AFFECTIVE AND BEHAVIORAL MODULATIONS UNDER CONTRASTING SOCIAL CLIMATES

TOXICITY VS. SUPPORT IN COOPERATIVE ESPORTS PARADIGMS

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This research examines how supportive, toxic, and neutral social interaction styles influence player performance, motivation, and sense of belonging in competitive esports. Twenty-seven participants completed three five-minute rounds under systematically varied team climates using a within-subjects design. Unknown to participants, teammates were trained confederates enacting one of three behaviors: supportive (encouraging through in-game help and positive chat), toxic (withholding cooperation and criticizing), or neutral (functionally cooperative yet emotionally detached). Condition order was randomized. After each round, participants rated belonging, motivation, fairness, enjoyment, frustration, and competitiveness. Results showed that performance peaked under supportive conditions, followed by toxic, and was lowest in neutral play. Motivation was strongest in supportive and neutral settings, while toxicity increased competitiveness and frustration but lowered engagement. Sense of belonging and cooperative success were highest in supportive contexts and significantly differed across all conditions ($p < .05$).

Keywords: *esports*, social climate, player motivation, emotional engagement, team dynamics

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Introduction

Esports has rapidly evolved from a subcultural pastime into one of the most dynamic forms of mediated competition, combining real-time performance, strategic collaboration, and complex emotional exchanges between players. Far beyond the pursuit of victory, esports represents a social arena in which interactional tone and collective emotion shape both individual experience and team outcomes. Scholars increasingly acknowledge that digital competition cannot be understood solely through mechanical skill or game design; rather, the social climate that emerges among teammates -whether supportive, neutral, or toxic - profoundly modulates players' motivation, affect, and engagement (Kowert and Quandt 2016; McKechnie-Martin 2025). As competitive games rely heavily on mediated communication, players constantly interpret verbal and behavioral cues that signal belonging, respect, or hostility. These affective exchanges generate micro-climates of emotion that can either reinforce cooperation or trigger defensiveness and frustration. Prior research has documented that persistent exposure to toxic behavior such as blame, verbal aggression, or exclusion undermines team cohesion and emotional well-being (Consalvo 2012; Morrier et al. 2025). Conversely, supportive interaction patterns marked by empathy and positive reinforcement enhance intrinsic motivation and collective coordination, fulfilling psychological needs for competence and relatedness described in Self-Determination Theory (Deci and Ryan 2000). Yet, despite growing recognition of these mechanisms, few studies have experimentally isolated how contrasting emotional climates causally affect players' affective states and in-game behavior. The present study addresses this gap by constructing a controlled esports paradigm in which social climates were systematically manipulated through scripted teammate behavior. By observing participants across supportive, neutral, and toxic team contexts, the experiment captures how immediate affective tone rather than long-term cultural factors drives motivation, performance, and perceived belonging. This design allows for a direct comparison of how positive reinforcement, emotional detachment, and hostile interaction shape both the subjective and behavioral dimensions of play. Beyond its empirical focus, this work contributes to a broader psychological understanding of emotional engagement in competitive media. It proposes that sustained participation is not merely a product of enjoyment but of emotional activation the arousal elicited when players feel socially invested, whether through encouragement or confrontation. In doing so, the study bridges perspectives from team psychology, motivation theory, and media studies to reveal that the emotional temperature of the digital arena is as crucial to player experience as mechanical skill or design balance.

Related Work

The affective and behavioral dynamics of competitive esports are increasingly understood as products of the social climate that emerges among players during gameplay. In this context, social climate refers to the affective tone and interactional patterns that convey emotional valence ranging from supportive to hostile and shape collective motivation and coordination. As esports have evolved into complex, team-based ecosystems, scholars have turned attention to how contrasting climates of toxicity and support influence player emotions, motivation, performance, and sense of belonging (Kowert and Quandt 2016; McKechnie-Martin 2025). The present research builds on this line of inquiry by examining how experimentally manipulated team climates modulate affective and behavioral responses in cooperative play. Toxicity in online competition has been extensively documented as a pervasive and psychologically disruptive phenomenon. Toxic behavior encompasses verbal hostility, resource denial, blame, and exclusion actions that disrupt cooperation and elicit emotional strain. (Kowert and Quandt 2016) argue that such hostility is often normalized within gaming cultures, embedding aggression into the structure of competitive play. (Consalvo 2012) similarly critiques game design systems that unintentionally reward antagonistic behaviors, thereby sustaining toxic norms. Recent empirical work reinforces

