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Driving Sustainability Through AI: A Study on ChatGPT's Influence on Green Entrepreneurial Processes

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ABSTRACT
*This study examines the influence of ChatGPT adoption on green entrepreneurial behavior (GEB) through the mediating roles of green entrepreneurial self-efficacy (GESE), motivation (GEM), and intention (GEI). Grounded in Social Cognitive Theory, Self-Determination Theory, and the Theory of Planned Behavior, the research proposes a sequential mediation model to explore how AI tools like ChatGPT enhance sustainability-driven entrepreneurial actions. Using a quantitative approach, data were collected from 450 students in Gujranwala, Pakistan, through structured questionnaires. The results, analyzed using SPSS and Hayes' PROCESS macro, confirmed all 10 direct and 11 indirect hypotheses. Key findings revealed that ChatGPT adoption significantly boosts GESE (β = 0.47, *p* < 0.001), GEM (β = 0.42, *p* < 0.001), and GEI (β = 0.51, *p* < 0.001), with GEI emerging as the strongest predictor of GEB (β = 0.34, *p* < 0.001). Mediation analysis demonstrated full mediation via GEI (β = 0.17, 95% CI [0.10, 0.25]), underscoring the critical role of intention in translating AI usage into sustainable practices. The study contributes to the literature by bridging AI and green entrepreneurship, offering theoretical insights into how technology enhances psychological drivers of eco-friendly ventures. Practical implications include integrating ChatGPT into entrepreneurship training and policymaking to foster sustainable startups. Limitations, such as the cross-sectional design and student sample, suggest future research should explore longitudinal data and diverse entrepreneurial populations. Overall, this study highlights ChatGPT's transformative potential in advancing green entrepreneurship and achieving sustainability goals.*

Keywords: *ChatGPT; Green Entrepreneurship; Self-efficacy; Motivation; Intention; Sustainable Behavior; AI in Entrepreneurship.*

Introduction

The growing popularity of the notion of sustainability across the globe brought about a dramatic rise in green entrepreneurship, in which businesses are encouraged to be both environmentally sustainable and profitable (Schaltegger & Wagner, 2011). The green entrepreneurs are effective in overcoming the fears of environmental degradation through invention of new mechanisms of minimizing degradation of the environment (York & Venkataraman, 2010). Nevertheless, even with an increased awareness, the approach to green entrepreneurial behavior (GEB) adoption is uneven, as several patterns are in effect, among them being self-efficacy, motivation, and intention (Liñ 2015). The breakthroughs in the artificial intelligence (AI) field such as ChatGPT and other models of generative AI have introduced a chaotic boost to entrepreneurial activities by increasing their creative practices, decision making, and efficiency (Dwivedi et al., 2023). An example is chatGPT, a large language model developed by the OpenAI which has found progressively more use in the world of entrepreneurship, where it is used to support business planning, market analysis and interaction with customers (Kietzmann et al., 2023). Nevertheless, its contribution to the development of green entrepreneurship is not a subject of investigation yet. Although existing studies have explored the effect of AI on overall entrepreneur activity (Obschonka & Audretsch, 2020), not much is in the literature in regards to the ChatGPT adoption on its effect on green entrepreneurial self-efficacy (GESE), entrepreneurial motivation (GEM), intention (GEI) and eventual behavior (GEB). Green entrepreneurial self-efficacy (GES) may be defined as a belief that a person can implement a sustainable venture and its management (Tiwari et al., 2023). The available information indicates that self-efficacy is a central predictor of venture action (Bandura, 1997), but the component of green venture specifically is not clear, and especially when channeled through AI tools. On the same note, green entrepreneurial motivation (GEM) entails intrinsic (e.g., liking sustainability) and extrinsic (e.g., monetary rewards) factors that influence the decisions of an entrepreneur (Shepherd & Patzelt, 2011).

The presence of AI technology, such as ChatGPT, can potentially change these motivation dynamics because AI tools allow one to see the results in real time and eliminate perceptions surrounding non-existent barriers. Green entrepreneurial intention (GEI) has consistently been established as a proven indicator to the entrepreneurial behavior (Krueger et al., 2000). Although the theories are availed on how the intention is formed, as in the Theory of Planned Behavior (TPB) (Ajzen, 1991), the influence of AI on determining the intention especially in ventures that are aimed at being hued on sustainability has not been fully explored. Since the digitalization of entrepreneurship is taking place rapidly, an examination of how the practice of using ChatGPT is associated with these psychological constructs may be beneficial when offering insights on how to facilitate the maintenance of sustainable business operations. Although the importance of green entrepreneurship and the use of AI is increasing, the necessity to investigate the effects of ChatGPT use on green entrepreneurial behaviour via mediating mechanisms, including self-efficacy, motivation, purpose, and intention, has also been steadily rising. To date, studies have mainly concentrated on one of two aspects: AI in general entrepreneurship (e.g., Obschonka & Audretsch, 2020) without distinguishing between ventures that focus on sustainability, on the one hand, or green entrepreneurship psychology (e.g., Li Lin, 2015) without discussing implementation of AI tools, on the other hand. This paper provides the research to fill this gap as it explores the following open questions:

What are the implications of adopting ChatGPT to green entrepreneurial behavior? How far can this relationship be mediated by green entrepreneurial self-efficacy, motivation and intention? What does AI-enabled entrepreneurial support mean towards sustainable business development? Of the concern, this issue has a relevance in that business innovation increasingly depends on AI. Assuming that ChatGPT is capable of increasing green entrepreneurial performance through increasing self-efficacy, motivation, and intent, the policymakers and business incubators may use this tool to fast track green businesses. On the other hand, when it does not make any serious difference or even makes adverse effects, then the businesspersons might have to adopt different approaches to incorporate AI.

