywords: Service quality, programme quality, perceived value, loyalty intention, Generation Z, running events, sport events

INTRODUCTION

Running events have moved well past their origins as narrowly defined athletic competitions. They now function as broader experiential products, where participants weigh not just the physical challenge of the race but the surrounding service environment, the programme design, and what the event means to them overall. This shift shows up clearly in road-race markets, which have grown increasingly professionalized and are now benchmarked against international standards. In Malaysia, major events such as the Kuala Lumpur Standard Chartered Marathon (KLSCM) and Score Marathon are listed as full members of the Association of International Marathons and Distance Races (AIMS), which requires its member races to have courses measured according to standards recognized by World Athletics. Malaysian road races, in that sense, are becoming institutionalized as high-standard sport experiences rather than staying purely recreational gatherings.

This matters even more when the focus turns to Generation Z, a cohort often described as digitally immersed, experience-oriented, and highly responsive to interaction quality, immediacy, relevance, and perceived personal benefit (Ivasciuc et al., 2025; Priporas et al., 2017; Seyfi et al., 2024). Gen Z consumer behaviour research suggests this group does not judge service encounters on functional performance alone. What matters more is whether an experience feels engaging, efficient, and worthwhile (Seyfi et al., 2024). Related tourism research shows perceived value playing a substantial role in shaping attachment and post-consumption responses among younger consumers (Jiang & Hong, 2023; Nemati et al., 2025). Applied to running events, this points to something specific: Gen Z participants likely judge an event not only on whether it is well organized, but on whether the whole experience feels meaningful, enjoyable, and worth repeating.

Quality remains one of the most established predictors of favourable consumer responses in service and event research. Its effect on loyalty-related outcomes, though, is rarely direct. Zeithaml (1988) argued that consumers form value judgments through a trade-off between what they receive and what they give up, which makes perceived value a more immediate determinant of behavioural response than quality on its own. Recent meta-analytic evidence backs this up, identifying customer perceived value as a robust explanatory mechanism across service settings (Blut et al., 2023). Sport and event research shows similar patterns. Service quality is associated with perceived value, satisfaction, and behavioural intentions in spectator sport (Biscaia et al., 2023; Hapsari et al., 2016). Event quality predicts perceived value and behavioural intentions in event settings more broadly (Armbrrecht, 2021; Meeprom & Silanoi, 2020). Active sport tourism studies tell a consistent story too, with quality-related perceptions feeding into downstream behavioural outcomes through value-based evaluation (Jeong & Kim, 2020; Romiti & Sarti, 2016). Taken

together, this body of work points to a simple conclusion. Participants do not become loyal simply because quality exists. They become loyal when that quality is interpreted as valuable.

Despite these advances, several limitations remain in the literature. First, many event studies operationalize quality as a broad or aggregated construct, which can obscure the possibility that different dimensions of event delivery influence participants in different ways. In a running event setting, service quality may refer more closely to operational elements such as responsiveness, coordination, information delivery, and reliability, whereas programme quality may capture the design, attractiveness, engagement value, and experiential coherence of the event itself. Existing work acknowledges the multidimensional nature of event experiences, yet empirical research often stops short of modelling these dimensions as distinct predictors within the same loyalty framework. Second, much of the strongest evidence on quality-value-loyalty relationships comes from retail, airlines, hospitality, tourism, or spectator-sport settings rather than from participatory running events, where participants are active co-producers of the experience. Third, although Gen Z is increasingly important to the future sustainability of sport event participation, comparatively fewer studies have examined how this cohort forms loyalty in certified running event contexts, particularly in Malaysia. Taken together, the literature is strong on the general relevance of quality and value, but still limited in explaining how these mechanisms operate for young runners in internationally benchmarked event environments.

The present study addresses this gap by examining the relationships between service quality, programme quality, perceived value, and loyalty intention among Generation Z participants in the context of certified running events in Malaysia. Specifically, the study positions perceived value as the mediating mechanism through which service quality and programme quality may influence loyalty intention. This perspective is theoretically important because it moves beyond a direct-effect understanding of loyalty and instead treats loyalty as the outcome of an internal evaluative process. It is also practically important because organizers of certified running events now operate in an environment marked by growing participant expectations, increasing event choice, and stronger international benchmarking pressures.

By distinguishing service quality from programme quality, this study seeks to offer a more precise explanation of how loyalty is formed in participatory sport event settings. If service quality reflects the efficient and reliable delivery of the event, and programme quality reflects the experiential richness and attractiveness of the event design, then these dimensions may not contribute equally to participants' value judgments. This distinction is especially relevant for Gen Z, whose consumption patterns are often shaped by experiential relevance and perceived worth rather than by functional adequacy alone. Accordingly, the study contributes to the literature by extending value-based quality research into a youth-focused running event context and by clarifying whether participants' future loyalty is driven directly by perceived quality or indirectly through the value they derive from that quality.

