

Supplementary Questionnaires and Study Materials

Manuscript: Generative artificial intelligence personalization shapes sport fan identity through algorithmic understanding and shared experience

Anonymization and Scope

This file provides the questionnaires, interview prompts, experimental stimuli, manipulation checks and measurement items used across the empirical components of the study. It contains no participant-level response data, platform usernames, contact details, IP addresses, group names or direct identifiers. Bracketed labels such as [TEAM] and [FOCUS] indicate participant-provided text shown dynamically during the experiment.

Unless otherwise indicated, response items used seven-point response formats. Multi-item agreement scales used 1 = strongly disagree and 7 = strongly agree. Mean composite scores were used in the analyses described in the manuscript and analysis syntax.

Participant Information and Consent Text

- This study examines digital sport content experiences and responses to AI-assisted or AI-personalized sport content.
- Participation is voluntary. Participants may stop at any time before submitting the questionnaire or interview record.
- Participants must be at least 18 years old and have followed sport content online during the previous six months.
- Responses are anonymous or de-identified before analysis. The questionnaire does not request platform usernames, IP addresses, phone numbers, addresses or other direct identifiers.
- Aggregated findings may be used for academic publication. By continuing, participants indicate informed consent to participate.

Study 1: Screening Questionnaire and Interview Guide

Study 1 used text-based semi-structured interviews with adult digital sport fans. The screening questions verified age, online sport-following experience, focal fan object and concrete exposure to AI-generated, AI-assisted or AI-personalized sport content.

Code	Purpose	Question	Response format
S1-SC1	Age eligibility	Are you at least 18 years old?	Yes/No
S1-SC2	Online sport following	Have you followed sport content online during the past six months?	Yes/No
S1-SC3	Focal fan object	Please identify the team, athlete, league, event or fan community that you follow most closely.	Open text; identifiers anonymized before analysis
S1-SC4	Primary sport	Which sport is most closely related to this focal fan object?	Basketball; football; esports; volleyball; baseball; tennis; other
S1-SC5	AI-content exposure	Have you encountered AI-generated, AI-assisted or AI-personalized sport content?	Yes/No
S1-SC6	Concrete exposure example	Please briefly describe one concrete example, such as AI match summaries, AI commentary, AI team news, chatbot-based sport recommendations or AI fan assistants.	Open text; screening only
S1-SC7	Interview willingness	Are you willing to participate in a text-based semi-structured interview?	Yes/No

Study 1 Interview Prompts

Prompt	Topic	Question
Q1	Everyday sport consumption	How do you usually follow sport content online? Which platforms or content types do you use most often?
Q2	Fan attachment	Which team, athlete, league, event or fan community do you feel most connected to? What makes this object meaningful to you?
Q3	AI-content encounter	Please describe a concrete encounter with AI-generated, AI-assisted or AI-personalized sport content. What did the content do?
Q4	Identity relevance	Did the content feel relevant to you as a fan? If so, what made it feel connected to your own fan history, preferences or identity?

Q5	Algorithmic understanding	Did the AI content seem to recognize what you care about as a sport fan? Please describe what cues created or weakened that impression.
Q6	Shared fandom	Did the AI content make the sport experience feel connected to other fans, shared discussion or common emotional moments?
Q7	Fan communication	Did you share, discuss or compare the AI content with other fans? How did it affect fan conversation?
Q8	Over-individualization	Did the content ever feel too private, narrow or separated from what other fans were seeing or discussing?
Q9	Ordinary recommendation contrast	How was this AI-generated or AI-assisted content different from ordinary recommendation feeds?
Q10	Design implications	What should sport organizations or platforms avoid when using GenAI personalization for fans?

Follow-up probes asked participants to provide concrete examples and to distinguish ordinary recommendation feeds from AI-generated text, AI-supported summarization, chatbot interaction, personalized AI commentary and related GenAI-enabled sport-content features.

Studies 2a and 2b: Experimental Questionnaire and Stimuli

Studies 2a and 2b used the same 2 x 2 between-subjects stimulus structure crossing identity-relevant personalization and socially connective personalization. Study 2a pretested the stimuli. Study 2b used the same materials in the main randomized experiment.

