

Social Media and Entrepreneurial Thinking: The Mediating Role of Motivation among University Students

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ABSTRACT

This study examines how social media relates to entrepreneurial thinking among university students and clarifies the role of motivation using established psychological frameworks. Drawing on Self-Determination Theory and Social Cognitive Theory, the research models motivation as a pathway through which social media engagement is associated with the dimensions of entrepreneurial thinking. A cross-sectional survey of 321 students at a public Algerian university was analysed with partial least squares structural equation modelling (PLS-SEM) to test direct, mediating, and sequential pathways among social media use, motivation, five entrepreneurial thinking dimensions (opportunity identification/exploitation, innovation/creativity, resource mobilisation/management, adaptability/learning, growth mindset/self-efficacy), and an overall social media-related entrepreneurial thinking construct. The results indicate that social media use shows modest direct associations with overall entrepreneurial thinking, while motivation exhibits a stronger association and functions as the primary mediator. Among the thinking dimensions, opportunity identification/exploitation and adaptability/learning, but not innovation/creativity, resource mobilisation/management, or growth mindset/self-efficacy, transmit the association between social media and overall entrepreneurial thinking; sequential pathways (social media → motivation → opportunity/adaptability → overall thinking) are supported. These results suggest that educational interventions may be more effective when they first nurture students' autonomy, competence, and relatedness and then channel engagement toward opportunity scanning and adaptive learning. Limitations include the single-university context, reliance on self-reported measures, and the cross-sectional design, which constrain generalisability and causal inference; future research should employ longitudinal, multi-context, and platform-differentiated approaches.

KEYWORDS: *entrepreneurial thinking, motivation, pls-sem, social media, university students*

JEL CLASSIFICATION: *I23, L26, M13, O33*

1. INTRODUCTION

In the contemporary digital landscape, social media (SM) has emerged as a transformative force shaping various aspects of human behavior, including entrepreneurial thinking (ET) and intentions, particularly among students. Entrepreneurial thinking, conceptually distinct from entrepreneurial intentions, refers to a multidimensional cognitive-motivational construct comprising five key dimensions: (1) opportunity identification and exploitation—the capacity

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to recognise and act on business opportunities; (2) innovation and creativity—the ability to generate novel ideas and solutions; (3) resource mobilisation and management—skills in acquiring and deploying resources efficiently; (4) adaptability and learning—the capacity to adjust strategies and acquire new knowledge in uncertain environments; and (5) growth mindset and self-efficacy—beliefs about one's capability to succeed and improve through effort. Unlike entrepreneurial intentions, which capture an individual's willingness and planned commitment to start a venture at a specific point (Vesci et al., 2022; Kumar & Ragini, 2024), ET encompasses the ongoing cognitive processes, alertness mechanisms, and motivational orientations that enable individuals to perceive, frame, and respond to entrepreneurial possibilities before and during venture creation (Park et al., 2017; Saadat et al., 2021). The proliferation of platforms like Instagram, TikTok, and LinkedIn has created unprecedented opportunities for knowledge dissemination, business networking, and opportunity identification that were previously inaccessible to nascent entrepreneurs (Park et al., 2017). This digital revolution has fundamentally altered how students perceive entrepreneurship, learn entrepreneurial skills, and develop business ideas in ways that merit systematic investigation (Wibowo et al., 2023). As educational institutions and policymakers seek to cultivate entrepreneurial mindsets among young people, understanding the precise mechanisms through which SM influences ET has become increasingly important.

The relationship between SM and ET has received considerable attention in the academic literature. SM platforms serve as dynamic ecosystems where students can access diverse content, engage with professional networks, and enhance their business acumen (Longva, 2021). Recent studies have demonstrated that these platforms significantly improve entrepreneurial alertness by exposing users to market trends and innovative business models (Park et al., 2017). Additionally, SM facilitates experiential learning through real-time interactions with established entrepreneurs and provides opportunities to test business ideas with minimal investment (Scarmozzino et al., 2017). During the COVID-19 pandemic, platforms like Instagram and TikTok became particularly significant, as students leveraged them to develop financial resilience through product promotion and customer relationship management. However, while research has established correlations between SM use and entrepreneurial intentions, the specific pathways through which this influence occurs remain incompletely understood (Vesci et al., 2022).

Despite growing scholarly interest, a critical research gap persists: the psychological mechanisms—specifically motivation—that mediate the relationship between SM use and distinct ET dimensions remain under-theorised and empirically under-tested. While studies have documented direct associations between SM use and entrepreneurial intentions (Kumar & Ragini, 2024; Vesci et al., 2022), they have not systematically examined how SM exposure translates into cognitive-motivational entrepreneurial patterns through motivational pathways. For instance, Vesci et al. (2022) focus on SM dependency and its relationship with entrepreneurial intentions mediated by behavioral and normative beliefs, yet omit intrinsic motivation as a mechanism linking platform use to cognitive ET processes. Similarly, Troise et al. (2021) demonstrate SM's impact on entrepreneurial opportunities and orientation through direct effects but do not model motivation as a mediator. Loan et al. (2024) and Satriadi et al. (2022) emphasise intentions as outcomes rather than exploring motivation-driven pathways to specific ET dimensions such as opportunity identification, adaptability, or creativity. This oversight is significant because motivation represents a theoretically and empirically grounded mechanism that can explain how passive SM exposure activates the psychological conditions necessary for entrepreneurial cognition—a pathway supported by Self-Determination Theory (SDT) (Deci & Ryan, 2000; Ryan & Deci, 2000) and Social

Cognitive Theory (SCT) (Bandura, 1986), which posit that external stimuli (SM content) influence behavior through internalised motivation and self-efficacy beliefs. Malik et al. (2020) provide partial evidence for this mechanism by showing that intrinsic motivation mediates SM use and creativity among students, yet this finding has not been extended to entrepreneurial thinking's full dimensional architecture. Furthermore, existing research often treats SM as a monolithic construct without distinguishing between usage patterns or platform-specific effects (Troise et al., 2021), and most studies prioritise entrepreneurial intentions over the broader, more foundational construct of ET. These interconnected gaps—conceptual ambiguity about ET versus intentions, underspecification of motivational mediation, and aggregated SM measurement—limit cumulative understanding of how digital platforms cultivate entrepreneurial cognition among students.

Building on Self-Determination Theory (SDT) and Social Cognitive Theory (SCT), this study proposes that motivation functions as a critical mediating mechanism through which SM use influences ET. SDT suggests that external environments (such as SM platforms) can fulfill basic psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2018), thereby fostering intrinsic motivation that drives sustained cognitive engagement (Deci & Ryan, 2008). SCT emphasises that observational learning, role modelling, and vicarious reinforcement—common features of SM content—enhance self-efficacy beliefs and motivational states that precede entrepreneurial action (Bandura, 1997). Together, these frameworks justify examining motivation not merely as a parallel construct but as a sequential mediator that bridges SM exposure and the activation of distinct ET dimensions, particularly opportunity identification/exploitation and adaptability/learning, which require sustained cognitive effort and psychological readiness (Malik et al., 2020; Sutrisno et al., 2023).