LITERATURE REVIEW

Running events as experiential and participant-centred service settings

Recent scholarship increasingly treats participant sport events not merely as operationally delivered services but as experiential systems in which motivation, engagement, perceived benefits, and post-event

behaviour are closely connected. Chifamba et al. (2025) argue that participant sports remain underdeveloped in the literature relative to spectator sport, even though marathon participation clearly generates cognitive, emotional, and behavioural engagement that translates into word-of-mouth and re-participation intention. In parallel, Chen et al. (2025) show that event engagement research has shifted toward a broader understanding of technology-facilitated experience design across pre-event, during-event, and post-event phases. In a more event-specific context, Whitehead and Wicker (2025) demonstrate that a salient event-quality attribute can significantly increase participants' intention to revisit, confirming that event experience is materially tied to future behavioural commitment. Recent running event work has also started to examine technology-enabled customer experience directly, reinforcing the view that running events should be conceptualized as integrated service-and-experience environments rather than as simple race-day transactions (Kallitsari et al., 2026).

This experiential framing is especially relevant in the context of certified running events, where participant expectations are likely shaped not only by reliability and logistics but also by symbolic event quality, atmosphere, perceived professionalism, and digitally mediated touchpoints. As a result, the literature increasingly supports a distinction between operational service delivery and the wider programme or experience architecture of the event. This distinction is important because it opens analytical space for treating service quality and programme quality as related but non-identical constructs in participatory running event research.

Generation Z and contemporary event consumption

The relevance of this distinction becomes even stronger when the focal segment is Generation Z. Seyfi et al. (2024) describe Gen Z as a cohort reshaping hospitality and service expectations, with implications for both customer experience design and organizational strategy. More recent tourism research likewise suggests that Gen Z travellers display distinctive patterns in motivation, service preference, information use, and behavioural intention. For example, Ivasciuc et al. (2025) show that Gen Z is an increasingly influential tourism segment with identifiable service preferences, while Nemati et al. (2025) highlight behavioural preferences regarding service quality, perceived value, and loyalty among Gen Z in adventure tourism. Shuvo and Ahmed (2025) further demonstrate that value-based factors such as ethical, aesthetic, and play value influence Gen Z behavioural intention in sustainable tourism contexts, and Lam et al. (2025) find that experience, delight, and satisfaction significantly shape eWOM intention among Gen Z tourists. Taken together, these studies indicate that younger consumers are especially responsive to experiential and value-oriented components of service encounters. Crucially for the present study, these studies suggest that value-based evaluation may be especially important for explaining Gen Z behavioural intention, with programme richness and service reliability potentially translating into a judgement of worthwhileness that subsequently influences behavioural commitment (Ivasciuc et al., 2025; Seyfi et al., 2024). This makes Gen Z a highly relevant and analytically meaningful population for quality-value-loyalty research in running events.

These newer Gen Z studies also suggest that behavioural outcomes are rarely driven by functional performance alone. Instead, value interpretation, uniqueness, experience quality, and emotional response appear to play a central role in shaping recommendation, loyalty, and continued engagement. For a running event setting, this implies that participants in this cohort may evaluate the event not only on operational smoothness but also on whether the event feels distinctive, relevant, and worth repeating.

Service quality as a foundational but insufficient predictor

Recent literature continues to confirm the importance of service quality, but it also shows that service quality alone rarely explains loyalty comprehensively. Blut et al. (2023), in a large-scale meta-analysis, reaffirm the centrality of customer perceived value in consumer evaluation across service settings. Complementing this, So et al. (2024) show in a review of customer loyalty formation research that loyalty often arises through an intermediate evaluative state rather than through direct quality-to-loyalty pathways, underscoring that a mediating mechanism is typically required. While So et al. focus on satisfaction as one such mediator, their core finding is relevant here: it reinforces the broader principle that quality perceptions need to be transformed into an internal evaluative state before they reliably produce loyalty, which is precisely the role perceived value plays in the present study. More focused empirical studies reach similar conclusions. Ghosh et al. (2025) report that dimensions of e-tourism service quality influence traveller loyalty through trust, while Cheung (2015) find that green perceived value, green trust and perceived quality are influenced by green product adoption. Recent tourism work also continues to find positive associations between service quality and attitudinal loyalty, although the pathway often includes intervening constructs rather than operating as a simple direct effect (Manyangara et al., 2025). Collectively, these findings suggest that service quality remains a necessary antecedent, but one that typically requires evaluative or relational mechanisms before loyalty-related outcomes emerge.

For the present study, this body of evidence supports conceptualizing service quality as the participant's evaluation of the event's operational delivery, including reliability, responsiveness, clarity, coordination, and support. Empirically, Hapsari et al. (2016) demonstrate in an airline service context that service quality positively predicts perceived value and customer satisfaction, confirming the SQ-to-PV pathway. Extending this evidence to loyalty outcomes, Jeong and Kim (2020) and Paulose and Shakeel (2021) both confirm that perceived value subsequently predicts loyalty intention in experience and hospitality contexts. Similar indirect pathways have been confirmed in sport event and hospitality contexts (Armbrecht, 2021; Jeong & Kim, 2020), indicating that operational quality by itself may not be sufficient to secure return intention or advocacy in experience-intensive settings. This is why service quality is best treated as a foundational input into value formation rather than as a guaranteed direct route to loyalty.

