



## Athlete brand image during the early brand cycle: evidence from Paris 2024 rookies

*Imagen de marca del atleta durante el ciclo inicial de marca: evidencia de los novatos de Paris 2024*

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### Abstract

**Introduction:** Given the growing digitalization of global sport, understanding how emerging athletes build their brands and engage fans online has become essential.

**Objective:** Examines the influence of the perceived brand image of Olympic rookie athletes on fan engagement behavior across social media platforms.

**Methodology:** Data were collected from 303 Brazilian fans of first-time Olympic Games participants after the Paris 2024. Confirmatory Factor Analysis and Structural Equation Modeling were applied to validate the constructs and assess the model fit.

**Results:** Results provide empirical support for the hierarchical structure of the Athlete Brand Image model and demonstrate its predictive value (44%) for social media engagement.

**Discussion:** By focusing on rookie athletes with beginning of their Olympic careers, this research extends the athlete brand image framework and highlights how performance, appearance, and lifestyle perceptions shape digital engagement.

**Conclusions:** The findings offer practical insights for developing and managing emerging athlete brands in an increasingly digital sport environment.

### Keywords

Fan engagement behavior; olympic games; rookie athletes; social networks; sports marketing.

### Resumen

**Introducción:** Dada la creciente digitalización del deporte global, comprender cómo los atletas emergentes construyen sus marcas e interactúan con los aficionados en línea se ha vuelto esencial.

**Objetivo:** Examinar la influencia de la imagen de marca percibida de los atletas olímpicos novatos en el comportamiento de interacción de los aficionados en las redes sociales.

**Metodología:** Se recopilieron datos de 303 aficionados brasileños de participantes olímpicos primerizos después de París 2024. Se aplicó el Análisis Factorial Confirmatorio y el Modelo de Ecuaciones Estructurales para validar los constructos y evaluar el ajuste del modelo.

**Resultados:** Los resultados respaldan empíricamente la estructura jerárquica del modelo de Imagen de Marca del Atleta y demuestran su valor predictivo (44%) para la interacción en redes sociales.

**Discusión:** Al centrarse en atletas novatos que inician sus carreras olímpicas, esta investigación amplía el marco de la imagen de marca del atleta y destaca cómo las percepciones sobre el rendimiento, la apariencia y el estilo de vida influyen en la interacción digital.

**Conclusiones:** Los hallazgos ofrecen perspectivas prácticas para el desarrollo y la gestión de marcas de atletas emergentes en un entorno deportivo cada vez más digital.

### Palabras clave

Atletas novatos; comportamiento de los aficionados; juegos olímpicos; redes sociales; marketing deportivo.

## Introduction

Athletes are key players in the sports ecosystem, in both established and emerging sports markets, especially during major events, given their ability to engage fans independently of the teams or organizations they represent (Baker et al., 2022; Kunkel et al., 2021). When perceived as strong and authentic brands, athletes can translate this visibility into tangible benefits, such as sponsorships and long-term contractual relationships (Taniyev & Gordon, 2019; Zheng & Xu, 2024). However, there is a wide range of athletes, beyond those who are established brands, who have not yet reached maturity in relation to the Athlete Brand Cycle (Hasaan et al., 2021).

Athletes in the early stages of their careers are considered rookies. In the literature, some contributions have already outlined advances regarding the challenges of the transition, such as contractual, physical, and psychological aspects (Bruner et al., 2008; Shuman, 2012; Tibbert et al., 2015) of young athletes in their debut. However, from the point of view of sports marketing, issues related to building the athlete's brand lack attention. From a theoretical point of view, athletes in early brand cycles present a distinct dynamic in the brand cycle, as they have low prior notoriety, less public differentiation when compared to other athletes, thus requiring a strong dependence on narrative elements and authenticity to attract initial attention. Unlike mature athletes, their brand is still being formed, which alters the perception of performance attributes, appearance, and lifestyle in digital engagement. In this investigation, all athletes who are in the early stages of their sports careers and are participating in the Olympic Games for the first time will be understood as rookies.

Although rookie athletes at the Olympic Games may already have previous achievements, either nationally and/or internationally, they find in this mega-event the possibility of expanding the reach of brand recognition through exposure and seeking consolidation from the point of view of their brand cycle. The Paris 2024 Olympic Games reached an estimated five billion viewers worldwide (International Olympic Committee, 2024), offering athletes not only competitive exposure but also a unique opportunity to build and strengthen their personal brand narratives (Brison & Geurin, 2021; Dumitriu, 2015). In Olympic committees that are not consistently on the podium, the visibility and institutional promotion of their Olympic athletes is limited. Recently, Brazil became the most followed committee on social media among the Olympic organizations of the Paris 2024 Olympic Games (IBOPE Repucom, 2024).

This makes social media platforms central catalysts, enabling more direct relationships between brands and the public (Manoli, 2024). Since personal brand management on social media focuses on how athletes can personalize content to connect directly with their target audience (Doyle et al., 2022; Geurin, 2017). In addition to acting as a catalyst in promoting athletes, allowing greater exposure to current and potential fans, it increasingly brings the athlete closer to the audience interested in sports content. This makes Brazil a relevant case for extending branding and athlete engagement theories from countries in emerging contexts from a sports perspective.

These dynamics highlight the strategic importance of personal brand management on social media, where athletes can personalize content to interact directly with their target audience (Doyle et al., 2022; Geurin, 2017). The Athlete Brand Image (ABI) model conceptualizes an athlete's brand through fans' perceptions of performance, appearance, and lifestyle (Arai et al., 2014). Although widely applied to athletes in the maturity phases of their brand, its suitability for athletes in other phases of the athlete brand cycle (e.g., first participation in the Olympic Games) is still poorly understood and requires further study.

