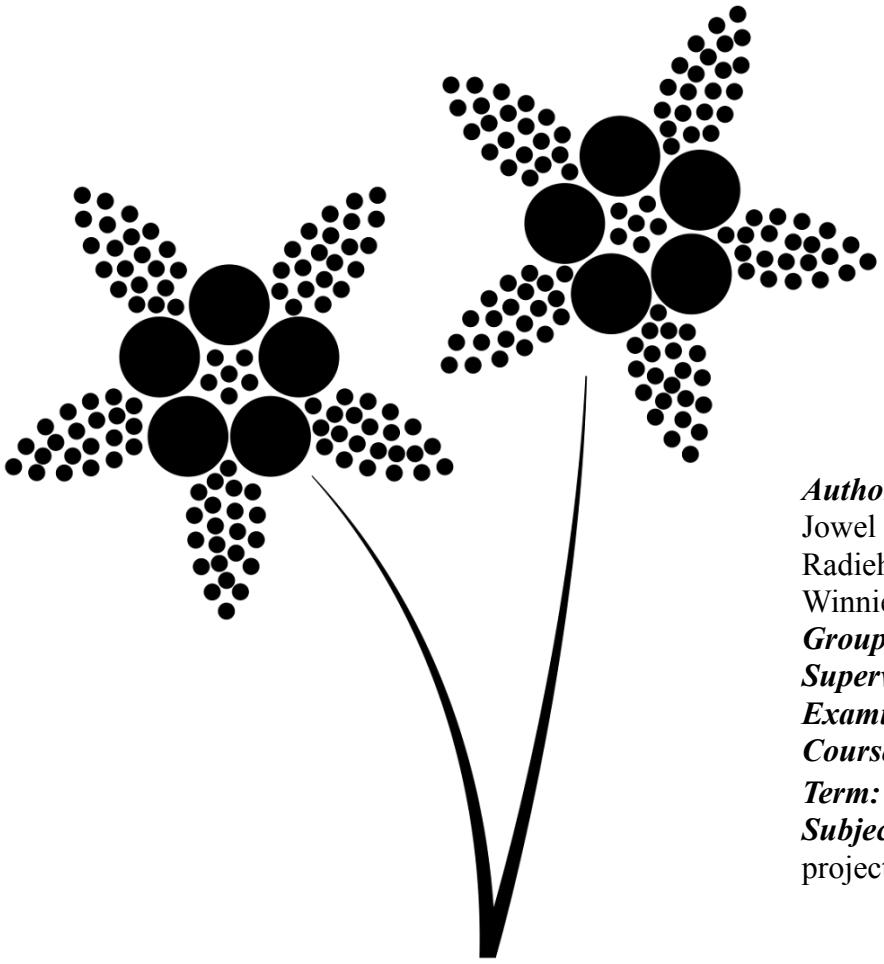
Linnæus University

Bachelor's Thesis

Green Signals, Red Flags?

Sustainability Communication, Purchase Intention, and the Moderating Role of Green Self-Identity in Rotating Sport Mega-Event Series



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Abstract

Background: Rotating sport mega-event series distribute the same event brand across multiple host destinations each season, creating recurring attendance decisions for spectators. Governing bodies increasingly invest in sustainability communication to influence these decisions, yet no empirical evidence links environmental messaging to spectators' purchase intention in this context.

Purpose: This study examines the influence of sustainability communication on spectators' purchase intention within rotating sport mega-event series, accounting for the moderating role of green self-identity.

Methodology: A quantitative cross-sectional survey was administered to 408 Formula 1 spectators across six continents. Sustainability communication was operationalised through three dimensions (message exposure, message credibility, and message engagement) with purchase intention as the dependent variable and green self-identity as the moderating variable. Eight hypotheses were tested using hierarchical moderated multiple regression analysis in SPSS.

Findings: Sustainability communication positively influences purchase intention ($\beta = 0.288$, $p < .001$), with message exposure the only dimension to independently contribute to this effect ($\beta = 0.123$, $p < .05$). Critically, green self-identity fully moderates the overall influence ($\beta = 0.315$, $p < .01$): once the interaction term was introduced, the direct effect of sustainability communication became non-significant, indicating its influence operates entirely through spectators' environmental self-concept. Fan closeness and prior attendance were the strongest control predictors throughout.

Conclusion: Sustainability communication functions as an identity-consistent reinforcer rather than a broadly persuasive tool. It reaches spectators for whom environmental responsibility is already self-defining while having little measurable effect on others. Organisations should treat sustainability messaging as a targeted instrument directed at environmentally identified audience segments rather than a mass communication strategy.

Keywords: sustainability communication, purchase intention, green self-identity, rotating sport mega-events, Formula 1, moderated regression

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1 Introduction

1.1 Background

Sport has long served as a vehicle for travel, with fans journeying across cities, countries, and continents to witness events and athletes that define their passion (Kaplanidou and Vogt, 2007). Central to this body of work is the concept of mega-events, large-scale, fixed-duration events that attract significant numbers of visitors, generate extensive mediated reach, entail substantial costs, and produce transformative impacts on their host destinations (Müller, 2015). Based on a review of existing definitions, Müller (2015) identifies four constitutive dimensions of mega-events: visitor attractiveness, mediated reach, costs, and transformative impact dimensions that collectively distinguish mega-events from smaller-scale sporting competitions and festivals. Building on this foundation, scholars have further classified mega-events by their organisational structure, distinguishing between single-edition events such as the Olympic Games or the FIFA World Cup and rotating series that distribute the same event brand across multiple host destinations within a single competitive calendar (Roche, 2000; Getz, 2008).

In contrast to single-edition mega-events, which present fans with a once-in-a-lifetime attendance opportunity, rotating sport mega-event series operate on an entirely different logic. Rather than anchoring to a single host city, a rotating series brings the same event brand to a different set of venues each season (Roche, 2000). Formula One (F1) exemplifies this structure, with its 2024 calendar featuring 24 races across 21 countries, including destinations as contrasting as Monaco, Abu Dhabi, Singapore, Las Vegas, and São Paulo (Öztopcu, 2024). Comparable series include MotoGP, the ATP and WTA professional tennis tours, and the World Surf League Championship Tour, each of which visits multiple countries within a single competitive year (Roche, 2000). What structurally distinguishes these series from single-edition mega-events is the nature of the consumption decision they create for their devoted fans, specifically, the formation of purchase intention, defined as an individual's conscious plan to make an effort to purchase a brand or experience (Spears and Singh, 2004). In a rotating sport mega-event context, this process is both recurring and comparative: fans do not simply decide whether to attend but actively evaluate which event from the season's calendar best meets their needs and preferences each year, making purchase intention a particularly dynamic and consequential construct in this setting (Morrison, 1979; Spears and Singh, 2004).

Alongside this structural distinctiveness, sustainability has developed into a central concern in contemporary sport and events (Han, 2021). Sustainability communication refers to the deliberate framing and transmission of environmental messages by an organisation, intended to build audience awareness, shape attitudes, and influence behaviour (Tinnish and Mangal, 2012; Harrison, Vafeiadis and Bober, 2022). Major sporting series increasingly communicate sustainability commitments to fans through digital platforms, event marketing, and social media (Harrison, Seaton and White, 2024; Kanza and Trisnaningtyas, 2025). F1, for example, has pledged net-zero emissions by 2030 and communicates sustainability initiatives to a global fan base of over 700 million across 180 countries (Lowrey, 2019; Robeers, Tudor and Stocz, 2023). Similarly, MotoGP has committed to transitioning all classes to 100% non-fossil fuels by 2027 and has obtained ISO 20121 certification for sustainable event management across its championship calendar (MotoGP, 2026).

This study draws on three theoretical pillars to examine what happens at the intersection of these sustainability communications and fans' purchase intentions. First, sustainability communication theory examines how organisations deliberately frame and convey environmental messages and under what conditions those messages successfully shape recipient attitudes and behaviour (Tinnish and Mangal, 2012; Harrison, Vafeiadis and Bober, 2022). Second, purchase intention theory addresses the cognitive and evaluative process through which consumers form a conscious plan to purchase a brand or experience, encompassing the role of brand attitude, perceived value, and customer experience in shaping that intent (Zeithaml, 1988; Spears and Singh, 2004; Nasermoadeli, Ling and Maghnati, 2013). Third, Green self-identity, which reflects the degree to which individuals perceive themselves as environmentally responsible and engage in behaviours consistent with this self-perception (Whitmarsh and O'Neill, 2010).

1.2 Problem Discussion

Rotating sport mega-event series represent a distinctive and commercially significant segment of the global sport and tourism industry. Series such as Formula One, MotoGP, the ATP and WTA tours, and the World Surf League bring the same event brand to multiple host destinations within a single competitive calendar, creating a recurring attendance decision for spectators who must actively evaluate which event from the season's calendar best meets their needs each year (Roche, 2000; Müller, 2015). Formula One alone communicates its brand and sustainability initiatives to a following of over 700

million people across 180 countries (Lowrey, 2019; Kanza and Trisnaningtyas, 2025). Within this context, governing bodies, event organisers, and destination marketing organisations increasingly invest in sustainability communication, the deliberate framing and transmission of environmental messages intended to build audience awareness, shape attitudes, and influence behaviour (Signitzer and Prexl, 2007). Despite this growing investment, Pierce (2024) finds no evidence that sustainability communication by destination marketing organisations produces measurable behavioural returns. This creates a practical problem because sustainability communication increasingly consumes organisational resources and strategic attention without clear evidence that it produces a likelihood of attending an event (Pierce, 2024).

The absence of evidence is not accidental. It reflects a structural limitation in how sustainability communication has been studied in sport contexts. Prior research has examined how environmental messaging shapes fan perceptions and general supportive attitudes (Harrison, Vafeiadis and Bober, 2022; Harrison, Seaton and White, 2024), how sustainability commitments have evolved within motorsport organisations (Robeers, Tudor and Stocz, 2023), and how spectators behave sustainably once they are already present at an event (Alagarsamy, Mehrolia and Ramdas, 2025). What none of these studies examines is whether sustainability communication shapes the decision to attend in the first place, or the purchase intention that precedes attendance entirely. The sports context has not addressed this at all. What makes sport a distinctive setting, and what prevents straightforward application of findings from general sustainability communication research, is the identity structure of the audience. Research in non-sport contexts assumes audiences who evaluate environmental messages primarily on the basis of message quality and perceived organisational credibility (Signitzer and Prexl, 2007; Tölkes, 2018). Sport audiences are structured differently. Acaf, Brown-Devlin and Atkinson (2025) demonstrate that spectators' primary relationship is with the spectacle, the competition, and the community rather than with the organisation's environmental conduct, and found empirically that F1 spectators who hold genuine environmental concerns nonetheless set those concerns aside when making attendance decisions, prioritising sporting factors instead. This pattern suggests that in sport contexts, the pathway from sustainability communication to purchase intention is moderated by identity-based filters that do not exist in the same way in general consumer markets. Whether those filters can be overcome, and under what communicative conditions, cannot be answered by importing findings from outside the sport context.

The question of how sustainability communication reaches different spectators adds a further dimension that existing research has not resolved. Sustainability communication does not reach a uniform audience. Spectators vary considerably in the degree to which they perceive themselves as environmentally responsible and incorporate that responsibility into their self-concept, what Whitmarsh and O'Neill (2010) define as green self-identity. Individuals with a strong green self-identity are more likely to engage actively with sustainability communication, process it as personally relevant, and allow it to influence their decisions, because such communication aligns with and reinforces how they already see themselves (Whitmarsh and O'Neill, 2010; Van der Werff, Steg and Keizer, 2014; Fatoki, 2020). Spectators for whom environmental responsibility is not a central part of their self-concept are less likely to respond to the same message in the same way (Bem, 1972; Kellison et al., 2025). This means the relationship between sustainability communication and purchase intention is not uniform across the audience; it is conditioned by the identity characteristics of the individual receiving the message. Existing research in the sport context has not accounted for the moderating role of green self-identity, despite evidence that sport consumption is strongly identity-driven and varies systematically across levels of fan identification (Wann and Branscombe, 1993; Funk and James, 2001; Trail, Fink and Anderson, 2003). Given that spectators differ significantly in how central team and sport identification are to their self-concept, it is likely that the influence of sustainability communication is similarly conditioned by identity structures, yet this has not been empirically examined in sport settings. If researchers ignore identity, they risk assuming that sustainability messages influence behaviour in sport in the same way they do in typical consumer settings, and ultimately result in communication strategies that are ineffective or poorly targeted in practice.

This gap matters practically. The assumption underlying current sustainability communication investment, that environmental messaging strengthens spectators' purchase intentions, has no empirical foundation in sport contexts (Harrison, Vafeiadis and Bober, 2022; Pierce, 2024). Investment in sustainability initiatives and related communication continues to expand within Formula 1's Net Zero 2030 strategy, including logistics optimisation, sustainable fuel development, and energy transition programmes (Pierce, 2024; Camm, 2025), and the available evidence suggests the relationship between sustainability communication and attendance decisions may be weaker than

assumed, particularly among spectators whose green self-identity is less central to their self-concept (Acaf, Brown-Devlin and Atkinson, 2025).

This study addresses that gap and benefits three groups who currently lack the evidence they need. Destination marketing organisations and circuit hosts need to know whether sustainability communication is a meaningful lever for driving purchase intention or whether resources are better directed elsewhere, yet investment in sustainability continues to grow without clear behavioural return data (Pierce, 2024). Event organisers and governing bodies similarly need evidence that sustainability communication produces measurable changes in spectators'purchase intention, rather than operational improvements alone (Mair and Smith, 2021).

The study also creates theoretical relevance for the academic community working at the intersection of sustainable sport, mega-event studies, and consumer behaviour, providing an empirically tested framework applicable to any rotating series where spectators face recurring destination selection decisions, including MotoGP, the ATP and WTA tours, the World Surf League, and F1. Existing literature provides insight into sustainability perceptions, supportive attitudes, and environmentally responsible behaviour within sport contexts, but insufficiently explains whether sustainability communication influences purchase intention within rotating sport mega-event series or whether this influence is moderated by green self-identity (Harrison, Vafeiadis and Bober, 2022; Harrison, Seaton and White, 2024; Alagarsamy, Mehrolia and Ramdas, 2025).

By quantitatively examining the relationship between sustainability communication and purchase intention, together with the moderating role of green self-identity, this study contributes empirical evidence regarding how sustainability communication functions within a sport context characterised by strong fandom, environmental tension, and recurring spectator decision-making.

1.3 Purpose

The purpose of this study is to examine the influence of sustainability communication on spectators' purchase intention within rotating sport mega-event series, accounting for the moderating role of green self-identity.

2. Theoretical Framework

2.1 Sustainability Communication

Sustainability communication is defined as the deliberate framing and transmission of environmental messages by an organisation, intended to build audience awareness, shape attitudes, and influence behaviour (Signitzer and Prexl, 2007). Although environmental messaging has sometimes been examined as a dimension of corporate social responsibility, sustainability communication constitutes a distinct construct whose operationalisation centres on audience reception processes rather than organisational reputation outcomes (Tölkes, 2018). The construct is operationalised through three dimensions: message exposure (Signitzer and Prexl, 2007; Tölkes, 2018), message credibility (Cho, Park and Kim, 2021; Harrison, Vafeiadis and Bober, 2022), and message engagement (Lazard and Atkinson, 2015; Kapoor, Balaji and Jiang, 2021). Each dimension captures a conceptually distinct aspect of how sustainability communication is received and processed by an audience, and each is treated in this study as an independent predictor of purchase intention.

2.1.1 Message Exposure

Message exposure captures the degree to which an audience has encountered an organisation's sustainability messaging. Without prior encounter with such messaging, no evaluative or behavioural response is possible (Signitzer and Prexl, 2007). Exposure is not a binary condition. Tölkes (2018) identifies that it varies as a function of channel selection, message frequency, and individual information-seeking behaviour, producing meaningful variation in exposure levels even within the same audience population.

Three components operationalise this dimension. Recall captures whether an audience member recalls having encountered sustainability messaging at all, establishing the minimum threshold of exposure. Frequency captures the perceived regularity of that exposure, distinguishing between isolated encounters and sustained reach (de Vreese and Neijens, 2016). Channel reach captures the breadth of exposure across platforms, reflecting the degree to which an organisation's sustainability communications penetrate different media environments. Tölkes (2018) identifies channel selection as a structural condition of exposure, noting that multi-channel presence determines the degree to which messages reach audiences who do not actively seek them out.

2.1.2 Message Credibility

Message credibility captures the degree to which an audience perceives an organisation's sustainability claims as believable and trustworthy. Sustainability messaging that is not believed has no theoretical pathway to attitude or behaviour change (Signitzer and Prexl, 2007). Credibility is defined as the degree to which sustainability claims are perceived as authentic, trustworthy, and consistent with the audience's prior expectations of the communicating organisation (Cho, Park and Kim, 2021; Harrison, Vafeiadis and Bober, 2022). Audiences do not evaluate claims in isolation; they assess them against what they already believe about the organisation's identity and conduct. Where messaging appears inconsistent with that prior understanding, credibility is undermined regardless of the factual content of the claims (Cho, Park and Kim, 2021).

Three components operationalise this dimension. Authenticity captures the perceived sincerity of the communicating organisation's intentions, that is, whether the audience believes the organisation's environmental commitments are genuine rather than performative (Harrison, Vafeiadis and Bober, 2022; Cho, Park and Kim, 2021). Trust captures confidence in the factual accuracy of the environmental information communicated. This is a distinct evaluative judgement from sincerity, as an organisation may be perceived as well-intentioned yet still doubted on the accuracy of its specific claims (de Jong, Huluba and Beldad, 2020; Harrison, Seaton and White, 2024). Consistency captures the perceived alignment between an organisation's stated sustainability commitments and its visible actions. De Jong, Huluba and Beldad (2020) demonstrate that claims which are technically accurate but selectively framed to overstate environmental progress produce audience perceptions of dishonesty comparable to outright false claims. Acaf, Brown-Devlin and Atkinson (2025) confirm this pattern in sport fandom contexts, finding that audiences who perceive a gap between sustainability claims and operational reality actively discount further communications from the same organisation.

2.1.3 Message Engagement

Message engagement captures the degree to which audiences actively process the sustainability content they encounter. Passive exposure, even to credible messages, does not reliably produce attitude change or behavioural intention (Signitzer and Prexl, 2007). Active processing is the mechanism through which message content is connected to

existing values, evaluated against prior knowledge, and potentially integrated into decision-making.

Three components operationalise this dimension. Relevance captures the perceived personal connection to sustainability content. Tölkes (2018) identifies personal relevance as a key condition for active processing, arguing that audiences are more likely to elaborate on content they perceive as connected to their own values or conduct. Elaboration captures the depth of cognitive processing that follows from relevance, reflecting the degree to which audiences engage in issue-relevant thinking about sustainability messages. Lazard and Atkinson (2015) demonstrate that when audiences critically evaluate message content against prior knowledge, the resulting attitudes are stronger and more resistant to change than those formed through surface-level processing. Message appeal captures the degree to which the emotional or rational framing of a message resonates with the audience and motivates engagement. Kapoor, Balaji and Jiang (2021) demonstrate that the match between message appeal type and message source significantly affects audience response. Bernard, Rahman and Douglas (2024) further show that precise, restriction-based language outperforms vague aspirational framing in producing both higher engagement and reduced scepticism about environmental claims. Message design, therefore, functions as a structural determinant of engagement independent of individual motivation.

2.2 Purchase Intention

Purchase intention is defined as an individual's conscious plan to make an effort to purchase a brand or experience (Spears and Singh, 2004). It reflects the subjective probability that a consumer will engage in a specific purchasing behaviour, capturing the motivational state that most immediately precedes action (Morrison, 1979; Spears and Singh, 2004). Spears and Singh (2004) draw an important conceptual distinction between purchase intention and related constructs such as brand attitude: while attitude reflects a stable internal evaluation of a brand, purchase intention operates at a lower level of abstraction and closer to tangible action. Across two independent studies using confirmatory factor analysis, Spears and Singh (2004) demonstrated that attitude towards the brand and purchase intention load onto separate factors with strong positive correlations, confirming that the two constructs are related but not interchangeable and that purchase intention is the more direct precursor to behaviour. It is widely regarded as the strongest direct predictor of actual buying behaviour, making it the most practically

valuable pre-behavioural construct available to researchers and practitioners seeking to anticipate consumption decisions before they occur (Morrison, 1979; Spears and Singh, 2004). Morwitz (2014), in a systematic review of sixty years of research on the relationship between purchase intentions and actual sales, found that purchase intentions consistently correlate with and predict future purchasing behaviour across a wide range of product categories and consumer contexts, reinforcing the construct's enduring cross-contextual validity and its value as the primary outcome variable of the present study.

The relationship between stated purchase intention and actual behaviour is not, however, guaranteed. Morrison (1979) demonstrated through longitudinal analysis of consumer panel data that stated purchase intentions maintain a positive linear relationship with actual purchase probability but showed that this relationship is moderated by product involvement and the temporal stability of individual intentions, meaning that even genuinely held intentions can be disrupted by intervening circumstances such as changes in personal finances or competing alternatives. Peña-García et al. (2020) corroborated this in a cross-cultural structural equation modelling study of online purchase behaviour across Colombian and Spanish consumers, finding that purchase intention did not reliably convert into actual purchase behaviour in either national context, attributing this gap to broader contextual conditions that suppress consumers' capacity to act on stated intentions even where those intentions were sincere.