Programme quality and event experience design

Compared with service quality, the construct of programme quality is less standardized in recent literature, yet contemporary event research strongly supports its relevance. Although many recent studies do not use the exact label "programme quality," they increasingly examine adjacent dimensions such as event experience design, engagement architecture, event branding, ethical responsiveness, and technology-enabled participation. Chen et al. (2025) show that technological innovations shape attendee engagement across multiple phases of the event experience, while Kallitsari et al. (2026) specifically model technology-enabled customer experience in running events, suggesting that the designed participant journey is now an essential part of event evaluation. In a road-race context, Chen (2025) further links green brand positioning, attitude, and identification to runners' green brand loyalty, indicating that symbolic and programme-level elements matter for post-event attachment. Similarly, Dekoulou et al. (2025) examine ethical customer responsiveness in branded running events and position multiple mediating mechanisms as central to brand engagement. These studies collectively indicate that participants respond not only to operational delivery but also to the experiential, symbolic, and design-based properties of the event.

This literature supports the use of programme quality in the present study as a distinct construct reflecting participants' evaluation of how attractive, engaging, coherent, and meaningful the event programme feels. In certified running events, programme quality may reasonably include the event atmosphere, fairness of the race structure, ancillary activities, participant interaction opportunities, branding coherence, and digitally facilitated touchpoints. The recent literature therefore justifies separating programme quality from service quality because the former captures the designed and memorable aspects of the event experience, whereas the latter captures the efficient execution of event operations.

Perceived value as the central evaluative mechanism

Among the constructs in this model, perceived value carries perhaps the strongest recent empirical support. Blut et al. (2023) identify customer perceived value as a highly robust explanatory mechanism across service settings. Croitoru et al. (2024) go further, showing that multiple forms of perceived value shape satisfaction, retention, and loyalty all at once. Tourism evidence points the same way. Rueda-López et al. (2026) find that perceived value affects loyalty both directly and indirectly through satisfaction, and Shuvo and Ahmed (2025) show that ethical, aesthetic, and play value significantly shape Gen Z behavioural intention in sustainable tourism settings. Wang et al. (2025), working in a technology-related tourism context, reports that experiential quality affects net benefits through perceived value. Value, in other words, keeps showing up as the interpretive bridge between what people experience and how they later behave. Read together, these studies make one thing clear: perceived value is not a peripheral construct here. It functions as a central evaluative mechanism, the point where service and experience cues get converted into behaviour that actually matters.

Running events make this especially relevant. Participation is not just a monetary transaction. Runners put in time, physical effort, emotional energy, travel, and social commitment, well beyond whatever entry fee they paid. Under those conditions, quality cues alone rarely produce loyalty. They have to be interpreted as worth the investment first. Perceived value gives a coherent account of why that gap opens up, of why participants might recognize an event as well run and still stop short of strong loyalty intention.

Loyalty intention in participant sport and tourism settings

Recent loyalty research also supports a mediated view of post-consumption behaviour. So et al. (2024) emphasize that loyalty formation is often indirect and relational, not purely attribute-driven. Chifamba et al. (2025) show in marathon settings that participant engagement leads to word-of-mouth and re-participation intention, while Whitehead and Wicker (2025) demonstrate that event quality can materially influence revisit intention. In broader tourism settings, Ghosh et al. (2025) show that loyalty can emerge through trust-mediated service-quality pathways, and Li et al. (2026) find that tourist loyalty is shaped through mediated well-being mechanisms, with perceived service quality strengthening that process. Rueda-López et al. (2026) likewise report that perceived value and quality perceptions tend to influence loyalty more reliably through intermediate evaluative states than through direct effects alone, consistent with the indirect pathway tested in this study (Paulose & Shakeel, 2021). Together, these findings reinforce the position that loyalty intention should be treated as the result of accumulated evaluation and internal processing rather than as an automatic response to isolated event attributes.

For participatory running events, this is a meaningful distinction. Participants are not passive observers; they actively co-create the event through physical involvement, self-regulation, and social interaction. As a result, loyalty intention in this context is likely to depend on whether the event is judged to have delivered value, identity relevance, enjoyment, and engagement in addition to basic service adequacy. In running and sport event contexts specifically, several antecedents of loyalty intention have been identified: event atmosphere and race organization (Whitehead & Wicker, 2025), programme quality and engagement design (Chifamba et al., 2025; Ko et al., 2011), perceived value derived from quality evaluation (Jeong & Kim, 2020), participant satisfaction (Baker & Crompton, 2000), and event brand equity and identification (Chen, 2025). The present study focuses on the perceived value pathway because it bridges the quality inputs and the loyalty outcome in a theoretically parsimonious and empirically testable manner.

