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How gaming motivation is associated with entrepreneurial passion: a sequential mediation model of entrepreneurial curiosity and self-efficacy

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Entrepreneurial passion is a vital emotional catalyst for chance exploration, perseverance, and venture establishment; nevertheless, its development prior to entrepreneurial involvement is not well comprehended. Simultaneously, digital gaming has emerged as a widespread pursuit among young, especially in Saudi Arabia, where elevated game engagement aligns with national initiatives to foster entrepreneurship under Vision 2030. Notwithstanding this convergence, current research has predominantly neglected to examine the extent to which non-business digital behaviors influence the development of entrepreneurial enthusiasm. This study aims to bridge this gap by developing and empirically testing a sequential cognitive model that connects gaming motivation to entrepreneurial passion via entrepreneurial curiosity and entrepreneurial self-efficacy. The model incorporates concepts from Self-Determination Theory, Information-Gap Theory, Social Cognitive Theory, and identity-based passion theory. Employing covariance-based structural equation modeling on survey data from 435 young adults in Saudi Arabia, the results indicate that gaming motivation positively predicts entrepreneurial curiosity and entrepreneurial self-efficacy, whereas entrepreneurial curiosity significantly boosts self-efficacy. Curiosity and self-efficacy significantly enhance entrepreneurial passion. Conversely, gaming motivation does not exert a substantial direct influence on entrepreneurial enthusiasm, suggesting that passion does not stem solely from digital interaction but rather arises from curiosity-driven inquiry and faith in one's capabilities. This study enhances entrepreneurship research by recognizing gaming motivation as a non-business precursor to entrepreneurial passion, identifying entrepreneurial curiosity as a crucial cognitive mechanism in the formation of passion, and situating these processes within a youth-driven entrepreneurial transformation. The results establish digital gaming as a scalable psychological asset for the development of entrepreneurial human capital in digitally intensive economies.

KEYWORDS

digital behavior, entrepreneurial curiosity, entrepreneurial passion, entrepreneurial self-efficacy, gaming motivation, Saudi Arabia, youth entrepreneurship

1 Introduction

Entrepreneurial passion is widely acknowledged as a fundamental emotional catalyst for opportunity exploration, perseverance, and business establishment. Previous studies indicate that entrepreneurial enthusiasm fosters innovation, commitment, and ongoing involvement in entrepreneurial endeavors (Murnieks et al., 2014; Murnieks and Cardon, 2023). Recent

developments in entrepreneurial cognition define passion as a psychologically constructed state arising from the interplay of motivation, cognition, and identity (Shepherd and Patzelt, 2018). Notwithstanding these advancements, the mechanisms by which entrepreneurial passion evolve before entrepreneurial involvement remain inadequately elucidated. Current research has predominantly investigated entrepreneurial passion because of formal entrepreneurship education, experiential learning initiatives, venture involvement, or interaction with entrepreneurial role models (Liñán and Fayolle, 2015). Although these methodologies offer significant insights, they predominantly exclude quotidian non-commercial situations that may influence entrepreneurial emotions at preliminary stages. This absence is significant considering the growing evidence that motivated experiences in one area can affect exploratory behavior and identity development in other domains (Grant and Berry, 2011). Consequently, the influence of non-commercial digital activities on the development of entrepreneurial passion is yet little examined.

Digital gaming constitutes a notably significant non-commercial setting. Modern digital games are deliberately intended to foster autonomy, challenge, feedback, and mastery—elements that strongly correspond with the motivating mechanisms outlined in Self-Determination Theory (Ryan and Deci, 2020). Empirical studies in psychology and digital learning indicate that intrinsically driven games maintain engagement and foster exploratory behavior (Oliveira et al., 2023). These traits correspond to the cognitive requirements linked to entrepreneurial inquiry and skill enhancement. In entrepreneurship study, gaming has predominantly been analyzed either as a recreational pursuit or concerning transferable abilities, like opportunity awareness and problem-solving (Kraus et al., 2022). Thus, current research has insufficiently investigated whether gaming-related motivation fosters the development of entrepreneurial spirit or the cognitive mechanisms through which this influence transpires. This disparity is especially prominent in the context of Saudi Arabia. Saudi society is distinguished by a significant youth population and ranks among the highest globally in digital gaming engagement. Simultaneously, entrepreneurship serves as a fundamental component of Saudi Arabia's national transformation goal under Vision 2030, which prioritizes youth empowerment, innovation, and the development of entrepreneurial human capital. These settings establish a unique correlation between extensive participation in digital gaming and institutional initiatives to promote entrepreneurial endeavors among youngsters. However, the current work has inadequately delineated how culturally ingrained digital behaviors may affect entrepreneurial motivation and enthusiasm at a psychological level. Previous studies do not explicitly clarify if gaming drive acts as a prelude to entrepreneurial zeal among Saudi youth, nor how this influence may manifest cognitively.

The lack of this explanation indicates a distinct research gap. Although gaming motivation is recognized for promoting prolonged engagement and experimental behavior, and entrepreneurial passion relies on cognitive engagement and perceived capacity (Murnieks and Cardon, 2023), the existing literature does not provide a cohesive framework that connects these processes. It is uncertain whether gaming motivation directly affects entrepreneurial passion or if its influence is mediated through cognitive processes that transform exploratory motivation into entrepreneurial-related beliefs and emotional commitment. Addressing this gap necessitates a process-oriented analysis of the interplay between motivation, curiosity, and

self-efficacy before entrepreneurial activity. In this context, the current study is directed by three primary research questions. Initially, it inquires if gaming motivation affects entrepreneurial passion in young adults before they engage in entrepreneurship. Secondly, it investigates whether the observed correlation between gaming drive and entrepreneurial passion functions indirectly via entrepreneurial curiosity and entrepreneurial self-efficacy, rather than through a direct route. Third, it examines the interplay between entrepreneurial curiosity and entrepreneurial self-efficacy in converting gaming-related motivational experiences into entrepreneurial passion within the context of Saudi Arabia, where youth gaming engagement and national entrepreneurship initiatives under Vision 2030 coexist.

This work develops and empirically evaluates a sequential cognitive model that connects gaming incentive to entrepreneurial passion via entrepreneurial curiosity and entrepreneurial self-efficacy, thereby addressing the identified research gap. Utilizing Self-Determination Theory (Ryan and Deci, 2020), Information-Gap Theory (Loewenstein, 1994), Social Cognitive Theory (Bandura, 1997), and identity-based passion theory (Murnieks and Cardon, 2023), the proposed model delineates entrepreneurial passion as the result of a cognitive transformation process. Gaming motivation is anticipated to incite curiosity-driven research, so augmenting perceived entrepreneurial capability and ultimately cultivating passion rooted in entrepreneurial identity. The model is evaluated via covariance-based structural equation modeling with survey data obtained from young adults in Saudi Arabia. This research presents three contributions. This research enhances entrepreneurship studies by recognizing gaming motivation as a non-business precursor to entrepreneurial passion, therefore expanding the comprehension of the situations in which entrepreneurial emotions may arise. Second, it enhances theory by clearly identifying entrepreneurial curiosity as a crucial cognitive mechanism that connects intrinsic motivation to entrepreneurial self-efficacy and affective commitment. Third, by contextualizing the data within Saudi Arabia's youth-focused entrepreneurial revolution, the study offers insights into how digitally integrated behaviors might be utilized to enhance entrepreneurial human capital development. These contributions significantly increase comprehension of the psychological underpinnings that underpin entrepreneurial passion in technology-driven environments.