An athlete's brand is a cycle that evolves throughout their career, from rise to maturity and legacy (Hasaan et al., 2018). For rookies Olympic athletes, social media serves both as an exposure amplifier (to new audiences) and as a testing ground to understand public perception at the early stages of this cycle. Effective brand management can strengthen fan perception and foster psychological connection, which in turn drives online engagement behaviors such as following, sharing, and supporting athletes (Biscaia et al., 2016; Hinson et al., 2019; Zheng & Xu, 2024). Understanding this relationship is particularly relevant in the context of mega-events like the Olympic Games, where first-time athletes gain exposure through participation. However, there is established gap in literature, the lack of contributions on the perception of athletes' brand image in the early stages of the brand cycle, such as rookies athletes in the Olympic Games, and its influence on engagement behavior.



Despite the growing academic attention to athlete branding and digital fan engagement, most research remains focused on North American, European, or East Asian contexts or with established athletes (Brison & Geurin, 2021; Doyle et al., 2022; Hafiar et al., 2025; Na et al., 2020; Zheng & Xu, 2024). Regarding rookie athletes, these issues differ in terms of sponsorship structures, fan behavior, and media exposure from those previously analyzed in more established sports contexts. Expanding the literature to other sporting scenarios, such as Latin America and rookie athletes, is essential to test the cultural and structural transferability of ABI models from different contexts. Given this scenario, the objective of this study is to analyze how the perception brand image of rookie athletes influences engagement behavior of fans on social media. This objective emerges directly from the identified gap in understanding the initial phases of the athlete brand cycle in emerging sports contexts, based on the case of Brazilian athletes debuting at the Paris 2024 Olympic Games, seeking to broaden the understanding of athlete brand dynamics of the athlete brand.

## Literature Review

### *Athlete's Brand cycle*

The Athlete Brand cycle (Hasaan et al., 2021) adapts the Classical Product Life Cycle Theory (Altunel, 2017) to the context of personal branding in sport. Like products and services in the sports industry, athlete brands evolve through identifiable stages: introduction, growth, maturity, decline, and reinvention/extinction. This framework helps explain how athletes create, consolidate, and maintain relevance over time, both competitively and commercially.

Social media currently plays a fundamental role in shaping perceptions of an athlete's brand (Pegoraro et al., 2018). According to Baumeister and Hutton (1987) the behavior of transmitting information or an image of oneself relates to the theory of self-presentation. Hogan (1982) points out that among the motivations and skills of this self-presentation, two fundamental needs of human social life permeate: status and popularity. Among its expressions, one consists of adapting self-presentation to the expectations and preferences of the public. The other is based on adapting self-presentation to one's ideal self. However, literature lacks advancement in the focus on the self-presentation of these rookie athletes through branding on social media, permeated by the exposure of their image.

In the brand introduction phase, athletes begin to position themselves in the sports ecosystem, as fans may be exposed to their image and performance for the first time (Hasaan et al., 2016). During this phase, differentiation is essential, as athletes compete for attention and emotional connection. For athletes who have not yet reached brand maturity and are less established, such as college athletes and recruits, social media offers an accessible platform to begin brand building and visibility, compensating for limited traditional media coverage (Kunkel et al., 2021; Park et al., 2020).

As visibility increases, events such as winning performances, viral content, or media attention can accelerate the transition from brand introduction to brand growth (Hasaan et al., 2016, 2018; Rein et al., 2006). With each new Olympics, athletes emerge in their first participation to dethrone current veterans and medal holders. However, at a competitive level, such a feat is uncertain, as it depends on other factors such as the stage of the athlete's career. What this does is cause rookie athletes (as a brand) to often occupy the transition and growth phase of the brand, balancing previous achievements with the potential exposure of the Olympic Games.

The maturity stage represents the peak of public recognition and commercial opportunities (Gmelin & Seuring, 2014). At this level, athlete brands become deeply intertwined with sporting rivalries and cultural narratives. As research has shown, maintaining perceived authenticity and consistent relationships with fans increases loyalty and sustains brand equity during and after a sporting career (Brown et al., 2022; Hasaan et al., 2020). Social media remains crucial during transitions or temporary career breaks, allowing athletes to manage visibility and maintain relevance (Bredikhina et al., 2022).

Recent contributions have expanded the discussion on athlete branding and legacy management in the post-retirement period (Taniyev & Gordon, 2019; Williams et al., 2022). However, most of these studies on the topic remain focused on the maturity or post-maturity phases of the athlete brand cycle, leaving early-career branding, especially among Olympic rookies, largely unexplored. Understanding how these athletes manage the introduction and growth phases of their brands is crucial to developing effective engagement and positioning strategies in the digital age (Hasaan, Berndt, et al., 2024).



For Olympic athletes, exposure can extend beyond their participation and last until the next edition, representing a crucial period for developing relationships with fans, especially those in the early stages of their brand cycle (Hasaan, Fisne, et al., 2024). Thus, examining how rookie athletes navigate the early stages of their brand cycle provides a theoretical bridge between athlete branding and the impact of digital fan engagement, three domains that increasingly intersect in contemporary sports management.

### *The athlete as a brand*

The ABI, proposed by Arai et al. (2014), defines athlete brand as a set of perceptions formed by fans based on performance, aesthetics, and lifestyle aspects. This approach has become a conceptual milestone in sports marketing literature, allowing brand image to be measured using the ABI Scale (Arai et al., 2013), which has subsequently been validated and applied in different cultural contexts, most recently with a greater focus on digital media (Mahmoudian et al., 2024; Na et al., 2020; Zheng & Xu, 2024).