Synthesis and research gap

Overall, the recent literature from 2024 to 2026 supports four broad conclusions. First, participant sport and event research increasingly recognizes that engagement, revisit intention, and advocacy depend on more than operational efficiency alone. Second, Gen Z consumers appear especially responsive to experiential, ethical, aesthetic, and value-laden aspects of service encounters. Third, perceived value repeatedly emerges as a central explanatory mechanism linking quality-related inputs to behavioural outcomes. Fourth, the loyalty pathway is usually indirect, passing through mediators such as value, satisfaction, trust, well-being, or engagement rather than relying on direct effects alone.

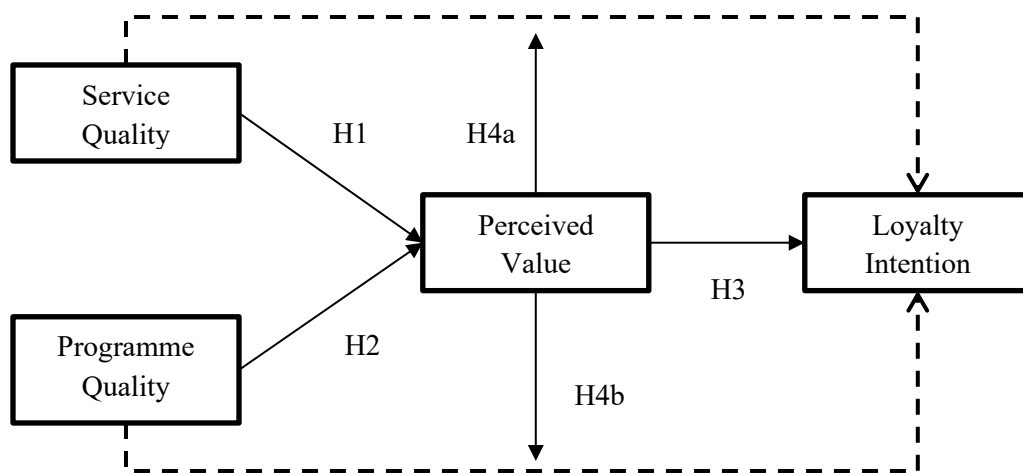
At the same time, an important gap remains. Much of the recent evidence comes from hospitality, e-tourism, green hotels, cultural tourism, or general event settings, with comparatively fewer studies focusing directly on Generation Z participants in certified running events. Even where recent running event studies exist, they tend to emphasize engagement, branding, or specific design elements rather than testing a focused model that distinguishes service quality from programme quality and examines perceived value as the mediating mechanism leading to loyalty intention. This gap justifies the present study and supports its contribution: to provide a more context-specific explanation of how quality perceptions are translated into loyalty among Gen Z participants in certified running events in Malaysia.

Research hypotheses and conceptual framework

Based on the reviewed literature, four relationships are proposed in this study. First, service quality is expected to positively predict perceived value (H1), consistent with evidence that operational quality shapes participants' overall benefit evaluation (Blut et al., 2023; Hapsari et al., 2016). Second, programme quality is expected to positively predict perceived value (H2), supported by event studies demonstrating that experiential design and engagement-based dimensions of events strengthen participants' value judgments (Armbrecht, 2021; Meeprom & Silanoi, 2020). Third, perceived value is expected to positively predict loyalty intention (H3), consistent with value-based consumer research confirming that evaluative outcomes drive subsequent behavioural commitment (Jeong & Kim, 2020; Zeithaml, 1988). Fourth, perceived value is expected to mediate both the relationship between service quality and loyalty intention (H4a) and the relationship between programme quality and loyalty intention (H4b), extending the logic of indirect-effect models in event and sport tourism contexts (Armbrecht, 2021; Hapsari et al., 2016). These relationships are summarized in Figure 1.

Figure 1

Conceptual Framework. Service Quality and Programme Quality as antecedents of Perceived Value mediating Loyalty Intention among Gen Z Running Event Participants



METHODOLOGY

Research design and study context

This study used a quantitative, cross-sectional design to examine whether perceived value mediates the relationships between service quality, programme quality, and loyalty intention among Generation Z participants in running events. A cross-sectional survey fit the purpose. The study needed to test relationships among perceptual constructs using participant-reported data collected at a single point in time, and a snapshot design serves that goal directly.

The final dataset comprised 553 valid responses from Gen Z respondents aged 18–25 who had participated in the certified running event between 2023 and 2025. This number holds up well against standard sample-size guidance. It comfortably exceeds Cochran's benchmark for large or unknown populations. It also clears the usual regression heuristics for multivariate analysis with room to spare. Mediation power guidance published in the literature points the same way: samples of this size are generally adequate for detecting many indirect effects, though power still hinges on how large the underlying paths actually are.

Population and sample

The target population comprised Generation Z runners who had participated in certified running events in Malaysia. This study defines Generation Z operationally as individuals born between 1997 and 2007, aged 18–25 at the time of data collection, following widely cited cohort demarcations in the literature (Seyfi et al., 2024). As a group, respondents here shared some recognizable traits: digital nativity, an active lifestyle orientation, and prior experience with organized competitive or recreational running.