This research aims to investigate the causal and mediating pathways through which SM use influences ET among students, with theoretically grounded attention to the mediating role of motivation and its sequential effects on the processes of opportunity identification and exploitation and adaptability/learning. Specifically, the study addresses the following research questions: RQ1: To what extent does SM use causally influence students' ET dimensions (opportunity identification/exploitation, innovation/creativity, resource mobilisation/management, adaptability/learning, and growth mindset/self-efficacy)? RQ2: Does motivation significantly mediate the causal relationship between SM use and ET dimensions, and if so, through which pathways (direct mediation vs. sequential mediation)? RQ3: Which specific ET dimensions serve as mediators in the pathway from SM use to overall SM-related ET, and do motivation and ET dimensions operate sequentially to transmit SM's influence? This research contributes to the growing body of literature on digital entrepreneurship by examining these questions, explicitly modelling motivation as a psychological mechanism grounded in SDT and SCT, decomposing ET into its constituent dimensions to move beyond intention-focused research, and testing both complementary and sequential mediation pathways that reveal how SM exposure translates into entrepreneurial cognition. These contributions offer recommendations for educational institutions seeking to leverage SM as a tool for entrepreneurship education.

The remainder of this paper is organised as follows. The next section reviews relevant literature on SM, ET, and the theoretical frameworks connecting them. The methodology section outlines the research design, sampling approach, and analytical methods employed. The results section presents the findings of the statistical analyses, while the discussion section interprets these findings in light of existing theory and research. The paper concludes with implications for theory and practice, as well as recommendations for future research.

2. LITERATURE REVIEW

Entrepreneurial thinking (ET) represents a multidimensional cognitive-motivational construct encompassing mental processes, competencies, and character strengths that enable individuals to identify opportunities, innovate, and navigate uncertainty in entrepreneurial contexts (Alsafadi & Aljuhmani, 2024; Krueger et al., 2024; Peschl et al., 2021; Sandhu et al., 2025). This construct comprises five interrelated dimensions: (1) opportunity identification and exploitation—cognitive alertness to recognise, evaluate, and act upon business possibilities through scanning, search, and pattern recognition (Clausen, 2020; Pirhadi et al., 2023; Sharma, 2019); (2) innovation and creativity—capacity to generate novel ideas, solutions, and business models by combining analytical, critical, and creative thinking (Hnátek, 2015; Leiva-Lugo et al., 2024; Sandhu et al., 2025); (3) resource mobilisation and management—skills in acquiring, deploying, and optimising resources under constraints (Peschl et al., 2021; Sandhu et al., 2025); (4) adaptability and learning—ability to adjust strategies, tolerate ambiguity, and assimilate new knowledge through iterative experimentation (Peschl et al., 2021; Sandhu et al., 2025); and (5) growth mindset and self-efficacy—beliefs about capability to succeed, improve through effort, and overcome entrepreneurial challenges (Peschl et al., 2021; Pirhadi et al., 2023; Sandhu et al., 2025).

Critically, ET diverges conceptually from entrepreneurial intentions, which capture planned commitment to start a venture at a specific time (Kumar & Ragini, 2024; Vesci et al., 2022). While intentions reflect behavioural commitment measured at discrete points, ET emphasises ongoing cognitive and behavioural processes—alertness, framing, sensemaking, problem-solving, empathy, and metacognitive regulation—that enable individuals to perceive, evaluate, and respond to entrepreneurial possibilities through iterative decision-making and experiential learning across diverse professional contexts (Alsafadi & Aljuhmani, 2024; Clausen, 2020; Krueger et al., 2024; Peschl et al., 2021).

Social media platforms fundamentally reshape entrepreneurial thinking by expanding opportunity recognition, accelerating effectual experimentation, and enabling low-cost search and networked learning loops (Olanrewaju et al., 2020; Troise et al., 2021). Empirical evidence among start-ups reveals that active social media use strengthens entrepreneurial orientation—particularly proactiveness and innovativeness—by shortening feedback cycles, facilitating rapid customer discovery, and widening networks for opportunity recognition (Troise et al., 2021). Among students and nascent entrepreneurs, social media mediates pathways from entrepreneurship education and intuition to entrepreneurial intention by facilitating observational learning, rapid audience validation, and skill-building (Wibowo et al., 2023). Higher platform exposure correlates with shifts in attitudes, subjective norms, and perceived ease that support entrepreneurial mindsets (Barrera-Verdugo & Villarroel-Villarroel, 2022).

However, synthesised reviews caution that social media is neither panacea nor fad; its value depends critically on strategic alignment, digital literacy, resource orchestration, and the ability to convert engagement into learning and value creation while navigating risks such as information overload, platform dependency, and algorithmic opacity (Secundo et al., 2021). Social media's impact follows a nonlinear trajectory: moderate use enhances information gathering and opportunity beliefs, whereas excessive use risks overload that impairs information processing and reinvestment decisions, indicating the importance of platform literacy and guardrails (Chen & Liu, 2023). Extending this logic, platforms can catalyse "accidental entrepreneurship," where creator passion transitions to commerce as communities

validate offerings and reduce entry barriers, reinforcing how social feedback loops translate identity into venture action (Ripollés & Blesa, 2025).

Early social media research examining platforms such as Facebook and LinkedIn (Khajeheian, 2013; Park et al., 2017) emphasised democratisation of business tools and opportunity discovery in developing economies, demonstrating how digital platforms allowed students to bypass traditional infrastructure limitations and engage in micro-entrepreneurship. While these foundational insights remain valuable, contemporary platform ecosystems differ markedly in affordances, algorithmic curation, and user behaviours. Recent research emphasises the growing importance of algorithmic literacy, as students must now master platform-specific content optimisation strategies to ensure business visibility (Lestari et al., 2024; Zhou, 2024). Platforms like TikTok significantly influence entrepreneurial interest by providing accessible and engaging means to explore business opportunities through short-form video and virality mechanisms (Ginting et al., 2024).

Motivation emerges repeatedly in the literature as a mediating mechanism linking social media exposure to entrepreneurial outcomes, yet its conceptualisation and operationalisation vary considerably across studies, creating ambiguity about its precise role. Malik et al. (2020) demonstrate that intrinsic motivation mediates the relationship between social media use and creativity among students, providing evidence that internal psychological drives—rather than external rewards—translate platform engagement into creative output. Sutrisno et al. (2023) show that social media amplifies the impact of formal entrepreneurship education by providing tangible success examples and peer role models, suggesting that motivation functions through vicarious learning and social comparison processes. Hussain et al. (2021) identify self-efficacy and risk propensity as mediating factors connecting social networking sites to entrepreneurial intentions, highlighting motivational beliefs about capability and tolerance for uncertainty.