Pre-Stimulus Questions

Code	Question type	Question wording	Response format
Pre-1	Focal team	Please name a sport team you follow closely.	Open text; displayed later as [TEAM]
Pre-2	Content focus	Please select the content focus you usually care about most.	Key players; tactics or playing style; match statistics; rivalry or opponent; team history or recent form
Pre-3	Selected focus	Your selected focus will be used in the AI sport assistant briefing.	Displayed later as [FOCUS]

Common Instruction

The following briefing was generated by an AI sport assistant for a digital sport platform. Please read it as if it appeared in your matchday feed.

Experimental Stimulus Texts

Condition	Factor levels	Stimulus text
Condition 1	Identity-relevant present; socially connective present	AI Fan Briefing Here is your AI match briefing for [TEAM]'s upcoming match. Since you follow [TEAM] and selected [FOCUS] as the part of coverage you usually care about most, today's key storyline focuses on how that aspect may shape the match. The briefing highlights moments that are likely to matter for someone who pays close attention to [TEAM]'s recent performances, match rhythm, and emotional swings across the season. In the fan discussion feed, many [TEAM] supporters are already debating the same storyline. You can join a prediction thread before the match, follow common reactions during key moments, and compare your view with other supporters after the final whistle.
Condition 2	Identity-relevant present; socially connective absent	AI Fan Briefing Here is your AI match briefing for [TEAM]'s upcoming match. Since you follow [TEAM] and selected [FOCUS] as the part of coverage you usually care about most, today's key storyline focuses on how that aspect may shape the match. The briefing highlights moments that are likely to matter for someone who pays close attention to [TEAM]'s recent performances, match rhythm, and emotional swings across the season.

		Your briefing includes a private watch note, a compact timeline of moments to track, and a personalized post-match summary focused on the parts of [TEAM]'s performance that best match your viewing routine.
Condition 3	Identity-relevant absent; socially connective present	AI Fan Briefing Here is your AI match briefing for [TEAM]'s upcoming match. [TEAM] enters the contest with several important factors to watch, including recent form, match tempo, defensive organization, and the ability to respond during decisive phases. The result may depend on early rhythm, finishing quality, substitutions, and how the team manages pressure across the full match. In the fan discussion feed, many [TEAM] supporters are already debating the main storyline. You can join a prediction thread before the match, follow common reactions during key moments, and compare your view with other supporters after the final whistle.
Condition 4	Identity-relevant absent; socially connective absent	AI Fan Briefing Here is your AI match briefing for [TEAM]'s upcoming match. [TEAM] enters the contest with several important factors to watch, including recent form, match tempo, defensive organization, and the ability to respond during decisive phases. The result may depend on early rhythm, finishing quality, substitutions, and how the team manages pressure across the full match. Your briefing includes a neutral match overview, a compact timeline of moments to track, and a post-match summary focused on general performance indicators such as score changes, shots, substitutions, defensive actions, and key phases of play.

Study 2a Post-Stimulus Questionnaire

After reading the stimulus, participants completed manipulation-check items and stimulus diagnostics. Study 2a focused on whether the four stimulus texts produced the intended differences without major diagnostic problems.

Item	Construct	Item wording
IR1	Identity relevance manipulation check	The briefing reflected the sport content focus I had indicated earlier.
IR2	Identity relevance manipulation check	The briefing felt tailored to how I usually follow [TEAM].
IR3	Identity relevance manipulation check	The briefing connected the match to aspects of [TEAM] coverage that are personally relevant to me.
IR4	Identity relevance manipulation check	The briefing seemed designed for a fan with my specific interests in [TEAM].
SC1	Social connectivity manipulation check	The briefing pointed me toward what other [TEAM] fans might be discussing.
SC2	Social connectivity manipulation check	The briefing created opportunities to engage with other fans.
SC3	Social connectivity manipulation check	The briefing made the match feel connected to a broader fan community.
SC4	Social connectivity manipulation check	The briefing included cues about collective fan reactions or conversations.