these concerns: (Morrier, Mahmassani, and Alvarez 2025) show that exposure to toxic teammates reduces engagement and provokes reciprocal hostility, amplifying affective arousal but undermining long-term motivation. From a design perspective, (Hassan 2017) contends that gamification frameworks can either enable or suppress such behaviors depending on how they structure feedback and participation. Complementing this, Ruotsalainen and Sihvonen (2024) describe banal toxicity the normalization of low-level hostility fostered by online disinhibition and cultural norms. Together, these studies depict toxicity not as an isolated behavioral anomaly but as a systemic social climate that modulates affective states, heightening frustration and competitiveness while reducing cooperation and belonging. This framing directly informs the toxic condition in the present experiment. In contrast, supportive social climates are characterized by cooperative communication, empathy, and positive reinforcement, which collectively promote intrinsic motivation and group cohesion. (Hatos 2020) finds that adolescents engaging in cooperative multiplayer games demonstrate stronger offline prosocial tendencies, suggesting that digital cooperation may transfer to real-world social behavior. In a related vein, (Yoshioka et al. 2024) report that praise-based and empathic feedback after defeat enhances intrinsic motivation and willingness to re-engage. Similarly, (Zhu, Song, and Lee 2022) emphasize that mutual dependence within teams nurtures harmonious passion, sustaining prosocial engagement even in competitive contexts. Building on this motivational mechanism, (Eldadi, Fitoussi, and Tenenbaum 2025) demonstrate that expert esports teams display denser, goal-directed communication patterns, which translate into stronger coordination and collective efficiency. Taken collectively, these studies illustrate how supportive interaction structures whether emotional (through affirmation and mutual dependence) or behavioral (through task-relevant coordination) promote both affective regulation and cooperative success.

Understanding how social climates shape player motivation and behavior can be explained through Self-Determination Theory (SDT; Deci and Ryan 2000), which identifies three key psychological needs: autonomy, competence, and relatedness. In gaming, these correspond to feeling in control, capable, and connected with teammates. When these needs are met such as in supportive team environments, players experience greater enjoyment and sustained engagement (Przybylski et al. 2013). Conversely, toxic climates that involve criticism or exclusion frustrate these needs, reducing intrinsic motivation and promoting defensive or short-term competitive responses. Building on the principles of Self-Determination Theory (SDT), (McKechnie-Martin 2025) expands the motivational framework by integrating evidence across multiple dimensions of digital play, showing that social interaction and competition jointly sustain engagement. Within this theoretical context, the quality of social interaction, whether cooperative or antagonistic, determines whether competition enhances or undermines motivation. Extending this framework to its affective implications, research on belongingness provides direct evidence for the emotional outcomes of supportive climates. (Lee and Jung 2022) demonstrate that social capital within gaming communities enhances life satisfaction and emotional resilience, suggesting that supportive relationships fulfill the need for relatedness central to SDT. Similarly, (Mahoney et al. 2024) identify enjoyment, competition, and social connection as primary motivational forces in esports participation. Taken together, these findings indicate that supportive social climates in esports satisfy core psychological needs that stabilize affect and sustain engagement mechanisms that the present study directly examines through post-round measures of belonging, motivation, and enjoyment under supportive, toxic, and neutral team conditions.