Despite convergence on motivation's significance, critical differentiation remains limited. Studies describe motivation as "particularly significant" or "crucial" (Malik et al., 2020; Sutrisno et al., 2023) without distinguishing between intrinsic and extrinsic motivation, autonomous versus controlled regulation, or need-based psychological motivations such as autonomy, competence, and relatedness posited by Self-Determination Theory (Deci & Ryan, 2000; Ryan & Deci, 2000, 2018). Karahanna et al. (2015) provide nuance by demonstrating that psychological ownership motivations—driven by needs for effectivity, self-identity, and having a place—encourage social media use, yet this framework has not been systematically integrated with entrepreneurial thinking research. Furthermore, Vesci et al. (2022) focus on social media dependency mediated by behavioural and normative beliefs but omit intrinsic motivation as a mechanism linking platform use to cognitive ET processes, while Troise et al. (2021) demonstrate social media's impact on entrepreneurial opportunities through direct effects without modelling motivation as a mediator.

This conceptual ambiguity limits the cumulative understanding: is motivation a unitary construct or do different motivational types (intrinsic, extrinsic, and prosocial) mediate different pathways from social media to specific ET dimensions? Self-Determination Theory (SDT) and Social Cognitive Theory (SCT) provide complementary theoretical lenses to address this gap. SDT suggests that external environments, such as social media platforms, can fulfil basic psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2018), thereby fostering intrinsic motivation that drives sustained cognitive engagement (Deci & Ryan, 2008). SCT emphasises that observational learning, role modelling, and vicarious reinforcement—common features of social media content—enhance self-efficacy beliefs and motivational states

that precede entrepreneurial action (Bandura, 1986, 1997). Together, these frameworks justify examining motivation not merely as a parallel construct but as a sequential mediator that bridges social media exposure and the activation of distinct ET dimensions, particularly opportunity identification/exploitation and adaptability/learning, which require sustained cognitive effort and psychological readiness (Malik et al., 2020; Sutrisno et al., 2023).

Empirical findings reveal notable contradictions regarding social media's effects on entrepreneurial outcomes. Troise et al. (2021) found that while social media use strongly enhances opportunity identification, its effects on entrepreneurial orientation dimensions (proactiveness, risk-taking, and innovativeness) are mixed and context-dependent. Alayis et al. (2018) reported that social media influences the perceived feasibility of entrepreneurship but only partially impacts perceived desirability, suggesting differential effects across Theory of Planned Behaviour constructs. Loan et al. (2024) found that social media positively correlates with entrepreneurial intentions by enhancing perceived behavioural control, particularly among students with moderate experience, yet Wibowo et al. (2023) emphasise mediation through digital skills and intuition, suggesting that platform effects depend on complementary competencies rather than exposure alone.

These contradictions may stem from variations in sample characteristics (student versus practicing entrepreneurs), cultural contexts (developed versus developing economies), platform types (professional networks like LinkedIn versus content-sharing platforms like TikTok), and usage patterns (passive consumption versus active content creation). Moreover, community-level dynamics introduce additional complexity: online communities coordinate collective agency and resource mobilisation for local venture formation, illustrating how digital interactions convert ideas into action and blur social-spatial boundaries that traditionally anchored community entrepreneurship (Jonsson, 2024). In social entrepreneurship contexts, social media can elevate intentions via serial mediation through risk propensity and entrepreneurial self-efficacy, highlighting how platform exposure shapes perceived feasibility and prosocial motivation (Gomes & Wisenthige, 2025).

Social media-related entrepreneurial thinking and traditional entrepreneurial thinking differ significantly in their processes, impacts, and the opportunities they present. Social media has emerged as a transformative tool in entrepreneurship, reshaping how entrepreneurs identify opportunities, engage with customers, and sustain their businesses. For instance, social media use has been shown to significantly enhance entrepreneurial opportunities by providing a platform for business growth and brand development, although it does not necessarily impact entrepreneurial orientation directly (Troise et al., 2021; Park et al., 2017). This finding is particularly evident in the context of disadvantaged populations, where social media levels the playing field by facilitating entrepreneurial entry for groups that face barriers in traditional settings, such as women and rural populations (Wang et al., 2024). Moreover, social media engagement is crucial for Gen-Z entrepreneurs, influencing their entrepreneurial intentions by fostering a digital fluency that aligns with their innovative outlook (Aryoko et al., 2024). The role of social media in entrepreneurship is not limited to opportunity identification but extends to enhancing sustainability, as seen in SMEs in Iran, where social media mediates the relationship between entrepreneurial thinking and business sustainability (Tajpour et al., 2023). Additionally, social media entrepreneurs, such as influencers and bloggers, often enter entrepreneurship serendipitously, driven by personal interests rather than planned strategies, highlighting a distinct entrepreneurial journey characterised by rapid experimentation and public exposure challenges (Erpe & Kotnik, 2022). This situation contrasts with traditional entrepreneurial models, which are often more structured and less influenced by digital dynamics

(Stephens & Miller, 2024). Furthermore, social media facilitates entrepreneurial learning, marketing, and networking, creating an ecosystem that supports entrepreneurial activities in ways traditional methods do not (Secundo et al., 2021). In developing countries, social media adoption moderates the relationship between entrepreneurial education and sustainable entrepreneurial intentions, indicating its critical role in shaping entrepreneurial attitudes and intentions among business graduates (El-Gohary et al., 2023). While traditional entrepreneurial thinking focuses on structured processes and established models, social media-related entrepreneurial thinking is more dynamic, inclusive, and adaptable to the digital age, offering unique advantages and challenges.

3. HYPOTHESES DEVELOPMENT

Drawing on Self-Determination Theory (SDT) and Social Cognitive Theory (SCT), this study posits that SM platforms function as digital learning environments that fulfil basic psychological needs (autonomy, competence, relatedness), foster intrinsic motivation, and enable observational learning and vicarious reinforcement—thereby activating entrepreneurial cognition (Ryan & Deci, 2018; Bandura, 1986). However, rather than testing all possible pathways indiscriminately, we focus on theoretically justified relationships that address the identified research gap: the under-examined role of motivation as a psychological mediator linking SM exposure to specific ET dimensions that require sustained cognitive effort.

H1: SM use has a significant positive direct effect on SM-related ET among university students.

This hypothesis tests the foundational premise that SM platforms enhance entrepreneurial thinking through mechanisms such as opportunity exposure, networking, content consumption, and iterative experimentation (Troise et al., 2021; Secundo et al., 2021).

H2: Motivation significantly mediates the relationship between SM use and SM-related ET.