2 Literature review

Entrepreneurial passion is typically characterized as a robust, affirmative emotional condition linked to entrepreneurial endeavors that are integral to an individual's personality (Cardon et al., 2013; Murnieks and Cardon, 2023). A significant amount of research indicates that entrepreneurial enthusiasm is essential for opportunity exploration, tenacity in the face of uncertainty, and venture performance (Murnieks et al., 2014). Initial studies predominantly focused on the effects of entrepreneurial passion; however contemporary research has redirected its focus to exploring its psychological underpinnings. This body of research indicates that entrepreneurial enthusiasm does not arise spontaneously; instead, it evolves with prolonged cognitive involvement and perceived proficiency in the entrepreneurial field (Murnieks and Cardon, 2023). Identity-based theories contend that passion emerges when individuals perceive entrepreneurial activities as significant and

achievable elements of their self-concept (Murnieks and Cardon, 2023). These insights suggest that the origins of entrepreneurial passion are fundamentally embedded in motivational and cognitive processes that precede entrepreneurial activity.

In this broader perspective, Self-Determination Theory provides a crucial basis for comprehending how intrinsic motivation can catalyze these processes. Self-Determination Theory asserts that intrinsically motivated conduct arises when activities fulfill fundamental psychological requirements for autonomy, competence, and relatedness (Ryan and Deci, 2020). Digital gaming environments are intentionally built to fulfill these requirements via voluntary engagement, incremental challenges, prompt feedback, and social interaction. Consequently, gaming motivation is frequently intrinsically motivated and maintained over time (Ryan et al., 2006; Oliveira et al., 2023). Studies in psychology and education indicate that intrinsically motivated engagement fosters exploration, persistence, and learning, and that motivational orientations established in one domain can affect exploration behavior in other domains (Grant and Berry, 2011). From this viewpoint, gaming motivation constitutes a recurrent motivational experience that may influence wider cognitive and emotional patterns pertinent to entrepreneurship, rather than simply serving as a type of leisure consumption.

The Information-Gap Theory elucidates how intrinsically motivated engagement fosters curiosity when individuals recognize discrepancies between their existing knowledge and their desired comprehension (Loewenstein, 1994). Curiosity has garnered significant attention in entrepreneurial studies as a crucial catalyst for opportunity exploration, knowledge retrieval, and experimentation (Marvel and Lumpkin, 2007; Peljko and Auer Antončič, 2022). Empirical research indicates that entrepreneurial curiosity fosters learning, innovation, and the identification of opportunities (Adomako et al., 2024). Curiosity significantly fosters sustained cognitive engagement with entrepreneurial material, encouraging individuals to continuously explore, reflect, and acquire knowledge. Recent data indicates that sustained participation significantly contributes to the formation of affective attachment to entrepreneurial activities (Heinemann et al., 2022). Thus, entrepreneurial curiosity can be perceived not merely as an indicator of cognitive results, but also as a psychological mechanism that converts motivational engagement into entrepreneurial enthusiasm.

Social Cognitive Theory enhances this viewpoint by emphasizing the significance of self-efficacy in influencing behavior, perseverance, and emotional engagement (Bandura, 1997). Entrepreneurial self-efficacy denotes individuals' confidence in their capacity to execute entrepreneurial tasks effectively and has been consistently associated with entrepreneurial intents, perseverance, and performance (Newman et al., 2019; Glosenberget al., 2022). Furthermore, new research demonstrates that self-efficacy is pivotal in the development of entrepreneurial passion. Identity-based theories propose that perceived capacity allows individuals to assimilate the entrepreneurial role into their identity, thus converting cognitive engagement into emotional commitment (Murnieks and Cardon, 2023). Individuals who view themselves as capable of entrepreneurial activity are consequently more inclined to cultivate a robust emotional attachment and excitement for business endeavors (Murnieks and Cardon, 2023). In this context, entrepreneurial self-efficacy serves as a psychological conduit that transforms curiosity-driven exploration into entrepreneurial passion.

The present material collectively indicates a consistent psychological process that underpins the development of entrepreneurial enthusiasm. Intrinsic motivation promotes enduring engagement and investigation (Ryan and Deci, 2020), which Information-Gap Theory anticipates will emerge as curiosity in uncertain situations (Loewenstein, 1994). Curiosity fosters learning and problem-solving, producing mastery experiences that improve perceived competence (Bandura, 1997). These beliefs in capabilities foster emotional engagement in entrepreneurial endeavors and promote the development of entrepreneurial passion rooted in identity (Murnieks and Cardon, 2023). Digital gaming closely reflects this progression. Games are designed to foster intrinsic motivation, encourage curiosity-driven discovery, and facilitate repeating mastering cycles through feedback and challenge. These characteristics indicate that gaming motivation may engage the same cognitive processes—entrepreneurial curiosity and entrepreneurial self-efficacy—that previous studies have recognized as precursors to entrepreneurial passion. Notwithstanding this theoretical congruence, current entrepreneurship research has failed to include these systems into a cohesive framework elucidating how gaming incentive influences entrepreneurial enthusiasm. Most previous research has focused on gaming in terms of skills or cognition, rather than as a source of motivational experiences that can catalyze the development of passion. This work fills the gap by conceptualizing entrepreneurial curiosity and entrepreneurial self-efficacy as sequential mediators, offering a theoretically informed explanation of how non-business digital behavior may foster the creation of entrepreneurial passion. This expands current studies on entrepreneurial passion and provides a more thorough comprehension of its psychological foundations.

3 Hypothesis development

3.1 Direct effect hypothesis

Research on Self-Determination Theory (SDT) indicates that intrinsically motivated digital gameplay fosters exploratory engagement and information seeking, which are linked to autonomy and competence pursuits. These conditions consistently activate epistemic curiosity when there are noticeable informational gaps (Ryan and Deci, 2020). Kraus et al. (2022) discovered that video gamers exhibiting a strong entrepreneurial mindset show improved ability to recognize opportunities, especially in shooting games. Also observed that specific game activities could promote the development of entrepreneurial cognition. The most pertinent evidence is provided by Heinemann et al. (2022), highlighting that epistemic curiosity, akin to gaming-driven curiosity, serves as a significant predictor of entrepreneurial outcomes. When considered collectively, gameplay driven by intrinsic motivation is expected to extend to an interest in understanding how concepts evolve into business ventures. Meta analytic and systematic reviews indicate that gamified environments modestly but consistently enhance intrinsic motivation and exploration tendencies (Li et al., 2024). Recent evidence from esports and competitive gaming documents the transfer of higher-order soft skills, such as strategic exploration, into non-game domains (Zhong et al., 2025). In the realm of entrepreneurship, recent studies highlight entrepreneurial curiosity as a unique catalyst for opportunity exploration and innovation (Peljko and Auer Antončič, 2022; Adomako et al., 2024).

Thus,

H1: Gaming motivation positively influences entrepreneurial curiosity.