The model consists of three main dimensions: athletic performance, attractive appearance, and marketable lifestyle (Arai et al., 2013). The first represents the athlete's competence and mastery in their sport, serving as the basis for credibility and competitive identity (Arai et al., 2013). Furthermore, performance contributes to increased visibility and value for associated sponsors (Ferreira et al., 2022; Hafiar et al., 2025).

H1a: Among Olympic rookie athletes positioned in the introduction/early growth stage of the athlete brand cycle, perceived athletic performance positively influences ABI.

Attractive appearance is related to physical and symbolic characteristics that make the athlete aesthetically and socially attractive, influencing fan attitudes and loyalty (Geurin-Eagleman & Burch, 2016; Magano et al., 2024; Mahmoudian et al., 2021).

H1b: Among Olympic rookie athletes positioned in the introduction/early growth stage of the athlete brand cycle, perceived attractive appearance positively influences ABI.

Marketable lifestyle refers to the athlete's ability to project an inspiring narrative based on authenticity, resilience, and exemplary behavior, which strengthens fan identification and commercial opportunities (Arai et al., 2014; Kunkel et al., 2019; Lobpries et al., 2018).

H1c: Among Olympic rookie athletes positioned in the introduction/early growth stage of the athlete brand cycle, perceived marketable lifestyle positively influences ABI.

Self-presentation theory complements this debate by explaining how athletes strategically use social media to foster desired narratives and maintain connections with their fans, even in the face of frightening athletic performance (Kunkel et al., 2019; Pegoraro et al., 2018; Toffoletti & Thorpe, 2018). Recent studies expand the understanding of ABI by investigating how its dimensions influence consumer behaviors and digital engagement (Mahmoudian et al., 2024; Zheng & Xu, 2024).

Fans who clearly perceive an athlete's performance, appearance, and lifestyle tend to demonstrate greater effective and behavioral engagement, such as following, sharing, or commenting on posts (Bredikhina et al., 2023; Na et al., 2020; Su, Baker, Doyle, & Kunkel, 2020). ABI directly and positively influences fans' intention to follow their favorite athletes' Instagram accounts (Hafiar et al., 2025; Sharifzadeh et al., 2021; Su, Baker, Doyle, & Kunkel, 2020).

Although the ABI model has been structured and widely applied, even with new adaptations and applications, the literature still lacks evidence on how fans perceive the brand image of athletes at the beginning of their careers brands that are not yet consolidated from a sporting and symbolic perspective (Arai et al., 2014; Hasaan, Berndt, et al., 2024). This gap is especially relevant in digital environments, where strategic image management can compensate for the lack of significant sporting achievements and influence fan engagement behavior.

### *Online Engagement Behavior*

Fan engagement behavior on social media has become one of the main metrics for evaluating the strength of relationships between brands and their audiences (Doyle et al., 2022; Hinson et al., 2019). Considering that engagement is specific to the context and object of interaction (Hollebeek et al., 2014). Recent studies focus on the advancement of these interactions by investigating sports clubs, such as in Lianopoulos et al. (2025) study, which explored the relationship between what individuals associate

with their team and the engagement behaviors of fans on social media in relation to their favorite team. In this context, it is valid to understand how athletes are perceived by their fans, based on the use of social media (i.e., sharing content that reflects aspects of their performance, lifestyle, and appearance) and its influence on engagement.

The originality inherent in each athlete allows the public to differentiate them from others, and this ends up impacting relationships with the consumer. Yoshida et al. (2014) point out that fan engagement occurs through spontaneous, interactive, and co-creative behaviors. Fans have a strong connection with brands and may be willing to dedicate time debating and defending their favorite athlete (Hayes et al., 2020; Hollebeek et al., 2014; Zhou et al., 2020). Adopting tactics aimed at captivating consumers to obtain engagement behaviors (Doyle et al., 2022; Kunkel et al., 2019) is a primary focus, since, by revealing greater interest and relevance of the shared content, the greater the possibility of fan involvement, as well as its recommendation.

Conceptually, fan engagement is understood as a multidimensional psychological state composed of cognitive, emotional, and behavioral components (Hinson et al., 2019; McDonald et al., 2022; Santos et al., 2019; Yoshida et al., 2014). Cognitive engagement refers to the attention and mental absorption of fans when interacting with an athlete's content. Emotional engagement refers to positive feelings and affective identification. Behavioral engagement reflects observable actions, such as liking, commenting, sharing, and creating content related to the athlete, and it is about behavioral logic that we will explore in this investigation.

In the digital environment, behavioral engagement can be measured through interaction indicators, such as likes, comments, and shares (Romero-Jara et al., 2024; Zheng & Xu, 2024), which reflect the degree of fan involvement. In addition to this measurement, psychometric scales have been commonly used to assess the impact of sports brand communication strategies on fan behavior (Biscaia et al., 2016; Ferreira et al., 2022; Hinson et al., 2019; Vale & Fernandes, 2018; Zheng & Xu, 2024). New measurement tactics can further expand the literature, such as data mining, which can be used to identify fan preferences and interaction patterns, enabling more targeted and personalized marketing strategies (Obi et al., 2024).

Despite the extensive literature on fan engagement, most studies focus on athletes from established brands and mature sports markets (Doyle et al., 2022; Zheng & Xu, 2024). Little is known about how athletes in the early stages of their brand cycle, especially in emerging sports ecosystems like Brazil, build digital connections with their audiences.

H2: Among Olympic rookie athletes positioned in the introduction/early growth stage of the athlete brand cycle, ABI positively influences fans' engagement behavior on social media.

Under these conditions, limited resources and creative strategies become crucial for generating interactions and sustaining engagement during and after global mega events such as the Olympic Games. This theoretical gap informs the present study.