SDT suggests that SM content can satisfy psychological needs for autonomy, competence, and relatedness, thereby fostering intrinsic motivation that transforms passive exposure into active entrepreneurial cognition (Ryan & Deci, 2018). SCT further posits that motivational states—enhanced through role modelling and vicarious success on SM—precede entrepreneurial action (Bandura, 1986). While prior studies document direct SM–intention links, the mediating role of motivation in translating SM use into cognitive ET remains empirically under-tested (Malik et al., 2020; Sutrisno et al., 2023).

Rather than testing all five ET dimensions as parallel mediators—which risks descriptive over-specification—we focus on the two dimensions most theoretically aligned with SM affordances and motivational processes: opportunity identification/exploitation and adaptability/learning. These dimensions are cognitively demanding, require sustained psychological readiness, and are most directly facilitated by SM's real-time information flows, diverse network exposure, and iterative feedback mechanisms (Park et al., 2017; Longva, 2021).

H3a: Opportunity identification and exploitation significantly mediate the relationship between SM use and SM-related ET.

SM platforms expose users to market trends, business models, and consumer needs across geographic and social boundaries, enhancing alertness and opportunity recognition—key antecedents to overall entrepreneurial thinking (Park et al., 2017; Troise et al., 2021).

H3b: Adaptability and learning significantly mediate the relationship between SM use and SM-related ET.

SM facilitates rapid experimentation, real-time feedback, and exposure to failure narratives, which cultivate adaptive learning and tolerance for ambiguity—core components of entrepreneurial cognition in uncertain environments (Longva, 2021; Peschl et al., 2021).

The most theoretically novel contribution of this study lies in testing sequential mediation pathways where motivation serves as a psychological gateway through which SM use activates specific, cognitively effortful ET dimensions. Unlike parallel mediation, sequential mediation reflects the temporal and causal logic of SDT and SCT: external stimuli (SM content) first enhance motivation, which then enables sustained cognitive engagement required for opportunity scanning and adaptive learning (Ryan & Deci, 2018; Bandura, 1986; Malik et al., 2020).

H4a: The relationship between SM use and SM-related ET is sequentially mediated by motivation and opportunity identification/exploitation (SM use → Motivation → Opportunity identification/exploitation → SM-related ET).

Intrinsic motivation—driven by autonomy, competence, and relatedness needs satisfied through SM interactions—precedes the sustained cognitive alertness necessary for opportunity recognition and exploitation (Ryan & Deci, 2018; Park et al., 2017).

H4b: The relationship between SM use and SM-related ET is sequentially mediated by motivation and adaptability/learning (SM use → Motivation → Adaptability/learning → SM-related ET).

Motivational readiness enables students to engage deeply with iterative feedback, learn from observed failures, and adjust strategies—processes central to adaptive entrepreneurial thinking (Longva, 2021; Sutrisno et al., 2023).

4. METHODOLOGY

4.1 Sample

This study examined social media use and entrepreneurial thinking among students at the University of El Oued, Algeria. The target population comprised all enrolled undergraduate and graduate students across diverse academic faculties during the 2024/2025 academic year. The university's total student enrolment at the time of data collection was approximately 25,000 students across eight faculties: Economics and Management, Social and Human Sciences, Science and Technology, Computer Science and Mathematics, Exact Sciences, Natural and Life Sciences, Literature and Languages, Law and Political Sciences, and Islamic Sciences.

A stratified random sampling strategy was employed to ensure proportional representation across faculties and degree levels (Bachelor's, Master's, Doctorate). Stratification was based on two criteria: (1) field of study and (2) degree level, reflecting the university's demographic composition. Sample size determination followed Hair et al.'s (2023) recommendation for PLS-

SEM analysis, requiring a minimum of 10 observations per predictor in the most complex regression within the structural model; given the model's complexity (seven constructs with multiple paths), a minimum sample of 200 was deemed adequate. To account for potential incomplete or invalid responses, the target sample was set at 350.

A total of 321 valid responses were obtained, representing a 91.7% usable response rate after excluding 29 incomplete or inconsistent questionnaires. This sample provides adequate statistical power for PLS-SEM analysis and captures diversity across faculties and degree levels. Importantly, all Algerian universities are public governmental institutions operating under a unified national higher education framework governed by the same laws, regulations, and quality assurance standards issued by the Ministry of Higher Education and Scientific Research. This centralised governance structure ensures substantial institutional homogeneity across Algeria's university system in terms of admission criteria, curriculum standards, degree requirements, faculty qualifications, and administrative procedures. Furthermore, Algerian university students exhibit considerable demographic and educational homogeneity across regions, as they are selected through the national baccalaureate examination, follow standardised national curricula, and share common linguistic (Arabic/French), cultural, and socio-economic contexts characteristic of Algeria's public higher education landscape. Given this structural and demographic uniformity, findings from the University of El Oued sample can be reasonably generalised to other Algerian public universities, particularly regarding social media use and entrepreneurial thinking patterns among university students within the national context. However, caution is warranted in extrapolating these results to private institutions (if any), non-student populations, or universities in different national or cultural contexts without further empirical validation.

4.2 Data collection

Data collection was conducted between December 2024 and March 2025 using a structured, self-administered online questionnaire distributed via Google Forms. The survey link was disseminated through multiple digital channels—university email lists, WhatsApp groups, Facebook student pages, and LinkedIn networks—to maximise reach and accessibility across the stratified sample. This multi-channel approach ensured broad participation while accommodating students' diverse digital habits and platform preferences.

The study adhered to the principles outlined in the Declaration of Helsinki and the Belmont Report, emphasising respect for individuals, beneficence, and justice. All participants provided informed consent electronically before accessing the questionnaire. The consent form, presented on the first page of the survey, clearly outlined: (1) the study's purpose and objectives, (2) voluntary participation and the right to withdraw at any time without penalty, (3) confidentiality and anonymity protections, (4) data storage and usage protocols, (5) estimated completion time (10–15 minutes), and (6) researcher contact information for questions or concerns.

Confidentiality was ensured through several measures: respondents were not required to provide identifying information (names, student IDs, or contact details), IP addresses were not collected, and all data were stored on password-protected servers accessible only to the research team. Participation was entirely voluntary, with no incentives offered, thereby minimising coercion or undue influence. Responses were automatically recorded and timestamped by Google Forms, allowing for real-time monitoring of data collection progress and facilitating prompt identification of incomplete submissions.

Missing data treatment followed established PLS-SEM protocols. Of the 350 initial responses, 29 were excluded due to (1) incomplete questionnaires (more than 20% missing items), (2) patterned or straight-line responses indicating low engagement, or (3) logical inconsistencies (e.g., contradictory demographic information). No systematic patterns of missingness related to demographics or key variables were detected, supporting the assumption of data missing completely at random.

4.3 Measures

All constructs were measured using multi-item reflective scales adapted from validated instruments in prior entrepreneurship and social media research, with minor linguistic and contextual modifications to suit the Algerian university student population. Items were originally developed in English and translated into Arabic and French (the primary languages of instruction at the University of El Oued) using a back-translation procedure to ensure semantic equivalence and cultural appropriateness.