Experiences of mastery, iterative feedback, and progressive challenges—characteristics inherent to modern gaming—serve as the most significant precursors to domain-specific self-efficacy (consistent with Bandura's mechanisms) and have been consistently documented in contexts of game-based learning (Ryan and Deci, 2020; Checa-Romero and Gimenez-Lozano, 2025). Findings from serious and competitive gaming indicate enhanced problem-solving confidence and performance, suggesting a transfer of efficacy across contexts due to shared cognitive demands (Zhong et al., 2025; Hoffelner et al., 2025). Recent studies in entrepreneurship highlight the significance of entrepreneurial self-efficacy (ESE) as a strong predictor of intentions and success across various contexts (Taneja et al., 2024; Ye and Kang, 2025). Daniel et al. (2024) illustrated that a business simulation game can enhance students' self-efficacy and motivation. Daniel et al. (2024) provided additional evidence that game-based learning improves entrepreneurial self-efficacy, although the impact differs based on factors such as prior gaming experience, gender, and field of study. The findings suggest a noteworthy relationship between gaming and entrepreneurial self-efficacy, yet they also emphasize that the effects are not consistent across the board. The effectiveness is influenced by the design of the game, the characteristics of the students, and the learning context involved. Although the evidence is encouraging, further investigation is essential to comprehensively grasp the specific mechanisms through which gaming motivation influences entrepreneurial self-efficacy.

Consequently, enhanced gaming motivation ought to correspond with an increased number of mastery cycles and a greater perceived ability for entrepreneurial tasks.

H2: Gaming motivation positively influences entrepreneurial self-efficacy.

The drive for curiosity enhances the search for information, broadens knowledge, and improves metacognitive monitoring. These factors work together to diminish the perception of task difficulty and bolster beliefs in one's capabilities, as supported by Loewenstein's logic and contemporary studies in entrepreneurial and innovation contexts (Peljko and Auer Antončič, 2022; Adomako et al., 2024). Simultaneously, studies in education reveal that activities inspired by games and designed to spark curiosity improve metacognitive skills—processes recognized for strengthening self-efficacy (Checa-Romero and Gimenez-Lozano, 2025). The study offers strong support for this connection. Jeraj and Marič (2013) carried out a multi-country survey in Slovenia and the United States, revealing that entrepreneurial curiosity positively influences self-efficacy in executing entrepreneurial tasks. Prihatsanti (2018) provided additional validation for this, discovering a significant positive correlation between entrepreneurial curiosity and self-efficacy among 116 college students initiating businesses. The findings of Chang et al. (2025) further reinforce this link, indicating that curiosity serves as a catalyst for entrepreneurial self-efficacy. Although the studies show consistency, conducting additional investigations with larger

and more diverse samples could enhance the robustness of these findings.

Consequently, entrepreneurial curiosity is expected to enhance entrepreneurial self-efficacy by broadening knowledge pertinent to ventures and increasing perceived control.

H3: Entrepreneurial curiosity positively influences entrepreneurial self-efficacy.

Recent reviews and empirical studies consistently highlight ESE as a key factor influencing essential entrepreneurial outcomes—intentions, persistence, and performance—partly through emotional investment and the internalization of identity (Gloesberg et al., 2022; Taneja et al., 2024). Since enthusiasm demonstrates a strong positive connection to ventured activities, elevated entrepreneurial self-efficacy is likely to enhance expected enjoyment and alignment of values, thereby intensifying passion. Indeed, a significant number of studies indicate a contrary relationship: it seems that entrepreneurial passion has an impact on self-efficacy. Norena-Chavez and Thalassinis (2022) discovered that “entrepreneurial passion has a positive influence on entrepreneurial self-efficacy.” In a similar vein, Neneh (2022) found that “entrepreneurial passion positively affects entrepreneurial self-efficacy.” (Sun, 2020) provided additional evidence that self-efficacy serves as a mediator in the relationship between entrepreneurial passion and entrepreneurial behavior, indicating that it is passion that enhances self-efficacy rather than the other way around. The sources consistently demonstrate a relationship between these constructs, primarily indicating that passion influences self-efficacy, rather than self-efficacy driving passion. Further investigation is required to definitively confirm the initial hypothesis.

This article seeks to verify that entrepreneurial self-efficacy positively influences entrepreneurial passion; therefore, the hypothesis is outlined below.

H4: Entrepreneurial self-efficacy positively influences entrepreneurial passion.

The pursuit of knowledge brings inherent satisfaction through exploration and resolution of challenges, promoting ongoing involvement in tasks, which is essential for emotional connection. Current studies in entrepreneurship link curiosity to innovative actions and the creation of meaning within venture environments (Peljko and Auer Antončič, 2022; Adomako et al., 2024). As curiosity draws individuals into deeper exploration of entrepreneurial content, it should directly cultivate positive effects and identification with entrepreneurial roles, even net of capability beliefs. Zou (2022) discovered that curiosity plays a positive and significant role in moderating the connection between entrepreneurial passion and entrepreneurial learning. Heinemann et al. (2022) offers further insights, emphasizing that epistemic curiosity is “a crucial characteristic for successful entrepreneurs” and significantly impacts entrepreneurial results.

Nonetheless, the evidence is mainly indirect and serves a moderating role, rather than providing a direct causal examination of the hypothesis. Hence, this article proposes a direct connection.

H5: Entrepreneurial curiosity positively influences entrepreneurial passion.

While gaming can provoke intense emotions, recent reviews highlight the importance of context in understanding intrinsic motivation (Ryan and Deci, 2020). The connection between entrepreneurship and personal identity is crucial; without a cognitive shift towards beliefs and objectives relevant to the venture, mere motivation from gaming is unlikely to consistently foster entrepreneurial passion. Recent meta-evidence on gamification indicates slight changes in intrinsic motivation while highlighting the importance of aligning mechanisms (Li et al., 2024). Although certain studies indicate possible links between gaming and entrepreneurial mindsets, none explicitly examine the relationship outlined in the hypothesis. Kraus et al. (2022) discovered that video gaming can improve opportunity recognition abilities, while (Fuster et al., 2014) showed that gaming passion encompasses various motivational patterns. Pan et al. (2025) conducted an in-depth examination of gaming motivation types, revealing various motivational pathways. Nonetheless, there is a lack of sources that offer a direct and thorough examination of the impact of gaming motivation on entrepreneurial passion. Further focused investigation is essential to definitively confirm or disprove this hypothesis. Consequently, we anticipate that there will be no significant direct pathway once cognitive mediators are introduced.

H6: Gaming motivation does not have a significant direct effect on entrepreneurial passion.

3.2 Indirect effect hypothesis

Self-Determination Theory indicates that intrinsically motivated gaming fosters exploratory engagement (Ryan and Deci, 2020; Oliveira et al., 2023), which Information-Gap Theory predicts will be expressed as increased epistemic curiosity (Loewenstein, 1994; Adomako et al., 2024). Through Social Cognitive Theory, this curiosity-driven exploratory learning enhances perceived capability and mastery beliefs (Bandura, 1997), producing higher entrepreneurial self-efficacy (Gloesenberg et al., 2022; Newman et al., 2019). Identity-based theories of entrepreneurial passion argue that positive effect emerges when individuals see themselves as both interested and capable within an entrepreneurial domain (Murnieks and Cardon, 2023). Therefore, gaming motivation should influence entrepreneurial passion only indirectly, via a sequential cognitive chain in which gaming motivation activates entrepreneurial curiosity, curiosity elevates entrepreneurial self-efficacy, and self-efficacy finally generates entrepreneurial passion.

H7: Gaming motivation indirectly increases entrepreneurial passion through a sequential mediation mechanism via entrepreneurial curiosity and entrepreneurial self-efficacy.