Eligibility rested on two criteria. Age had to fall within the 18–25 range. Participation in at least one certified running event in Malaysia between 2023 and 2025 was required too. Data collection ran through an online structured questionnaire administered via Google Forms between March and June 2025. The survey link went out through official social media platforms of certified running events in Malaysia, running community groups on Facebook and Instagram, and university sports boards with active-runner memberships. Respondents confirmed their age and prior event participation before the survey items opened up.

A total of 601 responses came in. After excluding incomplete responses and those that failed eligibility checks, 553 valid responses remained, forming the final dataset for mediation testing. Convenience sampling made sense here, since the target population lacks a complete sampling frame. Purposive screening criteria, namely age range and prior participation, were applied on top of that to keep respondents relevant to the study (Cochran, 1977). The final usable sample of 553 respondents comfortably clears Cochran's formula benchmark for large or unknown populations ($n = 384$ at 95% confidence, 5% margin of error) and satisfies the regression heuristic of 10 observations per predictor variable.

Instrumentation and Measures

The questionnaire ran across four sections, each built to capture something different, respondent background first, then the three focal constructs. Section one collected demographic and participation information through five items: gender, age, ethnicity, semester of study, and frequency of participation in running events. Its job was simple. Profile the respondents. Establish their event-participation background before anything else.

Section two measured service quality (SQ) using 10 items adapted from the SERVQUAL tradition developed by Parasuraman, Zeithaml, and Berry (1988), reworked for the running event setting. The items centred on operational and interactional features: staff responsiveness, staff friendliness, availability of medical services, clarity of signage, safety and security arrangements. SERVQUAL was the natural starting point here. It remains one of the most established foundations for assessing perceived service quality in service encounters, and few alternatives carry the same track record.

Section three measured programme quality (PQ) through eight items adapted from event-quality research, particularly Ko et al. (2011), who developed and validated a multi-dimensional event quality scale for major spectator sports spanning programme, interaction quality, outcome quality, and physical environment. This study adapted only the programme quality subscale. It captures the experiential and organizational side of event delivery, things like activity design, atmosphere, and procedural fairness, that map most closely onto participatory running events. Ko et al.'s scale won out over other options for a specific reason: it was built and validated for sport event contexts, which puts it conceptually closer to running events than generic event-quality instruments could get. The items themselves covered organization of activities, event atmosphere, fairness of competition rules, efficiency of registration procedures, and overall memorability of the programme. Programme quality, in other words, was treated as its own construct here, separate from

service quality, weighted toward the design and experiential coherence of the event rather than operational delivery alone.

Section four captured perceived value and loyalty intention. Perceived value used a single global item, anchored in Zeithaml's (1988) conceptual definition and consistent with how global perceived value is typically measured in consumer and tourism research (Jeong & Kim, 2020): "The event provides good value for the time and money spent." This single-item approach follows earlier consumer and tourism research treating perceived value as an overall evaluative judgment rather than something that needs to be broken into dimensions. More elaborate alternatives exist. The Perceived Value scale (PERVAL) developed by Sweeney and Soutar (2001), for instance, offers a multidimensional route when that level of detail is required. Loyalty intention drew on two items adapted from Zeithaml et al. (1996), covering respondents' likelihood of attending future running events and recommending the event to others. All non-demographic items ran on a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). The instrument-development process, overall, aimed at strengthening content relevance and making sure the questionnaire actually fit Gen Z participants' perceptions of the running event context.

Data analysis procedure

The data were analyzed using SPSS version 26, and the mediation tests were conducted with the PROCESS Macro using Model 4, the template designed for simple mediation analysis. Two separate mediation models were estimated. Model 1 examined the indirect effect of programme quality on loyalty intention through perceived value, while Model 2 examined the indirect effect of service quality on loyalty intention through perceived value. Prior to the mediation analysis, descriptive statistics and correlation analyses were conducted to assess the data pattern and ensure that the variables were suitable for subsequent regression-based testing. PROCESS (Hayes, 2017) is widely used for mediation analysis because it estimates indirect effects directly within a regression framework and facilitates bootstrap-based inference for mediation models (Preacher & Hayes, 2008). The adequacy of sample size for detecting indirect effects was also assessed against the guidelines provided by Fritz and MacKinnon (2007).

To test the mediation effects, the study used bootstrapping with 5,000 resamples, following widely accepted guidance in mediation analysis. Bootstrapping is a non-parametric resampling procedure that generates an empirical sampling distribution of the indirect effect and is generally preferred to traditional normal-theory approaches because indirect effects often do not follow a normal distribution. The use of 5,000 bootstrap samples is commonly regarded as sufficient to generate stable bias-corrected confidence intervals while remaining computationally efficient. Given the present sample size of 553 respondents, this procedure provided a robust basis for statistical inference regarding the indirect effects in both mediation models.

Data suitability for mediation analysis

Before estimating the mediation models, the dataset was evaluated for its suitability for regression-based mediation analysis. First, measurement reliability was assessed for the multi-item predictors. The results indicated excellent internal consistency for both constructs, with Cronbach's $\alpha = .906$ for service quality and Cronbach's $\alpha = .879$ for programme quality. These values exceed the commonly used minimum benchmark of .70 and support the reliability of the two scales in the present dataset. Loyalty intention was measured with two items, while perceived value was represented by a global single-item appraisal, which is consistent with the conceptualization of value as an overall evaluation in prior research.