Item	Purpose	Item wording
DQ1_realism	Stimulus realism diagnostic	The briefing seemed realistic as content from a digital sport platform.
DQ2_readability	Readability diagnostic	The briefing was easy to read.
DQ3_quality	Content quality diagnostic	The briefing was well written.

DQ4_info_amount	Information amount diagnostic	The briefing contained an appropriate amount of information.
DQ5_intrusive	Intrusiveness diagnostic	The briefing felt intrusive.
DQ6_ai_role_clear	AI disclosure diagnostic	The briefing made the role of AI clear.
SP1	Suspicion probe	What do you think this study was trying to examine?

An attention-check item was included in the questionnaire. Participants also completed an open-ended suspicion probe after the diagnostics.

Study 2b Main Experimental Questionnaire

Study 2b used the same pre-stimulus questions, common instruction, four stimulus texts, manipulation checks and diagnostics. Baseline covariates were measured before stimulus exposure where applicable. Process perceptions and identity outcomes were measured after exposure.

Variable	Construct	Question wording	Response format
baseline_fan_identification	Baseline fan identification	How strongly do you identify as a fan of your focal sport object?	1 = not at all; 7 = very strongly
fan_involvement	Fan involvement	How involved are you in following your focal sport object?	1 = not at all involved; 7 = very involved
ai_familiarity	AI familiarity	How familiar are you with AI-generated or AI-personalized sport content?	1 = not at all familiar; 7 = very familiar
sport_consumption_frequency	Sport consumption frequency	How frequently do you follow sport content online?	1 = very rarely; 7 = very frequently
age	Age	Please report your age.	Numeric
gender	Gender	Please select the gender category that best describes you.	Male; female; nonbinary/prefer not to disclose/other

Item	Construct	Item wording
IR1	Identity relevance manipulation check	The briefing reflected the sport content focus I had indicated earlier.
IR2	Identity relevance manipulation check	The briefing felt tailored to how I usually follow [TEAM].
IR3	Identity relevance manipulation check	The briefing connected the match to aspects of [TEAM] coverage that are personally relevant to me.
IR4	Identity relevance manipulation check	The briefing seemed designed for a fan with my specific interests in [TEAM].
SC1	Social connectivity manipulation check	The briefing pointed me toward what other [TEAM] fans might be discussing.
SC2	Social connectivity manipulation check	The briefing created opportunities to engage with other fans.
SC3	Social connectivity manipulation check	The briefing made the match feel connected to a broader fan community.
SC4	Social connectivity manipulation check	The briefing included cues about collective fan reactions or conversations.
PAU1	Perceived algorithmic understanding	The AI-generated sport content seemed to understand what kind of fan I am.
PAU2	Perceived algorithmic understanding	The content reflected my sport preferences in a way that felt personally meaningful.

PAU3	Perceived algorithmic understanding	The AI appeared to recognize the team, athlete, league, or event that matters to me.
PAU4	Perceived algorithmic understanding	The content seemed aware of the sport details I usually care about.
PAU5	Perceived algorithmic understanding	The content recognized my fan-specific priorities rather than treating me as a generic user.
PAU6	Perceived algorithmic understanding	The content captured something about my history or perspective as a sport fan.
PSFE1	Perceived shared fandom experience	The content made me feel part of a shared fan experience.
PSFE2	Perceived shared fandom experience	The content gave me something I could discuss with other fans.
PSFE3	Perceived shared fandom experience	The content helped connect my own reaction to a broader fan community.
PSFE4	Perceived shared fandom experience	The content reflected topics that other fans were likely to care about.
PSFE5	Perceived shared fandom experience	The content made the match or sport moment feel like something fans experience together.
PSFE6	Perceived shared fandom experience	The content preserved common reference points between me and other fans.
IDR1	Identity response	The content strengthened my connection to my team, athlete, league, or event.
IDR2	Identity response	The content made my fan identity feel more salient.
IDR3	Identity response	The content reinforced my sense of myself as a sport fan.
IDR4	Identity response	The content increased how strongly I identified with my focal sport object.
MFI1	Momentary fan identification	After reading the briefing, I intended to continue following [TEAM] closely.
MFI2	Momentary fan identification	The briefing increased my interest in future content about [TEAM].
MFI3	Momentary fan identification	The briefing made me more likely to keep engaging with [TEAM] as a fan.
EC1_T3	Engagement continuity	I intend to keep following content about my focal sport object.
EC2_T3	Engagement continuity	I expect to continue engaging with related sport updates or discussions.
EC3_T3	Engagement continuity	I am likely to remain involved in this fan interest over time.