Self-Determination Theory indicates that intrinsic motivation leads to ongoing exploratory effort (Ryan and Deci, 2020; Oliveira et al., 2023). Information-Gap Theory suggests that these exploratory tendencies emerge as epistemic curiosity when individuals face unknowns (Loewenstein, 1994; Adomako et al., 2024). The act of being curious inherently brings rewards and fosters positive emotional experiences associated with exploration, education, and the creation of significance. Identity-based passion perspectives suggest that epistemic engagement can lead to emotionally balanced

entrepreneurial commitment when the explored domain holds personal significance (Murnieks and Cardon, 2023). The existing evidence offers some backing for the idea that gaming motivation may indirectly enhance entrepreneurial passion through a sequential mediation process involving entrepreneurial curiosity and self-efficacy; however, these sources do not fully validate this hypothesis. Syed et al. (2020), discovered that curiosity can enhance the connection between entrepreneurial passion and intentions. Neneh (2022) illustrated how entrepreneurial self-efficacy can serve as a mediator in the relationship between entrepreneurial passion and intention. Sun (2020) demonstrated that self-efficacy completely mediates the relationship between entrepreneurial passion and entrepreneurial behavior.

Consequently, curiosity is expected to exert a direct positive influence on entrepreneurial passion, independent of capability beliefs (ESE).

H8: Gaming motivation indirectly increases entrepreneurial passion through entrepreneurial curiosity.

Gaming environments designed with autonomy, challenge, feedback, and mastery cycles serve as the most significant sources of self-efficacy identified in Social Cognitive Theory (Bandura, 1997). Recent findings indicate that gamified mastery experiences enhance perceived competence and domain confidence (Gloesenberg et al., 2022; Newman et al., 2019). In the realm of entrepreneurship, the theory of identity-based passion suggests that individuals cultivate passion when they view themselves as skilled and proficient within the entrepreneurial landscape (Murnieks and Cardon, 2023). Consequently, the motivation derived from gaming is likely to enhance entrepreneurial passion. The available sources fail to offer direct evidence that definitively supports the hypothesis suggesting that gaming motivation indirectly enhances entrepreneurial passion via entrepreneurial self-efficacy. Although the sources provide compelling evidence that entrepreneurial self-efficacy can mediate the relationships between passion and entrepreneurial outcomes, there is a notable absence of focus on gaming motivation. Sun (2020) discovered that self-efficacy completely mediates the impact of entrepreneurial passion on behavior, while Neneh (2022) validated a positive indirect effect via self-efficacy.

Thus, this research proposes an indirect effect of entrepreneurial self-efficacy on entrepreneurial passion.

H9: Gaming motivation indirectly increases entrepreneurial passion through entrepreneurial self-efficacy.

The Information-Gap Theory posits that curiosity serves as a catalyst for exploratory search and the acquisition of knowledge (Loewenstein, 1994; Adomako et al., 2024). The acquisition of this knowledge clarifies uncertainties and enhances the sense of control, which is recognized as fundamental factors influencing self-efficacy according to Social Cognitive Theory (Bandura, 1997; Newman et al., 2019). Research focused on identity-based passion reveals that beliefs in one's capabilities lead to enhanced emotional commitment and passion (Murnieks and Cardon, 2023). The findings provide some support for the hypothesis that entrepreneurial curiosity has an indirect effect on entrepreneurial passion via entrepreneurial self-efficacy, though the empirical evidence is moderate. Prihatsanti (2018)

identified a noteworthy positive correlation between entrepreneurial curiosity and entrepreneurial self-efficacy in college students. Syed et al. (2020), illustrated that curiosity enhances the connection between entrepreneurial passion and intentions. Neneh (2022) established that entrepreneurial self-efficacy serves as a positive mediator in the relationship between passion and entrepreneurial intention. Although there is no singular study that directly examines the entire hypothesis pathway, the collective evidence indicates a credible indirect relationship. Jeraj and Marič (2013) highlighted that entrepreneurial curiosity has a positive effect on self-efficacy when engaging in entrepreneurial tasks.

Therefore, curiosity is likely to boost entrepreneurial passion in an indirect manner, primarily by first improving entrepreneurial self-efficacy.

H10: Entrepreneurial curiosity indirectly increases entrepreneurial passion through entrepreneurial self-efficacy.

Summary of hypothesis

The diagram in Figure 1 illustrates the proposed structural model along with the hypotheses that were tested in the study. This figure illustrates the theoretical framework, showcasing the connections between latent variables including gaming motivation (Gm), entrepreneurial self-efficacy (Ese), entrepreneurial curiosity (Ecur), and entrepreneurial passion (Epass). To maintain theoretical clarity while ensuring analytical completeness, the proposed hypotheses are structured hierarchically. Hypothesis H7 represents the core theory-testing proposition, capturing the primary sequential mediation mechanism linking gaming motivation to entrepreneurial passion via entrepreneurial curiosity and entrepreneurial self-efficacy. Hypotheses H8–H10 are specified as supplementary indirect paths to examine alternative and partial mediation structures and to assess the robustness of the proposed cognitive process. This approach enables a parsimonious evaluation of the central theoretical model while providing additional insights into the distinct mediating roles of curiosity and self-efficacy.

4 Methodology

4.1 Research design and data collection

This investigation employs a quantitative, cross-sectional research framework. A structural equation modelling (SEM) approach was

utilized to empirically examine the proposed sequential mediation model that connects gaming motivation, entrepreneurial curiosity, entrepreneurial self-efficacy, and entrepreneurial passion. SEM is suitable as the theoretical model encompasses various latent constructs, indirect effects, and the simultaneous estimation of direct and mediated paths, aspects that single-equation regression models cannot sufficiently analyze. The methodology employed was structural equation modelling (SEM) due to its ability to simultaneously assess intricate, multi-path relationships and mediations (Hair et al., 2019).

4.2 Sampling and procedure

A systematic, self-directed online survey tool was employed to gather data from 435 participants. The study was executed from March 2025 to September 2025, concentrating on young adults residing in Saudi Arabia. A non-probability purposive sampling method was utilized to recruit participants who satisfied the study's inclusion criteria. The study specifically focused on young people in Saudi Arabia who are exposed to digital settings, as this demographic is most pertinent for analyzing the correlation between gaming motivation and entrepreneurial passion. Participants were enlisted via academic networks and social media sites frequently utilized by young individuals. This sampling method is suitable for theory-driven research aimed at investigating psychological mechanisms inside a particular population, rather than producing population-level estimations. The sample size exceeds the minimum requirements for SEM using maximum likelihood estimate and surpasses the recommended ratios for each latent variable (Kline, 2023). The sample size is adequate for detecting indirect effects in many mediator models. A secure web-based survey and structured questionnaire collected data. Before its introduction, 35 gaming experts completed a pilot test of the instrument to evaluate its clarity, language, and comprehension. Feedback on the pilot research altered the terminology. The survey incorporated translation and back translation to guarantee linguistic and conceptual equivalence in Arabic and English (Brislin, 1980). The final poll link was distributed via online gaming communities, educational digital platforms, and youth-centric social media. Screening questions confirmed digital gameplay in the prior year. Study participants were anonymous, voluntary, and could withdraw at any time. The mean time required to complete the questionnaire was 8 to 10 min.