At the behavioral level, prior research consistently links team cohesion and communication quality to stronger performance. (Yoshioka et al. 2024) show that cooperative dialogue enhances strategic decision-making and reaction time in competitive play. Similarly, foundational studies on group dynamics identify cohesion, shared leadership, and psychological safety as key predictors of collective success (Carron, Widmeyer, and Brawley 1985; LePine et al. 2008; Mathieu et al. 2008). Together, these findings indicate that

supportive communication strengthens both emotional well-being and coordinated performance, whereas toxic climates undermine these processes, leading to disorganized or defensive play. Collectively, prior research demonstrates that the emotional and behavioral outcomes of competitive gaming depend strongly on the surrounding social climate. Toxic environments heighten frustration and short-term competitiveness but disrupt cooperation and belonging, whereas supportive climates enhance motivation, cohesion, and collective efficiency. Frameworks such as Self-Determination Theory (Deci and Ryan 2000) provide a useful lens for explaining these patterns, linking supportive interaction to the satisfaction of basic psychological needs and toxic interaction to their frustration. Empirical studies across digital play and team psychology converge on the idea that communication quality and emotional tone jointly regulate affective stability and coordinated action. Despite these advances, experimental evidence isolating the causal effects of contrasting social climates within esports remains limited. Most existing work relies on self-report or correlational designs, leaving unclear how real-time toxic versus supportive interactions influence immediate motivation, affect, and performance. The present study addresses this gap by systematically manipulating team climates supportive, toxic, and neutral within a controlled cooperative esports paradigm to measure their differential impact on players' affective and behavioral responses.

Methodology

To investigate how distinct social climates influence affective and behavioral responses in cooperative esports play, this study adopted a within-subjects experimental design in which each participant experienced all three interaction conditions: *supportive*, *toxic*, and *neutral*. Unlike prior work such as (Zhu, Song, and Lee 2022), which primarily relied on survey-based analyses of mutual dependence and passion in naturally occurring multiplayer environments, the present study employed a controlled, laboratory-based simulation to directly manipulate social dynamics during gameplay. A total of 30 participants were initially recruited for the study. After identifying and removing three statistical outliers from the subjective test data, the final sample consisted of 27 participants (15 male, 12 female) aged 18–35 years. None of the participants reported prior experience in professional or structured esports competitions, ensuring that the study captured the affective and behavioral responses of novice team-based players. All participants provided informed consent prior to participation and received monetary compensation for their time.

Apparatus and Experimental Setup

Testing was conducted in a controlled esports laboratory equipped with three identical gaming stations. Each station was outfitted with standardized hardware and identical communication interfaces, ensuring that all participants experienced the same audiovisual and performance parameters. Three trained confederates were seated at separate stations under the researcher's supervision. Participants were informed that they would be randomly assigned to a team of three other players online; in reality, these teammates were the confederates whose task was to simulate distinct social climates according to predesigned behavioral scripts. Before each trial, participants were instructed to select a random in-game username from a provided list to ensure anonymity and to prevent recognition of confederate teammates across sessions. This procedure preserved the illusion of playing with different, independent teams each round and minimized expectancy bias.

Testing Procedure

Each participant completed three rounds of cooperative gameplay, lasting approximately five minutes per round. In every round, the same cooperative game environment was used,

but the behavioral style of the confederates was systematically altered to represent one of the following conditions:

1. Supportive Climate Confederates engaged in prosocial, encouraging behavior, such as praising performance, offering assistance, sharing resources, and providing verbal or written affirmation (e.g., *"Nice play, we've got your back!"*). The goal was to induce a positive, cohesive emotional atmosphere characterized by inclusion, empathy, and cooperation.

2. Toxic Climate Confederates enacted antisocial and competitive hostility, including verbal criticism, resource denial (e.g., taking items meant for the participant), sarcastic or mocking comments, and a lack of cooperative effort. This condition aimed to model the emotional tension and frustration commonly described in studies of toxic gamer culture.

3. Neutral Climate Confederates maintained functional but emotionally detached interaction. Communication was minimal, limited to basic coordination necessary for gameplay (e.g., *"Go left"*, *"Take point"*), and devoid of affective tone or evaluative feedback. This condition represented an emotionally neutral baseline for comparison.