## Method

This study adopted a quantitative, cross-sectional design using an electronic survey to examine the relationships between ABI and fan engagement on social media. This technique allows researchers to obtain characteristics, attitudes, or behaviors in each sample, based on exploration in a digital context (Andrew et al., 2019; Skinner et al., 2014).

### Participants

The study population consisted of fans of Brazilian Olympic rookie athletes who interacted on social media with the official profiles of these athletes. The debuting athletes, who are part of the investigative universe of this study, were mapped in advance of the Olympic Games and needed to have their places confirmed up to 60 days before the start of the event, allowing for the mapping of the target audience. In total, 48 rookie athletes were listed, distributed across 19 individual sports.

To be eligible for inclusion, participants were required to: (a) be at least 18 years old; (b) follow at least one Brazilian rookie Olympic athlete on Instagram; and (c) report having interacted with content posted



by these athletes during the specified period. These criteria were verified through screening questions at the beginning of the questionnaire, ensuring that only respondents with relevant exposure and interaction were included in the final sample. Due to the large study population, the minimum sample size was determined using an item-to-subject ratio ranging from 1:4 to 1:10, as proposed by Hinkin (1995). This guideline recommends a minimum of four, and ideally ten, respondents for each item of the instrument (design shown in the following section). This approach aims to ensure the stability of the factorial solution and the reliability of the parameter estimates.

### **Procedure**

The data collection procedure took place through the provision of an online questionnaire hosted on the Google Forms platform, data collection began on September 11, 2024. The collection occurred in a non-probabilistically manner by convenience (Skinner et al., 2014), in which participants freely and spontaneously decided to participate. They were informed about the study through temporary publications that contain a link to the questionnaire. The accounts used to publicize the study were those of the research group responsible for the study, and the post was shared by the athletes involved. The deadline for completing the questionnaire extended until October 31, 2024. This research is linked to a research project approved by the Research Ethics Committee of a Brazilian university. One of the conditions for this was the reading of the Informed Consent Form by the participants before answering the questionnaire. This ensured that those who agreed to participate expressed their agreement with the objectives and procedures of the research.

### **Instrument**

The questionnaire used was the one proposed by Arai et al. (2014), which addresses the athlete's brand image, aligning with the propositions of Na et al. (2020) when investigating this perspective in a digital context. Furthermore, the dimensions used to assess online engagement behavior were those of Zheng and Xu (2024). The questionnaire final consisted of 16 items (12 – ABI; 4 – Social Media Engagement (SME)). The scales, in their original format, were developed in English and, due to the context of this research, required linguistic adaptation. The translation, back-translation, and contextual adjustments from English to Portuguese were carried out by four sports management experts in three rounds of instrument evaluation (Banville et al., 2000).

Considering the possible violations of research bias, this study adopted the recommendations of Podsakoff et al. (2003). Using a Likert-type scale with seven points (ABI) and five points (SME), and eight final multiple-choice questions were used to collect information about the participants' characteristics, specifically: gender, age, active presence on social media, preferred platform, interaction with content, following of athletes, daily time spent online, and programming preferences for watching sports.

Solutions such as protecting respondent anonymity, balancing the order of questions, and using statistics (Harman one-way test) were also adopted. In accordance with other recommendations indicated in the literature, statistical resources were used to ensure the internal consistency of the items, discriminant validity, and the detection of possible outliers (Byrne, 2010; Fornell & Larcker, 1981; Hair Jr et al., 2009).

### **Data analysis**

Following research trends in sports management (Byon & Zhang, 2019), data analysis was guided by Confirmatory Factor Analysis and Structural Equation Modeling performed using IBM SPSS Statistics (version 29.0) and JAMOVI software (version 2.4; SEMLj module based on lavaan), respectively. Skewness (3 to -3) and kurtosis (10 to -10) data were analyzed to verify whether the items were close to a normal distribution. The model fit was considered good when the ratio between  $\chi^2$  and its degrees of freedom it was less than 3.0 (Hair Jr et al., 2009).

The Average Variance Extracted, AVE ( $<0.50$ ) and composite reliability ( $<0.70$ ) data were analyzed (Fornell & Larcker, 1981; Hair Jr et al., 2009). The values of the Goodness of Fit Index ( $GFI \geq 0.95$ ), Comparative Fit Index ( $CFI \geq 0.90$ ), Tucker-Lewis Index ( $TLI \geq 0.90$ ) and Root Mean Square Error of Approximation ( $RMSEA < 0.08$ ) were analyzed for better model fit, according to Byrne (2010). Additionally, discriminant validity was accepted when the AVE of each construct was greater than the squared multiple correlation between that construct and any other (Fornell & Larcker, 1981).



This research was conducted through a multi-stage procedure to ensure the validity of the constructs in the new contextual scenario. Firstly, a Pilot Study was carried out to establish the reliability of the scales, aiming to test their applicability and internal consistency to mitigate errors or ambiguous information regarding interpretation. After that a Main Study was completed to analyze the influence of brand image perception on SME behavior. Based on the theoretical model of ABI, which proposes a second-order construct, this study adopted that structure, where the dimensions of Athletic Performance, Attractive Appearance, and Marketable Lifestyle form a higher-order factor that influences SME behavior.

### *Pilot Study*

A pilot study was conducted with 138 fans who reported having followed the Paris 2024 Summer Olympic Games and having interacted with Brazilian rookie athletes on Instagram. Participants were required to be at least 18 years old at the time of completing the questionnaire. Questionnaires that were incomplete contained eight or more consecutive identical responses or indicated no interaction with the athletes on Instagram were excluded from the analysis.