All items were measured on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), except for demographic variables. The questionnaire comprised eight sections:

- *Social Media Use (USM)*: Four items assessing frequency, intensity, and engagement with social media platforms for entrepreneurship-related activities.
- *Motivation (M)*: Seven items measuring intrinsic and extrinsic motivational orientations toward entrepreneurship, drawing on Self-Determination Theory (Ryan & Deci, 2018).
- *Entrepreneurial Thinking Dimensions*: Five subscales, each comprising four items:
 1. *Identifying and Exploiting Opportunities (ETep)*: Assesses alertness to and capacity to act on business opportunities.
 2. *Innovation and Creativity (ETic)*: Measures ability to generate novel ideas and solutions.
 3. *Resource Mobilisation and Management (ETrm)*: Evaluates skills in acquiring and deploying resources.
 4. *Ability to Adapt and Learn (ETal)*: Captures capacity to adjust strategies and learn from feedback.
 5. *Growth Mindset and Self-Efficacy (ETms)*: Assesses beliefs about capability and improvement through effort.
- *SM-Related Entrepreneurial Thinking (Rsmet)*: Ten items measuring overall entrepreneurial thinking patterns specifically activated or enhanced through social media engagement.
- *Demographics*: Age (categorical: up to 20, 20–25, above 25), gender (male/female), field of study (Computer Science and Mathematics, Economics and Management, Science and Technology, Social and Human Sciences), and college degree (Bachelor's, Master's, Doctorate).

4.4 Analysis

Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM) implemented in R Studio (version 4.4.1) with the seminar package. PLS-SEM was selected for its appropriateness in (1) exploratory and theory-building research contexts, (2) models with complex mediating pathways, (3) small-to-moderate sample sizes, (4) reflective and formative measurement models, and (5) non-normal data distributions (Hair et al., 2020, 2023).

The analytical procedure followed a two-stage approach recommended by Hair et al. (2020):

Stage 1: Assessment of the Measurement (Outer) Model

- Indicator Reliability: Evaluated using outer loadings, with a threshold of ≥ 0.60 for exploratory research.
- Internal Consistency Reliability: Assessed using Cronbach's Alpha ($\alpha \geq 0.70$), Dijkstra-Henseler's rho_A ($\rho_A \geq 0.70$), and Composite Reliability ($CR \geq 0.70$).
- Convergent Validity: Verified through Average Variance Extracted ($AVE \geq 0.50$), indicating that constructs explain at least 50% of their indicators' variance.
- Discriminant Validity: Examined using three criteria: (1) Fornell-Larcker criterion (square root of AVE > inter-construct correlations), (2) Heterotrait-Monotrait Ratio (HTMT < 0.85), and (3) cross-loadings analysis (indicator loadings > cross-loadings).

Stage 2: Assessment of the Structural (Inner) Model

- Collinearity: Variance Inflation Factor ($VIF < 5$) to detect multicollinearity.
- Path Coefficients (β): Standardised regression weights indicating the strength and direction of hypothesised relationships.
- Significance Testing: Bootstrapping with 5,000 resamples to compute t-values and p-values for path coefficients ($p < 0.05$ for significance).
- Coefficient of Determination (R^2): Proportion of variance explained in endogenous constructs; values of 0.25, 0.50, and 0.75 indicate weak, moderate, and substantial explanatory power, respectively (Hair et al., 2011).
- Effect Size (f^2): Cohen's f^2 assesses the relative impact of predictor constructs, with values of 0.02, 0.15, and 0.35 indicating small, medium, and large effects, respectively.
- Predictive Relevance (Q^2): Stone-Geisser's Q^2 via blindfolding procedure ($Q^2 > 0$ indicates predictive relevance).

Mediation pathways were tested following Zhao et al.'s (2010) typology, distinguishing between complementary mediation (both direct and indirect effects significant and aligned), competitive mediation (both significant but opposite), indirect-only mediation (only indirect effect significant), direct-only non-mediation (only direct effect significant), and no-effect non-mediation (neither significant). Specific indirect effects were estimated by bootstrapping, with 95% bias-corrected confidence intervals used to determine significance.

5. RESULTS

5.1 Sample demographics

Table 1 presents the demographic profile of the 321 participants. The sample comprised 179 females (55.8%) and 142 males (44.2%), closely reflecting the University of El Oued's overall student gender distribution of approximately 57% female and 43% male. The majority of respondents were aged 20–25 years (66.4%), with 6.9% under 20 and 26.8% above 25, consistent with the university's predominantly young adult undergraduate and early graduate student population.

In terms of academic background, Economics and Management students constituted the largest group (46.1%), followed by Social and Human Sciences (29.6%), Science and Technology (19.6%), and Computer Science and Mathematics (4.7%). This distribution slightly over-represents Economics and Management relative to the university's actual enrolment (approximately 38%), likely due to higher survey engagement among business-oriented students. Master's degree candidates comprised 61.7% of the sample, Bachelor's students 37.4%, and Doctoral students 0.9%, aligning with the university's graduate-heavy enrolment profile.

Table 1. Descriptive statistics

Variable	Item	Frequency	Percentage (%)
Age	Up to 20	22	6.8536
	20 to 25	213	66.3551
	Above 25	86	26.7913
Gender	Female	179	55.7632
	Male	142	44.2368
Study field	Computer Science and Mathematics	15	4.6729
	Economics and Management	148	46.1059
	Science and Technology	63	19.6262
	Social and human sciences	95	29.5950
College degree	Bachelor's	120	37.3832
	Master's	198	61.6822
	Doctorate	3	0.9346

Source: authors' computation

5.2 Measurement model assessment

Indicator Reliability. All items demonstrated acceptable outer loadings ranging from 0.638 to 0.874, exceeding the 0.60 threshold for exploratory research (Table 2). The highest loadings were observed for Growth Mindset/Self-Efficacy (ETms3 = 0.874) and Opportunity Identification (ETal4 = 0.84), while the lowest—though still acceptable—were for Innovation/Creativity (ETic1 = 0.638) and SM Use (USM3 = 0.647).