Second, sample-size adequacy was confirmed. With 553 valid responses, the study exceeded Cochran's benchmark for large populations and common multivariate regression recommendations. This sample size also compares favorably with mediation power guidance showing that indirect-effect testing generally benefits from substantially larger samples than ordinary direct-effect testing. Accordingly, the dataset was sufficiently large to support the planned reliability analysis, correlation analysis, and mediation testing.

Third, preliminary regression diagnostics indicated that the proposed mediation structure was empirically tenable. The independent variables, namely service quality and programme quality, were significantly associated with the mediator (perceived value), and the mediator significantly predicted loyalty intention. At the same time, the direct paths from service quality and programme quality to loyalty intention were not significant, suggesting the plausibility of full mediation. In addition, variance inflation factors (VIFs) were below the commonly used threshold of 5, indicating no problematic multicollinearity, while visual inspection of residuals supported the assumptions of linearity, homoscedasticity, and independence required for regression-based mediation analysis.

Theoretical grounding of the mediation model

The mediation model was conceptually grounded in the Stimulus-Organism-Response (S-O-R) framework proposed by Mehrabian and Russell (1974). Within this framework, service quality and programme quality function as external stimuli, perceived value represents the internal organismic evaluation, and loyalty intention constitutes the behavioural response. This theoretical structure provides a coherent rationale for modelling value as the intervening mechanism through which quality perceptions are translated into future behavioural intention. Taken together, the theoretical logic, scale structure, sample size, diagnostic checks, and bootstrap procedure justify the use of mediation analysis as an appropriate and robust strategy for hypothesis testing in this study.

Ethical considerations

This study was conducted in accordance with relevant ethical guidelines. Ethical approval was obtained from the institutional review board of the authors' affiliated institution prior to data collection. All participants provided voluntary informed consent, were assured of anonymity and confidentiality, and were informed of their right to withdraw at any time without consequence. No personally identifying information was collected or retained.

FINDINGS

The mediation analyses were conducted using PROCESS Model 4 with 5,000 bootstrap resamples on the study sample of 553 valid responses. Two separate models were estimated to examine the indirect effects of programme quality and service quality on loyalty intention through perceived value.

In Model 1 (programme quality → perceived value → loyalty intention), programme quality significantly predicted perceived value ($B = 0.4999$, $p < .001$), and perceived value significantly predicted loyalty intention ($B = 0.5813$, $p = .0013$). The indirect effect of programme quality on loyalty intention through perceived value was significant ($B = 0.2906$, 95% CI [0.1000, 0.4883]). However, the direct effect of programme quality on loyalty intention was not significant ($B = 0.1425$, $p = .3743$), indicating full

mediation. The model explained 31.42% of the variance in perceived value ($R^2 = 0.3142$) and 3.70% of the variance in loyalty intention ($R^2 = 0.0370$).

In Model 2 (service quality $\rightarrow$ perceived value $\rightarrow$ loyalty intention), service quality significantly predicted perceived value ($B = 0.3484$, $p < .001$). The indirect effect of service quality on loyalty intention through perceived value was also significant ($B = 0.2299$, 95% CI [0.1145, 0.3537]), whereas the direct effect of service quality on loyalty intention was not significant ($B = 0.0219$, $p = .8721$), again indicating full mediation. The corresponding path from perceived value to loyalty intention in this model was $B = 0.6598$.

The model explained 17.60% of the variance in perceived value ($R^2 = 0.1760$). For loyalty intention, that figure dropped sharply, to just 3.56% ($R^2 = 0.0356$). Put together, the results tell a consistent story. Both programme quality and service quality reached loyalty intention indirectly, through perceived value. Neither quality dimension produced a significant direct effect on loyalty intention in any of the tested models. Programme quality outperformed service quality as a predictor of perceived value, evident in both the larger path coefficient and the higher explained variance in the mediator model.

Table 1

Summary of mediation results

Path/Effect	Model 1 (PQ to Value to Loyalty)	Model 2 (SQ to Value to Loyalty)
Path A (X $\rightarrow$ M)	0.4999	0.3484
Path B (M $\rightarrow$ Y)	0.5813	0.6598
Path C' (X $\rightarrow$ Y, direct)	0.1425 (n.s.)	0.0219 (n.s.)
Indirect effect (X $\rightarrow$ M $\rightarrow$ Y)	0.2906*	0.2299*
95% CI for indirect effect	[0.1000, 0.4883]	[0.1145, 0.3537]
R^2 for perceived value	0.3142	0.1760
R^2 for loyalty intention	0.0370	0.0356

*Significant at the 95% confidence interval level.