The primary purpose of the pilot study was to assess the linguistic clarity, cultural adequacy, and preliminary functioning of the Portuguese adaptation of the ABI scale prior to the main data collection. As the instrument had been previously validated in its original language, the pilot phase was not intended to provide definitive evidence of factorial validity, but rather to ensure semantic equivalence and measurement stability before proceeding to the full study (Beaton et al., 2000; Byrne, 2016).

### *Main Study*

The final sample consisted of 303 fans who responded to the questionnaire resulting from the Pilot Study. It is worth noting that, at this step, the SME items are already incorporated into the measurement (Zheng & Xu, 2024) so that the predictive analysis of the model could be carried out. Therefore, the final sample was composed of a non-probabilistic convenience random sample of fans who declared interacting with Brazilian athletes in their first participation in the Olympic Games.

## **Results**

### *Pilot Study*

The pilot sample consisted primarily of women (57.8%), with a mean age of 32.6 years (SD = 11.5). Most respondents reported being active on social media during the Olympic Games (95.3%), predominantly on Instagram (89.1%). More than half (56.7%) reported posting or interacting with content during the Games, and 88.3% already followed athletes on Instagram. Approximately 32% reported spending more than three hours per day online, and 50.8% preferred watching sports at night. Furthermore, 83.6% indicated a preference for following athlete-related news via social media rather than traditional media outlets. At this stage, the construct validity of the first-order measurement model (Athletic Performance, Attractive Appearance, and Marketable Lifestyle) was examined. The fit indices were  $\chi^2(51) = 132$ ,  $p < .01$ ;  $\chi^2/df = 2.58$ ; CFI = 0.92; GFI = 0.90; TLI = 0.90; RMSEA = 0.10.

The incremental fit indices (CFI and TLI) and the  $\chi^2/df$  ratio suggested an acceptable level of model fit. Although the RMSEA was at the upper threshold, fit indices in preliminary studies should be interpreted cautiously and not evaluated solely based on rigid cutoff criteria (Marsh et al., 2004; Kenny et al., 2015). The AVE for Athletic Performance was slightly below the recommended threshold of .50 (Fornell & Larcker, 1981), while composite reliability values exceeded .70 for all constructs, indicating adequate internal consistency for a preliminary adaptation stage. Given the theoretical consistency of the ABI model (Arai et al., 2014) and prior empirical validation, the factor structure applied in Na et al., (2020) was maintained for confirmation and refinement in the main study sample (N = 303), where full psychometric validation was conducted.

### *Main Study*

The sample mostly composed of women (54.5%), and with an average age of 31.4 (SD = 10.18), 96.7% had daily activities on social media during the Olympic Games, with a preference for Instagram (90.4%), posting and interacting several times during the Olympic Games (51.7%), and who already followed the

athletes on Instagram (92.7%). They have the habit of spending more than 3 hours a day connected to the network (31%) and preferably at night (59.4%). In addition, respondents stated that they chose to broadcast via streaming platforms (53.5%), instead of broadcasting via traditional television schedule, and that they chose to follow the athletes' news through social media (84.5%).

The final model included 12 items, with four items per dimension, retaining the items with the highest factor weight. When moving to the measurement scale, the model with a first-order factor was tested, establishing the predictive evaluation of the constructs Athletic Performance, Attractive Appearance, and Marketable Lifestyle in relation to engagement behavior. And, as a second-order model, the ABI component was inserted into the analytical structure. In the first-order model, the results obtained through CFA indicated an acceptable fit to the data ( $\chi^2(98) = 266$  ( $p < 0.001$ );  $\chi^2/df = 2.71$ ; CFI = 0.95; GFI = 0.99; TLI = 0.94; RMSEA = 0.06). Given the presence of mild deviations from normality, the robust Maximum Likelihood estimator (MLR) was used to correct standard errors, p-values, and model fit statistics.

With the increase in sample size and semantic refinement of the items, the AVE and CR values improved. However, the only dimension that previously indicated being below the limit (Athletic Performance), even with the adjustments, remained slightly below (.49). However, Cheung et al. (2024); Hair Jr et al. (2009) establish that, if the other measurement quality indicators are satisfactory, such as a high CR (>0.70) and good factor loadings (>0.50), a value slightly below the AVE (<0.50) can still be considered acceptable.

Discriminate validity was assessed using the Fornell and Larcker (1981) criterion, which compares the AVE of each construct to the squared correlations with other constructs. Most comparisons met the criterion, with the AVE of each construct exceeding the corresponding squared correlations values. However, in the case of Athletic Performance and Marketable Lifestyle, the shared variance indicates a potential overlap (See Table 1). This finding may reflect the conceptual proximity between Athletic Performance and Lifestyle Marketability, as strong on-field performance can enhance media visibility and commercial appeal. To further examine this, the Heterotrait-Monotrait ratio (HTMT) was calculated as a complementary and more robust assessment. All HTMT estimates ranged from 0.351 to 0.639, remaining well below the conservative threshold of 0.85 (Kline, 2023), thus confirming discriminant validity among all constructs (see Table 1).