These findings collectively establish that purchase intention is a distinct and independently meaningful construct, not simply a proxy for behaviour, and that understanding what shapes its formation is as theoretically important as understanding the conditions under which it converts into action (Morrison, 1979; Spears and Singh, 2004; Peña-García et al., 2020). Critically, this intention-behaviour gap is particularly relevant in sustainability contexts: Acaf, Brown-Devlin and Atkinson (2025) found that consumers holding genuine environmental concerns consistently set those concerns aside when forming consumption decisions, demonstrating that a positive attitude towards sustainability does not automatically translate into changed purchase intention and that the relationship between sustainability communication and purchase intention requires direct empirical investigation rather than assumption.

In the context of rotating sport mega-events, the formation of purchase intention is further shaped by the depth of consumers' identification with and loyalty to the event itself. Funk

and James (2001) propose the Psychological Continuum Model to describe how individuals progress through successive stages of psychological connection to a sport from initial awareness through attraction, attachment, and ultimately allegiance, with each stage representing a deeper and more durable form of involvement that increasingly predicts consistent consumption behaviour. At the allegiance stage, which characterises the most highly involved fans, consumption decisions become less deliberative and more habitual, driven by a stable identity-based commitment to the sport rather than situational evaluation of individual events (Funk and James, 2001). This distinction is theoretically significant in the context of rotating sport mega-event series, where the same event brand is experienced across multiple host destinations within a single competitive calendar, creating repeated consumption opportunities that reward the kind of deep loyalty Funk and James (2001) describe. Wann and Branscombe (1993) establish that higher degrees of fan identification are associated with stronger and more favourable orientations toward sport attendance, suggesting that deeply involved fans are more likely to maintain consistent purchase intentions across repeated event editions within a rotating series. Kim et al. (2019), in a meta-analytic review integrating 352 effect sizes from 172,142 participants across 119 studies, found that identification and commitment were the strongest predictors of sport attendance of all antecedents examined, confirming that the depth of a fan's psychological connection to a sport or event series is a more powerful driver of attendance intention than product-focused factors such as cost, facility, or even team performance. Rai et al. (2024) further confirm this dynamic in a sport sponsorship context, finding that fans' involvement in a sporting event significantly predicted positive perceptions of event reputation and, through those perceptions, purchase intention for products associated with the event. This suggests that in rotating mega-event contexts, the depth of fan involvement functions as a foundational condition that amplifies the purchase-relevant effects of other stimuli, including sustainability communication encountered across the event series (Funk and James, 2001; Kim et al., 2019; Rai et al., 2024). Consequently, how closely a consumer follows a rotating sport mega-event series is not merely a demographic characteristic of the sample but a theoretically relevant variable that conditions the strength of the relationships under investigation in the present study (Wann and Branscombe, 1993; Kim et al., 2019).

2.3 Green Self-Identity

Green self-identity reflects the degree to which individuals perceive themselves as environmentally responsible and engage in behaviours consistent with this self-perception (Whitmarsh and O'Neill, 2010). Rooted in identity theory, it represents a specific dimension of the actual self, how a person currently sees themselves in relation to environmental values and conduct, rather than an aspirational or socially projected image (Higgins, 1987; Van der Werff, Steg and Keizer, 2014). Individuals with a strong green self-identity do not merely hold positive attitudes toward the environment in the abstract; they incorporate environmental responsibility into their core self-concept, such that pro-environmental behaviour becomes an expression of who they are rather than a response to external pressure (Whitmarsh and O'Neill, 2010; Bem, 1972).

Furthermore, in accordance with Whitmarsh and O'Neill (2010) and Bem (1972), individuals with a strong green self-identity do not just have positive views about the environment in general; instead, they see environmental responsibility as part of who they are. Because of this, they act in environmentally friendly ways as a means of expressing their environmental identity rather than in response to external pressure. Research has shown that consumers actively select products and experiences that align with their green self-image, using consumption choices as a means of both reinforcing and signalling their environmental identity to others (Kim and Kim, 2025). Similarly, Fatoki (2020) found that green self-identity had a direct and significant positive effect on consumers' intention to choose sustainable accommodation options, operating independently of attitude and subjective norms.

Identity theory assumes that the more central or important an identity is to a person's self-concept, the more strongly it shapes their behaviour. As a result, individuals tend to invest more time and effort in roles or identities that are more central to them compared to those that are less important (Stryker and Burke, 2000; Pinho, 2025). Pinho (2025) found that individuals with a centrally held environmental identity reported higher levels of climate change anxiety and pro-environmental behaviour.

3. Conceptual Framework

3.1 Hypotheses

The theoretical framework presented in Chapter 2 identifies sustainability communication as a multidimensional construct comprising three distinct dimensions: message exposure, message credibility, and message engagement, each of which is expected to contribute positively to the overall effect of sustainability communication on spectators' purchase intention. Green self-identity is proposed as a moderator of both the overall sustainability communication-purchase intention relationship and the individual relationships between each dimension and purchase intention. This chapter develops the study's eight hypotheses by outlining the expected direction and theoretical rationale for each relationship, drawing on prior empirical evidence.

Rotating sports mega-event series present a structurally distinctive sustainability communication environment. Rather than anchoring to a single host city, the same event brand visits a different set of venues each season, distributing spectator engagement across multiple geographically dispersed editions within a single competitive calendar (Roche, 2000). This structure means that governing bodies must convey environmental credentials across multiple host cities and markets simultaneously and to a global spectator base whose relationship with each individual edition is episodic rather than continuous (Roche, 2000; Acaf, Brown-Devlin and Atkinson, 2025). The way organisations frame and communicate environmental messages in this context directly influences audience attitudes and behavioural responses (Signitzer and Prexl, 2007; Tölkes, 2018), and purchase intention is the most direct pre-behavioural indicator of whether those responses translate into actual consumption (Morrison, 1979; Spears and Singh, 2004). Each hypothesis below specifies a pathway through which sustainability communication and its dimensions influence purchase intention within this rotating series context, and the conditions under which green self-identity strengthens those pathways.

3.1.1 The influence of Message Exposure on purchase intention

Message exposure has been consistently identified as the foundational prerequisite of any sustainability communication effect. Without prior encounter with sustainability messaging, no evaluative or behavioural response is possible, as audiences cannot form attitudes toward communications they have not encountered (Signitzer and Prexl, 2007; Tölkes, 2018). De Vreese and Neijens (2016) in an overview of media exposure measurement across communication research, establish that exposure is a multidimensional concept encompassing awareness of message content, the frequency with which messages are encountered, and the breadth of channel reach across platforms, each of which captures a meaningfully different aspect of how audiences engage with media content. Du, Bhattacharya and Sen (2010) identify low stakeholder awareness as a key barrier to realising behavioural returns from corporate social responsibility communication, finding that consumers who are unaware of an organisation's sustainability activities cannot be expected to respond to them behaviourally.

In a rotating sport mega-event series, this exposure barrier is structurally amplified. Sustainability messaging is typically concentrated in the lead-up to and during each race edition rather than through the consistent, long-term brand touchpoints available to everyday consumer organisations (Roche, 2000). Spectators vary considerably in whether they encounter sustainability messaging through live broadcast, official social media, or on-site activation across different race markets, and these differences in channel reach are likely to produce corresponding differences in the overall effect of sustainability communication. Harrison, Vafeiadis and Bober (2022) provide empirical support in a sport context, finding that sustained exposure to organisational sustainability communication is a precondition for the trust and authenticity perceptions that drive fan supportive intentions. Wu and Long (2024) further confirm that social media sustainability communication positively and directly predicts eco-friendly purchase intention among consumers. Greater message exposure is therefore expected to produce a stronger overall effect of sustainability communication on spectators' purchase intention within the rotating series context.

H1: Message exposure positively influences purchase intention in rotating sport mega-event series.

3.1.2 The Influence of Message Credibility on Purchase Intention

Whilst exposure determines whether spectators encounter sustainability messaging, credibility determines whether that messaging is believed and accepted as a genuine reflection of organisational values. Sustainability messaging that is not perceived as authentic and trustworthy has no theoretical pathway to attitude or behaviour change, regardless of the level of exposure achieved (Signitzer and Prexl, 2007; Cho, Park and Kim, 2021). Newell and Goldsmith (2001) demonstrate that perceived corporate credibility, operationalised through trustworthiness and expertise, significantly and positively influences consumer attitudes and behavioural intentions, including purchase intention. Du, Bhattacharya and Sen (2010) further identify sceptical attribution toward corporate sustainability motives as a key barrier to CSR communication effectiveness, finding that consumers who attribute organisational sustainability activities to self-interested motives are significantly less likely to respond with supportive behaviour.

In a rotating sport mega-event series, credibility is not automatically conferred by exposure. Spectators carry accumulated reputational expectations formed across prior editions of the event, and sustainability claims encountered in the present edition are assessed against those prior expectations (Cho, Park and Kim, 2021). Where a perceived gap exists between stated environmental commitments and observed operational reality, a particularly salient risk given the scale of commercial interests involved and the high visibility of any discrepancy across multiple race markets, credibility is undermined and the downstream contribution of sustainability communication to purchase intention is correspondingly weakened. Harrison, Vafeiadis, and Bober (2022) demonstrate in a sport context that trust and authenticity perceptions significantly predict fan supportive intentions, underscoring credibility as the central mechanism through which sustainability communication produces behavioural responses. Louis and Lombart (2024) provide the most direct empirical evidence, finding that a CSR message's effect on purchase intention operates specifically through brand credibility perceptions, whilst Bianchi, Hofer and Saleh (2024) confirm the same pattern among younger consumers. Higher message credibility is therefore expected to produce a stronger overall effect of sustainability communication on spectators' purchase intention within the rotating series context.

H2: Message credibility positively influences purchase intention in rotating sport mega-event series.

3.1.3 The Influence of Message Engagement on Purchase Intention

Whilst exposure determines whether spectators encounter sustainability messaging and credibility determines whether they believe it, engagement determines whether they actively process it in ways that generate meaningful purchase-relevant responses. Passive exposure, even to credible messages, does not reliably produce attitude change or behavioural intention (Signitzer and Prexl, 2007). Dessart, Veloutsou and Morgan-Thomas (2015) conceptualise consumer engagement as a multidimensional construct encompassing cognitive, emotional, and behavioural dimensions, demonstrating through structural equation modelling that higher engagement produces stronger and more durable behavioural outcomes. Lazard and Atkinson (2015) demonstrate that deeper cognitive processing of sustainability messages produces attitudes that are stronger and more resistant to change, and given that stronger attitudes are well-established antecedents of purchase intention (Morrison, 1979; Spears and Singh, 2004), higher engagement is expected to strengthen the contribution of sustainability communication to purchase intention. Gong et al. (2023), in a structural equation modelling study of 393 consumers, found that customer engagement with sustainable marketing content significantly and positively predicts sustainable purchase intention, providing direct empirical confirmation of this pathway.

In a rotating sport mega-event series, the engagement challenge is particularly consequential. Sustainability messaging must compete for spectator attention with the primary motivation of experiencing the competition itself, with excitement, entertainment, and social interaction consistently identified as dominant drivers of sport event attendance (Funk et al., 2009). Even well-exposed and credible messages may therefore be received passively rather than processed meaningfully across the series' diverse race markets, making active engagement the critical mechanism that converts exposure and credibility into purchase-relevant responses. Kapoor, Balaji and Jiang (2021) show that message appeal and source congruency determine whether engagement is initiated among sport audiences, whilst Bernard, Rahman and Douglas (2024) confirm that precise message design produces higher engagement and reduced scepticism with direct effects on behavioural intentions. Higher message engagement is therefore expected to produce a stronger overall effect of sustainability communication on spectators' purchase intention within the rotating series context.

H3: Message engagement positively influences purchase intention in rotating sport mega-event series.

3.1.4 The Influence of Sustainability Communication on Purchase Intention

Having established that message exposure, credibility and engagement each contribute positively to sustainability communication as a construct, the fourth hypothesis addresses the overall direct influence between sustainability communication and spectators' purchase intention within a rotating sport mega-event series. Tölkes (2018) confirms in a systematic review of sustainability communication in tourism that effective environmental messaging influences consumer behavioural intentions across multiple consumption contexts, whilst Signitzer and Prexl (2007) argue that the strategic framing and transmission of environmental messages directly shape audience attitudes and responses. In sport event contexts specifically, Harrison, Vafeiadis and Bober (2022) demonstrate that sustainability communication by sport organisations significantly increases fan supportive intentions, providing direct empirical support for this relationship in a context comparable to the rotating mega-event series. Rai et al. (2024) further confirm that fans' involvement with and positive perceptions of sport events, shaped in part by event communication, significantly predict purchase intention for products associated with the event. Within the rotating series context, where sustainability communication operates across multiple editions and markets and must reach a geographically dispersed spectator base whose engagement with each edition is episodic, the combined effect of exposure, credibility and engagement is expected to exert a positive direct influence on spectators' stated purchase intention.

H4: Sustainability communication positively influences purchase intention in rotating sport mega-event series.

3.1.5 The Moderating Influence of Green Self-Identity on Sustainability Communication and Purchase Intention

Whilst H4 proposes that sustainability communication positively influences purchase intention across the spectator population, the strength of this relationship is not expected to be uniform. The global spectator base of a rotating sport mega-event series is

substantially heterogeneous in its environmental orientations, encompassing dedicated sustainability advocates alongside fans whose primary motivation is sport consumption and who may hold limited or conflicted engagement with environmental values (Acaf, Brown-Devlin and Atkinson, 2025; Kellison et al., 2025). Green self-identity, the degree to which individuals define themselves as environmentally responsible, is proposed as the individual-level variable that most directly conditions how strongly the overall effect of sustainability communication translates into purchase intention.

Barbarossa and De Pelsmacker (2016) show that the determinants of eco-friendly purchase behaviour differ significantly between consumers with stronger and weaker pro-environmental orientations, indicating that individuals with higher green self-identity respond more strongly to sustainability-related stimuli. Fatoki (2020) confirms that green self-identity predicts sustainable purchase intention directly and independently of attitude and subjective norms. In sport contexts specifically, Kellison et al. (2025) find that environmental identity conditions fan responses to sustainability communication, with stronger environmental identification associated with more positive behavioural responses to event sustainability messaging. Acaf, Brown-Devlin and Atkinson (2025) further demonstrate that fans with weaker environmental identities are less responsive to sustainability messaging even when directly exposed to it within a rotating series context, confirming that the sustainability communication-purchase intention relationship is not uniform across the spectator population. Green self-identity is therefore expected to moderate the overall sustainability communication-purchase intention relationship, such that the positive influence of sustainability communication is stronger among spectators with higher green self-identity and weaker among those with lower green self-identity.

H5: Green self-identity positively moderates the influence of sustainability communication on purchase intention in rotating sport mega-event series.

3.1.6 Dimension-Level Moderation: The Role of Green Self-Identity Across Message Exposure, Credibility, and Engagement

Hypotheses H6, H7, and H8 extend the moderation proposed in H5 to the individual dimension level. Testing moderation at the dimension level is theoretically important because green self-identity may not condition the effects of message exposure, credibility and engagement equally across the series' diverse race markets and spectator segments.

Spectators with higher green self-identity may respond especially strongly to one specific communication pathway, being more attentive to sustainability messaging when exposed to it, more receptive to credibility signals, or more deeply engaged with sustainability content, whilst the moderation of other dimensions may be weaker or absent. Specifying moderation at the dimension level, therefore, provides a more granular and theoretically precise understanding of how green self-identity shapes the sustainability communication-purchase intention relationship than an aggregate-level hypothesis alone can offer.

The theoretical basis for each dimension-level moderation hypothesis follows from the foundational arguments established in H5. Individuals with stronger green self-identities are more motivated to process environmental information in ways consistent with their self-concept (Barbarossa and De Pelsmacker, 2016; Fatoki, 2020), making them more likely to notice and attend to sustainability messaging when encountered across race editions (H6), more disposed to evaluate sustainability claims favourably when prior self-concept alignment exists (H7), and more inclined to engage deeply with sustainability content that resonates with their environmental values (H8). Kellison et al. (2025) and Acaf, Brown-Devlin and Atkinson (2025) both confirm that environmental identity conditions fan responses to sport sustainability communication at the level of specific communication encounters rather than only at the aggregate level, supporting the specification of dimension-level moderation hypotheses within the rotating series context.

H6: Green self-identity positively moderates the influence of message exposure on purchase intention in a rotating sport mega-event series.

H7: Green self-identity positively moderates the influence of message credibility on purchase intention in a rotating sport mega-event series.

H8: Green self-identity positively moderates the influence of message engagement on purchase intention in a rotating sport mega-event series.

3.2 Conceptual Model

Figure 1 illustrates the proposed relationships between the study's variables within the context of spectators of a rotating sport mega-event series. At the first level, the three

dimensions of sustainability communication message exposure, message credibility and message engagement each positively contribute to the overall construct of sustainability communication (H1-H3), represented by solid arrows. At the second level, sustainability communication has a direct positive influence on spectators' purchase intention (H4), represented by a solid arrow connecting sustainability communication to purchase intention. Green self-identity operates as a moderating variable at both levels: moderating the overall sustainability communication-purchase intention relationship (H5) and independently moderating the relationship between each individual dimension and purchase intention (H6-H8), represented by dashed arrows. Solid arrows represent direct hypothesised effects (H1-H4); dashed arrows represent the proposed moderating role of green self-identity (H5-H8).

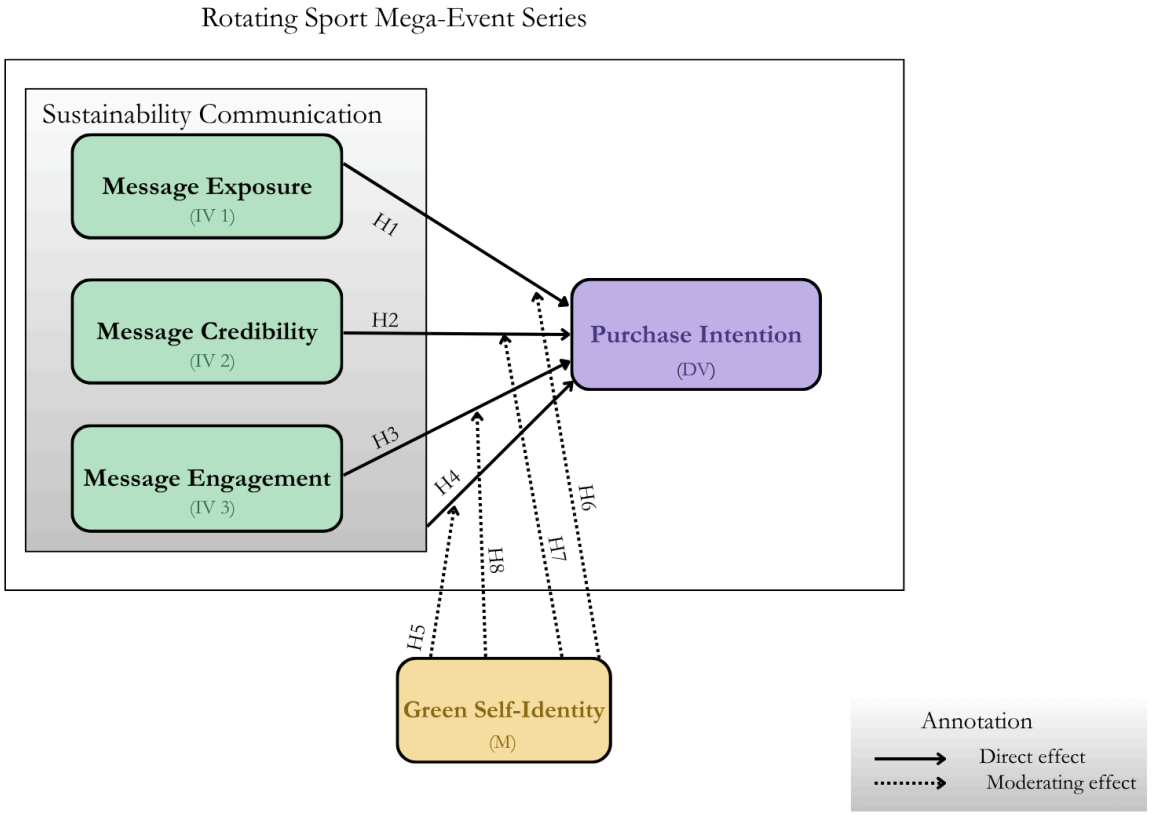

Figure 1. Conceptual model of the influence of sustainability communication on spectators' purchase intention within a rotating sport mega-event series, with green self-identity as a moderating variable.

4. Methodology

This chapter outlines the methodological decisions underpinning the present study, from the philosophical assumptions informing the research approach through to the procedures used for data collection, analysis, and quality evaluation. Each decision is justified with reference to the study's purpose, which is to explain the extent to which sustainability communication influences spectators' purchase intention within rotating sport mega-event series, and whether green self-identity moderates this relationship. Like most empirical research, the data collection process encountered practical obstacles that required adaptation, and these are reported honestly in the relevant sections below.

4.1 Research Philosophy

4.1.1 Ontological Position

Ontology concerns the nature of social reality and what can be known about it (Bell, Bryman and Harley, 2022). This study adopts an objectivist ontological position, treating constructs such as purchase intention, sustainability communication, and green self-identity as phenomena that exist independently of the researchers and can be measured through standardised instruments. Under this position, the relationships between variables are assumed to be real and stable enough to be captured through structured measurement, rather than being constructed through the act of inquiry itself (Bell, Bryman and Harley, 2022).