DISCUSSION

The present study shows that perceived value fully mediates the relationships between both service quality and programme quality and loyalty intention among Gen Z participants in running events. That is the headline finding here. Quality perceptions alone are not enough to build loyalty. Participants have to interpret those qualities as personally worthwhile first. An event can be flawlessly delivered and still fail to earn a repeat visit. Loyalty shows up when the experience is judged worth the time, effort, and money spent on it, not simply when the event runs smoothly. This tracks with value-based consumer research, which argues that post-consumption behavior is often driven less by objective quality cues than by the subjective value consumers derive from them (Blut et al., 2023; Zeithaml, 1988).

The pattern also fits earlier work showing that quality rarely predicts behaviour directly. Hapsari et al. (2016) found that perceived value mediates the link between service quality and customer responses. Event research tells a similar story: event quality tends to shape behavioural intention through evaluative mechanisms such as value and satisfaction, rather than on its own (Armbrecht, 2021; Jeong & Kim, 2020;

Meeprom & Silanoi, 2020). What this study adds is specificity. Among Gen Z runners, perceived value is not just one variable among several. It is the main channel through which quality becomes behaviourally meaningful. Loyalty, in that sense, looks less like an automatic reaction to good operations and more like an act of interpretation.

One result stands out. Programme quality explained perceived value considerably better than service quality did (PQ to PV: $B = .4999$, $R^2 = .3142$; SQ to PV: $B = .3484$, $R^2 = .1760$). Gen Z participants, it seems, weigh the experiential and memorable parts of a running event more heavily than basic operational execution. Theoretically, this fits the Stimulus-Organism-Response framework, where service quality and programme quality function as external stimuli, perceived value represents the internal evaluative state, and loyalty intention is the resulting behaviour (Mehrabian & Russell, 1974). Both quality types are stimuli here. But programme quality produces a stronger organismic response, likely because it connects more directly to the symbolic and experiential side of participation. The Experience Economy perspective offers a complementary explanation: memorable, engaging experiences generate stronger affective and evaluative reactions than purely functional service delivery (Pine & Gilmore, 2013).

Some of this may simply come down to who Gen Z is as a consumer segment. They tend to be value-conscious, experience-driven, and attentive to authenticity and relevance (Priporas et al., 2017). Perceived value also plays an outsized role in shaping attachment and loyalty among younger consumers in tourism and experience contexts more broadly (Jiang & Hong, 2023). Seyfi et al. (2024) make a related point: Gen Z is reshaping hospitality expectations, with experiential relevance and interactional quality moving to the centre of how they evaluate service. Adventure and sustainable tourism research points the same direction: aesthetic, ethical, and play value often drive behavioural intention more strongly than functional service alone (Nemati et al., 2025; Shuvo & Ahmed, 2025).

In running events specifically, programme quality likely carries more weight because it covers what participants actually remember and talk about afterward: atmosphere, fairness, excitement, how well activities are organized, the overall sense of meaning. Service quality works differently. It sets a baseline. Get it wrong, and dissatisfaction follows. Get it right, and nothing especially happens. It just prevents complaints. Lam et al. (2025) found something similar: experiential delight and satisfaction shape eWOM intention among Gen Z tourists more strongly than operational service features do. That may explain why service quality still predicted perceived value in this model, just less strongly than programme quality.

A second notable result: neither service quality nor programme quality predicted loyalty intention directly. Loyalty among young event participants, then, does not form in a straight line. Participants can recognize that an event was well run, well programmed, competently delivered, and still hold back their future commitment unless those qualities register as a benefit, a pleasure, or a sense of worth. This distinguishes quality recognition from value realization. One is about what participants notice. The other is about what that noticing means to them. The present data suggest loyalty tracks the second process far more closely than the first.

Still, the models accounted for only a modest share of variance in loyalty intention, even with the indirect effects reaching significance. Perceived value matters. It is not the whole story. Satisfaction, destination attachment, community belonging, event identity, personal achievement, health motivation, social influence; any of these could plausibly contribute to whether someone returns or recommends the event. The present findings are best read as one meaningful pathway among several, not a complete account of

how loyalty forms. That framing has some theoretical value of its own: it places perceived value inside a larger nomological network rather than treating it as a single, sufficient explanation. Full mediation, a stronger programme-quality effect, relatively low R^2 for loyalty. Together, these results call for a measured reading of what the model actually explains.

Three theoretical contributions follow from this. First, the study strengthens the case for the S-O-R framework in participatory running event settings, showing that external quality cues shape behavioural intention through an internal evaluative state rather than a direct stimulus-response link. Second, it positions perceived value, not satisfaction, as the more immediate explanatory mechanism in this context. Third, it argues for treating service quality and programme quality as analytically separate, since the findings show they do not operate with equal strength. That separation adds precision. Broad, aggregated quality measures can obscure the distinct pathways through which participant evaluations actually form.

There are practical takeaways too, for event organizers and sports tourism stakeholders alike. Operational competence still matters. Safety, responsiveness, clarity, logistical efficiency; these remain essential, functioning as baseline expectations rather than loyalty drivers. Building loyalty asks for more. Organizers need to invest in programme elements that heighten a participant's sense of value: engaging race-day experiences, transparent and fair event structures, meaningful pre- and post-event activities, personalized communication, chances for social interaction, atmosphere that people remember. For Gen Z specifically, value tends to rise when an event feels authentic, participative, and worth sharing. Loyalty strategies, then, should be built as value-creation strategies embedded across the whole participant journey, not just as service improvements layered onto existing operations.