Table 1. Factor loadings, composite reliability, and average variance extracted for each construct and Squared correlations, HTMT estimates for discriminant validity valuation.

| for discriminant validity variation.                                                |          |     |     |     |
|-------------------------------------------------------------------------------------|----------|-----|-----|-----|
| Construct                                                                           | Loadings | CR  | AVE |     |
| Athletic Performance (AP)                                                           |          | .75 | .49 |     |
| The athlete seems to have a lot of knowledge in their sport.                        | .66      |     |     |     |
| The athlete has outstanding athletic skills in their sport.                         | .64      |     |     |     |
| The athlete demonstrates fair play.                                                 | .64      |     |     |     |
| The athlete performs well against their biggest rival.                              | .61      |     |     |     |
| Attractive Appearance (AA)                                                          |          | .87 | .62 |     |
| The athlete is good-looking.                                                        | .88      |     |     |     |
| The athlete is physically attractive.                                               | .87      |     |     |     |
| The athlete is stylish.                                                             | .87      |     |     |     |
| The athlete's own style is attractive.                                              | .85      |     |     |     |
| Marketable Lifestyle (ML)                                                           |          | .86 | .61 |     |
| The athlete responds to fans.                                                       | .80      |     |     |     |
| The athlete tries to interact with fans.                                            | .79      |     |     |     |
| The athlete shows appreciation for fans and spectators.                             | .73      |     |     |     |
| The athlete is socially responsible.                                                | .71      |     |     |     |
| Social Media Engagement (SME)                                                       |          | .83 | .56 |     |
| I like to read information about the athlete on social media.                       | .68      |     |     |     |
| I like to talk with others and share information about the athlete on social media. | .80      |     |     |     |
| I like to comment on and fully support the athlete on social media.                 | .79      |     |     |     |
| I like to join the athlete's online community to communicate with others.           | .71      |     |     |     |
| Construct                                                                           | AP       | AA  | ML  | SME |
| AP                                                                                  | --       |     |     |     |
| AA                                                                                  | .40      | --  |     |     |
| ML                                                                                  | .64      | .41 | --  |     |
| ESM                                                                                 | .35      | .55 | .48 | --  |

Notes: CR = Composite Reliability; AVE = Average Variance Extracted. Values below the diagonal represent squared correlations between constructs.

Source: Authors

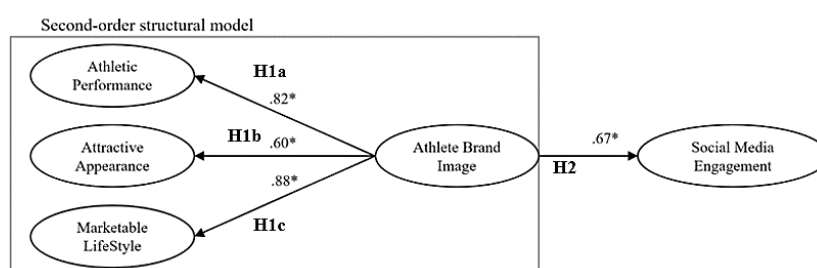


As shown in Table 1, factor loadings ranged from .61 to .88, demonstrating acceptable indicator reliability. Although the Fornell–Larcker criterion was not fully satisfied for all construct pairs, HTMT estimates remained well below the recommended threshold, supporting the empirical distinctiveness of the constructs within the ABI framework. Thus, despite the indication of partial overlap between specific dimensions, the constructs remain sufficiently distinguishable to support subsequent structural analysis. Regarding the assessment of Common Method Bias, Harman's single factor test was conducted as a preliminary diagnostic. The first factor explained 38.2% of the total variance, a value below the threshold (50%) commonly referenced threshold (Podsakoff et al., 2003), suggesting that common method variance is unlikely to pose a substantial concern.

As previously indicated, this study followed the theoretical model of ABI and tested the set of hypotheses (H1a; H1b; H1c and H2) derived from the ABI framework. Which proposes a second-order construct in which the dimensions of Athletic Performance, Attractive Appearance, and Marketable Lifestyle form a higher-order factor that influences SME behavior. Following Sarstedt et al. (2019), the higher-order construct was specified as a reflective–formative model, in which first-order dimensions are measured reflectively, while jointly forming the second-order construct. This specification is theoretically appropriate because the three dimensions represent distinct facets that collectively form ABI, rather than interchangeable manifestations of a single underlying trait. With the second-order model, the CFA results indicated a good fit to the observed values ( $\chi^2(100) = 315$  ( $p < 0.001$ );  $\chi^2/df = 3.15$ ; CFI = 0.94; GFI = 0.99; TLI = 0.92; RMSEA = 0.07), which confirmed the adequacy of the second-order model for the data. These values collectively confirm a satisfactory model fit, suggesting that the measurement model adequately represents the underlying constructs of ABI and fan engagement.

The marketable lifestyle (.88) emerged as the latent indicators of the higher-order ABI construct, followed by athletic performance (.82), and attractive appearance (.60), thereby providing empirical support for H1a, H1b, and H1c (See Figure 1). This indicates that personal narratives and off-field identification may play a more important role in fan perceptions than athletic dominance alone. However, the relatively weaker contribution of Attractive Appearance suggests that visual appeal may be less central for engagement in this context, potentially due to the rookie status of the athletes and the competitive setting of the tournament. Still, the path coefficient  $ABI \rightarrow SME$ , besides being significant, shows a positive relationship (.67), thereby providing support for H2. The model explained 44% of the variance in SME, a substantial predictive power consistent with previous studies on fan–athlete interactions in digital contexts (e.g., Mahmoudian et al., 2024; Zheng & Xu, 2024).

Figure 1. Second-order structural model



Note: \* =  $p < .001$

Source: Authors

These findings provide empirical support for the hierarchical nature of the ABI model and demonstrate its predictive value for SME among Olympic rookie athletes. The next section discusses these results considering branding theory and fan engagement frameworks.