Variable	Construct	Question wording
perceived_over_individualization	Perceived over-individualization	The briefing made my fan experience feel too individualized and separated from what other fans were seeing or discussing.

Study 3: Three-Wave Survey Questionnaire

Study 3 used a three-wave online panel. T1 measured baseline covariates and naturally occurring GenAI-use experiences. T2 measured perceived algorithmic understanding and perceived shared fandom experience. T3 measured identity response and engagement continuity.

T1 Measures

Variable	Construct	Question wording	Response format
baseline_fan_identification	Baseline fan identification	How strongly do you identify as a fan of your focal sport object?	1 = not at all; 7 = very strongly
fan_involvement	Fan involvement	How involved are you in following your focal sport	1 = not at all involved;

		object?	7 = very involved
ai_familiarity	AI familiarity	How familiar are you with AI-generated or AI-personalized sport content?	1 = not at all familiar; 7 = very familiar
sport_consumption_frequency	Sport consumption frequency	How frequently do you follow sport content online?	1 = very rarely; 7 = very frequently
age	Age	Please report your age.	Numeric
gender	Gender	Please select the gender category that best describes you.	Male; female; nonbinary/prefer not to disclose/other
identity_relevant_genai_T1	Identity-relevant GenAI use	In the past month, the GenAI-assisted sport content I encountered reflected my team, athlete, league, event or fan history in a personally meaningful way.	1-7 agreement
socially_connective_genai_T1	Socially connective GenAI use	In the past month, the GenAI-assisted sport content I encountered connected my own sport experience to wider fan discussions, shared reactions or common reference points.	1-7 agreement
over_individualized_genai_T1	Over-individualized GenAI use	In the past month, GenAI-personalized sport content made my fan experience feel like a private content stream separated from what other fans were seeing or discussing.	1-7 agreement

T2 Measures

Item	Construct	Item wording
PAU1	Perceived algorithmic understanding	The AI-generated sport content seemed to understand what kind of fan I am.
PAU2	Perceived algorithmic understanding	The content reflected my sport preferences in a way that felt personally meaningful.
PAU3	Perceived algorithmic understanding	The AI appeared to recognize the team, athlete, league, or event that matters to me.
PAU4	Perceived algorithmic understanding	The content seemed aware of the sport details I usually care about.
PAU5	Perceived algorithmic understanding	The content recognized my fan-specific priorities rather than treating me as a generic user.
PAU6	Perceived algorithmic understanding	The content captured something about my history or perspective as a sport fan.
PSFE1	Perceived shared fandom experience	The content made me feel part of a shared fan experience.
PSFE2	Perceived shared fandom experience	The content gave me something I could discuss with other fans.
PSFE3	Perceived shared fandom experience	The content helped connect my own reaction to a broader fan community.
PSFE4	Perceived shared fandom experience	The content reflected topics that other fans were likely to care about.
PSFE5	Perceived shared fandom experience	The content made the match or sport moment feel like something fans experience together.
PSFE6	Perceived shared fandom experience	The content preserved common reference points between me and other fans.

T3 Measures

Item	Construct	Item wording
IDR1	Identity response	The content strengthened my connection to my team, athlete, league, or event.
IDR2	Identity response	The content made my fan identity feel more salient.
IDR3	Identity response	The content reinforced my sense of myself as a sport fan.
IDR4	Identity response	The content increased how strongly I identified with my focal sport object.
EC1_T3	Engagement continuity	I intend to keep following content about my focal sport object.
EC2_T3	Engagement continuity	I expect to continue engaging with related sport updates or discussions.
EC3_T3	Engagement continuity	I am likely to remain involved in this fan interest over time.
EC4_T3	Engagement continuity	I plan to maintain my engagement with this sport fan community or content stream.