Taken together, the study suggests loyalty intention in running events is best understood as the outcome of a value-based interpretation process. Service quality and programme quality both matter, but mainly because they shape whether the event gets judged worthwhile in the first place. Programme quality's stronger pull points to something further: the experiential architecture of an event may carry particular weight for younger participants. Successful event management, on this view, is not only about delivering quality. It is about converting that quality into a sense of value strong enough that participants want to come back, tell others, and remember it.

RECOMMENDATION

Based on the findings, event organizers should treat perceived value enhancement as a primary strategic objective. Since both service quality and programme quality influence loyalty only through perceived value, organizers should design event experiences in ways that clearly increase the participant's sense of benefit relative to the time, effort, and cost invested. This means that value creation should be embedded across the full participant journey, from registration and communication to race-day delivery and post-event engagement. First, organizers should continue to maintain strong service quality foundations, particularly in areas such as safety, staff responsiveness, information clarity, medical readiness, and operational reliability. Although these dimensions may not independently generate loyalty, they remain essential in establishing trust and reducing dissatisfaction. Poor service delivery may weaken participants' value perceptions even when the programme itself is attractive.

Second, greater emphasis should be placed on programme quality, since this dimension showed the stronger relationship with perceived value. Organizers should therefore prioritize engaging programme design, transparent and fair race structures, memorable event atmosphere, meaningful pre- and post-event activities, and interaction opportunities that resonate with younger participants. Features that make the event feel distinctive, participative, and socially shareable are likely to strengthen perceived value more effectively than routine operational efficiency alone. Third, event managers should adopt a more segment-sensitive strategy for Gen Z participants. Because this cohort tends to be experience-oriented and value-conscious, organizers should consider communication styles, digital touchpoints, personalization, and community-building mechanisms that reinforce authenticity and relevance. The aim should not simply be to deliver a race, but to curate an event ecosystem that participants judge as worth repeating and recommending.

From a research perspective, future studies should broaden the model by incorporating additional predictors of loyalty intention, such as satisfaction, event attachment, social identity, achievement motivation, and community belonging. The relatively modest explained variance in loyalty intention suggests that perceived value is a significant mechanism, but not the only one. Future work may also benefit from using multi-event datasets, longitudinal designs, and comparative analyses across different categories of running events to determine whether the present mediation pattern holds across contexts and time periods. A further methodological recommendation is to strengthen construct measurement in subsequent studies. The currently accessible materials indicate that perceived value was assessed with a single item and loyalty intention with two items, which may be acceptable for an initial mediation model but limits construct depth. Later studies could employ fuller validated scales and test the model using structural equation modeling or multi-group analysis to improve robustness and allow richer theoretical comparison.

In conclusion, the present study suggests that loyalty among Gen Z participants in running events is best cultivated not by quality delivery alone, but by ensuring that event quality is experienced as meaningful value. Organizers who are able to convert operational competence and programme design into strong value perceptions are more likely to foster repeat participation, favourable word-of-mouth, and sustainable participant loyalty over time.

CONCLUSION

This study concludes that perceived value is the central mechanism linking both service quality and programme quality to loyalty intention among Gen Z participants in running events. The findings show that neither service quality nor programme quality directly predicts loyalty intention; instead, both operate indirectly through participants' value appraisal. This indicates that event quality, although important, is not sufficient on its own to secure future commitment from young participants unless it is translated into a meaningful sense of worth. The results therefore reinforce the argument that loyalty in running events is shaped less by quality recognition alone than by how participants evaluate the overall benefits they receive from the event experience.

A further contribution of the study lies in demonstrating that programme quality exerts stronger explanatory power for perceived value than service quality. This suggests that Gen Z participants are particularly responsive to the experiential and engagement-oriented aspects of an event, including atmosphere, fairness,

memorability, and interaction, rather than to operational delivery alone. In theoretical terms, this finding strengthens the usefulness of the value-based mediation perspective within the quality-loyalty framework and supports the broader view that participant loyalty emerges through internal evaluation processes rather than through a simple direct response to external quality cues.

Overall, the study contributes to event and youth-consumer research by showing that the relationship between event quality and loyalty intention is more effectively understood through perceived value than through direct quality effects alone. In practical terms, the findings suggest that the long-term sustainability of running events depends not merely on delivering efficient services, but on creating experiences that participants perceive as worthwhile, authentic, and enriching.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHOR CONTRIBUTION STATEMENT

H. M. Zakaria designed and conceptualized the study, performed the data collection, and drafted the original manuscript. A. Ramely developed the methodology, conducted the statistical analyses and mediation modeling, and interpreted the results. L. M. Kamarudin contributed to the literature review, theoretical framework, and initial draft editing. M. F. Mokhtar supervised the research project, provided critical revisions, and handled final editing and manuscript validation. All authors have read and agreed to the published version of the manuscript.

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