## Discussion

The objective of this study was to analyze the influence of Olympic athletes brand image perceptions on fans SME behavior. Overall, the findings provide empirical support for all proposed hypotheses (H1a–H2), reinforcing the hierarchical structure of ABI and its predictive relevance for engagement among Olympic rookie athletes. To this end, we analyzed Brazilian athletes making their debut at the Paris 2024 Summer Olympics. ABI was specified as a higher-order formative construct, with Athletic Performance, Attractive Appearance, and Marketable Lifestyle modeled as latent indicators rather than predictors. Using a second-order model, the results of this study indicate that an rookie athletes brand image has a significant impact on SME, with 44% of the variance in fan engagement being explained by the athletes brand image perception. This finding suggests that brand image perceptions may play a meaningful role in shaping engagement behaviors even at early stages of the athlete brand cycle. This level of explanatory power is in line with previous studies on digital engagement, confirming that fans' perceptions of athletes personal brands substantially drive their online interaction and engagement behaviors (Zheng & Xu, 2024). However, these results should be interpreted cautiously, as engagement patterns may vary across sport contexts, athlete popularity levels, and cultural environments.

In the context of this research, Brazilian rookie athletes have diverse trajectories and carry with them stories that will impact a diverse audience. This makes the lifestyle marketable a significant latent indicators path (0.88,  $p < 0.001$ ) in explaining rookie athletes SME. The predominance of the marketable lifestyle dimension suggests that narratives of authenticity, personal values, and relatability outweigh performance-based attributes in shaping fan engagement with early-career athletes. Although this pattern is consistent with contemporary branding perspectives, it may also reflect the specific visibility dynamics of the Olympic context, where athletes often gain attention through personal stories and national representation. This expands the athlete branding model, reinforcing the narrative element as an important driver of engagement. This finding highlights the value of supporting emerging athletes with lifestyle content strategies that create emotional connection, rather than focusing solely on the impact of performance achievements. At the same time, it is important to recognize that lifestyle-based strategies may not be equally effective for all athletes, depending on sport type, audience characteristics, and media exposure.

Less artificial, more spontaneous, and authentic content is valued by fans because it allows athletes to showcase a more personal side of their brand. Life story narratives, transparency of values, assertion of authenticity, and charisma help build a personal brand (Cortsen, 2013). Similar reflections can be seen in interviews with Brazilian athletes who make the front pages of newspapers and television news programs, highlighting the obstacles they faced before achieving something or breaking records (Rubio, 2019). Facts like these corroborate the understanding of the strong relationship between the marketable lifestyle of the rookie athlete and their perception of the brand image.

According to Magano et al. (2024), fans commonly seek a deeper connection with athletes, and this feeling of connection and engagement behavior are fostered by those who actively engage with their audience. In line with this, Brison and Geurin (2021) analyzed aspects related to the engagement of Olympic athletes in the United States and found that the highest engagement rate was concentrated in genuine posts by the athletes, without any endorsement relationships with other brands.

Studies show that achieving positive placement on media channels can boost athlete engagement and provide an environment for genuine and authentic positioning in times of crisis (Su, Baker, Doyle, & Yan, 2020; Williams et al., 2022). Examples such as that of English soccer player Marcus Rashford demonstrate that SME can be strengthened through positions that transcend sport (Vincent et al., 2024). By using his platforms for social activism, Rashford not only mobilized important causes but also cemented his image as an influential figure within and outside of soccer. Although activism was not assessed in the present study, this example illustrates how off-field identity cues may amplify engagement by increasing perceived relevance and social meaning.

This reinforces the importance of personal brand management to increase connection and interaction with the public. This factor is also intensified by the psychological and affective relationships they maintain with the brand (Kunkel et al., 2019; Su, Baker, Doyle, & Kunkel, 2020; Vale & Fernandes, 2018). Thus, athletes, seen as role models and with their well-regarded efforts to build relationships with fans,

were important attributes in the behavioral intention of Generation Z (Shin & Lee, 2021). Even athletes who are not at their peak are seen as role models by their fans (Taniyev & Gordon, 2022).

The results of this study reinforce that managing an athlete's image on social media must go beyond simple exposure. As Na et al. (2020) point out, appearance plays a crucial role in how fans perceive and interact with the athlete. Furthermore, the literature (Hasaan et al., 2018; Kunkel et al., 2019) suggests that exposing an athlete's life outside of the sports environment directly impacts audience loyalty, which may explain why images associated with aesthetics and a marketable lifestyle generate interesting engagement metrics.

Athletic performance also demonstrated a latent indicators path (0.82,  $p < 0.001$ ) to ABI, reaffirming its central role in fan engagement. The contribution of performance to building an athlete's brand is undeniable, especially in relationships outside of social media, as demonstrated in other studies (Arai et al., 2014; Taniyev & Gordon, 2019). Mahmoudian et al. (2024) analyzed fan responses to brand image attributes with famous athletes such as Lionel Messi and Cristiano Ronaldo, and the content of posts has a distinct influence on how fans interact, with athletic performance being the most prevalent. Performance-related posts generated more likes compared to non-performance-related posts. Although these athletes represent a different career stage than Olympic rookies, the evidence supports the argument that performance remains a key legitimacy signal across contexts.

For the development of an athlete's brand cycle, performance-related issues are important for their positioning and growth (Hasaan, Berndt, et al., 2024; Hasaan et al., 2018). It is crucial that athletes have a rooting audience, aware of and attentive to the inherent aspects of their athletic performance. In the early stages of a career or during rookie moments, athletic performance serves as the entry point for visibility within the athlete's brand cycle, serving as the primary signal by which fans identify potential future stars. Those who excel in competition often gain more exposure and interest from the public (Hasaan et al., 2020). This type of content is increasingly common on athlete profiles, especially those seeking to expand their fan base. This, in turn, can lead to greater fan interest and engagement on social media platforms (Ferreira et al., 2022). Therefore, the present findings suggest that performance-based content remains necessary for visibility, but may operate most effectively when combined with lifestyle-related narratives.