4.1.2 Epistemological Stance

Epistemology concerns the question of what counts as valid knowledge and how it can be obtained (Bell, Bryman and Harley, 2022). The present study adopts a positivist epistemological stance, treating social reality as amenable to investigation through methods analogous to those of natural science. This means the study seeks to identify regularities in the relationships between variables that can be expressed as generalisable findings, verified or falsified through empirical testing, and communicated through the language of statistics (Bell, Bryman and Harley, 2022). This stance is consistent with the study's aim of testing theoretically derived hypotheses rather than generating interpretive accounts of meaning.

4.2 Research Approach

4.2.1 Quantitative Research

The choice of a quantitative research approach is justified not only by the study's purpose but by the maturity of the research area in which it is situated. A quantitative approach prioritises the measurement of social phenomena through the collection and analysis of numerical data, and is particularly appropriate when theoretical frameworks already exist, and the goal is to test whether predicted relationships hold empirically (Bell, Bryman and Harley, 2022).

The constructs examined in this study have each been theorised and operationalised in prior quantitative research. Sustainability communication has been studied quantitatively as a driver of fan perceptions and supportive intentions in sport contexts (Harrison, Vafeiadis and Bober, 2022; Harrison, Seaton and White, 2024), and its relationship with consumer behaviour in tourism contexts has been reviewed systematically by Tölkes (2018), who identifies the translation of environmental attitudes into behavioural change as the weakest and least-studied link in the chain. Purchase intention has been operationalised and measured quantitatively across consumer behaviour and sport marketing research (Morrison, 1979; Spears and Singh, 2004; Peña-García et al., 2020). Green self-identity has been established as a theoretically meaningful and empirically measurable moderating variable in green consumer research (Whitmarsh and O'Neill, 2010; Van der Werff, Steg and Keizer, 2014; Fatoki, 2020). What remains absent from the literature is an empirical test of these relationships within the specific context of rotating sport mega-event series, where the recurring attendance decision creates a distinct and practically relevant purchase intention context (Müller, 2015; Roche, 2000). The field is therefore past the exploratory stage: the concepts are defined, the theoretical propositions are formulated, and the next logical step is empirical verification through hypothesis testing (Bell, Bryman and Harley, 2022). This is precisely the condition under which a quantitative deductive approach is warranted.

A qualitative approach would not be appropriate here, as the study's aim is not to generate new theoretical concepts or explore how individuals construct meaning around sustainability, but to test whether pre-specified relationships between measurable variables exist and in what direction they operate (Bell, Bryman and Harley, 2022).

4.2.2 Deductive Logic

The research follows a deductive logic, moving from established theory to the empirical testing of hypotheses (Bell, Bryman and Harley, 2022). Theoretical frameworks drawn from sustainability communication, purchase intention, and green self-identity research are used to derive eight specific hypotheses, which are then subjected to statistical testing using survey data. This sequence, from theory, to hypothesis, to operationalisation, to data collection, to analysis, is characteristic of deductive quantitative research and ensures that the empirical investigation remains grounded in prior scholarly work rather than proceeding from intuition or observation alone (Bell, Bryman and Harley, 2022).

4.3 Research Design

4.3.1 Cross-Sectional Survey Design

The study employs a cross-sectional research design, in which data on multiple variables are collected from a sample of respondents at a single point in time (Bell, Bryman and Harley, 2022). This design is suited to detecting patterns of association between variables and is appropriate here because the study's purpose is to examine associations between sustainability communication dimensions, green self-identity, and purchase intention across a sample of F1 spectators, rather than to track changes in these variables over time (Bell, Bryman and Harley, 2022).

Specifically, the study examines the direct associations between three dimensions of sustainability communication (message exposure, message credibility, and message engagement) as independent variables and purchase intention as the dependent variable, and tests whether green self-identity as a moderating variable conditions the strength of those associations. The design enables the simultaneous measurement of all variables and their respective dimensions across a sufficiently large sample to support statistical inference.

It is acknowledged that a cross-sectional design does not permit causal inference (Bell, Bryman and Harley, 2022). Findings are therefore interpreted as evidence of association, indicating whether the predicted relationships exist and in what direction, rather than as demonstrations of cause and effect. This limitation is addressed further in the discussion of internal validity in section 4.7.

4.3.2 Empirical Context: Formula 1 as a Case

F1 serves as the empirical case for this study. It is treated as a bounded system and an object of interest in its own right, providing a specific and concrete context within which the study's theoretical propositions can be examined (Bell, Bryman and Harley, 2022). The selection of F1 is justified on three independent substantive grounds. First, F1 communicates its brand and sustainability initiatives to a following of over 700 million people across 180 countries (Robeers, Tudor and Stocz, 2023; Lowrey, 2019), providing a large and geographically dispersed population of potential respondents. Second, F1 has publicly committed to reaching net zero carbon emissions by 2030 (Camm, 2025), making sustainability communication an active and ongoing feature of the organisation's public-facing strategy rather than a marginal concern. Third, F1 operates as a rotating sport mega-event series, staging races across multiple countries each season, which means spectators face recurring attendance decisions across different destinations, a context that makes the association between sustainability communication and purchase intention both theoretically relevant and practically significant (Müller, 2015; Roche, 2000; Getz, 2008).

It is worth acknowledging that the choice of F1 as the empirical context was partly shaped by the researchers' existing familiarity with and interest in the sport. While this facilitated access to relevant fan communities and contextual understanding, the researchers are aware that personal affiliation can influence how findings are framed and interpreted (Bell, Bryman and Harley, 2022). Steps were taken to minimise this risk: all analytical decisions were grounded in established theory and statistical output rather than prior expectations, the operationalisation was subjected to external review by an independent tutor and a quantitative methods expert, and the instrument was pre-tested with participants drawn from the target population. The three independent substantive justifications for selecting F1 outlined above further ensure that the case choice is defensible on methodological and theoretical grounds beyond personal familiarity.

4.4 Operationalisation

4.4.1 Measurement Approach

Operationalisation refers to the process of translating abstract theoretical concepts into concrete, measurable indicators that can be captured through a research instrument (Bell,

Bryman and Harley, 2022). In this study, five variables require operationalisation: the three dimensions of sustainability communication serving as independent variables (message exposure, message credibility, and message engagement), purchase intention as the dependent variable, and green self-identity as the moderating variable.

Each construct is operationalised through multiple indicators forming a summated scale. Bell, Bryman and Harley (2022) note that multiple-indicator measures improve validity and reliability by capturing more of the conceptual domain than any single question can achieve. All items were developed on the basis of established theoretical definitions drawn from peer-reviewed sources, and where validated scales existed in the prior literature, these were adapted for the present context. Adapting validated scales rather than constructing entirely new items strengthens measurement validity by building on instruments that have demonstrated reliability and conceptual accuracy in previous research, and facilitates comparison with existing findings (Bell, Bryman and Harley, 2022).

It should be noted that green self-identity is intentionally measured as a general dispositional characteristic rather than being anchored to the F1 context specifically. This reflects the construct's theoretical definition as a stable aspect of an individual's self-concept that operates across situations rather than being context-dependent (Whitmarsh and O'Neill, 2010; Van der Werff, Steg and Keizer, 2014). Individuals with a stronger environmental self-identity are more likely to engage actively with sustainability communication, process it as personally relevant, and allow it to influence their decisions, because such communication aligns with and reinforces how they already see themselves (Whitmarsh and O'Neill, 2010; Fatoki, 2020). Its moderating effect is therefore theorised to operate at the trait level across contexts (Whitmarsh and O'Neill, 2010; Van der Werff, Steg and Keizer, 2014). This is reflected in Figure 1, where green self-identity is positioned outside the rotating sport mega-event series context boundary, representing its operation as a trait-level variable that the spectator brings to the context rather than one that is specific to it. The independent variable items, by contrast, are anchored to the mega-event series because they measure perceptions of a specific organisation's communication, which is necessarily context-bound (Signitzer and Prexl, 2007; Tölkes, 2018).

4.4.2 Operationalisation table

Table 1: Operationalisation of Theoretical Constructs

Theory	Component	Item	Theoretical definition	Questionnaire Statement	Reference(s)
Sustainability Communication **(Independent Variable)**	**Message Exposure**	Recall	Recall of sustainability messaging	I can recall sustainability messages from the mega-event series.	Tölkes (2018); Signitzer and Prexl (2007)
		Frequency	Perceived regularity of exposure	I regularly come across sustainability messages from the mega-event series.	de Vreese and Neijens (2016); Tölkes (2018)
		Channel reach	Degree to which messages are encountered across multiple platforms	I come across sustainability messages from the mega-event series across different channels (e.g. social media, TV, website).	Tölkes (2018); de Vreese and Neijens (2016)
	Message Credibility	Authenticity	Perceived sincerity of sustainability claims	I believe the mega-event series' sustainability claims are sincere.	Harrison, Vafeiadis and Bober (2022); Cho, Park and Kim (2021)
		Trust	Confidence in the accuracy of environmental claims	I trust the environmental information that the mega-event series communicates.	Harrison, Seaton and White (2024); de Jong, Huluba and Beldad (2020)
		Consistency	Perceived alignment between stated sustainability commitments and visible organisational conduct	The mega-event series' sustainability actions are consistent with what it claims to stand for.	de Jong, Huluba and Beldad (2020); Acaf, Brown-Devlin and Atkinson (2025)

	Message Engagement	Relevance	Perceived personal connection to sustainability content	The mega-event series' sustainability content is relevant to me.	Tölkes (2018); Bernard, Rahman and Douglas (2024)
		Elaboration	Active cognitive processing of sustainability messages	I think about the mega-event series' sustainability messages when I come across them.	Lazard and Atkinson (2015); Tölkes (2018)
		Message appeal	Degree to which the emotional or rational framing of the message resonates	The sustainability communication from the mega-event series appeals to me.	Kapoor, Balaji and Jiang (2021); Bernard, Rahman and Douglas (2024)
Purchase Intention **(Dependent Variable)**	**Motivational state**	Stated intent	The consumer's direct and conscious plan to purchase; the most proximate cognitive precursor to buying behaviour, distinct from brand attitude in operating closer to tangible action	I intend to purchase a ticket to the mega-event series in the future	Spears and Singh (2004); Morrison (1979)
		Likelihood	The consumer's subjective probability of purchasing; probability-based items capture meaningful variation in purchase likelihood and produce more valid operationalisations of the construct than binary formulations	I will likely purchase a ticket to the mega-event series in the future	Morrison (1979); Morwitz (2014)
		Consideration	The consumer's active deliberation of the purchase as a forthcoming possibility; distinguishes consumers for whom the behaviour is a live option from those who have not yet formed an intention	I am considering purchasing a ticket to the mega-event series in the future	Spears and Singh (2004); Peña-García et al. (2020)

Green Self-Identity **(Moderator)**	**Self-Perception**	Environmental self-label	The degree to which an individual perceives themselves as an environmentally responsible person as part of their actual self-concept	I see myself as an environmentally responsible person	Whitmarsh and O'Neill (2010); Van der Werff, Steg and Keizer (2014); Bem (1972)
		Self-perception clarity	The degree to which an individual holds a clear and stable sense of themselves as environmentally responsible across different situations	I have a clear sense of my own environmental values	Kim and Kim (2025); Fatoki (2020)
		Identity importance	The degree to which environmental responsibility is central to an individual's overall self-concept rather than peripheral	Being environmentally responsible is an important part of who I am	Pinho (2025); Stryker and Burke (2000)

4.4.3 Scale Format and Response Options

Each indicator is measured on a five-point Likert scale presented vertically, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The five-point format was selected for two reasons. First, it provides sufficient response variation to capture meaningful differences between respondents without introducing more gradations than participants can reliably distinguish; research on rating scales suggests that beyond five to seven points, additional categories do not improve measurement precision and may introduce confusion (Bell, Bryman and Harley, 2022). Second, the inclusion of a neutral midpoint avoids forcing respondents into a position where genuine ambivalence is plausible, which is particularly important in this study, given that some respondents may hold genuinely neutral views toward F1's sustainability communication (Bell, Bryman and Harley, 2022).

The demographic and relationship with F1 items in the opening section of the questionnaire are not measured on this scale, as they serve descriptive and control purposes rather than scale measurement (Bell, Bryman and Harley, 2022). These items use categorical response formats appropriate to their content, such as age ranges and region of residence, and are not included in any summated scale.

4.5 Sampling and Data Collection

4.5.1 Sampling Strategy

The population of interest is F1 spectators, defined as individuals who actively follow F1 regardless of whether they have previously attended a Grand Prix in person. Given the global and dispersed nature of this population, no complete sampling frame exists, and probability sampling was not feasible within the practical constraints of this study (Bell, Bryman and Harley, 2022). The study therefore employs non-probability sampling, which does not rely on random selection and does not permit statistical generalisation to the broader population, but which is appropriate when access to a complete sampling frame is unavailable (Bell, Bryman and Harley, 2022).

The specific strategy used is convenience sampling, whereby respondents are selected on the basis of their accessibility and willingness to participate (Bell, Bryman and Harley, 2022). The survey was distributed through F1 fan communities across multiple online platforms. An element of snowball sampling is also present, in that personal acquaintances within the target population were invited to participate and encouraged to share the survey within their networks, extending reach beyond the researchers' immediate contacts (Bell, Bryman and Harley, 2022).

4.5.2 Sample Size

Determining an appropriate sample size involves balancing statistical precision, practical feasibility, and the requirements of the intended analytical method (Bell, Bryman and Harley, 2022). Larger samples reduce sampling error and increase the statistical power of inferential analyses, making it more likely that genuine relationships between variables will be detected (Bell, Bryman and Harley, 2022). For moderated regression analysis, which is the primary analytical technique used in this study, a minimum of 200 to 250 usable responses is generally considered necessary to produce stable coefficient estimates, though larger samples are preferable where achievable (Bell, Bryman and Harley, 2022). The study therefore targeted a minimum of 200 valid responses, with a preferred target of 250 or above to ensure sufficient statistical power for the moderation analysis. The final response outcomes are reported in section 4.5.7.

4.5.3 Data Collection Instrument

Data were collected using a self-completion questionnaire administered digitally through Google Forms. This instrument was selected for several reasons. First, it enables efficient data collection from a geographically dispersed sample of F1 spectators located across multiple countries, which would not be achievable through interview-based methods within the constraints of this study (Bell, Bryman and Harley, 2022). Second, self-completion questionnaires eliminate interviewer effects, meaning that variation in responses attributable to the presence or behaviour of an interviewer rather than to genuine differences in respondent attitudes is avoided (Bell, Bryman and Harley, 2022). Third, the standardised format of a closed-question questionnaire ensures that all respondents respond to the same items in the same format, facilitating systematic comparison and statistical analysis (Bell, Bryman and Harley, 2022). The digital format also allowed for the implementation of filter questions on the opening page to automatically screen out respondents who do not follow F1 or who have not encountered F1 sustainability communication, ensuring that only members of the target population contributed usable data.

4.5.4 Questionnaire Design

The survey opened with a greeting message introducing the research team and the study, followed by two filter questions, “Do you follow F1?” and “Have you come across sustainability communication messages from F1?” to which respondents could answer Yes or No. Those who answered No to either question were automatically redirected to a closing screen thanking them for their time and informing them that the survey was designed specifically for F1 followers who have encountered sustainability messages, ending their participation at that point. Only respondents who answered Yes to both questions proceeded to the main body of the survey, ensuring the sample remained relevant to the research context.

The survey was structured into six sections, each preceded by a brief contextual introduction to ensure respondents had sufficient background knowledge to answer accurately (Bell, Bryman and Harley, 2022). The first section established respondents’ relationship with F1, capturing how long and how closely they follow the sport, as well as whether they have previously attended a Grand Prix. The second section measured purchase intention through three statements assessing respondents’ likelihood of buying a

ticket to a future F1 Grand Prix. Purchase intention was measured before the sustainability communication items were deliberately introduced to minimise priming effects and demand characteristics. Presenting sustainability communication items first could lead respondents to consciously connect their environmental perceptions to their attendance intentions in a way that inflates the observed associations, rather than reflecting how these attitudes operate independently in natural settings (Bell, Bryman and Harley, 2022). The third section addressed F1's sustainability communication across three dimensions (message exposure, message credibility, and message engagement), each measured by three items. The fourth section captured green self-identity using three items reflecting the degree to which respondents perceive themselves as environmentally responsible as a stable personal characteristic (Whitmarsh and O'Neill, 2010). A demographic section followed, collecting data on age, gender, and region of residence. The survey concluded with a closing section thanking participants and providing contact information for any follow-up queries.

All attitudinal and perceptual items in Sections 2 through 4 were measured using the five-point Likert scale described in Section 4.4.3. The questionnaire was kept anonymous, and respondents were informed that their data would be used solely for academic purposes (Bell, Bryman and Harley, 2022). The complete survey is provided in Appendix 1.

4.5.5 Control Variables

To isolate the associations between the independent variables and purchase intention, a set of control variables is included in the regression models (Bell, Bryman and Harley, 2022). These variables are expected to account for variance in purchase intention independently of sustainability communication, and their inclusion reduces the risk of omitted variable bias in the coefficient estimates.

Six control variables are included. First, age is controlled for because research on sport fans' environmental attitudes identifies meaningful differences across age groups that may independently shape how spectators respond to sustainability-related content (Kellison et al., 2025). Second, gender is controlled for because studies of sport fan populations consistently find differences in environmental attitudes and engagement across gender groups that may independently influence purchase intention (Kellison et al., 2025). Third, region of residence is controlled for because proximity to Grand Prix

venues and regional differences in sustainability awareness and event access may independently predict the likelihood of purchasing a ticket to attend a race (Getz, 2008; Tölkes, 2018). Fourth, prior Grand Prix attendance is controlled for because respondents who have previously attended an event are likely to hold stronger and more stable purchase intentions independently of any sustainability communication they have encountered, given that prior experience shapes future behavioural intentions in sport tourism contexts (Kaplanidou and Vogt, 2007; Nasermoadeli, Ling and Maghnati, 2013). Fifth, duration of following F1 is controlled for because spectators who have followed the sport for longer periods are likely to have developed stronger dispositional preferences toward attendance that operate independently of sustainability communication (Kaplanidou and Vogt, 2007). Sixth, closeness of following F1 is controlled for because the degree to which a respondent actively engages with F1 as a fan reflects the overall strength of their relationship with the sport, which may independently drive purchase intention regardless of environmental messaging (Rai et al., 2024). These variables are entered into the regression models as the first block, prior to the introduction of the independent and moderating variables, following the standard hierarchical regression procedure (Bell, Bryman and Harley, 2022).

4.5.6 Pre-Test

Prior to full distribution, the questionnaire underwent a multi-stage review process. The instrument was first reviewed by the thesis supervisor, a tutor from a separate thesis group within the Marketing programme, and a quantitative methods expert available to students in this programme. The tutor and quantitative methods expert had no prior involvement in the study, providing an objective external perspective on the instrument's clarity and theoretical alignment (Bell, Bryman and Harley, 2022). Based on their feedback, a small number of questions were removed, and others were reworded to improve theoretical precision and clarity.

Following these revisions, the questionnaire was pre-tested with five participants drawn from the researchers' personal networks. All five participants were confirmed followers of F1 and, therefore, representative of the target population. Participants completed the questionnaire independently and were debriefed verbally upon completion (Bell, Bryman and Harley, 2022). All five participants reported that the questionnaire was clear, easy to understand, and straightforward to complete, with no items generating confusion or

requiring further revision. All pre-test participants were excluded from the final sample to ensure the integrity of the data collection (Bell, Bryman and Harley, 2022).

4.5.7 Data Collection Procedure and Response Outcomes

The survey was distributed digitally in English beginning on 29 April 2026. Data collection ran for one week, closing on 7 May 2026. The questionnaire was hosted on Google Forms and distributed exclusively online across multiple platforms and communities known to attract F1 followers. The survey was conducted in English, reflecting the international nature of the F1 fan base and the study's aim to reach spectators across different regions (Kanza and Trisnaningtyas, 2025).

The data collection process encountered several practical obstacles worth reporting transparently (Bell, Bryman and Harley, 2022). Posts shared across multiple F1 subreddits on Reddit were removed by community moderators on the grounds that they violated subreddit rules, limiting the reach of distribution through that channel. Several posts in F1 fan groups on Facebook were similarly deleted. These setbacks required the researchers to adapt their distribution strategy and redirect efforts toward alternative channels. The most effective platform in terms of response volume proved to be Telegram, where posts shared in dedicated F1 channels generated a significant increase in response rates. Distribution was also maintained through Discord servers, LinkedIn, WhatsApp groups with known F1 followers, and the researchers' personal social media profiles. Follow-up reminders were posted across channels during the collection period, and previously shared posts were reboosted to maintain visibility. No incentives were offered for participation.

Within the data collection period, a total of 459 responses were received. Of these, 4 were removed because respondents indicated they did not follow F1, failing the first filter question. A further 47 were removed because respondents indicated they had not encountered F1 sustainability communication, failing the second filter question. No incomplete responses required removal as the mandatory response settings in Google Forms prevented partial submission. This resulted in a final valid sample of 408 responses, which forms the basis for all subsequent analysis reported in Chapter 5.