Table 2. Factor loadings for various constructs

Construct	Item	Outer loading	Construct	Item	Outer loading
Use of social media (USM)	USM1	0.830	ET (identifying & exploiting opportunities) (ETep)	ETep1	0.711
	USM2	0.777		ETep2	0.783
	USM3	0.647		ETep3	0.809
	USM4	0.678		ETep4	0.737
ET (innovation and creativity) (ETic)	ETic1	0.638	ET (resource mobilisation & management) (ETrm)	ETrm1	0.838
	ETic2	0.814		ETrm2	0.803
	ETic3	0.764		ETrm3	0.793
	ETic4	0.737		ETrm4	0.788
ET (ability to adapt & learn) (ETal)	ETal1	0.715	ET (growth mindset & self-efficacy) (ETms)	ETms1	0.838
	ETal2	0.647		ETms2	0.766
	ETal3	0.808		ETms3	0.874
	ETal4	0.840		ETms4	0.833
social media-related entrepreneurial thinking (Rsmet)	Rsmet1	0.701	Motivation (M)	M1	0.707
	Rsmet2	0.782		M2	0.801
	Rsmet3	0.770		M3	0.850
	Rsmet4	0.828		M4	0.703
	Rsmet5	0.797		M5	0.832
	Rsmet6	0.690		M6	0.813
	Rsmet7	0.770		M7	0.747
	Rsmet8	0.779			
	Rsmet9	0.781			
	Rsmet10	0.675			

Source: authors' computation

Internal Consistency. Table 3 shows that all constructs exceeded reliability thresholds. Cronbach's Alpha ranged from 0.724 (ETic) to 0.917 (Rsmet), Dijkstra-Henseler's rho_A from 0.738 to 0.919, and Composite Reliability from 0.824 to 0.931. Average Variance Extracted (AVE) values ranged from 0.543 (USM) to 0.687 (ETms), all surpassing the 0.50 criterion.

Table 3. Convergent validity

Construct	Cronbach's alpha ($\alpha > 0.7$)	Rho-A (> 0.7)	Composite reliability (> 0.7)	AVE (> 0.5)
USM	0.735	0.805	0.824	0.543
ETep	0.757	0.761	0.846	0.579
ETic	0.724	0.738	0.828	0.549
ETrm	0.820	0.822	0.881	0.649
ETal	0.749	0.776	0.841	0.572
ETms	0.847	0.848	0.897	0.687
M	0.892	0.896	0.916	0.610
Rsmet	0.917	0.919	0.931	0.576

Source: authors' computation

Table 4 presents the Fornell-Larcker assessment, where diagonal elements represent the square root of each construct's AVE, and off-diagonal elements show inter-construct correlations. All diagonal values exceed their corresponding row and column correlations, confirming that each construct shares more variance with its indicators than with other constructs.

Table 4. Fornell-Larcker criterion

Latent	USM	ETep	ETic	ETrm	ETal	ETms	M	Rsmet
USM	0.737							
ETep	0.191	0.761						
ETic	0.258	0.531	0.741					
ETrm	0.161	0.586	0.594	0.806				
ETal	0.249	0.462	0.575	0.599	0.757			
ETms	0.280	0.340	0.509	0.390	0.675	0.829		
M	0.248	0.383	0.535	0.416	0.564	0.674	0.781	
Rsmet	0.383	0.506	0.481	0.476	0.566	0.508	0.668	0.759

Source: authors' computation

Table 5 presents the Heterotrait-Monotrait ratio, a more stringent discriminant validity criterion. All HTMT values are below the conservative threshold of 0.85, with the highest value being 0.837 (ETal-ETms), confirming adequate discriminant validity across all construct pairs.

Table 5. HTMT

Latent	USM	ETep	ETic	ETrm	ETal	ETms	M	Rsmet
USM								
ETep	0.249							
ETic	0.305	0.727						
ETrm	0.193	0.743	0.787					

ETal	0.299	0.605	0.781	0.762				
ETms	0.305	0.422	0.636	0.472	0.837			
M	0.266	0.464	0.652	0.484	0.679	0.773		
Rsmet	0.448	0.603	0.594	0.549	0.671	0.574	0.737	

Source: authors' computation

5.3 Structural model relationships

Table 7 reveals the direct path coefficients among constructs in the structural model. Social media use (USM) demonstrates significant positive effects on motivation ($\beta = 0.248$, $p < 0.001$), innovation/creativity ($\beta = 0.133$, $p < 0.01$), adaptability/learning ($\beta = 0.116$, $p < 0.05$), growth mindset/self-efficacy ($\beta = 0.119$, $p < 0.05$), opportunity identification ($\beta = 0.102$, $p < 0.05$), and overall SM-related entrepreneurial thinking ($\beta = 0.202$, $p < 0.001$), but not on resource mobilisation ($\beta = 0.061$, $p > 0.05$). Motivation emerged as the most influential predictor, showing strong positive effects on all five ET dimensions—growth mindset/self-efficacy ($\beta = 0.644$, $p < 0.001$), adaptability/learning ($\beta = 0.535$, $p < 0.001$), innovation/creativity ($\beta = 0.502$, $p < 0.001$), resource mobilisation ($\beta = 0.401$, $p < 0.001$), and opportunity identification ($\beta = 0.358$, $p < 0.001$)—as well as on overall SM-related ET ($\beta = 0.477$, $p < 0.001$). Among the ET dimensions, only opportunity identification ($\beta = 0.206$, $p < 0.001$) and adaptability/learning ($\beta = 0.180$, $p < 0.01$) significantly predicted overall SM-related ET, while innovation/creativity ($\beta = -0.049$, $p > 0.05$), resource mobilisation ($\beta = 0.069$, $p > 0.05$), and growth mindset/self-efficacy ($\beta = -0.064$, $p > 0.05$) showed non-significant or negligible effects. Importantly, all demographic control variables—age, gender, field of study, and college degree—were non-significant (all $p > 0.05$), confirming that the SM-ET relationship operates uniformly across student subgroups in this sample.

Table 7. Path coefficients

Constructs	Original Est.	Bootstrap	T Stat.
USM -> ETep	0.102	0.106	1.699*
USM -> ETic	0.133	0.137	2.390**
USM -> ETrm	0.061	0.065	1.048
USM -> ETal	0.116	0.121	2.159*
USM -> ETms	0.119	0.122	2.205*
USM -> M	0.248	0.254	4.103***
USM -> Rsmet	0.202	0.207	0.202***
ETep -> Rsmet	0.206	0.205	3.836***
ETic -> Rsmet	-0.049	-0.051	-0.757
ETrm -> Rsmet	0.069	0.068	0.983
ETal -> Rsmet	0.180	0.177	2.367**
ETms -> Rsmet	-0.064	-0.059	-0.882
M -> ETep	0.358	0.359	6.069***
M -> ETic	0.502	0.504	9.509***
M -> ETrm	0.401	0.403	6.810***
M -> ETal	0.535	0.534	9.791***
M -> ETms	0.644	0.645	12.677***
M -> Rsmet	0.477	0.474	6.843***
Age -> Rsmet	-0.040	-0.041	-0.938
Study_field -> Rsmet	0.015	0.015	0.407
Gender -> Rsmet	0.003	0.004	0.083
College_degree -> Rsmet	-0.029	-0.029	-0.723

Source: authors' computation

Table 8 shows the coefficient of determination (R^2) values for each endogenous construct in the structural model. These values indicate the extent to which the variables used to predict them can explain the variance. The R^2 values range from 0.062 to 0.583, with the SM-related ET (Rsmet) construct showing the highest explanatory power (58.3%), suggesting that the model accounts for a substantial portion of the variation in social media and ET.