The order of climate presentation was fully randomized across participants to control for sequence effects. Between rounds, participants were given a one-minute neutral rest period to minimize emotional carryover between conditions.

Data Collection

Immediately following each round, participants completed a post-session questionnaire consisting of six constructs assessed on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree): *(i)* Perceived belonging, *(ii)* Motivation, *(iii)* Fairness, *(iv)* Enjoyment, *(v)* Frustration, *(vi)* Competitiveness. These measures captured both affective and cognitive appraisals of the gaming experience. The questionnaire was designed to assess the short-term psychological impact of each social climate, providing within-subject comparability across conditions. In addition to self-report measures, objective performance metrics (e.g., task completion rate, contribution to team score, reaction latency) were automatically recorded by the game's internal tracking system. Observational field notes were also taken to capture qualitative impressions of emotional expression and interaction dynamics.

To preserve ecological validity while maintaining control, the participants were unaware of the confederate manipulation. The cover story described the sessions as randomized online matches. Communication among team members occurred via an in-game chat system rather than face-to-face, preventing visual cues that might reveal the experimental setup. This methodological concealment ensured that behavioral differences across conditions reflected genuine reactions to social climate variations, not awareness of experimental intent. Data were analyzed using within-subject mean comparisons across conditions for each dependent variable. Descriptive statistics and mean difference analyses were calculated to assess the direction and magnitude of climate effects. The integrated design enabled both quantitative evaluation (via Likert-scale means) and qualitative interpretation (via observational data), allowing a multidimensional understanding of how supportive, toxic, and neutral team climates shape emotional and behavioral adaptation during gameplay.

Evaluation and Results

In this section, we analyze the results of the subjective test. First, we identify and remove any outliers from the collected data. Outlier detection was conducted using statistical

methods, including the Z-score and Interquartile Range (IQR) (Yaro et al. 2024), to identify extreme values that deviate significantly from the central distribution of the subjective results. As a result, three outlier responses were excluded from the analysis, and the subsequent results are based on data from 27 subjects.

Quantitative analyses revealed significant divergences in players' affective and motivational responses across the three experimental team climates: *Supportive*, *Neutral*, and *Toxic* (see Figure 1). As summarized in the mean comparison table, players in the Supportive condition reported the highest levels of *motivation* (M = 4.89), *enjoyment* (M = 4.07), *clarity of communication* (M = 4.41), and *eagerness to continue playing* (M = 4.93). In contrast, the Neutral condition showed moderate engagement (e.g., *motivation = 2.93; enjoyment = 3.85*), while the Toxic condition yielded more polarized results, producing *elevated arousal* (e.g., *performance perception = 5.00; eagerness to continue = 4.63*) despite simultaneously high frustration and hostility.

These outcomes confirm that emotional intensity, rather than emotional valence alone, drives continued engagement in competitive play. Both supportive and toxic climates evoke strong affective arousal, while the neutral climate, lacking emotional stimulation, fails to sustain motivation or interest (see Figure 2).