4.6 Data Analysis Method

Data collected through the questionnaire were processed and analysed using SPSS. Raw responses were exported from Google Forms and prepared for analysis through standard data cleaning procedures, including the removal of ineligible responses as described in section 4.5.7.

4.6.1 Descriptive Statistics

Descriptive statistics, including frequencies, means, and standard deviations, were calculated for all variables to provide an overview of the sample characteristics and the distribution of responses across each scale (Bell, Bryman and Harley, 2022). Skewness and kurtosis values were also examined to assess the normality of each distribution, with acceptable values generally falling within the range of −1 to +1 for skewness and −2 to +2 for kurtosis (Bell, Bryman and Harley, 2022). Where kurtosis values slightly exceeded these stricter thresholds, they were interpreted in relation to sample size and more lenient reference points for substantial non-normality (Kim, 2013). These are reported in Chapter 5 alongside the sample profile.

4.6.2 Internal Consistency: Cronbach's Alpha

To assess the internal consistency of each multi-item scale, Cronbach's alpha was calculated for all constructs prior to hypothesis testing. Cronbach's alpha measures the degree to which the items within a scale are interrelated and collectively capture the same underlying construct (Bell, Bryman and Harley, 2022). A coefficient of 0.80 or above indicates strong internal consistency, and values of 0.70 and above are considered acceptable (Bell, Bryman and Harley, 2022). Values below 0.70 are treated with caution and are flagged in the results, as they indicate that the items within a scale may not be measuring the same construct with sufficient consistency. Results are reported in Chapter 5.

4.6.3 Bivariate Correlations

Bivariate correlations using Pearson's r were examined to explore the pairwise relationships between all variables and to identify any issues of multicollinearity before proceeding to regression analysis (Bell, Bryman and Harley, 2022). Pearson's r ranges from −1 to +1, where values closer to +1 indicate a strong positive linear relationship,

values closer to −1 indicate a strong negative linear relationship, and values close to 0 indicate the absence of a linear relationship (Bell, Bryman and Harley, 2022). For the purposes of this study, correlations between independent variables exceeding 0.80 are treated as indicative of problematic multicollinearity that could destabilise regression coefficient estimates (Bell, Bryman and Harley, 2022). Correlations between each independent variable and the dependent variable are also examined to provide preliminary evidence of whether the predicted associations exist prior to formal hypothesis testing.

4.6.4 Moderated Multiple Regression Analysis

The primary analytical method used to test the study's hypotheses is moderated multiple regression analysis. This technique is appropriate when the aim is to examine both the direct associations of independent variables with a dependent variable and whether those associations are conditioned by the level of a third variable, in this case green self-identity (Bell, Bryman and Harley, 2022).

The analysis proceeds in three stages. In the first stage, hypotheses H1, H2, and H3 are tested by entering the three dimensions of sustainability communication (message exposure, message credibility, and message engagement) as independent variables and examining their direct associations with purchase intention, controlling for the demographic and behavioural variables described in section 4.5.5. Statistical significance is evaluated at the $p < .05$ threshold, with $p < .01$ and $p < .001$ reported where applicable (Bell, Bryman and Harley, 2022). The adjusted R^2 is used as the primary indicator of model fit, as it corrects for the number of predictors in the model and provides a less biased estimate of explained variance than R^2 alone (Bell, Bryman and Harley, 2022). Hypothesis testing for H1, H2, and H3 is based on the full model including all three dimensions simultaneously, as this controls for the shared variance among the sustainability communication dimensions and provides the most conservative and reliable estimate of each dimension's unique contribution.

In the second stage, Hypothesis H4 is tested by introducing sustainability communication as an independent variable and examining its direct association with purchase intention, again controlling for the same set of demographic and behavioural variables. As with H1-H3, the unstandardised regression coefficient and its associated significance level in the full model are used to evaluate the hypothesis.

In the third stage, Hypotheses H5 through H8 are tested by introducing interaction terms between green self-identity and each of the four independent variables, sustainability communication (H5), message exposure (H6), message credibility (H7), and message engagement (H8), in four separate moderated regression models. Prior to computing these interaction terms, all continuous variables are mean-centred to reduce multicollinearity between the main effects and the interaction terms, which is standard practice in moderation analysis (Hair et al., 2013; Bell, Bryman and Harley, 2022). A statistically significant interaction term indicates that the association between the given independent variable and purchase intention varies as a function of respondents' level of green self-identity, providing support for the corresponding hypothesis. Each interaction term is introduced alongside the relevant main effects and control variables, and results for all four moderation tests are reported and interpreted separately in Chapter 5.

4.7 Research Quality

Evaluating research quality requires criteria appropriate to the chosen methodology. In quantitative research, these criteria are reliability and validity, which together assess whether a study's measures are consistent and whether its conclusions accurately reflect the phenomena under investigation (Bell, Bryman and Harley, 2022).

4.7.1 Reliability

Reliability refers to the consistency and repeatability of measurement (Bell, Bryman and Harley, 2022). Three dimensions are relevant to this study, though they apply to different degrees.

The first is stability, which concerns whether a measure produces consistent results over time (Bell, Bryman and Harley, 2022). Because the present study uses a single-wave cross-sectional design, stability cannot be formally verified through test-retest procedures. Nevertheless, the constructs under investigation, including purchase intention and green self-identity, are not expected to shift substantially over short periods, providing reasonable grounds for assuming temporal stability in the measures (Whitmarsh and O'Neill, 2010; Spears and Singh, 2004).

The second and most critical dimension is internal reliability, which assesses whether the items comprising each scale are consistent with one another (Bell, Bryman and Harley, 2022). This is particularly important here because all constructs are operationalised through multi-item summated scales, each comprising three indicators. Internal reliability was assessed using Cronbach's alpha, the most widely adopted measure of scale reliability in quantitative social science research (Hair et al., 2013). A Cronbach's alpha coefficient ranges from 0 to 1, where higher values indicate greater inter-item consistency. The widely accepted threshold for acceptable reliability is $\alpha \geq .70$, below which a scale is generally considered insufficiently consistent for use in inferential analysis (Hair et al., 2013). Values between .70 and .90 are considered good, while values exceeding .90 are considered excellent (Hair et al., 2013). Cronbach's alpha was computed for all five constructs included in this study (purchase intention, message exposure, message credibility, message engagement, and green self-identity) and the results are reported in Table 9.

The third dimension, inter-rater reliability, concerns consistency between researchers when judging or coding observational data (Bell, Bryman and Harley, 2022). Since all responses in this study are recorded automatically through fixed Likert-scale categories with no subjective interpretation required from the researchers, this dimension does not apply.

4.7.2 Validity

Validity is widely regarded as the most fundamental criterion of research quality, as it concerns whether a study's conclusions genuinely reflect the phenomena being investigated (Bell, Bryman and Harley, 2022). Critically, validity presupposes reliability: a measure that is inconsistent cannot accurately represent any construct, regardless of how well it is theoretically defined (Bell, Bryman and Harley, 2022). Having addressed reliability above, four dimensions of validity are considered here.

4.7.2.1 Measurement Validity

Measurement validity concerns whether the study's indicators genuinely capture their intended constructs rather than related but conceptually distinct phenomena (Bell, Bryman and Harley, 2022). To strengthen this dimension, all items were grounded in peer-reviewed theoretical definitions and developed through systematic operationalisation

documented in section 4.4.2. The instrument was subsequently reviewed by an independent tutor and a quantitative methods expert before being pre-tested with five F1 followers from the target population.

To assess construct validity statistically, a Principal Component Analysis (PCA) was conducted on the nine items comprising the three dimensions of sustainability communication, specified to extract three factors consistent with the theoretical structure of the instrument. Following Hair et al. (2013), factor loadings of .50 and above are considered acceptable indicators of construct validity, with loadings above .70 regarded as strong. A factor loading below .50 would indicate that an item does not sufficiently represent its intended construct and should be considered for removal.

To further examine convergent and discriminant validity, a Pearson correlation analysis was conducted on the three summated scales. Convergent validity is considered satisfactory when theoretically related scales correlate significantly with one another, while discriminant validity requires that correlations between distinct constructs remain sufficiently moderate to confirm they are measuring different underlying phenomena (Hair et al., 2013). A correlation approaching or exceeding .90 between two supposedly distinct constructs would raise concerns about discriminant validity, as it would suggest the scales may be capturing the same underlying construct (Hair et al., 2013). The results of both analyses are reported in Chapter 5.

4.7.2.2 Internal Validity

Internal validity concerns the extent to which variation in purchase intention can be attributed to the independent variables rather than to extraneous factors (Bell, Bryman and Harley, 2022). A cross-sectional survey design does not permit the experimental control necessary to establish causality, and unmeasured variables such as disposable income or general interest in attending live sport events may account for some of the observed variance (Bell, Bryman and Harley, 2022). For this reason, findings are interpreted as evidence of association rather than causation, as indicators of whether the predicted relationships exist and in what direction, rather than as demonstrations that sustainability communication causes changes in purchase intention. It should be noted that the hypotheses in Chapter 3 use the word “influence” in the theoretical rather than causal sense, consistent with the conventions of the sustainability communication and consumer behaviour literatures from which they are derived, and not as a claim of

experimental causality. This framing is consistent with the study's cross-sectional design and is reflected throughout the analysis and discussion. The inclusion of control variables in the regression models partially reduces the influence of confounding factors, though it cannot eliminate this concern entirely within a survey design (Bell, Bryman and Harley, 2022).

4.7.2.3 External Validity

External validity concerns whether findings can be generalised beyond the study's specific sample and context (Bell, Bryman and Harley, 2022). The non-probability convenience sample, drawn from F1 online fan communities, does not permit statistical generalisation to the broader spectator population, and respondents active in dedicated fan communities may hold stronger views on the sport than the average follower, introducing potential self-selection bias (Bell, Bryman and Harley, 2022). That said, the study's theoretical framework is designed to be applicable across rotating sport mega-event series more broadly (Müller, 2015; Roche, 2000), and the findings may offer transferable insights for comparable contexts subject to replication.

4.7.2.4 Ecological Validity

Ecological validity concerns whether findings reflect attitudes and behaviour as they occur in natural, everyday settings (Bell, Bryman and Harley, 2022). The self-administered survey format introduces a degree of artificiality, and explicitly directing respondents' attention to sustainability communication may amplify social desirability bias, the tendency to respond in line with perceived expectations rather than genuine attitudes (Bell, Bryman and Harley, 2022). This risk is particularly salient in sustainability research, where the gap between stated environmental attitudes and actual behaviour is well documented (Whitmarsh and O'Neill, 2010; Tölkes, 2018). Communicating respondent anonymity in the survey introduction was intended to reduce this risk, though it cannot be eliminated entirely within a self-report design (Bell, Bryman and Harley, 2022).

4.8 Ethical and Societal Considerations

4.8.1 Ethical Issues

Bell, Bryman and Harley (2022) identify several core ethical principles that apply to business research involving human participants: informed consent, the avoidance of harm, the protection of privacy, and the right to withdraw.

Informed consent was secured through the survey's introductory page, which clearly stated the purpose of the study, the academic context in which it was conducted, how the data would be used, and the contact details of the research team (Bell, Bryman and Harley, 2022). By proceeding past the introduction and submitting their responses, participants indicated their willingness to take part. No deception was employed at any stage of the research process. The study's purpose and subject matter were accurately communicated to all respondents from the outset (Bell, Bryman and Harley, 2022).

Participant anonymity was maintained throughout. The survey was designed to collect no personally identifiable information. Responses were recorded automatically through Google Forms and are accessible only to the research team. No individual response can be traced back to a specific participant, and data will not be shared with any third parties. This approach is consistent with Bell, Bryman and Harley's (2022) guidance on protecting participant privacy and minimising the risk of harm arising from participation.

The right to withdraw was preserved through the voluntary nature of participation. No incentives were offered, and respondents were under no obligation to complete the survey (Bell, Bryman and Harley, 2022). The mandatory response settings in Google Forms ensured that submitted responses were complete, and respondents who did not wish to continue could exit the survey at any point without consequence.

Regarding online research ethics, Bell, Bryman and Harley (2022) note that researchers distributing surveys through social media and online communities should be transparent about their identity and purpose. All posts sharing the survey link clearly identified the researchers as students conducting academic research, and the survey introduction provided full details of the study and its institutional affiliation at Linnaeus University.

This study was conducted entirely as an independent student project and received no external funding, sponsorship, or support from any commercial organisation. Neither the

researchers nor Linnaeus University have any financial or commercial relationship with F1 or any of its affiliated entities. The findings therefore carry no conflicts of interest.

4.8.2 Societal Implications

Beyond the immediate research context, researchers have a responsibility to consider how the knowledge they generate may be used and what broader contribution it makes to society (Bell, Bryman and Harley, 2022). The present study carries implications for multiple stakeholder groups whose interests are shaped by the relationship between sustainability communication and consumer behaviour.

For consumers and spectators, the study generates evidence about whether sustainability communication from large-scale sporting organisations genuinely influences attendance decisions. If a positive association is found, this signals that consumers are integrating environmental considerations into event attendance choices, contributing to broader shifts toward conscious consumption (Tölkes, 2018; Whitmarsh and O'Neill, 2010). If the association is weak or absent, this raises questions about whether greenwashing perceptions have eroded the credibility of environmental claims to the point where consumers no longer respond to them (de Jong, Huluba and Beldad, 2020; Torelli, Balluchi and Lazzini, 2020).

For event organisers and governing bodies, the study provides evidence about whether sustainability communication produces measurable associations with spectator behavioural intentions, rather than simply improving operational metrics (Mair and Smith, 2021). Organisations such as F1, which has publicly committed to net zero carbon emissions by 2030 (Öztopcu, 2024; Robeers, Tudor and Stocz, 2023), have a direct interest in knowing whether their environmental messaging resonates in ways that translate into attendance intention. Where it does not, this signals a need to reconsider how sustainability claims are framed, delivered, and substantiated (Pierce, 2024; Harrison, Vafeiadis and Bober, 2022).

For businesses operating within the event ecosystem, including destination marketing organisations, hospitality providers, sponsors, and commercial partners, the study generates evidence about whether sustainability communication shapes the attendance decisions of the consumer base they depend on (Pierce, 2024; Getz, 2008). Understanding whether green self-identity moderates this relationship also allows businesses to consider

how to target sustainability messaging more effectively toward audiences for whom environmental identity is a central motivator (Fatoki, 2020; Kellison et al., 2025).

For host destinations and local communities, the study's findings may inform how destination marketing organisations integrate sustainability communication into visitor engagement strategies, and whether emphasising the environmental credentials of the host venue constitutes a meaningful lever for driving purchase intention among environmentally conscious spectators (Tölkes, 2018; Kaplanidou and Vogt, 2007). Host cities investing in sustainable event infrastructure have a direct interest in knowing whether that investment is communicated in ways that reach and influence the international audiences the event attracts (Müller, 2015; Getz, 2008).

For the natural environment, the most fundamental stakeholder in any sustainability discussion, an important tension must be acknowledged. Increasing attendance at events that generate significant carbon emissions and travel footprints may not constitute a net environmental benefit, even if the communication driving that attendance is environmentally framed (Mair and Smith, 2021; Öztopcu, 2024). Growing event attendance on the basis of sustainability communication is only environmentally beneficial if events are substantively reducing their environmental impact at a rate that outpaces attendance-related emissions growth. The study's findings should therefore be read alongside genuine organisational environmental performance data, not treated as a justification for communication-led growth strategies unmatched by operational change (Mair and Smith, 2021; Robeers, Tudor and Stocz, 2023).

Finally, the potential for misuse of findings applies across all stakeholder groups. If credible sustainability communication is shown to be associated with increased purchase intention, organisations risk applying this knowledge instrumentally, crafting messages designed to appear credible without undertaking the genuine environmental action credibility requires (de Jong, Huluba and Beldad, 2020; Murfree and Brison, 2025). This would accelerate greenwashing, harm consumers through misleading claims, damage host destination reputations, and deepen the environmental costs of events presenting themselves as sustainable while failing to act accordingly (Torelli, Balluchi and Lazzini, 2020; Murfree and Brison, 2025). The study's findings should therefore be read alongside independent environmental auditing and transparency standards rather than as a standalone guide to communication strategy (Bell, Bryman and Harley, 2022; Mair and Smith, 2021).

5. Results

5.1 Sample Profile and Descriptive Statistics

5.1.1 Frequency: Respondent Characteristics

The duration frequency in Table 2 shows that most respondents had followed the event series for a relatively long period of time. Among the valid responses of 408 participants, 58.6% had followed the series for more than five years, while 37.5% had followed it for three to five years. Only 3.4% had followed the series for one to three years, and 0.5% for less than one year. This indicates that the sample mainly consisted of spectators with substantial familiarity with the event series.

Table 2. Duration frequency table

Column 1	Duration	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a year	2	0.4	0.5	0.5
	1-3 years	14	3.1	3.4	3.9
	3-5 years	153	33.3	37.5	41.4
	More than 5 years	239	52.1	58.6	100
	Total	408	88.9	100	
Missing		51	11.1		
Total		459	100		

The closeness frequency in Table 3 indicates a high level of closeness to the event series among respondents. Out of the valid respondents of 408 most reported following the series very closely at 57.4%, while 37.3% described themselves as dedicated fans. Only 4.9% followed the series moderately and 0.5% casually. This suggests that the sample largely consisted of highly involved spectators rather than casual spectators.

Table 3. Closeness frequency table

	Closeness	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Casually	2	0.4	0.5	0.5
	Moderately	20	4.4	4.9	5.4
	Very closely	234	51	57.4	62.7
	I am a dedicated fan	152	33.1	37.3	100
	Total	408	88.9	100	
Missing		51	11.1		
Total		459	100		

The attendance frequency in Table 4 shows that 44.9% of 408 valid respondents had attended an event in the series, while 55.1% had not. Although slightly more respondents had not attended in person, the proportion of attendees remains substantial. This suggests that the sample included both physically attending spectators and non-attending followers, allowing the study to capture perspectives from different levels of event involvement.

Table 4. Attendance frequency table

	Attendance	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	225	49	55.1	55.1
	Yes	183	39.9	44.9	100
	Total	408	88.9	100	
Missing		51	11.1		
Total		459	100		

The gender frequency in Table 5 shows that the sample was predominantly male, with 56.6% of 408 valid respondents identifying as male. Female respondents represented 39.0% of the valid sample, while 4.4% identified as non-binary. This indicates that the sample included gender diversity, although male respondents formed the largest group.

Table 5. Gender frequency table

	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	231	50.3	56.6	56.6
	Female	159	34.6	39	95.6
	Non-binary	18	3.9	4.4	100
	Total	408	88.9	100	
Missing		51	11.1		
Total		459	100		

The age frequency in Table 6 shows that the largest valid respondent groups out of 408 were aged 30-39 years at 31.9%, and 20-29 years at 31.4%. Respondents aged 40-49 accounted for 24.0%, while smaller proportions were under 20 years old at 4.4% or aged 50-59 years at 8.3%. This suggests that the sample mainly consisted of young and middle-aged adults.

Table 6. Age frequency table

	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20	18	3.9	4.4	4.4
	20-29	128	27.9	31.4	35.8
	30-39	130	28.3	31.9	67.6
	40-49	98	21.4	24	91.7
	50-59	34	7.4	8.3	100
	Total	408	88.9	100	
Missing		51	11.1		
Total		459	100		

The location frequency, as shown in Table 7, indicates that the sample of 408 valid responses was geographically diverse. Europe represented the largest valid respondent group at 31.9%, followed by North America at 19.1%, Asia at 17.2%, Australia (Oceania) at 16.4%, South America at 10.8%, and Africa at 4.7%. This distribution reflects the

international nature of the respondent sample and is appropriate for the context of a rotating sport mega-event series.

Table 7. Location frequency table

	Location	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Asia	70	15.3	17.2	17.2
	Africa	19	4.1	4.7	21.8
	North America	78	17	19.1	40.9
	South America	44	9.6	10.8	51.7
	Europe	130	28.3	31.9	83.6
	Australia (Oceania)	67	14.6	16.4	100
	Total	408	88.9	100	
Missing		51	11.1		
Total		459	100		

5.1.2 Descriptive Statistics

The descriptive statistics analysis produced through SPSS provided an overview of the distribution of responses across all study indicators, including minimum and maximum values, mean scores, standard deviations, skewness, and kurtosis. As presented in Table 8, respondents used nearly the full range of the five-point Likert scale across the variables included in the study. Most indicators recorded minimum values of 1 and maximum values of 5, while the purchase intention indicators ranged between 2 and 5. This suggests that respondents expressed varying levels of agreement across the constructs measured in the questionnaire.

Regarding the dependent variable, all purchase intention indicators displayed relatively high mean values. Stated intention recorded the highest mean value (M = 3.94), followed by purchase likelihood (M = 3.89) and purchase consideration (M = 3.88). As all values remained above the midpoint of the Likert scale, the findings suggest that respondents generally demonstrated favourable purchase intentions toward the event series.

For the independent variables, the message exposure indicators all displayed positive mean values above the midpoint of the scale, including awareness (M = 3.60), frequency

(M = 3.55), and channel reach (M = 3.52). Similarly, the message credibility indicators also demonstrated moderately positive evaluations, with authenticity (M = 3.35), trust (M = 3.35), and consistency (M = 3.40). The message engagement indicators likewise remained above the midpoint, including relevance (M = 3.39), elaboration (M = 3.46), and message appeal (M = 3.43). Overall, these findings suggest generally positive respondent perceptions of sustainability communication across all three dimensions.