Table 8. R^2 values of constructs

	R^2	Adj R^2
Rsmet	0.583	0.568
ETep	0.157	0.151
ETic	0.303	0.299
ETrm	0.177	0.171
ETal	0.331	0.327
ETms	0.468	0.465
M	0.062	0.059

Source: authors' computation

5.4 Mediation analysis

Table 9 reveals that motivation serves as the primary mediating mechanism through which social media use influences SM-related entrepreneurial thinking, demonstrating the strongest indirect effect ($\beta = 0.118$, $p < 0.001$) among all tested pathways. Simple mediation through opportunity identification/exploitation ($\beta = 0.021$, $p < 0.05$) and adaptability/learning ($\beta = 0.021$, $p < 0.05$) showed marginal significance, while innovation/creativity, resource mobilisation, and growth mindset failed to mediate the SM-ET relationship (all $p > 0.05$). Critically, the sequential mediation pathways where SM use first enhances motivation, which then activates specific ET dimensions—particularly opportunity identification ($\beta = 0.018$, $p < 0.01$) and adaptability/learning ($\beta = 0.024$, $p < 0.05$)—were statistically significant, supporting the theoretical proposition that motivation functions as a psychological gateway rather than a parallel construct. The negative (though non-significant) coefficients for innovation/creativity and growth mindset as mediators suggest that these dimensions, while positively influenced by motivation directly (as shown in Table 7), do not transmit SM's influence to overall entrepreneurial thinking—a finding that challenges assumptions from earlier studies. Together, these results confirm complementary mediation wherein both direct SM effects and indirect motivational pathways operate simultaneously, underscoring that entrepreneurial thinking development requires not only SM exposure, but also the psychological readiness and cognitive effort that motivation enables.

Table 9. Mediation relationships

Constructs	Original Est.	Bootstrap Mean	T Stat.
USM -> M -> Rsmet	0.11853343	0.11990688	3.637***
USM -> ETep -> Rsmet	0.021007131	0.021114498	1.593*
USM -> ETic -> Rsmet	-0.006542815	-0.006468323	-0.672
USM -> ETrm -> Rsmet	0.004229089	0.004453531	0.582
USM -> ETal -> Rsmet	0.0208098208	0.0208647553	1.584*
USM -> ETms -> Rsmet	-0.00761714	-0.007547806	-0.726
USM -> M -> ETep -> Rsmet	0.018328526	0.018631697	2.465**
USM -> M -> ETic -> Rsmet	-0.006152618	-0.006755837	-0.685
USM -> M -> ETrm -> Rsmet	0.006916838	0.006979113	0.905
USM -> M -> ETal -> Rsmet	0.023906776	0.023556224	2.104*
USM -> M -> ETms -> Rsmet	-0.0102094	-0.01005052	-0.784

Source: authors' computation

6. DISCUSSION

This study investigated the pathways through which social media use influences entrepreneurial thinking among university students, with particular attention to motivation as a psychological mediator. The empirical findings reveal a complex; multi-stage process wherein social media engagement does not uniformly enhance all dimensions of entrepreneurial thinking but rather operates selectively through motivational and cognitive mechanisms. This discussion interprets these results in relation to the study's hypotheses and situates them within the broader theoretical frameworks of Self-Determination Theory and Social Cognitive Theory.

Direct Effects of Social Media

The results confirm H1, demonstrating that social media use exerts a significant direct effect on overall SM-related entrepreneurial thinking. However, when examining the pathways to specific ET dimensions, social media's influence appears more nuanced than a uniform positive effect. Although SM use significantly predicted opportunity identification, innovation/creativity, adaptability/learning, and growth mindset/self-efficacy, these coefficients are modest in magnitude. SM use did not significantly influence resource mobilisation, suggesting that platform engagement alone may be insufficient to develop skills in acquiring and deploying resources.

These findings align with Troise et al.'s (2021) observation that social media's impact on entrepreneurial orientation dimensions is mixed and context-dependent, though they extend this work by demonstrating that even where significant effects exist, they are relatively weak when motivation is not accounted for. The modest direct effects suggest that passive exposure to entrepreneurial content on social media platforms—while valuable—does not automatically translate into robust entrepreneurial thinking patterns. This interpretation is consistent with Secundo et al.'s (2021) caution that social media is neither panacea nor fad; its value depends critically on how students engage with platform affordances and whether that engagement satisfies deeper psychological needs.

Motivation as Primary Mediator

The central finding of this study—supporting H2—is that motivation serves as the dominant mediating mechanism linking social media use to entrepreneurial thinking. This indirect effect through motivation is nearly as strong as the direct effect of SM on overall ET, and motivation itself emerged as the most influential predictor of all five ET dimensions in the model: growth mindset/self-efficacy, adaptability/learning, innovation/creativity, resource mobilisation, and opportunity identification.

This pattern of results strongly supports the theoretical proposition that motivation functions not merely as a parallel correlate but as a psychological gateway through which social media exposure activates entrepreneurial cognition. From a Self-Determination Theory perspective, these findings suggest that social media platforms may fulfil basic psychological needs for autonomy (choosing what content to consume and create), competence (observing and learning entrepreneurial skills), and relatedness (connecting with entrepreneurial role models and communities). Satisfying these needs leads to the emergence of intrinsic motivation, which sustains cognitive engagement with entrepreneurial thinking processes (Ryan & Deci, 2018; Deci & Ryan, 2008).

The magnitude of motivation's effects on ET dimensions also helps explain an apparent contradiction in prior research. While Malik et al. (2020) found that intrinsic motivation mediated the relationship between social media use and creativity, and Sutrisno et al. (2023) showed that social media amplified entrepreneurship education's impact through motivational mechanisms, neither study examined motivation's role across the full dimensional architecture of entrepreneurial thinking. The present findings demonstrate that motivation's influence extends far beyond creativity alone—it is a general-purpose mechanism that enhances multiple facets of entrepreneurial cognition simultaneously. This broader effect makes motivation the critical psychological condition necessary for translating digital engagement into entrepreneurial development.

Selective Dimensional Pathways

A surprising result emerged when examining which ET dimensions mediate the relationship between SM use and overall SM-related ET. Despite motivation's strong effects on all five dimensions, only opportunity identification/exploitation and adaptability/learning significantly predicted overall SM-related entrepreneurial thinking. Innovation/creativity, resource mobilisation, and growth mindset/self-efficacy showed non-significant or negligible effects on the outcome.

These results support H3a and H3b, but they also reveal something theoretically important: not all dimensions of entrepreneurial thinking contribute equally to the overall construct as it is activated through social media engagement. Opportunity identification and adaptability appear to function as transmission mechanisms—they capture and channel the influence of SM and motivation toward broader entrepreneurial thinking patterns. In contrast, while students' creativity, resource management skills, and self-efficacy beliefs are enhanced by motivation, these dimensions do not independently transmit social media's influence to the overall construct.