4.3 Measurement of the constructs

The data analysis was conducted using Structural Equation Modelling (SEM) via Jamovi. SEM was chosen for its capability to handle complex models with multiple mediations, its robustness against non-normal data, and its focus on predictive accuracy (Hair et al., 2019). All constructs were evaluated using well-established multi-item scales derived from prior research, adapted to suit the context of Saudi Arabia. All latent variables in this study were assessed through multi-item scales derived from recognized instruments in previous peer-reviewed studies. Each item was evaluated using a 5-point Likert scale, where 1 represents Strongly Disagree and 5 represents Strongly Agree. Table 1 illustrates the measurement scales utilized in this study.

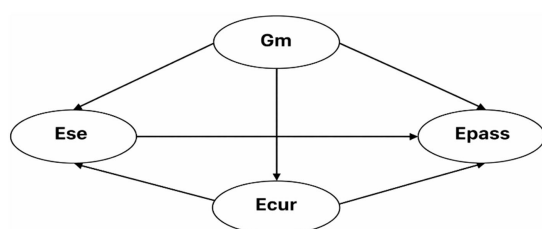


FIGURE 1
Model and hypotheses.

Gaming motivation was assessed through an adapted scale that measures intrinsic engagement and enjoyment in gaming activities. Entrepreneurial curiosity was assessed through items that captured interest in exploring entrepreneurial opportunities and processes. Entrepreneurial self-efficacy was evaluated utilizing a validated instrument that measures confidence in executing entrepreneurial activities. Entrepreneurial passion was assessed through items that gauged intense positive sentiments associated with entrepreneurial pursuits.

4.4 Ethical considerations

Participation was completely voluntary, with a strong emphasis on anonymity, ensuring that no identifying personal data was gathered. Participants were made aware of the scholarly objectives of the research. The study design adhered to established ethical guidelines for behavioral research with human participants.

5 Results

The results are presented in three stages: assessment of the measurement model, evaluation of the structural relationships, and examination of indirect and mediation effects.

5.1 Descriptive statistics

The final dataset consisted of 435 verified replies obtained from young adults in Saudi Arabia. Table 2 summarizes the demographic characteristics of the respondents. The data indicates that 99 respondents claimed no participation in digital gaming activities, while the remaining participants classified themselves as avid gamers. Since gaming motivation is a fundamental exogenous element in the proposed model, responses from non-gamers were preserved for descriptive analysis but omitted from the structural equation modeling. This strategy guaranteed conceptual coherence in evaluating the proposed linkages while preserving transparency concerning sample composition. To enhance clarity and uniformity in demographic reporting, age was classified into grouped intervals instead of being reported as mean or median values. Participants were categorized into age brackets (e.g., 18–21, 22–25, 26–29, and 30 years and older), ensuring

consistency in the presentation of age with other categorical characteristics detailed in Table 2.

5.2 Common method bias assessment

The assessment of potential common method bias was conducted through Harman's single-factor test, as outlined by Podsakoff and Organ (1986). All measurement items were subjected to an unrotated principal component analysis. The findings indicated the existence of several factors, with the primary factor representing 43.516% of the overall variance (Table 3). The value being below the commonly accepted threshold of 50% (Podsakoff et al., 2003) indicates that common method bias is unlikely to have a significant impact on the study results.

5.3 Measurement model assessment

The measurement model demonstrates strong indicator reliability and construct validity across all latent variables. As reported in Table 4, all standardized factor loadings exceed 0.70 and are statistically significant ($p < 0.001$). Various items define gaming motivation, entrepreneurial self-efficacy, entrepreneurial curiosity, and entrepreneurial passion, with average factor loadings exceeding 0.70 and p -values achieving statistical significance ($p < 0.001$). Gaming motivation is measured by three variables, whereas entrepreneurial self-efficacy and curiosity are measured by four. We also measure entrepreneurial passion with three indicators. High and substantial factor loadings show that the observed items accurately represent their underlying components. Table 4 shows that the measurement model is appropriately stated and that the latent variables are adequately represented by their indicators, confirming the measurement structure's reliability and validity (Hair et al., 2019; Kline, 2023).

Construction quality was assessed before structural linkages. The measurement model appears reliable and valid. Our latent constructs had good internal consistency and convergent validity. Entrepreneurial self-efficacy, curiosity, and passion have strong internal consistency, according to Table 5. The average variance extracted (AVE) values and Cronbach's alpha, ordinal alpha, and omega coefficients exceed 0.70. Results show that these constructs' measurement scales match their theoretical dimensions. Despite a lower Cronbach's alpha ($\alpha = 0.617$), the omega coefficient ($\omega_1 = 0.801$) and AVE (0.563) exceed recommended cut-off values, indicating construct reliability and convergent validity. Using composite and ordinal-based reliability

TABLE 1 Measurement scales.

Construct	Source	Sample items	Scale
Gaming motivation	Ryan et al., 2006	I play games to achieve goals and earn rewards; I enjoy exploring game environments and stories	5-point Likert
Entrepreneurial curiosity		I enjoy learning how business operate; I like exploring business models and entrepreneurial stories	5-point Likert
Entrepreneurial self-efficacy		I can identify new business opportunities; I can manage business-related risks effectively	5-point Likert
Entrepreneurial passion	Cardon et al. (2013)	I am passionate about starting a business; I enjoy developing and improving business ideas	5-point Likert

TABLE 2 Descriptive measures of the sample data.

Category	Subcategory	Frequency (N)	Percentage (%)
Gender	Female	261	62.4%
	Male	157	37.6%
Age	under 18	13	3.1%
	18–24	273	65.3%
	25–34	95	22.7%
	35–44	28	6.7%
	45–54	9	2.2%
Level of study	Undergraduate	409	97.8%
	Postgraduate	9	2.2%

TABLE 3 Initial eigenvalues from Harman's single-factor test.

Component	Eigenvalue	% of variance	Cumulative %
1	6.092	43.516	43.516
2	1.754	12.529	56.045
3	1.150	8.211	64.256
4	0.843	6.020	70.276
5	0.707	5.050	75.326
6	0.573	4.094	79.420
7	0.543	3.878	83.298
8	0.463	3.305	86.603
9	0.415	2.965	89.568
10	0.374	2.670	92.239
11	0.338	2.411	94.649
12	0.300	2.139	96.789
13	0.250	1.785	98.574
14	0.200	1.426	100.000

criteria, the construction is evaluated consistently. In exploratory research, Cronbach's alpha values between 0.60 and 0.70 are acceptable when supported by improved composite reliability and ordinal alpha values (Gadermann et al., 2012). The measurements in Table 5 support the measurement model, allowing structural model analysis to continue.

After applying the Heterotrait–Monotrait (HTMT) ratio criterion, all latent constructs had appropriate discriminant validity. As indicated by Table 6, all concept pairs had HTMT values below the proposed threshold, demonstrating their empirical distinctiveness. The measurement model has discriminant validity with HTMT ratios from 0.232 (gaming motivation–entrepreneurial curiosity) to 0.868 (entrepreneurial curiosity–passion). Between entrepreneurial curiosity and passion, the HTMT value is near the conservative threshold but below the commonly known cutoff of 0.90 for conceptually comparable categories (Henseler et al., 2015; Hair et al., 2022). According to theory, entrepreneurial curiosity and passion are closely related although still different psychological phenomena. HTMT results in Table 6 demonstrate that latent constructs represent distinct conceptual domains, validating the measuring paradigm and enabling structural analysis.