Regarding the moderating variable, green self-identity indicators displayed the highest mean values within the dataset. Self-perception recorded the highest mean overall (M = 4.01), followed closely by self-label (M = 4.00) and identity importance (M = 3.98). These findings suggest that environmental responsibility was generally perceived as an important aspect of respondents' self-concept. In addition, the relatively low standard deviation values across the indicators indicate limited dispersion around the mean values and suggest relatively consistent response patterns among participants.

The skewness and kurtosis statistics further indicated acceptable distributional properties across the dataset. According to Bell, Bryman and Harley (2022), acceptable skewness values generally fall between −1 and +1, whilst kurtosis values typically remain acceptable between −2 and +2. Although the green self-identity indicators displayed comparatively higher kurtosis values than the remaining variables, such as GSI_SelfLabel (3.427) and GSI_SelfPerception (2.654), these values were not considered severe enough to compromise the suitability of the data for regression analysis. Kim (2013) suggests that, in samples larger than 300, absolute skewness values above 2 and absolute kurtosis values above 7 may be used as reference points for substantial non-normality. Since the present study included 408 valid responses, all skewness values remained within the stricter acceptable range of −1 and +1, and the highest kurtosis value was 3.427; the deviations did not approach Kim's (2013) threshold for substantial non-normality. Therefore, the dataset was considered acceptable for subsequent regression analysis.

Table 8. Descriptive statistics analysis

Indicator	Min Stat	Max Stat	Mean	Std. Deviation	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Dependent Variable								
PI_StatedIntent	2	5	3.94	0.62	-0.272	0.121	0.491	0.241
PI_Likelihood	2	5	3.89	0.647	-0.17	0.121	0.044	0.241
PI_Consideration	2	5	3.88	0.676	-0.087	0.121	-0.275	0.241
Independent Variables								
Exp_Awareness	1	5	3.6	0.808	-0.609	0.121	0.634	0.241
Exp_Frequency	1	5	3.55	0.831	-0.492	0.121	0.188	0.241
Exp_ChannelReach	1	5	3.52	0.835	-0.347	0.121	-0.041	0.241
Cred_Authenticity	1	5	3.35	0.871	-0.072	0.121	-0.077	0.241
Cred_Trust	1	5	3.35	0.857	-0.051	0.121	-0.08	0.241
Cred_Consistency	1	5	3.4	0.802	-0.063	0.121	0.195	0.241
Eng_Relevance	1	5	3.39	0.834	-0.171	0.121	0.051	0.241
Eng_Elaboration	1	5	3.46	0.811	-0.248	0.121	0.292	0.241
Eng_MessageAppeal	1	5	3.43	0.833	-0.186	0.121	0.118	0.241
Moderating Variable								
GSI_SelfLabel	1	5	4	0.513	-0.444	0.121	3.427	0.241
GSI_SelfPerception	1	5	4.01	0.55	-0.442	0.121	2.654	0.241
GSI_IdentityImportance	1	5	3.98	0.588	-0.433	0.121	1.841	0.241

5.2 Quality Assessment

5.2.1 Reliability: Cronbach's Alpha

The reliability analysis presented in Table 9 demonstrated strong internal consistency across all study constructs. Purchase intention recorded a Cronbach's alpha value of 0.932, whilst message exposure, message credibility, and message engagement produced alpha values of 0.933, 0.926, and 0.914 respectively. Green self-identity displayed the lowest alpha value among the constructs ($\alpha = 0.845$), although this value still exceeded the commonly accepted threshold of 0.70 for acceptable reliability (Bell, Bryman and Harley, 2022).

Overall, all constructs demonstrated high levels of internal consistency reliability, indicating that the indicators within each construct consistently measured the same underlying concept. These findings therefore support the reliability of the measurement scales used in the study.

Table 9. Cronbach's Alpha reliability table

Variable	Cronbach's Alpha	N of Indicators
Purchase Intention	0.932	3
Message Exposure	0.933	3
Message Credibility	0.926	3
Message Engagement	0.914	3
Green Self-Identity	0.845	3

5.2.2 Validity

5.2.2.1 Construct Validity: Factor Analysis

To assess construct validity, a Principal Component Analysis (PCA) was conducted on the nine items comprising the three dimensions of sustainability communication. Following Hair et al. (2013), a summated scale should never be created without first assessing its unidimensionality through factor analysis. The analysis was therefore specified to extract three factors, consistent with the theoretical structure of the instrument, with loadings below 0.50 suppressed to aid interpretability. The results are presented in Table 10.

The factor solution provides support for the theorised three-factor structure. Factor 1 captures the three message exposure items, with Exp_Awareness, Exp_Frequency, and Exp_ChannelReach loading at 0.871, 0.878, and 0.869, respectively, indicating strong convergence around the exposure dimension. Factor 2 captures the three message engagement items, with Eng_Relevance, Eng_Elaboration, and Eng_MessageAppeal loading at 0.751, 0.765, and 0.793, respectively. Factor 3 captures the message credibility items, with Cred_Authenticity and Cred_Trust loading at 0.814 and 0.795, respectively.

One item warrants acknowledgement. Cred_Consistency produced a cross-loading pattern, loading on both Factor 2 and Factor 3 at 0.537 and 0.666, respectively. This suggests that the consistency item shares conceptual variance with the engagement dimension in addition to its intended credibility dimension, which may reflect the degree to which perceived alignment between an organisation's stated commitments and its visible conduct is also experienced as personally engaging by respondents. However, since Cred_Consistency loads more strongly on its theoretically intended factor (Factor 3, capturing message credibility) than on Factor 2, the cross-loading is treated as an acceptable anomaly, and the item is retained within the credibility scale. Primary factor membership is determined by the highest loading, which in this case unambiguously places Cred_Consistency within the credibility dimension (Hair et al., 2013). The overall factor structure therefore supports the construct validity of the three-dimensional operationalisation of sustainability communication used in this study, and confirms that summated scales can be appropriately constructed for each dimension prior to hypothesis testing.

Table 10. Factor Analysis: Principal Component Analysis

Item	1	2	3
Exp_Awareness	0.871		
Exp_Frequency	0.878		
Exp_ChannelReach	0.869		
Cred_Authenticity			0.814
Cred_Trust			0.795
Cred_Consistency		0.537	0.666
Eng_Relevance		0.751	
Eng_Elaboration		0.765	
Eng_MessageAppeal		0.793	

5.2.2.2 Convergent and Discriminant Validity: Correlation Analysis

To further assess validity, a Pearson correlation analysis was conducted on the three summated scales representing message exposure, message credibility, and message engagement. Convergent validity is supported when scales measuring theoretically related constructs correlate meaningfully with one another, while discriminant validity requires that scales remain sufficiently distinct from each other to confirm they are capturing different underlying constructs (Hair et al., 2013). The results are presented in Table 11.

All three correlations are statistically significant at the $p < 0.001$ level, providing support for convergent validity. This is theoretically expected, as message exposure, message credibility, and message engagement represent three conceptually related but distinct dimensions of the same overarching construct, sustainability communication, and a degree of positive intercorrelation is therefore anticipated (Signitzer and Prexl, 2007; Tölkes, 2018).

The correlation between message credibility and message engagement is notably high at 0.863, which approaches the threshold commonly associated with multicollinearity concerns. However, this high correlation does not pose a validity problem in the present study for two reasons. First, the factor analysis reported in section 5.2.2.1 confirmed that credibility and engagement items load cleanly onto separate factors, demonstrating that the two constructs are empirically distinguishable at the item level despite their intercorrelation at the scale level. Since the factor analysis establishes their distinctiveness, the high correlation observed here is accounted for and does not undermine discriminant validity. Second, the correlation between message exposure and the remaining two scales is moderate, 0.625 with credibility and 0.641 with engagement, further confirming that the three dimensions are not interchangeable. The correlation structure therefore, provides satisfactory evidence of both convergent and discriminant validity across the three sustainability communication dimensions.

Table 11. Pearson's correlation analysis

Item	Exp	Cred	Eng
Exposure	1	.625***	0.641***
Credibility	.625***	1	.863***
Engagement	0.641***	.863***	1
*** Correlation is significant at the 0.001 level (2-tailed)			

5.3 Hypothesis Testing

To examine the hypothesised relationships between the independent, moderating, and dependent variables, a series of hierarchical multiple regression analyses was conducted. Given the structure of the research model, comprising four independent variables (H1-H4), one moderating variable (H5), and three interaction hypotheses (H6-H8), six separate regression tables are presented. The first table (Section 5.3.1) tested the four independent variables simultaneously. The subsequent tables (Section 5.3.2) address Hypothesis 4 in isolation, the moderating effect of GSI (H5), and three interaction effects between GSI and message exposure (H6), message credibility (H7), and message engagement (H8), respectively. This stepwise approach allows for the incremental contribution of each predictor and interaction term to be assessed while controlling for potential confounds.

5.3.1 Multiple Regression Analysis for Independent Variables

5.3.1.1 Multiple Regression Analysis for Message Exposure (H1), Message Credibility (H2), and Message Engagement (H3)

To test the three hypotheses, a series of hierarchical multiple regression analyses was conducted, the results of which are presented in Table 12. Five models were constructed sequentially: Model 1 introduced the control variables (duration, closeness, attendance, age, gender, and location) to establish a baseline, while Models 2 through 4 each added one hypothesised predictor: message exposure (H1), message credibility (H2), and message engagement (H3), respectively. Model 5 incorporated all variables simultaneously to assess the combined explanatory power of the full model, in accordance with this study's conceptual model.

The baseline model (Model 1) accounted for 26.6% of the variance in the dependent variable ($R^2 = .266$, $F(6) = 24.249$, $p < .001$). Among the control variables, closeness ($\beta =$

0.281, $p < .001$) and attendance ($\beta = 0.227$, $p < .001$) emerged as statistically significant predictors and remained so across all subsequent models.

In support of H1, message exposure was found to be a significant positive predictor when entered into Model 2 ($\beta = 0.248$, $p < .001$), which explained 31.9% of the variance ($R^2 = .319$). Similarly, H2 was supported, with message credibility demonstrating a significant positive effect in Model 3 ($\beta = 0.258$, $p < .001$; $R^2 = .327$). H3 was likewise supported, with message engagement emerging as a significant predictor in Model 4 ($\beta = 0.255$, $p < .001$; $R^2 = .326$).

However, when all predictors were entered simultaneously in Model 5, the coefficients for message exposure ($\beta = 0.123$, $p < .05$), message credibility ($\beta = 0.112$, ns), and message engagement ($\beta = 0.088$, ns) were substantially weaker and, in the case of the latter two, no longer statistically significant. This pattern suggests multicollinearity among the three message-related constructs, indicating shared variance that diminishes the unique contribution of each variable when modelled simultaneously. The full model explained 34.0% of the variance ($R^2 = .340$, Adjusted $R^2 = .325$, $F(9) = 22.735$, $p < .001$), representing a meaningful improvement over the controls-only baseline.

Table 12. Multiple regression analysis for Hypotheses 1, 2, and 3

	Exp. Sign	Model 1 (Controls)	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (ALL)
Controls						
Duration		0.105 (0.060)	0.067 (0.058)	0.086 (0.057)	0.081 (0.057)	0.069 (0.057)
Closeness		0.281 (0.060)***	0.236 (0.059)***	0.258 (0.058)***	0.260 (0.058)***	0.242 (0.58)***
Attendance		0.227 (0.058)***	0.215 (0.056)***	0.205 (0.056)***	0.200 (0.056)***	0.202 (0.056)***
Age		0.010 (0.026)	-0.015 (0.025)	0.000 (0.025)	-0.002 (0.025)	-0.011 (0.025)
Gender		-0.046 (0.047)	-0.032 (0.045)	-0.016 (0.045)	-0.027 (0.045)	-0.019 (0.045)
Location		0.085 (0.013)	0.050 (0.013	0.043 (0.013)	0.055 (0.013)	0.039 (0.013)
Hypotheses						
Message Exposure (H1)	Positive		0.248 (0.035)***			0.123 (0.044) *
Message Credibility (H2)	Positive			0.258 (0.033)***		0.112 (0.064)
Message Engagement (H3)	Positive				0.255 (0.034)***	0.088 (0.067)
R^2		0.266	0.319	0.327	0.326	0.34
Adjusted R^2		0.255	0.307	0.316	0.315	0.325
Std. Error of the Estimates		0.52496	0.50654	0.50328	0.50358	0.49992
F-value		24.249	26.709	27.8	27.698	22.735
Degrees of freedom (df)		6	7	7	7	9
Significance		<.001	<.001	<.001	<.001	<.001

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

5.3.1.2 Multiple Regression Analysis for Sustainability Communication (H4)

To test Hypothesis 4, a hierarchical multiple regression was conducted, introducing sustainability communication as a predictor alongside the established control variables. The results are presented in Table 13. Model 1 (controls only) was statistically significant ($p < .001$), with closeness ($\beta = 0.281$, $p < .001$) and attendance ($\beta = 0.227$, $p < .001$) emerging as the strongest positive predictors among the controls. Duration, age, gender, and location did not reach statistical significance in the baseline model.

Model 2 introduced sustainability communication, which emerged as a strong and statistically significant positive predictor ($\beta = 0.288$, $p < .001$), providing clear support for H4. The inclusion of this variable yielded a meaningful improvement in model fit, with $R^2 = .339$ (Adjusted $R^2 = .328$, $F(7) = 29.355$, $p < .001$). Closeness ($\beta = 0.244$, $p < .001$) and attendance ($\beta = 0.201$, $p < .001$) remained significant in this model, while location, though reduced in magnitude ($\beta = 0.040$), retained a notable presence. Overall, these results indicate that sustainability communication is a significant positive predictor of the outcome variable, above and beyond the contribution of the control variables.

Table 13. Multiple regression analysis for Hypothesis 4

	Exp. Sign	Model 1(Controls)	Model 2(H4)
Controls			
Duration		0.105 (0.060)	0.071 (0.057)
Closeness		0.281 (0.060)***	0.244 (0.058)***
Attendance		0.227 (0.058)***	0.201 (0.056)***
Age		0.010 (0.026)	-0.010 (0.024)
Gender		-0.046 (0.047)	-0.019 (0.045)
Location		0.085 (0.013)	0.040 (0.013)
Hypothesis			
Sustainability Communication (H4)	Positive		0.288 (0.038)***
R^2			0.339
Adjusted R^2			0.328
Std. Error of the Estimates			0.49873
F-value			29.355
Degrees of freedom (df)			7
Significance		<.001	<.001

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

5.3.2 Multiple Regression Analysis for Moderating Variable

5.3.2.1 Multiple Regression Analysis for Green Self-Identity Moderating Sustainability Communication's Influence on Purchase Intention (H5)

Table 14 presents the results of the hierarchical multiple regression conducted to test the moderating role of Green Self-Identity (GSI) on the relationship between sustainability communication and purchase intention (H5). Three models were estimated: Model 1 with controls only, Model 2 adding sustainability communication (H4), and Model 3 introducing the interaction term GSI * Sustainability Communication.

As established in the previous section, Model 1 ($p < .001$) confirmed the significance of closeness ($\beta = 0.281$, $p < .001$) and attendance ($\beta = 0.227$, $p < .001$) as the dominant control predictors, and Model 2 confirmed the significant positive effect of sustainability communication ($\beta = 0.288$, $p < .001$; $R^2 = .339$, $F(7) = 29.355$, $p < .001$).

In Model 3, the interaction term GSI * Sustainability Communication was entered and found to be a statistically significant positive predictor ($\beta = 0.315$, $p < .01$), providing support for H5. Critically, upon introduction of the interaction term, the direct effect of sustainability communication was rendered non-significant ($\beta = 0.009$, ns), while the interaction term itself remained significant. This pattern, whereby the direct effect disappears after the interaction term is added, is indicative of full moderation, meaning that sustainability communication has no independent effect on purchase intention on its own, and its influence operates entirely through the moderating role of GSI. The full model explained 35.7% of the variance ($R^2 = .357$, Adjusted $R^2 = .344$, $F(8) = 27.693$, $p < .001$).

Table 14. Multiple regression analysis for Hypothesis 5

	Exp. Sign	Model 1 (Controls)	Model 2 (H4)	Model 3 (H5)
Controls				
Duration		0.105 (0.060)	0.071 (0.057)	0.082 (0.056)
Closeness		0.281 (0.060)***	0.244 (0.058)***	0.235 (0.057)***
Attendance		0.227 (0.058)***	0.201 (0.056)***	0.186 (0.055)***
Age		0.010 (0.026)	-0.010 (0.024)	-0.027 (0.024)
Gender		-0.046 (0.047)	-0.019 (0.045)	-0.021 (0.044)
Location		0.085 (0.013)	0.040 (0.013)	0.033 (0.013)
Sustainability Communication (H4)	Positive		0.288 (0.038)***	0.009 (0.083)
GSI * Sustainability Communication (H5)	Positive			0.315 (0.015)**
R^2			0.339	0.357
Adjusted R^2			0.328	0.344
Std. Error of the Estimates			0.49873	0.49264
F-value			29.355	27.693
Degrees of freedom (df)			7	8
Significance		<.001	<.001	<.001
* p < 0.05; ** p < 0.01; *** p < 0.001				

5.3.2.2 Multiple Regression Analysis for Green Self-Identity Moderating Message Exposure's Influence on Purchase Intention (H6)

To test Hypothesis 6, a hierarchical multiple regression was conducted introducing an interaction term between GSI and message exposure into the full model. Results are displayed in Table 15. Models 1 through 4 replicate the baseline and single-predictor models reported in Section 5.3.1.1, with closeness and attendance consistently emerging as significant control predictors across all models. In Model 5, the interaction term GSI * Exposure was added alongside all other predictors and found to be a statistically

significant positive predictor (β = 0.284, p < .01), providing support for H6. The full model accounted for 35.4% of the variance (R^2 = .354, Adjusted R^2 = .337, F(10) = 21.712, p < .001), representing an improvement of 8.8 percentage points over the controls-only baseline (R^2 = .266).

When entered simultaneously in Model 5, the direct effects of message exposure (β = −0.102, ns), message credibility (β = 0.109, ns), and message engagement (β = 0.052, ns) were all rendered non-significant, while the interaction term GSI * Exposure remained statistically significant. This pattern is consistent with full moderation: message exposure does not exert a meaningful direct effect on purchase intention independently, and its influence is contingent upon the level of green self-identity of the respondent. Among the controls, closeness (β = 0.235, p < .001) and attendance (β = 0.190, p < .001) remained robust predictors throughout. These findings indicate that exposure to sustainability messaging is only consequential for purchase intention among individuals who already identify as environmentally conscious.

Table 15. Multiple regression analysis for Hypothesis 6

	Exp. Sign	Model 1 (Controls)	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (H6)
Controls						
Duration		0.105 (0.060)	0.067 (0.058)	0.086 (0.057)	0.081 (0.057)	0.078 (0.057)
Closeness		0.281 (0.060)***	0.236 (0.059)***	0.258 (0.058)***	0.260 (0.058)***	0.235 (0.058)***
Attendance		0.227 (0.058)***	0.215 (0.056)***	0.205 (0.056)***	0.200 (0.056)***	0.190 (0.056)***
Age		0.010 (0.026)	-0.015 (0.025)	0.000 (0.025)	-0.002 (0.025)	-0.025 (0.025)
Gender		-0.046 (0.047)	-0.032 (0.045)	-0.016 (0.045)	-0.027 (0.045)	-0.023 (0.045)
Location		0.085 (0.013)	0.050 (0.013	0.043 (0.013)	0.055 (0.013)	0.035 (0.013)
Hypotheses						
Message Exposure (H1)	Positive		0.248 (0.035)***			-0.102 (0.075)
Message Credibility (H2)	Positive			0.258 (0.033)***		0.109 (0.063)
Message Engagement (H3)	Positive				0.255 (0.034)***	0.052 (0.067)
GSI * Exposure (H6)	Positive					0.284 (0.015)**
R^2		0.266	0.319	0.327	0.326	0.354
Adjusted R^2		0.255	0.307	0.316	0.315	0.337
Std. Error of the Estimates		0.52496	0.50654	0.50328	0.50358	0.49522
F-value		24.249	26.709	27.8	27.698	21.712
Degrees of freedom (df)		6	7	7	7	10
Significance		<.001	<.001	<.001	<.001	<.001

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

5.3.2.3 Multiple Regression Analysis for Green Self-Identity Moderating Message Credibility's Influence on Purchase Intention (H7)

Table 16 reports the regression results for Hypothesis 7, which proposed that GSI moderates the relationship between message credibility and purchase intention. Following the same hierarchical structure as previous models, Models 1 through 4 replicate the baseline and single-predictor models reported in Section 5.3.1.1, with closeness and attendance remaining consistently significant control predictors throughout. The interaction term GSI * Credibility was entered in Model 5 alongside all predictors and controls.