While strong performance is essential to be one of the most visible brands in sports, recent literature suggests that athletes, when building their brand image, should be increasingly attentive to aspects related to their lives outside of competition (Kunkel et al., 2019; Lobpries et al., 2018; Magano et al., 2024). These findings reinforce that athletic excellence remains a necessary, though not the only, condition for digital engagement, especially in contexts where sporting success competes with personal narrative for fans' attention.

Considering previous studies suggesting that physical attractiveness drives engagement (Geurin-Eagleman & Burch, 2016; Mahmoudian et al., 2021), this research shows that attractive appearance significantly predicted SME among rookie athletes but was less decisive compared to the other dimensions analyzed. This suggests that, in the absence of a solid and mature public brand image, fans more readily consider perceived lifestyle and performance attributes in their engagement actions. However, as Na et al. (2020) point out, appearance plays a crucial role in how fans interact with athletes and can directly influence fan loyalty (Mahmoudian et al., 2021). Geurin-Eagleman and Burch (2016), analyzing 800 posts by elite athletes, found that content associated with body exposure and aesthetic appreciation yielded higher levels of engagement.

For rookie athletes, beyond which attributes may or may not generate higher engagement metrics, building strong relationships with their audience is crucial. This ultimately allows them to leverage new audiences and develop their brand image. Biscaia et al. (2016) believe that when a brand is recognized, it becomes more likely to be remembered. The Olympic Games contribute to this perspective, as their visibility and audience reach allow the introduction of emerging brands, as well as sports with less cultural attachment (Hasaan et al., 2020).

Therefore, beyond the medals that can be won, off-field issues help shape fans' perceptions (Hasaan et al., 2018), and the use of media platforms helps manage and structure the athlete's image among fans. These factors are related to strategies for building an athlete's brand image in the minds of consumers. Some elements, such as traditional media, can act as catalysts for narratives that foster public recall.



However, this cannot be the only strategy for creating connectivity with fans, as external factors such as the country's culture and access to information can impact this. In this regard, in a study by Sharifzadeh et al. (2021) with professional athletes in Iran, the lack of media coverage was highlighted as one of the barriers to positioning these athletes' brands among the public.

On the other hand, branding strategies already consider social media as the main communication asset for fans. This divergence suggests that successful branding requires a combination of on-field excellence and off-field storytelling that resonates with fans' values and aspirations. It may also reflect cultural variations in how fans in emerging markets interpret athletic imagery, valuing immediacy and relatability. Thus, by focusing on Brazilian Olympic rookies, this study extends athlete branding research into an emerging market context, offering evidence that established brand image frameworks remain applicable but may operate through context-specific emphasis on lifestyle narratives.

The results confirmed that ABI significantly predicts SME ( $R^2 = 44\%$ ), particularly through lifestyle-related attributes. While athletic performance remains a vital source of legitimacy and visibility, off-field narratives and authenticity appear to sustain long-term digital loyalty.

These findings reinforce the early stages of the Athlete Brand Cycle (Hasaan et al., 2018), where rookies athletes begin to consolidate visibility and differentiation through self-presentation and fan connection in digital spaces. Unlike veteran athletes managed by agencies, early-career athletes often depend on organic storytelling and direct interaction to shape their emerging brands (Kunkel et al., 2019; Linsner et al., 2021). This dynamic allows authentic and innovative content to become a defining component of brand growth.

Together, these results validate the multidimensional nature of ABI and demonstrate its predictive relevance for engagement behavior in digital contexts. By analyzing Brazilian rookie athletes, this study expands athlete brand research beyond established sports sectors, offering evidence that brand image formation follows similar, yet culturally adaptive, dynamics in emerging sports ecosystems.

## Conclusions, limitations and future implications

This study examined how the perceived brand image of Olympic rookie athletes influences fans' engagement behavior on social media. Theoretically, this study extends the Athlete Brand Image (Arai et al., 2014) to early-career athletes and validates its hierarchical structure in a digital context. It also integrates the Athlete Brand Cycle (Hasaan et al., 2021) with engagement behavior models, suggesting that lifestyle narratives may accelerate the transition from brand introduction to growth stages.

In practice, the results suggest that emerging athletes can benefit from balanced content strategies that combine performance highlights with personal and lifestyle narratives. Sports organizations, athlete support agencies, and sponsors should focus their efforts on educating athletes on the importance of communication, the use of digital tools, and the importance of emphasizing their human side and engaging with cultural aspects, rather than just competitive results. For example, short narrative content that documents training journeys, travel to championships, or culturally rooted narratives can strengthen parasocial connections and sustain engagement beyond the competition. For emerging sports markets, empowering athletes to manage their own brand narratives can also reduce reliance on institutional promotion, democratizing visibility and sponsorship opportunities.

Because this study used a cross-sectional design, causal inferences cannot be drawn. Given that the target audience is largely oriented toward Instagram use, this may have amplified the relevance of lifestyle attributes compared to performance-based content. The study focused exclusively on Brazilian rookie athletes, limiting generalizability across sports and cultures. Furthermore, engagement was not segmented between new and existing followers, restricting the interpretation of how fan proximity moderates engagement. Data collection during the Olympic Games represents a window of opportunity for these athletes and researchers, focusing on the outcomes that this mega-event may bring about. Future studies should adopt longitudinal and multiplatform approaches to capture dynamic changes in fan engagement throughout the Olympic cycle. It is recommended that future studies include comparative analyses between debuting and trained athletes to test whether the relationships observed are exclusive to early stages in their careers. Comparative analyses between medal-winning and non-medal-winning



athletes, or between team and individual sports, can provide deeper insights into how athletic success interacts with digital brand development. Furthermore, cross-cultural research can explore how fan values mediate engagement in emerging versus mature sports markets.

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