5.4 Structural model evaluation

The structural equation model exhibited a satisfactory fit to the observed data. The global fit indices presented in Table 7 demonstrate that the proposed model effectively captures the relationships among the latent constructs. While the chi-square statistic was significant ($\chi^2 = 136.051$, $df = 68$, $p < 0.001$), this result is anticipated in models analyzed with larger samples and thus does not, on its own, suggest inadequate model fit (Barrett, 2007; West et al., 2012). The fit of the model was additionally corroborated by various complementary indices. The standardized root means square residual (SRMR = 0.044) and the root means square error of approximation (RMSEA = 0.048) are both below the recommended threshold of 0.05, suggesting a close fit between the proposed model and the observed covariance matrix. Furthermore, the goodness-of-fit index (GFI = 0.996), comparative fit index (CFI = 0.997), and Tucker–Lewis index (TLI = 0.996) all surpass the conservative threshold of 0.95, indicating outstanding incremental fit (Hu and Bentler, 1999). The fit statistics presented in Table 7 collectively indicate robust support for the structural model, demonstrating that it is well specified and effectively encapsulates the underlying relationships among gaming motivation, entrepreneurial curiosity, entrepreneurial self-efficacy, and entrepreneurial passion. The satisfactory model fit reinforces the validity of the subsequent hypothesis testing and the interpretation of the structural path coefficients.

5.5 Direct effects

The structural model provides strong support for the proposed theoretical relationships, with all hypothesized paths—except the direct effect of gaming motivation on entrepreneurial passion—reaching statistical significance. As shown in Table 8, gaming motivation is positively associated with entrepreneurial curiosity ($\beta = 0.234$, $p = 0.004$) and entrepreneurial self-efficacy ($\beta = 0.268$, $p < 0.001$). This shows that intrinsically motivated gaming increases exploration and entrepreneurial confidence. Research shows that entrepreneurial curiosity significantly improves self-efficacy ($\beta = 0.587$, $p < 0.001$), suggesting that curiosity-driven investigation promotes perceived entrepreneurial ability. Hence, entrepreneurial self-efficacy positively impacted entrepreneurial passion ($\beta = 0.434$, $p < 0.001$), emphasizing the significance of perceived capacity in shaping entrepreneurial emotions. The study found a significant correlation between entrepreneurial curiosity and passion ($\beta = 0.606$, $p < 0.001$), indicating that cognitive engagement with entrepreneurial concepts might foster passion independently. Interestingly, gaming motivation did not directly impact entrepreneurial enthusiasm ($\beta = -0.020$, $p = 0.523$). This supports the theory that cognitive mechanisms mediate the effect of gaming motivation on passion. Consistent with the structural estimates (Table 8) the direct effects in support the sequential structure of the proposed model, laying the groundwork for the mediation analysis.

The estimated structural relationships and their significance levels are visually summarized in Figure 2, which provides an integrated representation of the empirical findings.

TABLE 4 Factor loadings.

Latent	Observed	Estimate	SE	β	z	p
Gm	Gm1: I play games to achieve goals and earn rewards.	1.000	0.000	0.878		
	Gm2: I enjoy exploring game environments and stories.	0.993	0.117	0.872	8.523	<0.001
	Gm3: I play games to interact with other players.	0.453	0.125	0.398	3.627	<0.001
Ese	Ese1: I can identify new business opportunities.	1.000	0.000	0.733		
	Ese2: I can manage business-related risks effectively.	1.093	0.043	0.800	25.373	<0.001
	Ese3: I can develop innovative products or services.	1.068	0.042	0.783	25.295	<0.001
	Ese4: I can lead and motivate others in a business setting.	1.092	0.046	0.800	23.664	<0.001
Ecur	Ecur1: I enjoy learning how businesses operate.	1.000	0.000	0.849		
	Ecur2: I am curious about how ideas become businesses.	1.002	0.027	0.851	36.958	<0.001
	Ecur3: I like exploring business models and entrepreneurial stories.	1.011	0.027	0.858	37.493	<0.001
	Ecur4: I often look for information about startups and innovation.	0.954	0.027	0.810	34.889	<0.001
Epas	Epas1: I am passionate about starting a business.	1.000	0.000	0.814		
	Epas2: I enjoy developing and improving business ideas.	1.096	0.021	0.892	52.025	<0.001
	Epas3: I love solving problems in a business context.	1.075	0.024	0.875	43.993	<0.001

TABLE 5 Reliability indices.

Variable	A	Ordinal α	ω_1	ω_2	ω_3	AVE
Gm	0.617	0.660	0.801	0.801	0.806	0.563
Ese	0.821	0.858	0.825	0.825	0.828	0.608
Ecur	0.855	0.901	0.865	0.865	0.879	0.710
Epas	0.869	0.911	0.822	0.822	0.825	0.742

5.6 Indirect effects and mediation analysis

The mediation analysis indicates that the relationship between gaming motivation and entrepreneurial passion operates primarily through indirect pathways rather than a direct effect. Specifically, the sequential mediation via entrepreneurial curiosity and entrepreneurial self-efficacy is statistically significant ($\beta = 0.060, p = 0.004$), as reported in Table 9. This finding substantiates the proposed cognitive transformation process, in which gaming-related motivation stimulates curiosity-driven exploration, thereby enhancing perceived entrepreneurial capability and ultimately contributing to entrepreneurial passion. Alongside the sequential pathway, gaming motivation demonstrates notable indirect effects on entrepreneurial passion, mediated solely by entrepreneurial curiosity (Gm \rightarrow Ecur \rightarrow Epas; $\beta = 0.142, p = 0.004$) and by entrepreneurial self-efficacy (Gm \rightarrow Ese \rightarrow Epas; $\beta = 0.116, p = 0.001$). The findings suggest that each mediator operates independently to convey the impact of gaming motivation on entrepreneurial passion. Additionally, it was observed that entrepreneurial curiosity has a significant indirect influence on entrepreneurial passion through the mediating role of entrepreneurial self-efficacy (Ecur \rightarrow Ese \rightarrow Epas; $\beta = 0.255, p < 0.001$), thereby emphasizing the sequential connection between exploration and perceived capability. The indirect effects presented in Table 9 collectively offer strong support for the pivotal function of mediation within the proposed model. The findings indicate that gaming motivation influences entrepreneurial passion via various cognitive pathways, rather than through a straightforward effect. This highlights

the significance of entrepreneurial curiosity and self-efficacy as essential psychological mechanisms.

Taken together, these findings support the proposed cognitive pathway in which gaming-related motivation translates into entrepreneurial passion only when mediated by curiosity and perceived capability.

5.7 Summary of structural equation modeling results

A condensed summary of the hypothesized correlations, matching test data, and support judgments as shown in Table 10, which is intended to make interpretation easier. The results of the direct and indirect effect assessments are summarized in this table, which also provides an integrated review of the empirical evidence that supports the suggested model.

6 Discussion

This study analyzed the relationship between gaming motivation and entrepreneurial passion, focusing on the mediating effects of entrepreneurial curiosity and self-efficacy. The findings demonstrate a positive correlation between gaming motivation and both entrepreneurial curiosity and entrepreneurial self-efficacy, suggesting that these factors play a significant role in influencing entrepreneurial passion. While prior studies frequently model passion as antecedent to self-efficacy, the present study adopts the reverse ordering for theoretical consistency with Social Cognitive Theory and identity-based passion formation, where perceived capability precedes affective internalization. Research indicates that entrepreneurial passion could enhance self-efficacy over time, suggesting a potentially reciprocal relationship between these concepts. The current research does not assert causal precedence; rather, it examines a theoretically informed directional pathway rooted in social cognitive theory and identity-based perspectives,

TABLE 6 HTMT.