The GSI * Credibility interaction term emerged as a highly significant positive predictor ($\beta = 0.360$, $p < .001$), providing strong support for H7. The full model explained 35.9% of the variance ($R^2 = .359$, Adjusted $R^2 = .343$, $F(10) = 22.227$, $p < .001$), an improvement of 9.3 percentage points over the controls-only baseline ($R^2 = .266$). Among the controls, closeness ($\beta = 0.231$, $p < .001$) and attendance ($\beta = 0.185$, $p < .001$) remained significant in the full model. Regarding the hypothesised direct effects, message credibility ($\beta = -0.173$, ns) and message engagement ($\beta = 0.046$, ns) were rendered non-significant upon introduction of the interaction term, while the interaction term itself remained highly significant. This pattern is consistent with full moderation, indicating that message credibility has no independent effect on purchase intention and that its influence is entirely contingent upon the respondent's level of green self-identity. Individuals with stronger environmental self-identification are more responsive to credible sustainability messaging, whereas those with lower GSI appear unaffected by message credibility alone.

Table 16. Multiple regression analysis for Hypothesis 7

	Exp. Sign	Model 1 (Controls)	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (H7)
Controls						
Duration		0.105 (0.060)	0.067 (0.058)	0.086 (0.057)	0.081 (0.057)	0.083 (0.057)
Closeness		0.281 (0.060)***	0.236 (0.059)***	0.258 (0.058)***	0.260 (0.058)***	0.231 (0.057)***
Attendance		0.227 (0.058)***	0.215 (0.056)***	0.205 (0.056)***	0.200 (0.056)***	0.185 (0.056)***
Age		0.010 (0.026)	-0.015 (0.025)	0.000 (0.025)	-0.002 (0.025)	-0.030 (0.024)
Gender		-0.046 (0.047)	-0.032 (0.045)	-0.016 (0.045)	-0.027 (0.045)	-0.021 (0.044)
Location		0.085 (0.013)	0.050 (0.013	0.043 (0.013)	0.055 (0.013)	0.030 (0.013)
Hypotheses						
Message Exposure (H1)	Positive		0.248 (0.035)***			0.118 (0.044)*
Message Credibility (H2)	Positive			0.258 (0.033)***		-0.173 (0.090)
Message Engagement (H3)	Positive				0.255 (0.034)***	0.046 (0.067)
GSI * Credibility (H7)	Positive					0.360 (0.016)***
R^2		0.266	0.319	0.327	0.326	0.359
Adjusted R^2		0.255	0.307	0.316	0.315	0.343
Std. Error of the Estimates		0.52496	0.50654	0.50328	0.50358	0.49315
F-value		24.249	26.709	27.8	27.698	22.227
Degrees of freedom (df)		6	7	7	7	10
Significance		<.001	<.001	<.001	<.001	<.001

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

5.3.2.4 Multiple Regression Analysis for Green Self-Identity Moderating Message Engagement's Influence on Purchase Intention (H8)

The final regression analysis tested Hypothesis 8, examining whether GSI moderates the relationship between message engagement and purchase intention. As shown in Table 17, Models 1 through 4 replicate the baseline and single-predictor models reported in Section 5.3.1.1, with closeness and attendance remaining consistently significant control predictors throughout. The interaction term GSI * Engagement was introduced in Model 5 together with all previously established predictors.

The interaction term was found to be statistically significant and positively signed (β = 0.369, $p < .001$), providing support for H8. The full model explained 36.0% of the variance (R^2 = .360, Adjusted R^2 = .344, $F(10) = 22.357$, $p < .001$), representing a 9.4 percentage point improvement over the controls-only baseline (R^2 = .266). Among the controls, closeness (β = 0.229, $p < .001$) and attendance (β = 0.187, $p < .001$) remained robust and significant in the full model. The direct effects of message credibility (**β** = 0.095, ns) and message engagement ($\beta = -0.225$, ns) were rendered non-significant in the presence of the interaction term, while the interaction term itself remained highly significant. This pattern is consistent with full moderation, indicating that message engagement has no independent effect on purchase intention and that its influence on consumer behaviour is entirely dependent on the respondent's level of green self-identity.

Table 17. Multiple regression analysis for Hypothesis 8

	Exp. Sign	Model 1 (Controls)	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5 (H8)
Controls						
Duration		0.105 (0.060)	0.067 (0.058)	0.086 (0.057)	0.081 (0.057)	0.081 (0.057)
Closeness		0.281 (0.060)***	0.236 (0.059)***	0.258 (0.058)***	0.260 (0.058)***	0.229 (0.057)***
Attendance		0.227 (0.058)***	0.215 (0.056)***	0.205 (0.056)***	0.200 (0.056)***	0.187 (0.055)***
Age		0.010 (0.026)	-0.015 (0.025)	0.000 (0.025)	-0.002 (0.025)	-0.033 (0.025)
Gender		-0.046 (0.047)	-0.032 (0.045)	-0.016 (0.045)	-0.027 (0.045)	-0.018 (0.044)
Location		0.085 (0.013)	0.050 (0.013	0.043 (0.013)	0.055 (0.013)	0.028 (0.013)
Hypotheses						
Message Exposure (H1)	Positive		0.248 (0.035)***			0.117 (0.044)*
Message Credibility (H2)	Positive			0.258 (0.033)***		0.095 (0.063)
Message Engagement (H3)	Positive				0.255 (0.034)***	-0.225 (0.096)
GSI * Engagement (H8)	Positive					0.369 (0.016)***
R^2		0.266	0.319	0.327	0.326	0.36
Adjusted R^2		0.255	0.307	0.316	0.315	0.344
Std. Error of the Estimates		0.52496	0.50654	0.50328	0.50358	0.49263
F-value		24.249	26.709	27.8	27.698	22.357
Degrees of freedom (df)		6	7	7	7	10
Significance		<.001	<.001	<.001	<.001	<.001

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

5.3.3 Hypothesis results

Table 18 presents a summary of the hypothesis testing results for all eight hypotheses examined in this study. Of the eight hypotheses proposed, six were supported and two were not supported.

Hypothesis 1, which predicted that message exposure positively influences purchase intention in rotating sport mega-event series, was supported ($\beta = 0.123$, $p < .05$). In contrast, Hypothesis 2, proposing a positive effect of message credibility on purchase intention, was not supported ($\beta = 0.112$, $p > .05$), nor was Hypothesis 3, which predicted a positive effect of message engagement ($\beta = 0.088$, $p > .05$). Hypothesis 4, which proposed that sustainability communication positively influences purchase intention, was supported with a strong and significant coefficient ($\beta = 0.288$, $p < .001$).

Regarding the moderating hypotheses, Hypothesis 5, which proposed that green self-identity positively moderates the relationship between sustainability communication and purchase intention, was supported ($\beta = 0.315$, $p < .01$). Similarly, Hypothesis 6, proposing that green self-identity moderates the relationship between message exposure and purchase intention, was supported ($\beta = 0.284$, $p < .01$). Hypotheses 7 and 8, which examined the moderating role of green self-identity on message credibility and message engagement respectively, were both supported at a high level of significance (H7: $\beta = 0.360$, $p < .001$; H8: $\beta = 0.369$, $p < .001$).

Overall, these findings suggest that while not all direct message-related effects on purchase intention were significant, sustainability communication and the moderating role of green self-identity consistently demonstrated meaningful and statistically significant influences across the model.

Table 18. Summary of Hypotheses results.

Hypothesis	Predicted Direction	Final Result
H1: Message exposure positively influences purchase intention in rotating sport mega-event series.	Positive	Supported ($\beta = 0.123$, $p < 0.05$)
H2: Message credibility positively influences purchase intention in rotating sport mega-event series.	Positive	Not supported ($\beta = 0.112$, $p > 0.05$)
H3: Message engagement positively influences purchase intention in rotating sport mega-event series.	Positive	Not supported ($\beta = 0.088$, $p > 0.05$)
H4: Sustainability communication positively influences purchase intention in rotating sport mega-event series.	Positive	Supported ($\beta = 0.288$, $p < 0.001$)
H5: Green self-identity positively moderates the relationship between sustainability communication and purchase intention in rotating sport mega-event series.	Positive	Supported ($\beta = 0.315$, $p < 0.01$)
H6: Green self-identity positively moderates the relationship between message exposure and purchase intention in rotating sport mega-event series.	Positive	Supported ($\beta = 0.284$, $p < 0.01$)
H7: Green self-identity positively moderates the relationship between message credibility and purchase intention in rotating sport mega-event series.	Positive	Supported ($\beta = 0.360$, $p < 0.001$)
H8: Green self-identity positively moderates the relationship between message engagement and purchase intention in rotating sport mega-event series.	Positive	Supported ($\beta = 0.369$, $p < 0.001$)

6. Discussion

6.1 Control Variables

The multiple regression analysis shown in Tables 12 to 17 revealed that closeness and attendance were the only control variables to demonstrate statistically significant positive relationships with purchase intention across the regression models. Duration, age, gender, and location did not demonstrate statistically significant relationships with purchase intention, suggesting that behavioural and psychological involvement with the rotating sport mega-event series exerted a stronger influence on spectators' purchase intention than demographic characteristics or longevity of following alone.

Closeness demonstrated the strongest control effect within the regression analysis ($\beta = 0.281$, $p < 0.001$). Attendance similarly displayed a significant positive relationship with purchase intention ($\beta = 0.227$, $p < 0.001$). These findings indicate that spectators who feel more emotionally connected to the event series and those who have attended events in person are significantly more likely to demonstrate stronger purchase intention toward the rotating sport mega-event series. This aligns with Funk and James' (2001) Psychological Continuum Model, which argues that stronger psychological attachment to a sport property increases behavioural loyalty and consumption-related intentions over time. Similarly, Wann and Branscombe (1993) found that stronger fan identification is associated with more favourable sport consumption behaviours, while Kim et al. (2019) identified identification and commitment as among the strongest predictors of sport event attendance intention across sport consumer behaviour research.

In contrast, duration did not demonstrate a statistically significant relationship with purchase intention despite displaying a positive coefficient ($\beta = 0.105$, $p > 0.05$). This suggests that simply following the event series for a longer period does not necessarily strengthen spectators' purchase intention unless accompanied by stronger emotional attachment or behavioural involvement. This finding is consistent with Funk and James' (2001) argument that the depth of psychological connection is more influential than passive exposure duration alone.

Likewise, age ($\beta = 0.010$, $p > 0.05$), gender ($\beta = -0.046$, $p > 0.05$), and location ($\beta = 0.085$, $p > 0.05$) did not demonstrate statistically significant relationships with purchase intention within the regression models. These findings suggest that purchase intention toward the rotating sport mega-event series was relatively consistent across demographic

groups and geographical regions within the sample. Collectively, the control variable findings reinforce the theoretical importance of fan attachment, emotional connection, and behavioural involvement in shaping spectators' purchase intention within rotating sport mega-event series (Funk and James, 2001; Kim et al., 2019; Rai et al., 2024).

6.2 Hypotheses Discussion

H1: Message exposure positively influences purchase intention in rotating sport mega-event series.

The results regarding H1, shown in Table 12, support the hypothesised positive influence of message exposure on purchase intention. When message exposure was first tested with the control variables only, it showed a highly significant positive relationship with purchase intention ($\beta = 0.248$, $p < 0.001$). However, when message exposure was entered together with message credibility and message engagement in the full conceptual model, its coefficient decreased but remained statistically significant at ($\beta = 0.123$, $p < 0.05$), resulting in the acceptance of H1 and rejection of the null hypothesis.

This finding aligns with previous literature identifying message exposure as the foundational prerequisite of any sustainability communication effect. Without prior encounter with sustainability messaging, no evaluative or behavioural response is possible, as audiences cannot form attitudes toward communications they have not encountered (Signitzer and Prexl, 2007; Tölkes, 2018). This is consistent with de Vreese and Neijens' (2016) view of exposure as a multidimensional concept encompassing awareness of message content, the frequency with which messages are encountered, and the breadth of channel reach across platforms. In addition, Du, Bhattacharya and Sen (2010) identify low stakeholder awareness as a key barrier to realising behavioural returns from corporate social responsibility communication, while Harrison, Vafeiadis and Bober (2022) argue that sustained exposure to organisational sustainability communication is a precondition for the trust and authenticity perceptions that drive fan supportive intentions. Wu and Long (2024) further confirm that social media sustainability communication positively and directly predicts eco-friendly purchase intention among consumers. The positive and significant result for H1, therefore, supports the expectation that greater message exposure is associated with stronger spectators' purchase intention within the rotating series context.

H2: Message credibility positively influences purchase intention in rotating sport mega-event series.

The results regarding H2, shown in Table 12, do not support the hypothesised positive influence of message credibility on purchase intention. When message credibility was first tested with control variables only, it showed a highly significant positive relationship with purchase intention ($\beta = 0.258$, $p < 0.001$). However, once message exposure, message credibility, and message engagement were entered simultaneously in the full conceptual model, the effect of message credibility decreased and became statistically insignificant ($\beta = 0.112$, $p > 0.05$). Although the relationship was positive, message credibility was not statistically significant, resulting in the rejection of H2 and acceptance of the null hypothesis.

This finding does not support the theoretical expectation that message credibility positively influences purchase intention within the rotating sport mega-event series context. Signitzer and Prexl (2007) argue that sustainability communication must be believed in order to influence audience responses, while Cho, Park and Kim (2021) emphasise that audiences assess sustainability claims against prior perceptions of organisational identity and behaviour. It also aligns with Du, Bhattacharya and Sen's (2010) argument that sceptical attribution toward corporate sustainability motives can weaken behavioural responses to sustainability communication. Within the rotating sport mega-event series context, where spectators may perceive inconsistencies between stated environmental commitments and operational reality across different race markets, credibility may therefore be undermined despite continued exposure to sustainability messaging. This interpretation is also consistent with de Jong, Huluba and Beldad's (2020) finding that selectively framed environmental claims can produce audience perceptions of dishonesty, and Acaf, Brown-Devlin and Atkinson's (2025) observation that sport audiences who perceive a gap between sustainability claims and operational reality actively discount further communication from the organisation.

However, although credibility remains theoretically important, the full conceptual model did not provide statistical evidence that message credibility made a significant contribution to purchase intention in this study. This suggests that credibility alone was not sufficient to independently explain spectators' purchase intention once message exposure and message engagement were considered.

H3: Message engagement positively influences purchase intention in rotating sport mega-event series.

The results regarding H3, shown in Table 12, show that message engagement did not significantly influence purchase intention. When message engagement was tested individually with the control variables, it demonstrated a highly significant positive relationship with purchase intention ($\beta = 0.255$, $p < 0.001$). However, in the full conceptual model including message exposure, credibility, and engagement together, the coefficient for message engagement decreased and became statistically insignificant ($\beta = 0.088$, $p > 0.05$), resulting in the rejection of H3 and acceptance of the null hypothesis.

This finding does not support the theoretical expectation that message engagement positively influences purchase intention within the rotating sport mega-event series context. Lazard and Atkinson (2015) demonstrate that deeper cognitive processing of sustainability messages produces attitudes that are stronger and more resistant to change, while Kapoor, Balaji and Jiang (2021) show that message appeal and source congruency affect audience response. The finding may reflect the engagement challenge identified, where sustainability messaging must compete with excitement, entertainment, and social interaction as dominant drivers of sport event attendance (Funk et al., 2009). Even well-exposed and credible sustainability messages may therefore be received passively rather than processed meaningfully across different race markets. This interpretation is also consistent with Bernard, Rahman and Douglas' (2024) finding that precise message design produces higher engagement and reduced scepticism toward environmental claims. However, although message engagement remains theoretically important, the full conceptual model in H3 did not provide statistical evidence that message engagement significantly influenced purchase intention in the present study.

H4: Sustainability communication positively influences purchase intention in rotating sport mega-event series.

The results regarding H4, shown in Table 13, support the hypothesised positive influence of sustainability communication on purchase intention. Sustainability communication was found to have a highly significant positive relationship with purchase intention ($\beta = 0.288$ at $p < 0.001$), resulting in the acceptance of H4 and rejection of the null hypothesis. Sustainability communication in this study is understood as the deliberate framing and transmission of environmental messages intended to build awareness, shape attitudes, and influence behaviour (Signitzer and Prexl, 2007; Tölkes, 2018).

This finding aligns with previous literature suggesting that sustainability communication positively influences behavioural intentions. Tölkes (2018) argues that sustainability communication constitutes a distinct construct centred on audience reception processes, while Signitzer and Prexl (2007) emphasise that the strategic framing and transmission of environmental messages directly shape audience attitudes and responses. In sport event contexts specifically, Harrison, Vafeiadis and Bober (2022) demonstrate that sustainability communication by sport organisations significantly increases fan supportive intentions, whilst Rai et al. (2024) further confirm that fans' involvement with and positive perceptions of sport events, shaped in part by event communication, significantly predict purchase intention for products associated with the event. The positive and significant result for H4 therefore supports that sustainability communication, when examined as an overall construct, significantly contributes to spectators' purchase intention within the rotating sport mega-event series.

H5: Green self-identity positively moderates the influence of sustainability communication on purchase intention in rotating sport mega-event series.

The results regarding H5, shown in Table 14, support the hypothesised moderating role of green self-identity in the relationship between sustainability communication and purchase intention. The interaction between green self-identity and sustainability communication was positive and statistically significant in the full conceptual model ($\beta = 0.315$ at $p < 0.01$), resulting in the acceptance of H5 and rejection of the null hypothesis.

Comparing H5 with the earlier direct-effect result of sustainability communication in H4 provides a more precise interpretation of the sustainability communication and purchase intention relationship. H4 showed that sustainability communication had a significant positive direct relationship with purchase intention when tested with the control variables ($\beta = 0.288$, $p < 0.001$). However, when the interaction between sustainability communication and green self-identity was introduced in H5, the interaction term was positive and statistically significant ($\beta = 0.315$, $p < 0.01$), while the direct coefficient in the final conceptual model for sustainability communication became non-significant ($\beta = 0.009$, $p > 0.05$). This pattern indicates full moderation, as the direct effect of sustainability communication becomes non-significant in the final conceptual model, while the interaction between sustainability communication and green self-identity remains positive and statistically significant.

This does not reject H4, because H4 and H5 test different effects. Rather, it indicates that the overall positive effect identified in H4 is better understood as varying according to spectators' green self-identity, meaning that the relationship between sustainability communication and purchase intention is not uniform across the spectator population. This supports Whitmarsh and O'Neill's (2010) argument that individuals with stronger green self-identities are more likely to act consistently with their environmental self-perceptions, and Barbarossa and De Pelsmacker's (2016) finding that consumers with stronger pro-environmental orientations respond more strongly to sustainability-related factors. The finding is also consistent with Kellison et al.'s (2025) argument that environmental identity conditions fan responses to sustainability communication, and Acaf, Brown-Devlin and Atkinson's (2025) observation that fans with weaker environmental identities are less responsive to sustainability messaging within a rotating series context.

H6: Green self-identity positively moderates the influence of message exposure on purchase intention in rotating sport mega-event series.

The results regarding H6, shown in Table 15, support the hypothesised moderating effect of green self-identity on the relationship between message exposure and purchase intention. The interaction between green self-identity and message exposure was positive and statistically significant in the full conceptual model ($\beta = 0.284$ at $p < 0.01$), resulting in the acceptance of H6 and rejection of the null hypothesis.

Comparing H6 with the earlier direct-effect result for message exposure in H1 provides a clearer interpretation of the moderation effect. When message exposure was tested individually with the control variables, it had a significant positive relationship with purchase intention ($\beta = 0.248$, $p < 0.001$). However, when message exposure was entered in the full conceptual model together with message credibility, message engagement, and the interaction between green self-identity and exposure, its direct effect became statistically insignificant ($\beta = -0.102$, $p > 0.05$), while the interaction term remained positive and significant ($\beta = 0.284$, $p < 0.01$). This pattern indicates full moderation, as the direct effect of message exposure became non-significant in the final conceptual model, while the interaction between green self-identity and message exposure remained positive and statistically significant.

This indicates that exposure did not operate as a stable independent predictor; rather, its relationship with purchase intention depended on spectators' green self-identity. This

supports the theoretical expectation that spectators with stronger environmental self-identities are more responsive to sustainability communication exposure, as environmental information is more likely to align with their self-concept (Whitmarsh and O'Neill, 2010; Barbarossa and De Pelsmacker, 2016). This is also consistent with identity theory, which proposes that the more central an identity is to an individual's self-concept, the more strongly it shapes behaviour (Stryker and Burke, 2000). Similarly, Pinho (2025) argues that individuals tend to invest more time and effort in identities that are more central to them. The finding is further supported by Kellison et al.'s (2025) argument that environmental identity conditions fan responses to sustainability communication. The acceptance of H6 therefore supports the expectation that the relationship between message exposure and purchase intention is stronger among spectators with higher green self-identity.

H7: Green self-identity positively moderates the influence of message credibility on purchase intention in rotating sport mega-event series.

The results regarding H7, shown in Table 16, support the hypothesised moderating effect of green self-identity on the relationship between message credibility and purchase intention. The interaction between green self-identity and message credibility was positive and statistically significant in the full conceptual model ($\beta = 0.360$ at $p < 0.001$), resulting in the acceptance of H7 and rejection of the null hypothesis. Message credibility refers to authenticity, trust, and consistency in sustainability communication, while green self-identity reflects the importance of environmental responsibility within the individual's self-concept (Cho, Park and Kim, 2021; Harrison, Vafeiadis and Bober, 2022; Whitmarsh and O'Neill, 2010).