This selective mediation pattern can be understood through the lens of SM platform affordances. Park et al. (2017) demonstrated that social media enhances entrepreneurial alertness by exposing users to market trends, business models, and consumer needs across geographic boundaries—precisely the information streams that support opportunity recognition. Similarly, Longva (2021) and Schou et al. (2021) showed that social media facilitates rapid experimentation, real-time feedback, and exposure to failure narratives, which cultivate adaptive learning. These platform affordances align closely with the cognitive demands of opportunity scanning and adaptive adjustment, but they may be less well-suited to fostering the kind of divergent, recombinant thinking required for breakthrough creativity or the hands-on resource acquisition skills needed for resource mobilisation.

The negative (though non-significant) coefficients for innovation/creativity and growth mindset as mediators merit particular attention. These results do not indicate that social media harms these dimensions—as Table 7 clearly shows, motivation strongly enhances both. Rather, the negative signs in the mediation model suggest suppression effects: once the model accounts for motivation, opportunity identification, and adaptability, any additional variance contributed by creativity or mindset actually runs counter to overall SM-related ET. Such findings may indicate that different profiles of entrepreneurial thinking emerge depending on the primary pathway activated—some students may develop through creative experimentation, others through opportunity exploitation, but these pathways do not necessarily reinforce one another in the context of social media engagement.

Sequential Mediation Pathways

The most theoretically novel contribution of this study lies in demonstrating sequential mediation, wherein social media first enhances motivation, which then activates specific ET dimensions, which in turn shape overall entrepreneurial thinking. Both H4a and H4b were supported: the pathway SM → Motivation → Opportunity identification → SM-related ET and the pathway SM → Motivation → Adaptability/learning → SM-related ET were statistically significant.

These sequential pathways provide empirical support for the temporal and causal logic embedded in Self-Determination Theory and Social Cognitive Theory. SDT posits that external stimuli (in this case, entrepreneurial content on social media) first satisfy psychological needs, which then foster intrinsic motivation, which finally drives sustained cognitive engagement (Ryan & Deci, 2018). SCT similarly proposes that observational learning and vicarious reinforcement—common features of social media content—enhance motivational states that precede goal-directed behaviour (Bandura, 1986, 1997). The sequential mediation findings align with both frameworks by showing that motivation is not simply correlated with opportunity identification and adaptive learning but rather precedes and enables them.

The practical implication is clear: entrepreneurship educators cannot assume that merely exposing students to social media platforms will develop entrepreneurial thinking. Instead, interventions must be designed to activate motivation first, then channel that motivation toward cognitively demanding processes like opportunity scanning and adaptive experimentation. For example, rather than assigning students to passively follow entrepreneurs on Instagram, educators might design activities that satisfy autonomy (letting students choose which entrepreneurial domains to explore), competence (scaffolding platform literacy and content analysis skills), and relatedness (facilitating peer discussion and reflection on observed role models). These motivationally enriched activities would be more likely to trigger the sequential pathways identified in this study.

7. CONCLUSIONS

This study set out to unpack the psychological and cognitive mechanisms through which social media engagement relates to entrepreneurial thinking among university students, with particular focus on motivation as a theorised mediator. Analysis of 321 responses from the University of El Oued yielded support for all proposed hypotheses: H1 (direct SM-ET relationship), H2 (motivational mediation), H3a and H3b (dimensional mediation via opportunity identification and adaptability), and H4a and H4b (sequential mediation pathways). These findings address the study's three research questions by demonstrating that SM use relates to multiple ET dimensions (RQ1), that this relationship operates substantially through motivational mechanisms (RQ2), and that opportunity identification and adaptability—but not innovation, resource mobilisation, or mindset—function as transmission pathways to overall SM-related entrepreneurial thinking (RQ3).

The central theoretical contribution lies in positioning motivation as a sequential rather than parallel mediator, providing empirical support for Self-Determination and Social Cognitive Theory propositions that external stimuli satisfy psychological needs, which then enable sustained cognitive engagement. Motivation emerged not only as the strongest mediator but also as the most powerful predictor of all five ET dimensions, suggesting it functions as a psychological gateway through which platform affordances convert into entrepreneurial

cognition. The selective mediation pattern—wherein only opportunity identification and adaptability transmitted SM's influence to overall ET—challenges assumptions that all entrepreneurial thinking dimensions respond uniformly to digital engagement, pointing instead toward platform-affordance alignment with specific cognitive demands.

The practical implications center on entrepreneurship education design. Rather than assuming general social media exposure will automatically develop entrepreneurial thinking, educators should design interventions that first activate intrinsic motivation through psychological need satisfaction—autonomy, competence, and relatedness—and then channel that motivation toward cognitively demanding processes like opportunity identification and adaptive experimentation. Concrete strategies might include feedback-rich content creation assignments, curated exposure to diverse entrepreneurial role models, reflective practices that help students internalise observed behaviours, and scaffolded opportunity identification exercises. The finding that demographic factors (age, gender, field of study, and degree level) showed no significant effects suggests these interventions can be implemented as scalable, inclusive programs without extensive customisation for different student subgroups, at least within similar educational contexts.

Several limitations constrain the scope of these conclusions. The cross-sectional design limits causal inference; while sequential mediation models reflect theoretical causal logic, the data cannot establish temporal precedence. The sample was drawn from a single Algerian public university, and while institutional homogeneity across Algeria's public higher education system supports cautious generalisation to similar contexts, findings may not transfer to private institutions, non-student populations, or different cultural settings. The study relied on self-reported social media use without differentiating platform types, usage patterns, or algorithmic literacy—factors that prior research suggests moderate social media's effects. Additionally, the negative coefficients observed for innovation/creativity and growth mindset as mediators (though non-significant) suggest potential suppression effects or multicollinearity that warrant further investigation. These limitations indicate that the findings should be interpreted as supportive evidence aligned with the SDT and SCT frameworks rather than as definitive confirmation of causal mechanisms.

Future research should employ longitudinal designs to establish temporal ordering and test whether motivation precedes ET dimension development, as the sequential mediation model implies. Experimental interventions comparing motivationally enriched versus standard social media-based entrepreneurship education would provide stronger causal evidence. Studies should also disaggregate social media use by platform type, distinguishing between professional networks (LinkedIn), short-form video platforms (TikTok), and visual content platforms (Instagram), as their affordances likely activate different ET dimensions. Cross-cultural replication would clarify whether the motivation-centred pathway operates universally or varies across contexts with different entrepreneurial cultures. Finally, investigating why innovation/creativity did not function as a mediator despite strong motivational enhancement represents an important theoretical puzzle that could reveal boundary conditions for different ET development pathways. By addressing these directions, subsequent research can build a more comprehensive understanding of how digital platforms can be strategically leveraged to cultivate entrepreneurial thinking among emerging generations.

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