Construct	Gaming motivation (Gm)	Entrepreneurial self-efficacy (Ese)	Entrepreneurial curiosity (Ecur)	Entrepreneurial passion (Epas)
Gm	1.000			
Ese	0.434	1.000		
Ecur	0.232	0.661	1.000	
Epas	0.254	0.802	0.868	1.000

TABLE 7 Model fit indices.

χ^2	Df	p	SRMR	RMSEA	Goodness of Fit Index (GFI)	Comparative Fit Index (CFI)	Tucker-Lewis Index (TLI)
136.051	68	<0.001	0.044	0.048	0.996	0.997	0.996

TABLE 8 Direct effects.

Dep	Pred	Estimate	SE	β	Z	p
Ecur	Gm	0.227	0.078	0.234	2.897	0.004
Ese	Gm	0.223	0.066	0.268	3.382	<0.001
Ese	Ecur	0.507	0.038	0.587	13.221	<0.001
Epas	Ese	0.482	0.047	0.434	10.268	<0.001
Epas	Ecur	0.581	0.035	0.606	16.551	<0.001
Epas	Gm	-0.019	0.029	-0.020	-0.639	0.523

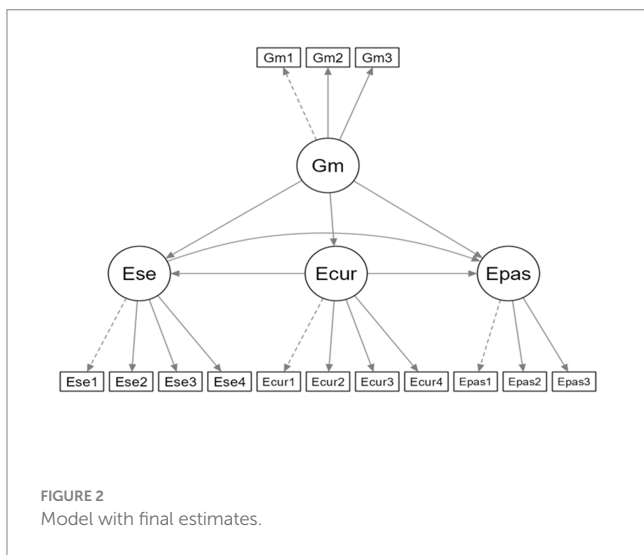


FIGURE 2 Model with final estimates.

TABLE 9 Indirect effects.

Description	Estimate	SE	β	z	p
Gm \Rightarrow Ecur \Rightarrow Ese \Rightarrow Epas	0.055	0.019	0.060	2.905	0.004
Gm \Rightarrow Ecur \Rightarrow Epas	0.132	0.046	0.142	2.864	0.004
Gm \Rightarrow Ese \Rightarrow Epas	0.108	0.033	0.116	3.231	0.001
Ecur \Rightarrow Ese \Rightarrow Epas	0.244	0.026	0.255	9.278	<0.001

where exploratory engagement and perceived capability are posited to precede affective commitment. Future longitudinal or experimental research should focus on examining reciprocal dynamics and exploring alternative causal structures.

The analysis revealed a negative and statistically non-significant relationship between gaming motivation and entrepreneurial passion ($\beta = -0.02, p = 0.523$). This suggests that gaming motivation, in isolation, does not lead to entrepreneurial passion unless intervening cognitive mechanisms are activated. This finding reinforces the notion that entrepreneurial passion is not simply a product of broad intrinsic motivation; rather, it necessitates a focused cognitive involvement, especially through curiosity-driven exploration and a sense of perceived entrepreneurial competence. The results reveal a significant insight regarding the crucial function of entrepreneurial curiosity. Entrepreneurial curiosity was identified as the most significant predictor of entrepreneurial passion, demonstrating a considerable direct effect ($\beta \approx 0.61$) as well as an indirect effect mediated by entrepreneurial self-efficacy. This pattern indicates that engagement driven by curiosity regarding entrepreneurial ideas has the potential to cultivate passion, even prior to individuals completely internalizing entrepreneurial competence. This finding aligns with identity-based perspectives, which define entrepreneurial passion as arising from prolonged cognitive involvement in entrepreneurial activities that individuals view as significant and personal relevant (Cardon et al., 2013; Murnieks and Cardon, 2023). The study empirically illustrates the dual role of curiosity, thereby expanding upon previous research that has mainly focused on curiosity as a catalyst for opportunity recognition or learning, rather than as a foundational mechanism influencing entrepreneurial affect. The findings indicate that while entrepreneurial curiosity and entrepreneurial passion are conceptually related, the HTMT results affirm their empirical distinctiveness, thereby justifying their classification as separate constructs within the model.

The mediating role of entrepreneurial self-efficacy elucidates the process by which motivational experiences in gaming environments are transformed into entrepreneurial passion. The robust correlation observed between self-efficacy and entrepreneurial passion reinforces the principles of Social Cognitive Theory, which asserts that an individual's perceived capabilities influence both their behavioral intentions and their emotional commitment to activities pertinent to their goals (Bandura, 1997). The notable sequential indirect pathway—gaming motivation \rightarrow curiosity \rightarrow self-efficacy \rightarrow entrepreneurial passion—while exhibiting a smaller effect size ($\beta \approx 0.06$), offers theoretically relevant insights suggesting that mastery experiences related to gaming may enhance confidence, which becomes emotionally significant when individuals undertake entrepreneurial activities. This finding supports Bandura's claim that mastery experiences serve as a fundamental source of self-efficacy, highlighting their significance beyond traditional educational or professional contexts.

TABLE 10 Summary of the SEM analysis.

H	Hypothesis	Description (what it actually means)	z	p	Result
H1	Gm → Ecur	Gaming motivation increases entrepreneurial curiosity	2.897	0.004	Supported
H2	Gm → Ese	Gaming motivation strengthens entrepreneurial self-efficacy	3.382	<0.001	Supported
H3	Ecur → Ese	Curiosity about business builds confidence in entrepreneurial self-efficacy	13.221	<0.001	Supported
H4	Ese → Epas	Entrepreneurial self-efficacy fuels passion for starting a venture	10.268	<0.001	Supported
H5	Ecur → Epas (direct)	Curiosity directly ignites entrepreneurial passion	16.551	<0.001	Supported
H6	Gm → Epas (direct)	Gaming motivation alone does not create passion	-0.639	0.523	Not supported
H7	Gm → Ecur → Ese → Epas	Gaming → curiosity → self-efficacy → passion (full chain)	2.905	0.004	Supported
H8	Gm → Ecur → Epas	Gaming sparks curiosity, which then sparks passion	2.864	0.004	Supported
H9	Gm → Ese → Epas	Gaming builds self-efficacy, which then sparks passion	3.231	0.001	Supported
H10	Ecur → Ese → Epas	Curiosity builds self-efficacy, which then builds passion	9.278	<0.001	Supported