Comparing H7 with the earlier direct-effect result for message credibility in H2 provides a more precise interpretation of the finding. When message credibility was tested individually with the control variables, it had a significant positive relationship with purchase intention ($\beta = 0.258$, $p < 0.001$). However, in the moderation model including the message exposure, message engagement and green self-identity, the direct effect of message credibility became statistically insignificant ($\beta = -0.173$, $p > 0.05$), while the interaction between green self-identity and message credibility was positive and significant ($\beta = 0.360$, $p < 0.001$). This pattern indicates full moderation, as the direct effect of message credibility became non-significant in the final conceptual model, while

the interaction between green self-identity and message credibility remained positive and statistically significant.

This suggests that credibility did not operate as a stable independent predictor; instead, its relationship with purchase intention depended on spectators' green self-identity. This aligns with the theoretical expectation that credibility becomes more influential when sustainability claims connect with spectators' environmental identity. Cho, Park and Kim (2021) argue that audiences evaluate sustainability claims against their perceptions of organisational identity and conduct, while Harrison, Vafeiadis and Bober (2022) emphasise authenticity and trust in sport sustainability communication. The acceptance of H7 therefore supports the expectation that the relationship between message credibility and purchase intention is stronger among spectators with higher green self-identity.

H8: Green self-identity positively moderates the influence of message engagement on purchase intention in rotating sport mega-event series.

The results regarding H8, shown in Table 17, support the hypothesised moderating effect of green self-identity on the relationship between message engagement and purchase intention. The interaction between green self-identity and message engagement was positive and statistically significant in the full conceptual model ($\beta = 0.369$ at $p < 0.001$), resulting in the acceptance of H8 and rejection of the null hypothesis. Message engagement refers to relevance, elaboration, and message appeal, while green self-identity reflects the extent to which environmental responsibility is part of spectators' self-concept (Lazard and Atkinson, 2015; Tölkes, 2018; Kapoor, Balaji and Jiang, 2021; Whitmarsh and O'Neill, 2010).

Comparing H8 with the earlier direct-effect result for message engagement in H3 provides a more precise interpretation of the finding. When message engagement was tested individually with the control variables, it had a significant positive relationship with purchase intention ($\beta = 0.255$, $p < 0.001$). However, in the moderation model including message exposure, message credibility and green self-identity, the direct effect of message engagement became statistically insignificant ($\beta = -0.225$, $p > 0.05$), while the interaction between green self-identity and message engagement was positive and significant ($\beta = 0.369$, $p < 0.001$). This pattern indicates full moderation, as the direct effect of message engagement became non-significant in the final conceptual model, while the interaction between green self-identity and message engagement remained positive and statistically significant.

This suggests that engagement did not operate as a stable independent predictor; instead, its relationship with purchase intention depended on spectators' green self-identity. This finding aligns with previous research suggesting that individuals with stronger environmental identities are more likely to process sustainability communication in personally meaningful ways. Lazard and Atkinson (2015) argue that deeper cognitive processing strengthens responses to sustainability messages, while Tölkes (2018) identifies personal relevance as an important condition for active processing. The acceptance of H8 therefore supports the expectation that the relationship between message engagement and purchase intention is stronger among spectators with higher green self-identity.

6.3 Revised Research Model

Figure 2 presents the revised conceptual model following hypothesis testing, retaining only the relationships that were empirically supported. Compared to the original model, message credibility (IV2) and message engagement (IV3) have been removed from the revised model, as their hypothesised direct effects on purchase intention were not supported in the full conceptual model (H2, H3). Consequently, the moderating hypotheses associated with these dimensions (H7, H8) were also excluded despite demonstrating statistical significance, as they were considered theoretically redundant, given that a moderating relationship cannot be meaningfully retained in the absence of a significant direct effect to moderate.

The revised model retains message exposure as the sole surviving dimension of sustainability communication with a significant direct effect on purchase intention (H1), alongside sustainability communication as an overall construct (H4). Green self-identity is retained as a moderating variable, positively moderating both the relationship between sustainability communication and purchase intention (H5) and the relationship between message exposure and purchase intention (H6). The moderation pattern observed for both H5 and H6 was one of full moderation, meaning that the direct effects of sustainability communication and message exposure on purchase intention were contingent on spectators' level of green self-identity rather than operating independently of it.

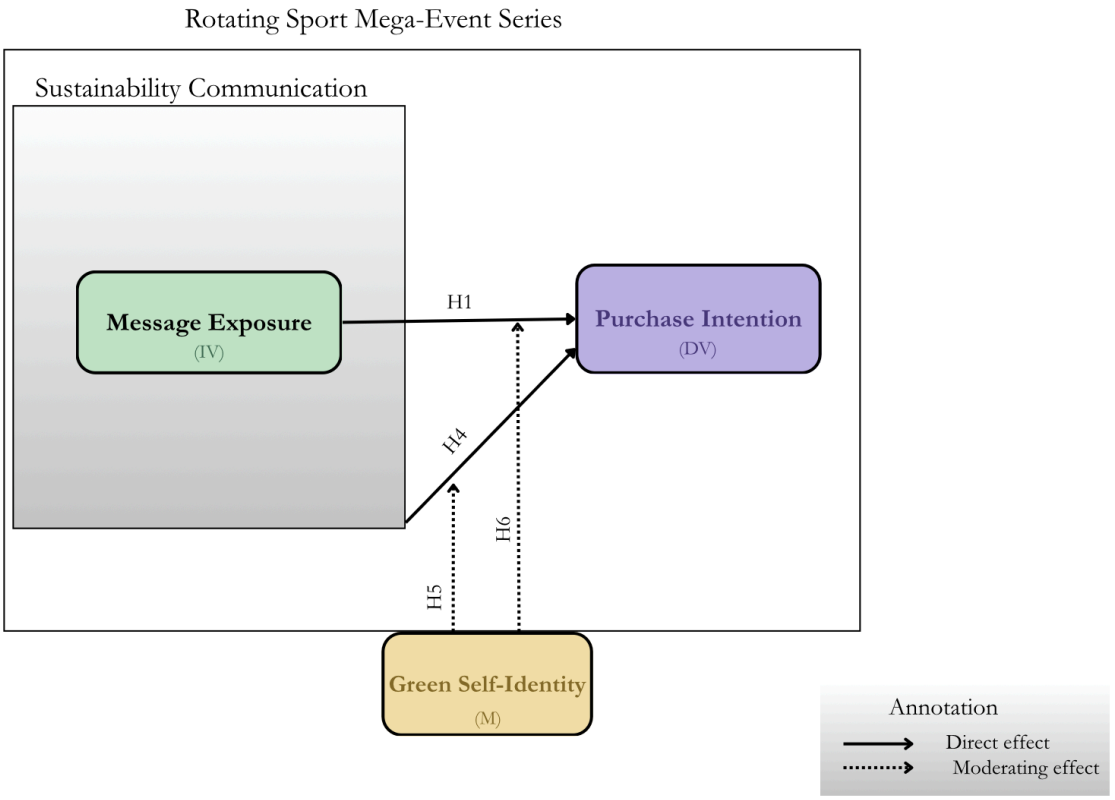

Figure 2. Revised conceptual model retaining supported hypotheses (H1, H4, H5, H6)

7. Conclusion

This study set out to examine the relationship between sustainability communication and spectators' purchase intention within rotating sport mega-event series, accounting for the moderating role of green self-identity. Using a quantitative cross-sectional survey design with 408 valid responses from F1 spectators across six continents, eight hypotheses were tested through moderated multiple regression analysis. The findings show that sustainability communication as an overall construct positively influences spectators' purchase intention (H4: $\beta = 0.288$, $p < .001$), and that message exposure independently contributes to this effect (H1: $\beta = 0.123$, $p < .05$). Message credibility and message engagement did not independently predict purchase intention when all three dimensions were entered simultaneously (H2: $\beta = 0.112$, $p > .05$; H3: $\beta = 0.088$, $p > .05$), suggesting that shared variance among the dimensions limits their unique contributions in the full model. Green self-identity positively moderated the relationship between sustainability communication and purchase intention (H5: $\beta = 0.315$, $p < .01$), and between message exposure and purchase intention (H6: $\beta = 0.284$, $p < .01$), while the moderation hypotheses for credibility and engagement (H7: $\beta = 0.360$, $p < .001$; H8: $\beta = 0.369$, $p < .001$) were supported statistically but rendered theoretically redundant by the non-significant direct effects they were proposed to moderate. The most consequential finding is the pattern of full moderation: when green self-identity entered the model, the direct effect of sustainability communication on purchase intention became non-significant ($\beta = 0.009$, $p > .05$), indicating that sustainability communication's influence on purchase intention is not uniform across spectators but operates entirely through their environmental self-concept. Sustainability communication, in this context, functions as an identity-consistent reinforcer rather than a broadly persuasive tool, reaching those for whom environmental responsibility is already self-defining, while having little measurable effect on those for whom it is not.

7.1 Theoretical Implications

The findings of this study extend existing theory in three meaningful ways. First, this study provides the first empirical evidence that sustainability communication positively predicts purchase intention within a rotating sport mega-event context, addressing a gap

identified by Harrison, Vafeiadis and Bober (2022) and Pierce (2024), who noted the absence of evidence linking environmental messaging to attendance-related behavioural intentions in sport. Prior research had examined sustainability communication in relation to fan perceptions and supportive attitudes, but had not tested whether it shapes the decision to attend. By demonstrating a significant positive relationship between sustainability communication and purchase intention (H4), and showing that message exposure independently contributes to this effect (H1), this study establishes that sustainability communication is not behaviourally inert in the rotating series context. Its effects are, however, more conditional than a direct-effects model alone would suggest.

Second, the full moderation pattern observed in H5 and H6 challenges existing assumptions about how sustainability communication operates in sport. Whitmarsh and O'Neill (2010) established that green self-identity predicts pro-environmental behaviour independently of attitude and subjective norms, and Barbarossa and De Pelsmacker (2016) showed that consumers with stronger environmental orientations respond more strongly to sustainability-related stimuli. The present study extends these findings into sport fandom by demonstrating that green self-identity does not merely amplify an existing relationship but determines whether a relationship exists at all. This positions green self-identity as a boundary condition rather than a simple moderator, contributing a sport-specific qualification to the broader green consumer behaviour literature and supporting Kellison et al.'s (2025) argument that identity structures fundamentally condition how sport audiences respond to environmental messaging.

Third, the non-significant direct effects of message credibility and message engagement in the full model raise important questions for future operationalisation of sustainability communication in sport contexts. Both constructs were significant when tested individually, but lost explanatory power in the full model, partly due to the high intercorrelation between credibility and engagement ($r = .863$). This suggests that sport spectators may not cognitively distinguish between believing a sustainability message and being engaged by it, indicating that the three-dimensional operationalisation of sustainability communication applied in this study may require refinement for sport-specific contexts where identity-based processing dominates over evaluative processing of message attributes.

7.2 Practical Implications

For event organisers and governing bodies such as F1, the findings indicate that sustainability communication should be approached as a targeted rather than a mass communication tool. Since the influence of sustainability communication on purchase intention operates through green self-identity, broadcasting generic environmental messages to the entire fan base is unlikely to produce meaningful behavioural returns among spectators for whom environmental responsibility is not personally central. Instead, governing bodies should invest in identifying and reaching the segment of spectators with stronger environmental self-identities through tailored, multi-channel sustainability messaging, given that message exposure was the dimension that independently predicted purchase intention. Ensuring that environmental messaging reaches this audience consistently and across multiple platforms is likely to be more effective than focusing solely on message quality or credibility.

For destination marketing organisations and circuit hosts, the study suggests that the sustainability credentials of host venues and race destinations are most likely to influence purchase intention among environmentally conscious spectator segments. Sustainable transport options, green event certification, and environmentally framed destination marketing should be directed toward spectators for whom green self-identity is salient, rather than applied uniformly. The finding that closeness and prior attendance were the strongest predictors of purchase intention across all models further suggests that sustainability communication is most likely to reinforce intentions among already deeply involved fans, who may be more receptive to messaging that aligns with their broader personal values than among casual followers who have not yet developed a strong psychological attachment to the series.

For sponsors, commercial partners, and the broader sport business ecosystem, the findings highlight green self-identity as a commercially relevant segmentation variable. Partners whose brand identity aligns with environmental values are most likely to find purchase-related resonance among the spectator segment that sustainability communication reaches most effectively. Conversely, partners with limited sustainability credentials should exercise caution in co-branding with event sustainability messaging, as highly green-identified spectators, the most responsive audience, are also likely the most critical of perceived greenwashing. Across all stakeholder groups, the overarching

practical takeaway is consistent: in rotating sport mega-event series, the effectiveness of sustainability communication depends less on how the message is designed and more on who is receiving it.

8. Limitations and Future Research

8.1 Limitations

Several methodological limitations should be acknowledged when interpreting the findings of the present study.

Firstly, the findings cannot be fully generalised to the wider population of F1 spectators due to the study's sampling approach. The study employed convenience sampling and distributed the questionnaire primarily through online F1 communities on platforms such as Telegram, Discord, Reddit, Facebook, LinkedIn, and WhatsApp. As a result, respondents who actively participate in online fan communities may differ from the broader F1 audience in terms of involvement with the sport, exposure to sustainability communication, and environmental attitudes. Non-probability convenience samples do not permit statistical generalisation to the broader population, as the sample cannot be assumed to be representative of all F1 spectators. Nevertheless, the final valid sample of 408 respondents exceeded the study's minimum target sample size and provided a sufficiently large dataset for the statistical analyses conducted.

Beyond the sampling method itself, the composition of the achieved sample represents a substantive limitation in its own right. With 58.6% of respondents having followed F1 for more than five years and 94.7% describing themselves as following the series very closely or as dedicated fans, the sample is heavily skewed toward the most involved end of the spectator spectrum. This matters theoretically, not merely statistically, because deeply involved fans may process sustainability communication differently from casual followers, potentially amplifying the observed relationships between sustainability communication and purchase intention. The finding that closeness was the strongest and most consistent control predictor across all regression models further underscores how dominant fan involvement was in this sample, and suggests that findings may not translate to audiences with weaker psychological connections to the sport.

Secondly, the study relied on self-reported survey responses, which introduces the possibility of response bias and social desirability bias. Since sustainability and environmental responsibility are socially valued topics, some respondents may have

overstated the degree to which sustainability communication influences their perceptions or behavioural intentions. Furthermore, the study measured purchase intention rather than actual ticket purchasing behaviour. Although purchase intention is widely recognised as a strong predictor of future behaviour, prior research demonstrates that intentions do not always translate into actual purchasing decisions, and this gap is particularly well-documented in sustainability contexts where attitude-behaviour inconsistency is common (Acaf, Brown-Devlin and Atkinson, 2025).

Thirdly, the study used a cross-sectional design in which all variables were measured at a single point in time. While this design allowed the study to examine associations between sustainability communication, green self-identity, and purchase intention, it does not permit causal conclusions to be drawn. The findings, therefore, indicate relationships between variables rather than demonstrating that sustainability communication directly causes changes in spectators' purchase intentions.

Fourthly, the high intercorrelation observed between message credibility and message engagement ($r = .863$) represents a meaningful measurement limitation that extends beyond a purely statistical concern. While the factor analysis confirmed that items from each dimension loaded onto separate factors, the scale-level correlation approaches the threshold associated with construct redundancy and raises a genuine conceptual question about whether spectators cognitively distinguish between believing a message and being engaged by it in the way the theoretical framework assumes. This suggests that future operationalisations of these dimensions may benefit from more precise discriminant measurement development.

Finally, the questionnaire was administered exclusively in English despite targeting an international audience spanning six continents. Although Formula 1 has a highly global and predominantly English-speaking fan base, some potential respondents may have felt less comfortable completing the survey in a non-native language. This may have influenced how certain questions were interpreted or limited participation among some spectator segments, particularly in regions where English proficiency is less uniform.

8.2 Recommendations for future research

The present study provides an empirically tested framework for examining how sustainability communication relates to spectators' purchase intention within rotating sport mega-event series, with green self-identity as a moderating variable. Future research may build on and extend this framework in several directions.

Firstly, future studies could investigate specific communication strategies, such as emotionally framed messaging, transparency-based communication, or athlete-led sustainability advocacy, to determine which formats and framings are most effective for different spectator segments, providing more actionable guidance for event organisers and governing bodies.

Secondly, longitudinal designs would allow researchers to examine whether sustained exposure to sustainability communication produces cumulative effects on purchase intention across multiple seasons, and whether repeated exposure can gradually strengthen green self-identity among spectators who currently score lower on this construct, a question the present cross-sectional design cannot answer.

Thirdly, comparative research across other rotating series, including MotoGP, the ATP and WTA tours, and the World Surf League, would test the generalisability of the framework beyond the F1 context. While these series share the same structural logic of recurring spectator attendance decisions across multiple host destinations, they differ in the degree of inherent tension between their operational identity and their sustainability communication. F1's combustion-engine identity creates a distinctive credibility challenge that may not exist to the same degree in other series, and examining whether the relationships observed in the present study hold across these varying contexts would help establish the boundary conditions of the framework's transferability.

Fourthly, given that green self-identity emerged as the dominant moderating variable, future research should examine whether organisational communication strategies can activate or cultivate environmental self-identification among less green-identified spectators, as the present study demonstrates that sustainability communication is considerably more effective among those who already hold strong environmental identities.

Finally, experimental or quasi-experimental designs would allow causal claims to be made with greater confidence, addressing the inferential limitations inherent in the cross-sectional survey approach adopted here.

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Appendices

Appendix 1 - Questionnaire Design

Hello!

We are a team of three students pursuing our bachelor thesis in Marketing, at Linnaeus University (LNU) in Växjö, Sweden. For our thesis, we are researching how Formula One's sustainability communication influences spectators' intention to purchase a Grand Prix ticket, and whether personal environmental values play a role in this relationship. Our goal is to gather information about Formula One (F1) spectators' experiences and attitudes, which will contribute to our academic research.

- You will receive a brief introduction to the topics in the various sections so that you have the necessary knowledge to complete the survey.
- Your participation and your answers are anonymous. Data from the survey will not be shared and will only be used for academic analysis.
- You are expected to fill in the questionnaire honestly.
- There are no right or wrong answers.

The survey consists of 25 questions and takes about 5–7 minutes to fill out.

If you have any questions or concerns regarding the survey, please do not hesitate to contact us by email.

Sincerely,

Jowel Eid – je224fj@student.lnu.se

Radieh El-Chafei – re222pa@student.lnu.se

Winnie Gyamfi – wg222bt@student.lnu.se

Thank you for taking the time to contribute to our project. Your input is immensely appreciated!

Do you follow F1? *

- ○ Yes
- ○ No

Have you come across sustainability communication messages from F1? *

- ○ Yes
- ○ No

Section 1 of 6

Your Relationship with F1

In this section we would like to understand how you engage with F1. Please answer the following questions about your relationship with the sport.

How long have you followed F1? *

- ○ Less than a year
- ○ 1–3 years
- ○ 3–5 years
- ○ More than 5 years

How closely do you follow F1? *

- ○ Casually
- ○ Moderately
- ○ Very closely
- ○ I am a dedicated fan

Have you ever attended a F1 Grand Prix? *

- ○ Yes
- ○ No

Section 2 of 6

Purchase Intention

In this section we want to understand your intentions to attend a F1 Grand Prix in the future. The following statements relate to your likelihood of purchasing a ticket to attend a F1 Grand Prix. Please indicate your level of agreement with each statement from Strongly Disagree to Strongly Agree.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I intend to purchase a ticket to a F1 Grand Prix in the future.	○	○	○	○	○
I will likely purchase a ticket to a F1 Grand Prix in the future.	○	○	○	○	○
I am considering purchasing a ticket to a F1 Grand Prix in the future.	○	○	○	○	○

Section 3 of 6

Formula 1's Sustainability Communication

In this section we want to understand how you experience F1's sustainability communication.

Sustainability communication refers to the environmental messages that F1 shares through channels such as social media, television, and its website.

Please indicate your level of agreement with each statement from Strongly Disagree to Strongly Agree.

Message Exposure

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

I can recall the sustainability messages from F1.	○	○	○	○	○
I regularly come across sustainability messages from F1.	○	○	○	○	○
I come across sustainability messages from F1 across different channels (e.g. social media, TV, website).	○	○	○	○	○

Message Credibility

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
I believe F1's sustainability claims are sincere.	○	○	○	○	○
I trust the environmental information that F1 communicates.	○	○	○	○	○
F1's sustainability actions are consistent with what it claims to stand for.	○	○	○	○	○

Message Engagement

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
F1's sustainability content is relevant to me.	○	○	○	○	○
I think about F1's sustainability messages when I come across them.	○	○	○	○	○

The sustainability communication from F1 appeals to me.	○	○	○	○	○

Section 4 of 6

Green Self-Identity

In this section we want to understand how you see yourself in relation to environmental values.

Green self-identity refers to the degree to which you see yourself as an environmentally responsible person.

Please indicate your level of agreement with each statement from Strongly Disagree to Strongly Agree.

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
I see myself as an environmentally responsible person.	○	○	○	○	○
I have a clear idea of my own environmental values.	○	○	○	○	○
Being environmentally responsible is an important part of who I am.	○	○	○	○	○

Section 5 of 6

About You

Finally, we would like to ask a few background questions about yourself. This information is used only for descriptive purposes and will not be linked to your individual responses.

What is your age? *

- ○ Under 20
- ○ 20–29
- ○ 30–39
- ○ 40–49
- ○ 50–59
- ○ 60–69
- ○ 70+

What gender do you identify with? *

- Male
- Female
- Non-binary
- Other

Where do you currently live? *

- Asia
- Africa
- Antarctica
- North America
- South America
- Europe
- Australia / Oceania

Thank You

You have just completed our survey and we are truly grateful for your time and input. Every response matters greatly to our research and brings us one step closer to completing our bachelor thesis.