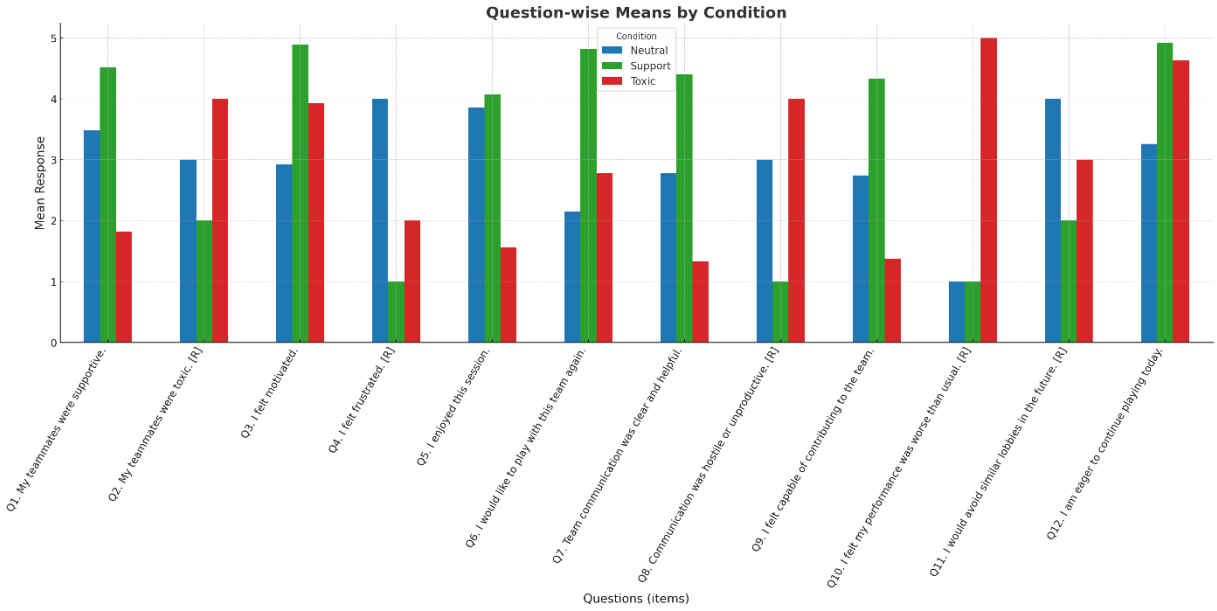

Figure 1. Distribution of mean item responses across experimental team climate conditions (Supportive, Neutral, Toxic).

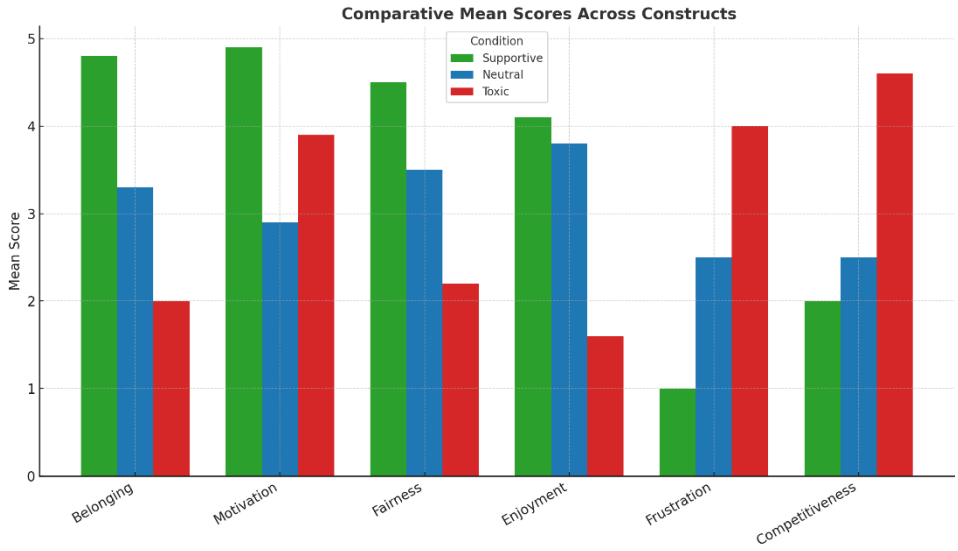

Figure 2. Comparative mean scores across affective and motivational constructs under supportive, neutral, and toxic team climates.

Psychological and Motivational Interpretation

From a Self-Determination Theory perspective, the results illustrate distinct motivational mechanisms activated by each climate:

- Supportive teams fulfill players' needs for relatedness and competence, as cooperative feedback, empathy, and mutual dependence reinforce intrinsic motivation. This aligns with prior findings that prosocial interaction enhances enjoyment and persistence in online play (Hatos 2020; Yoshioka et al. 2024; Zhu, Song, and Lee 2022). Participants under supportive conditions thus experienced emotional security and collaborative efficacy, fostering both affective satisfaction and performance stability.