The lack of a direct influence of gaming motivation on entrepreneurial passion establishes a significant theoretical boundary condition. Gaming motivation is inherently driven by internal factors; however, it does not necessarily lead to entrepreneurial passion unless it stimulates curiosity and facilitates the development of skills. This outcome sharpens the understanding of both entrepreneurship and digital behavior research by illustrating that motivation by itself does not suffice to produce entrepreneurial effect. Entrepreneurial passion seems to arise from a cognitive transformation process that includes exploration and the perception of capability. This interpretation is consistent with Information-Gap Theory, which highlights the role of curiosity in driving exploration and learning, ultimately enhancing both cognitive and emotional engagement (Loewenstein, 1994). The findings not only validate existing theoretical expectations but also present a new integrative assertion: entrepreneurial passion may stem from non-business digital experiences, particularly when these experiences foster curiosity-driven exploration and bolster self-efficacy. Previous studies have predominantly focused on entrepreneurial passion in structured entrepreneurial environments, including entrepreneurship education, venture exposure, and role modeling. In contrast, the current study illustrates that routine digital activities—particularly gaming—can indirectly influence entrepreneurial passion through significant psychological mechanisms. This enhances the existing knowledge regarding the factors that lead to entrepreneurial passion and provides a more thorough explanation of the development of entrepreneurial emotions in digitally driven societies.

The findings hold significant relevance for initiatives aimed at youth entrepreneurship in Saudi Arabia, particularly when considered from a practical standpoint. The findings indicate that although extensive participation in gaming may not inherently generate entrepreneurial passion, gamified learning environments and challenge-based training programs designed to intentionally cultivate curiosity and self-efficacy could facilitate entrepreneurial growth. Universities, entrepreneurship centers, and policy initiatives have the potential to utilize game-like elements—such as progressive challenges, feedback, experimentation, and autonomy—to create interventions that effectively convert gaming-related motivation into entrepreneurial capability and passion.

7 Conclusions, recommendations, limitations and future research

This study analyzed the contribution of gaming motivation to entrepreneurial passion, emphasizing the psychological mechanisms that underlie this relationship. The analysis employing structural equation modeling, alongside survey data from young adults in Saudi Arabia, reveals that gaming motivation does not have a direct impact on entrepreneurial passion. The effect functions through a sequential cognitive process where gaming motivation triggers entrepreneurial curiosity, boosts entrepreneurial self-efficacy, and ultimately cultivates entrepreneurial passion.

This study provides three fundamental contributions through the empirical validation of this mechanism. This study enhances the field of entrepreneurship research by recognizing gaming motivation as a significant non-business factor influencing entrepreneurial passion, thus expanding the spectrum of daily experiences that can contribute to the development of entrepreneurial affect. Secondly, it enhances theoretical understanding by elucidating the key mediating functions of entrepreneurial curiosity and self-efficacy, demonstrating that entrepreneurial passion arises from ongoing cognitive involvement and perceived competence, rather than solely from motivational intensity. Third, by placing the examination within the Saudi Arabian context, the study offers evidence that is firmly rooted in the specific circumstances of how digitally embedded behaviors can facilitate entrepreneurial growth in youth-driven, digitally focused societies.

7.1 Practical recommendations

The results indicate a range of actionable recommendations for educators, policymakers, and organizations aiming to cultivate entrepreneurial passion in young individuals. Initially, entrepreneurship education and training programs ought to prioritize the development of curiosity and self-efficacy, rather than concentrating solely on motivational appeals or the formation of intentions. Learning environments that promote exploration, experimentation, and problem-solving are more likely to activate cognitive processes fundamental to entrepreneurial passion.

Secondly, learning approaches that incorporate gamification and challenges can be especially effective when they are intentionally crafted to convert the motivation derived from gaming into entrepreneurial exploration and skill development. The integration of progressive challenges, feedback mechanisms, autonomy, and simulated entrepreneurial tasks serves to effectively connect digital engagement with entrepreneurial development.

Third, initiatives aimed at youth entrepreneurship that align with national development strategies particularly those that emphasize innovation and self-employment, must acknowledge that digital leisure activities are not intrinsically entrepreneurial. However, these activities can gain developmental significance when incorporated into structured programs that direct curiosity and confidence towards entrepreneurial objectives.

7.2 Contextual implications for Saudi Arabia

The findings in the context of Saudi Arabia are noteworthy, especially considering the nation's young demographic, significant engagement in digital gaming, and the persistent focus on entrepreneurship and innovation within the framework of national development objectives. The findings suggest that gaming motivation does not directly produce entrepreneurial passion; however, it can act as a significant precursor by stimulating entrepreneurial curiosity and enhancing self-efficacy. The widespread prevalence of gaming among Saudi youth indicates a potential developmental resource that could be effectively utilized through organized educational and training frameworks. Incorporating game-inspired pedagogical elements—such as progressive challenges, feedback mechanisms, and experiential simulations—could provide significant advantages for universities, entrepreneurship centers, and youth-oriented programs in Saudi Arabia. These elements are designed to intentionally foster curiosity-driven exploration and build confidence. These approaches correspond with national initiatives aimed at enhancing entrepreneurial readiness and developing human capital. They also support the study's main conclusion that entrepreneurial passion arises from intentional cognitive and experiential processes, rather than solely from digital interactions.

7.3 Limitations and future research

It is important to recognize several limitations. The conceptualization of gaming motivation was approached as a singular construct, aimed at encapsulating individuals' overall intrinsic involvement in gaming activities, rather than delineating separate motivational profiles. This approach aligns with previous studies on overall gaming engagement; however, the lower factor loading of the social interaction item indicates possible variability within the construct. The achievement and mastery components of gaming motivation appear to hold greater significance for entrepreneurial outcomes compared to experiences driven by social interaction in gaming. Accordingly, the findings should be interpreted as reflecting general intrinsic gaming engagement rather than specific motivational subtypes. Future studies may gain insights by utilizing multidimensional

gaming motivation frameworks to clarify the distinct impacts of achievement, immersion, and social motivations on entrepreneurial cognition and affect. The collection of data through a self-reported survey introduces the possibility of common method variance, which cannot be completely dismissed. A range of procedural remedies was put in place to address this risk, such as ensuring anonymity, employing psychologically distinct measurement sections, and utilizing scales that have been previously validated. A Harman's single-factor test was performed, revealing that no single factor explained a substantial portion of the variance, indicating that common method bias is probably not a major issue. Future research should consider employing multi-source or longitudinal designs to mitigate potential method-related bias more effectively. The cross-sectional design restricts the ability to draw causal conclusions, while purposive sampling limits the applicability of the results to a broader context. Future research may utilize longitudinal or experimental designs to investigate the progression of gaming-related motivational experiences into entrepreneurial cognition and passion over time. Additional research may investigate the potential for analogous mechanisms to function in various cultural or institutional settings, as well as across diverse types of digital engagement beyond the realm of gaming. This study presents a well-structured and evidence-based explanation of the indirect relationship between gaming motivation and entrepreneurial passion, shedding light on the psychological underpinnings of entrepreneurial growth in modern digital contexts.

Data availability statement

The datasets generated for this study are not publicly available due to ethical and privacy considerations related to the protection of participants' identities. The data are available from the corresponding author upon reasonable request.

Ethics statement

The research involved anonymous, voluntary participation and adhered to established ethical guidelines for behavioral research with human participants. No identifiable human images are included in the article.

Author contributions

AM: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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