Your answers will be treated with full confidentiality and will only be used for academic purposes as part of our research at Linnaeus University in Växjö.

We hope you found the survey interesting. If you have any questions about the study or would like to know more about our findings once the research is complete, please do not hesitate to reach out to us.

Sincerely,

Jowel Eid – je224fj@student.lnu.se

Radieh El-Chafei – re222pa@student.lnu.se

Winnie Gyamfi – wg222bt@student.lnu.se

Linnaeus University, Bachelor Thesis in Marketing, Spring 2026

Appendix 2 - SPSS Data

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
FollowF1	459	0	1	.99	.093	110.977	.227
SeenSusCommMessage	459	0	1	.89	.315	4.183	.227
F1_Duration	408	1	4	3.54	.589	.832	.241
F1_Closeness	408	1	4	3.31	.586	.207	.241
Attendance_F1GP	408	0	1	.45	.498	-1.967	.241
PI_StatedIntent	408	2	5	3.94	.620	.491	.241
PI_Likelihood	408	2	5	3.89	.647	.044	.241
PI_Consideration	408	2	5	3.88	.676	-.275	.241
Exp_Awareness	408	1	5	3.60	.808	.634	.241
Exp_Frequency	408	1	5	3.55	.831	.188	.241
Exp_ChannelReach	408	1	5	3.52	.835	-.041	.241
Cred_Authenticity	408	1	5	3.35	.871	-.077	.241
Cred_Trust	408	1	5	3.35	.857	-.080	.241
Cred_Consistency	408	1	5	3.40	.802	.195	.241
Eng_Relevance	408	1	5	3.39	.834	.051	.241
Eng_Elaboration	408	1	5	3.46	.811	.292	.241
Eng_MessageAppeal	408	1	5	3.43	.833	.118	.241
GSI_SelfLabel	408	1	5	4.00	.513	3.427	.241
GSI_SelfPerception	408	1	5	4.01	.550	2.654	.241
GSI_IdentityImportance	408	1	5	3.98	.588	1.841	.241
Age	408	1	5	3.00	1.033	-.706	.241
Gender	408	1	3	1.48	.582	-.402	.241
Living	408	1	7	4.63	2.050	-.815	.241
AvgExp	408	1.00	5.00	3.5556	.77475	.424	.241
AvgCred	408	1.00	5.00	3.3652	.78744	.170	.241
AvgEng	408	1.00	5.00	3.4281	.76310	.456	.241
AvgPI	408	2.00	5.00	3.9044	.60831	.351	.241
AvgGSI	408	1.00	5.00	3.9943	.48140	3.851	.241
AvgSusComm	408	1.00	5.00	3.4496	.69610	.479	.241
Valid N (listwise)	408						

Figure 3. Descriptive statistics of all variables and controls

Reliability

Purchase Intention

Reliability Statistics

Cronbach's Alpha	N of Items
.932	3

Figure 4. Cronbach's Alpha for Purchase Intention

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PI_StatedIntent	7.77	1.601	.856	.907
PI_Likelihood	7.82	1.485	.904	.867
PI_Consideration	7.84	1.504	.827	.931

Figure 5. Cronbach's Alpha if item is deleted

Sustainability Communication

Reliability Statistics

Cronbach's Alpha	N of Items
.947	9

Figure 6. Cronbach's Alpha for Sustainability Communication

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Exp_Awareness	27.45	32.002	.721	.944
Exp_Frequency	27.50	31.572	.748	.943
Exp_ChannelReach	27.53	31.719	.726	.944
Cred_Authenticity	27.70	30.541	.825	.938
Cred_Trust	27.70	30.796	.812	.939
Cred_Consistency	27.65	31.182	.829	.938
Eng_Relevance	27.66	30.968	.817	.939
Eng_Elaboration	27.59	31.177	.819	.939
Eng_MessageAppeal	27.61	31.004	.814	.939

Figure 7. Cronbach's Alpha if item is delete

Message Exposure

Reliability Statistics

Cronbach's Alpha	N of Items
.933	3

Figure 8. Cronbach's Alpha for Message Exposure

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Exp_Awareness	7.07	2.553	.850	.913
Exp_Frequency	7.12	2.423	.884	.885
Exp_ChannelReach	7.15	2.467	.853	.910

Figure 9. Cronbach's Alpha if item is delete

Message Credibility

Reliability Statistics

Cronbach's Alpha	N of Items
.926	3

Figure 10. Cronbach's Alpha for Message Credibility

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cred_Authenticity	6.75	2.461	.864	.881
Cred_Trust	6.75	2.514	.859	.885
Cred_Consistency	6.70	2.742	.827	.911

Figure 11. Cronbach's Alpha for if item is deleted

Message Engagement

Reliability Statistics

Cronbach's Alpha	N of Items
.914	3

Figure 12. Cronbach's Alpha for Message Engagement

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Eng_Relevance	6.89	2.399	.831	.874
Eng_Elaboration	6.82	2.465	.832	.873
Eng_MessageAppeal	6.85	2.422	.820	.883

Figure 13.Cronbach's Alpha if item is deleted

Green Self-Identity

Reliability Statistics

Cronbach's Alpha	N of Items
.845	3

Figure 14. Cronbach's Alpha for Green self-identity

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
GSI_SelfLabel	7.99	1.076	.702	.795
GSI_SelfPerception	7.98	.967	.755	.741
GSI_IdentityImportance	8.00	.953	.685	.815

Figure 15. Cronbach's Alpha if item is deleted

Correlations

Correlations

		Exp_Awareness	Exp_Frequency	Exp_ChannelReach	Cred_Authenticity	Cred_Trust	Cred_Consistency	Eng_Relevance	Eng_Elaboration	Eng_MessageAppeal
Exp_Awareness	Pearson Correlation	1	.836***	.795***	.555***	.517***	.564***	.534***	.540***	.550***
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Exp_Frequency	Pearson Correlation	.836***	1	.840***	.565***	.511***	.583***	.570***	.572***	.589***
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Exp_ChannelReach	Pearson Correlation	.795***	.840***	1	.574***	.534***	.533***	.535***	.558***	.560***
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Cred_Authenticity	Pearson Correlation	.555***	.565***	.574***	1	.837***	.796***	.742***	.728***	.721***
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Cred_Trust	Pearson Correlation	.517***	.511***	.534***	.837***	1	.789***	.763***	.763***	.721***
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Cred_Consistency	Pearson Correlation	.564***	.583***	.533***	.796***	.789***	1	.760***	.750***	.761***
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Eng_Relevance	Pearson Correlation	.534***	.570***	.535***	.742***	.763***	.760***	1	.791***	.775***
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	N	408	408	408	408	408	408	408	408	408
Eng_Elaboration	Pearson Correlation	.540***	.572***	.558***	.728***	.763***	.750***	.791***	1	.777***
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001
	N	408	408	408	408	408	408	408	408	408
Eng_MessageAppeal	Pearson Correlation	.550***	.589***	.560***	.721***	.721***	.761***	.775***	.777***	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	408	408	408	408	408	408	408	408	408

***. Correlation at 0.001(2-tailed)

Figure 16. Correlation analysis

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.516[a]	.266	.255	.52496	.266	24.249	6	401	<.001
2	.564[b]	.319	.307	.50654	.052	30.694	1	400	<.001

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp

Figure 17. Model summary for H1 and controls

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	2.044	.204		10.029	<.001
	F1_Duration	.069	.058	.067	1.193	.233
	F1_Closeness	.245	.059	.236	4.176	<.001
	Attendance_F1GP	.262	.056	.215	4.649	<.001
	Age	-.009	.025	-.015	-.362	.718
	Gender	-.034	.045	-.032	-.743	.458
	Living	.015	.013	.050	1.122	.263
	AvgExp	.195	.035	.248	5.540	<.001

a. Dependent Variable: AvgPI

Figure 18. Coefficients table for H1 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.516[a]	.266	.255	.52496	.266	24.249	6	401	<.001
2	.572[b]	.327	.316	.50328	.061	36.301	1	400	<.001

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgCred

Figure 19. Model summary for H2 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	1.886	.210		8.989	<.001
	F1_Duration	.089	.057	.086	1.544	.123
	F1_Closeness	.268	.058	.258	4.623	<.001
	Attendance_F1GP	.250	.056	.205	4.448	<.001
	Age	-2.087E-5	.025	.000	-.001	.999
	Gender	-.016	.045	-.016	-.363	.717
	Living	.013	.013	.043	.983	.326
	AvgCred	.199	.033	.258	6.025	<.001

a. Dependent Variable: AvgPI

Figure 20. Coefficients table for H2 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change
1	.516[a]	.266	.255	.52496	.266	24.249	6	401	<.001
2	.571[b]	.326	.315	.50358	.060	35.774	1	400	<.001

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgEng

Figure 21. Model summary for H3 and controls

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.096	6	6.683	24.249	<.001[b]
	Residual	110.509	401	.276		
	Total	150.605	407			
2	Regression	49.168	7	7.024	27.698	<.001[c]
	Residual	101.438	400	.254		
	Total	150.605	407			

a. Dependent Variable: AvgPI

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

c. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgEng

Figure 22. Coefficients table for H3 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.516[a]	.266	.255	.52496	.266	24.249	6	401	<.001
2	.564[b]	.319	.307	.50654	.052	30.694	1	400	<.001
3	.581[c]	.338	.324	.49998	.019	11.561	1	399	<.001
4	.583[d]	.340	.325	.49992	.002	1.102	1	398	.294

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp

c. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred

d. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng

Figure 23. Coefficients table for Model 5 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	2.044	.204		10.029	<.001
	F1_Duration	.069	.058	.067	1.193	.233
	F1_Closeness	.245	.059	.236	4.176	<.001
	Attendance_F1GP	.262	.056	.215	4.649	<.001
	Age	-.009	.025	-.015	-.362	.718
	Gender	-.034	.045	-.032	-.743	.458
	Living	.015	.013	.050	1.122	.263
	AvgExp	.195	.035	.248	5.540	<.001
3	(Constant)	1.852	.209		8.867	<.001
	F1_Duration	.073	.057	.071	1.274	.203
	F1_Closeness	.249	.058	.240	4.301	<.001
	Attendance_F1GP	.250	.056	.205	4.479	<.001
	Age	-.006	.025	-.011	-.262	.794
	Gender	-.018	.045	-.017	-.399	.690
	Living	.011	.013	.036	.829	.408
	AvgExp	.108	.043	.138	2.507	.013
	AvgCred	.139	.041	.179	3.400	<.001
4	(Constant)	1.827	.210		8.691	<.001
	F1_Duration	.072	.057	.069	1.252	.211
	F1_Closeness	.251	.058	.242	4.324	<.001
	Attendance_F1GP	.247	.056	.202	4.412	<.001
	Age	-.006	.025	-.011	-.259	.796
	Gender	-.020	.045	-.019	-.449	.654
	Living	.012	.013	.039	.889	.375
	AvgExp	.097	.044	.123	2.176	.030
	AvgCred	.087	.064	.112	1.358	.175
	AvgEng	.070	.067	.088	1.050	.294

a. Dependent Variable: AvgPI

Figure 24. Coefficients table for Model 5 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516[a]	.266	.255	.52496
2	.583[b]	.339	.328	.49873

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, SusCom

Figure 25. Model summary for H4 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	1.822	.209		8.715	<.001
	F1_Duration	.073	.057	.071	1.279	.202
	F1_Closeness	.253	.058	.244	4.391	<.001
	Attendance_F1GP	.246	.056	.201	4.412	<.001
	Age	-.006	.024	-.010	-.236	.814
	Gender	-.020	.045	-.019	-.452	.651
	Living	.012	.013	.040	.915	.361
	SusCom	.252	.038	.288	6.655	<.001

a. Dependent Variable: AvgPI

Figure 26. Coefficients table for H4 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516[a]	.266	.255	.52496
2	.583[b]	.339	.328	.49873
3	.598[c]	.357	.344	.49264

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, SusCom

c. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, SusCom, ModeSusCom

Figure 27. Model Summary for H5 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	1.822	.209		8.715	<.001
	F1_Duration	.073	.057	.071	1.279	.202
	F1_Closeness	.253	.058	.244	4.391	<.001
	Attendance_F1GP	.246	.056	.201	4.412	<.001
	Age	-.006	.024	-.010	-.236	.814
	Gender	-.020	.045	-.019	-.452	.651
	Living	.012	.013	.040	.915	.361
	SusCom	.252	.038	.288	6.655	<.001
3	(Constant)	1.992	.213		9.361	<.001
	F1_Duration	.085	.056	.082	1.500	.134
	F1_Closeness	.244	.057	.235	4.291	<.001
	Attendance_F1GP	.227	.055	.186	4.102	<.001
	Age	-.016	.024	-.027	-.660	.510
	Gender	-.022	.044	-.021	-.507	.612
	Living	.010	.013	.033	.769	.442
	SusCom	.008	.083	.009	.098	.922
	ModeSusCom	.051	.015	.315	3.309	.001

a. Dependent Variable: AvgPI

Figure 28. Coefficients table for H5 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516[a]	.266	.255	.52496
2	.564[b]	.319	.307	.50654
3	.581[c]	.338	.324	.49998
4	.583[d]	.340	.325	.49992
5	.595[e]	.354	.337	.49522

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp

c. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred

d. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng

e. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng, ModeExp

Figure 29. Model Summary for H6 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	2.044	.204		10.029	<.001
	F1_Duration	.069	.058	.067	1.193	.233
	F1_Closeness	.245	.059	.236	4.176	<.001
	Attendance_F1GP	.262	.056	.215	4.649	<.001
	Age	-.009	.025	-.015	-.362	.718
	Gender	-.034	.045	-.032	-.743	.458
	Living	.015	.013	.050	1.122	.263
	AvgExp	.195	.035	.248	5.540	<.001
3	(Constant)	1.852	.209		8.867	<.001
	F1_Duration	.073	.057	.071	1.274	.203
	F1_Closeness	.249	.058	.240	4.301	<.001
	Attendance_F1GP	.250	.056	.205	4.479	<.001
	Age	-.006	.025	-.011	-.262	.794
	Gender	-.018	.045	-.017	-.399	.690
	Living	.011	.013	.036	.829	.408
	AvgExp	.108	.043	.138	2.507	.013
	AvgCred	.139	.041	.179	3.400	<.001
4	(Constant)	1.827	.210		8.691	<.001
	F1_Duration	.072	.057	.069	1.252	.211
	F1_Closeness	.251	.058	.242	4.324	<.001
	Attendance_F1GP	.247	.056	.202	4.412	<.001
	Age	-.006	.025	-.011	-.259	.796
	Gender	-.020	.045	-.019	-.449	.654
	Living	.012	.013	.039	.889	.375
	AvgExp	.097	.044	.123	2.176	.030
	AvgCred	.087	.064	.112	1.358	.175
	AvgEng	.070	.067	.088	1.050	.294
5	(Constant)	1.978	.214		9.220	<.001
	F1_Duration	.080	.057	.078	1.412	.159
	F1_Closeness	.244	.058	.235	4.245	<.001
	Attendance_F1GP	.232	.056	.190	4.163	<.001
	Age	-.015	.025	-.025	-.608	.543
	Gender	-.024	.045	-.023	-.536	.592
	Living	.010	.013	.035	.795	.427
	AvgExp	-.080	.075	-.102	-1.070	.285
	AvgCred	.084	.063	.109	1.326	.186
	AvgEng	.041	.067	.052	.617	.537
	ModeExp	.043	.015	.284	2.932	.004

a. Dependent Variable: AvgPI

Figure 30. Coefficients table for H6 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516[a]	.266	.255	.52496
2	.564[b]	.319	.307	.50654
3	.581[c]	.338	.324	.49998
4	.583[d]	.340	.325	.49992
5	.599[e]	.359	.343	.49315

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp

c. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred

d. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng

e. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng, ModeCred

Figure 31. Model summary for H7 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	2.044	.204		10.029	<.001
	F1_Duration	.069	.058	.067	1.193	.233
	F1_Closeness	.245	.059	.236	4.176	<.001
	Attendance_F1GP	.262	.056	.215	4.649	<.001
	Age	-.009	.025	-.015	-.362	.718
	Gender	-.034	.045	-.032	-.743	.458
	Living	.015	.013	.050	1.122	.263
	AvgExp	.195	.035	.248	5.540	<.001
3	(Constant)	1.852	.209		8.867	<.001
	F1_Duration	.073	.057	.071	1.274	.203
	F1_Closeness	.249	.058	.240	4.301	<.001
	Attendance_F1GP	.250	.056	.205	4.479	<.001
	Age	-.006	.025	-.011	-.262	.794
	Gender	-.018	.045	-.017	-.399	.690
	Living	.011	.013	.036	.829	.408
	AvgExp	.108	.043	.138	2.507	.013
	AvgCred	.139	.041	.179	3.400	<.001
4	(Constant)	1.827	.210		8.691	<.001
	F1_Duration	.072	.057	.069	1.252	.211
	F1_Closeness	.251	.058	.242	4.324	<.001
	Attendance_F1GP	.247	.056	.202	4.412	<.001
	Age	-.006	.025	-.011	-.259	.796
	Gender	-.020	.045	-.019	-.449	.654
	Living	.012	.013	.039	.889	.375
	AvgExp	.097	.044	.123	2.176	.030
	AvgCred	.087	.064	.112	1.358	.175
	AvgEng	.070	.067	.088	1.050	.294
5	(Constant)	2.009	.214		9.391	<.001
	F1_Duration	.085	.057	.083	1.504	.133
	F1_Closeness	.240	.057	.231	4.187	<.001
	Attendance_F1GP	.226	.056	.185	4.067	<.001
	Age	-.017	.024	-.030	-.714	.475
	Gender	-.022	.044	-.021	-.504	.615
	Living	.009	.013	.030	.701	.484
	AvgExp	.093	.044	.118	2.116	.035
	AvgCred	-.133	.090	-.173	-1.489	.137
	AvgEng	.037	.067	.046	.549	.584
	ModeCred	.054	.016	.360	3.464	<.001

a. Dependent Variable: AvgPI

Figure 32. Coefficients table for H7 and controls

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516[a]	.266	.255	.52496
2	.564[b]	.319	.307	.50654
3	.581[c]	.338	.324	.49998
4	.583[d]	.340	.325	.49992
5	.600[e]	.360	.344	.49263

a. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration

b. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp

c. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred

d. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng

e. Predictors: (Constant), Living, F1_Closeness, Age, Gender, Attendance_F1GP, F1_Duration, AvgExp, AvgCred, AvgEng, ModeEng

Figure 33. Model summary for H8 and controls

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.370	.202		11.725	<.001
	F1_Duration	.108	.060	.105	1.808	.071
	F1_Closeness	.291	.060	.281	4.832	<.001
	Attendance_F1GP	.277	.058	.227	4.743	<.001
	Age	.006	.026	.010	.221	.825
	Gender	-.048	.047	-.046	-1.034	.302
	Living	.025	.013	.085	1.875	.062
2	(Constant)	2.044	.204		10.029	<.001
	F1_Duration	.069	.058	.067	1.193	.233
	F1_Closeness	.245	.059	.236	4.176	<.001
	Attendance_F1GP	.262	.056	.215	4.649	<.001
	Age	-.009	.025	-.015	-.362	.718
	Gender	-.034	.045	-.032	-.743	.458
	Living	.015	.013	.050	1.122	.263
	AvgExp	.195	.035	.248	5.540	<.001
3	(Constant)	1.852	.209		8.867	<.001
	F1_Duration	.073	.057	.071	1.274	.203
	F1_Closeness	.249	.058	.240	4.301	<.001
	Attendance_F1GP	.250	.056	.205	4.479	<.001
	Age	-.006	.025	-.011	-.262	.794
	Gender	-.018	.045	-.017	-.399	.690
	Living	.011	.013	.036	.829	.408
	AvgExp	.108	.043	.138	2.507	.013
	AvgCred	.139	.041	.179	3.400	<.001
4	(Constant)	1.827	.210		8.691	<.001
	F1_Duration	.072	.057	.069	1.252	.211
	F1_Closeness	.251	.058	.242	4.324	<.001
	Attendance_F1GP	.247	.056	.202	4.412	<.001
	Age	-.006	.025	-.011	-.259	.796
	Gender	-.020	.045	-.019	-.449	.654
	Living	.012	.013	.039	.889	.375
	AvgExp	.097	.044	.123	2.176	.030
	AvgCred	.087	.064	.112	1.358	.175
	AvgEng	.070	.067	.088	1.050	.294
5	(Constant)	2.021	.214		9.439	<.001
	F1_Duration	.083	.057	.081	1.473	.142
	F1_Closeness	.238	.057	.229	4.153	<.001
	Attendance_F1GP	.228	.055	.187	4.123	<.001
	Age	-.019	.025	-.033	-.784	.434
	Gender	-.019	.044	-.018	-.432	.666
	Living	.008	.013	.028	.652	.515
	AvgExp	.092	.044	.117	2.088	.037
	AvgCred	.074	.063	.095	1.167	.244
	AvgEng	-.179	.096	-.225	-1.871	.062
	ModeEng	.057	.016	.369	3.586	<.001

a. Dependent Variable: AvgPI

Figure 34. Coefficients table for H8 and controls