- Toxic teams, conversely, frustrate these needs through criticism, exclusion, and antagonism (Consalvo 2012; Morrier et al. 2025). Yet, consistent with (McKechnie-Martin 2025) and (Mahoney et al. 2024), competitive tension and anger-based arousal may transiently amplify extrinsic motivation, sustaining play despite negative emotion. This paradoxical engagement reflects a *"frustration–motivation loop"* in which negative affect reinforces short-term persistence but degrades long-term well-being and cooperation.

- The Neutral condition, devoid of strong social feedback, produced neither high frustration nor high engagement. Participants appeared psychologically safe but emotionally uninvested, supporting the claim that *affective neutrality diminishes immersion and flow* (Kowert and Quandt 2016).

Affective and Behavioral Outcomes

The emotional tone of interaction clearly shaped communication quality and team cohesion, echoing classic models of group effectiveness (Carron et al. 1985; LePine et al. 2008; Mathieu et al. 2008).

Under supportive conditions, cooperative dialogue, constructive feedback, and shared emotional regulation fostered both collective efficacy and positive affect, validating (Eldadi, Fitoussi, and Tenenbaum 2025) on the link between verbal coordination and performance. Conversely, toxic conditions intensified psychological defensiveness and disrupted communication, generating competitive arousal but eroding cohesion, a pattern consistent with (Ruotsalainen and Sihvonen 2024)'s concept of *banal toxicity*. Despite these social costs, the heightened emotional activation under toxic conditions maintained behavioral persistence. This finding extends prior work by (Yoshioka et al. 2024), showing that even negative feedback can trigger renewed effort when players remain invested in performance outcomes. Hence, both positive reinforcement and antagonistic stimulation can prolong engagement, albeit through distinct affective pathways.

Integrative Discussion

The present results contribute experimental evidence to the growing literature on emotional climates in esports by showing that both supportive and toxic environments can enhance engagement through different motivational routes, whereas neutral settings fail to elicit meaningful psychological activation. These findings bridge affective, motivational, and communicative perspectives in prior research (Kowert and Quandt 2016; Lee and Jung 2022; McKechnie-Martin 2025), revealing that the *quality of emotional tone* rather than its positivity determines sustained participation.

In theoretical terms, the study supports the SDT-based proposition that *emotional arousal coupled with social relevance* fulfills or substitutes for intrinsic need satisfaction. From a design standpoint, this suggests that moderate emotional tension, balancing competitive challenge with supportive communication, may represent the optimal affective configuration for long-term engagement in multiplayer contexts.

Conclusion

This study experimentally demonstrated that the emotional climate within esports teams whether supportive, neutral, or toxic plays a decisive role in shaping players' motivation, affect, and performance. Supportive environments produced the highest levels of enjoyment, belonging, and cooperation, while toxic settings, despite their negativity, elicited short-term competitiveness through heightened emotional arousal. Neutral conditions, lacking affective stimulation, resulted in the lowest engagement and performance. These findings highlight that emotional intensity, rather than positive or negative tone alone, drives continued participation in competitive play. Both supportive and toxic climates sustain engagement by keeping players emotionally activated, whereas neutral climates foster disengagement. Methodologically, the study contributes a controlled experimental framework for modeling social climates in esports, moving beyond self-report correlational research. Theoretically, it extends Self-Determination Theory by showing how emotional tone dynamically regulates the satisfaction or frustration of relatedness and competence needs. In summary, emotionally charged environments whether cooperative or antagonistic enhance engagement through distinct motivational routes. Designing balanced team interactions that combine competitive tension with supportive feedback may represent the optimal condition for sustained, healthy participation in digital play.

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AI Disclaimer

In the process of drafting this paper, we have used generative AI tools, specifically ChatGPT (OpenAI, GPT-5) and Grammarly Go, to improve the clarity and fluency of academic English writing, to rephrase sentences for better readability, and to correct grammar, vocabulary, and stylistic issues. The conceptual work, research design, data analysis, and interpretation of results are entirely our own.

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