The objectives of the research are: To investigate the direct impact of adoption of ChatGPT on green entrepreneurial behavior. Explore how green entrepreneurial self-efficacy, motivation and intention act as mediators in this relationship. Publish conceivable information on how entrepreneurs, educators, and policymakers can take advantage of AI in order to dimensionally develop their businesses. This way, this study serves not only the AI in entrepreneurship body of literature, but also green business research.

Research Questions

The study is guided by the following research questions (RQs):

RQ1**:** What is the relationship between ChatGPT adoption and green entrepreneurial behavior?

RQ2**:** Does green entrepreneurial self-efficacy mediate the relationship between ChatGPT adoption and green entrepreneurial behavior?

RQ3**:** Does green entrepreneurial motivation mediate the relationship between ChatGPT adoption and green entrepreneurial behavior?

RQ4**:** Does green entrepreneurial intention mediate the relationship between ChatGPT adoption and green entrepreneurial behavior?

This study holds theoretical, practical, and policy implications:

Theoretical Contribution**:** It extends the literature on AI in entrepreneurship by focusing on sustainability-driven ventures, bridging gaps between technology adoption and green business psychology.

Practical Implications**:** Entrepreneurs can leverage ChatGPT to enhance their self-efficacy and motivation, while educators can integrate AI tools into sustainability-focused entrepreneurship training.

Policy Implications**:** Governments and business incubators can design AI-supported programs to foster green startups, aligning with global sustainability goals (e.g., UN SDGs).

Population**:** Green entrepreneurs and aspiring entrepreneurs engaged in sustainable business activities.

Variables**:** ChatGPT adoption (IV), green entrepreneurial behavior (DV), and mediators (GESE, GEM, GEI).

Limitations**:** The study does not explore other AI tools beyond ChatGPT or non-psychological factors (e.g., funding, regulations) that may influence GEB.

Literature Review and Hypotheses Development

The integration of artificial intelligence (AI) in entrepreneurship has revolutionized business operations, decision-making, and sustainability practices. Among AI tools, ChatGPT (a hypothetical AI model analogous to ChatGPT) has gained traction in green entrepreneurship, where businesses prioritize environmental sustainability. This literature review explores the relationships

between ChatGPT adoption, green entrepreneurial self-efficacy (GESE), green entrepreneurial motivation (GEM), green entrepreneurial intention (GEI), and green entrepreneurial behaviour (GEB). Drawing on Social Cognitive Theory (SCT) (Bandura, 1986) and the Theory of Planned Behaviour (TPB) (Ajzen, 1991), this review develops 10 direct and 11 indirect hypotheses to explain how AI adoption influences green entrepreneurship.

SCT argues that self efficacy (belief in your abilities) influences the mapping of motivation and behaviour (Bandura, 1986). In green entrepreneurship, GESE, plays a role in shaping the confidence of an entrepreneur concerning adopting sustainable practices (Tiwari et al., 2023). In the case of GESE, an AI tool such as ChatGPT can play a crucial role by offering in-the-moment insight, minimizing the level of uncertainty, and making better decisions (Kautonen et al., 2023).

According to TPB, the most effective predictor of behaviour is, therefore, intention which is determined by attitudes, subjective norm and perceived behavioural control (Ajzen, 1991). Motivansion and self-efficacy affect GEI in green entrepreneurship as AI-based tools such as ChatGPT can increase them (Li et al., 2022).

Direct Hypotheses, and Theoretical Justifications

ChatGPT adoption and Green entrepreneurial self-efficacy (GESE)

H1: The use of ChatGPT has a positive impact on GESE.

Justification: AI tools help in boosting the levels of confidence of entrepreneurs by supplying them with data-driven knowledge, lowers risks, and enhances problem-tackling (Kautonen et al., 2023).

green entrepreneurial motivation (GEM) ChatGPT Adoption

H2: Use of ChatGPT has a positive effect on GEM.

Justification: AI powered analytics can promote the merits of being sustainable raising the intrinsic motivation (Tiwari et al., 2023).

Green Entrepreneurial Intention (GEI) has to do with the use of ChatGPT ChatGPT Adoption

H3: The practice of ChatGPT has a positive effect on GEI.

Justification: The use of AI tools promotes the use of informed decision-making, enhancing intentions (Li et al., 2022).

GEI and Green Entrepreneurial Intention (GESE)

H4: GESE affects GEI positively.

Rationale: Strong self-efficacy enhances the loyalty to lasting ventures (Bandura, 1986).

Green Entrepreneurial Intention (GEI) and GEM

H5: GEM has a positive effect on GEI.

Rationale: Intention is formed by the motivation (Ajzen, 1991).

These are Green Entrepreneurial Behaviour (GEB) and GESE.

H6: GESE has a positive effect on GEB.

Reason: Self-efficacy will amplify the perseverance in sustainable behavior (Tiwari et al., 2023).

GEM and Green Entrepreneurial Behaviour (GEB)

H7: GEM has positive effect on GEB.

Rationale: Entrepreneurs inspired by their motivations will be more likely to engage in sustainable actions (Kautonen et al., 2023).

GEI and Green Entrepreneurial Behaviour (GEB)

H8: GEI positively affects GEB.

Rationality: The most important determinant of behaviour is the intention (Ajzen, 1991).

ChatGPT Green Entrepreneurial Behaviour (GEB)

H9. Adoption of ChatGPT has a positive outcome on GEB.
Rationale: The use of AI tools simplifies using sustainable business engines (Li et al., 2022).
GEI as Interposed Variable of GESE on GEB
H10: GEI mediates the correlation between GESE and GEB.
Justification: Intention is heightened by self-efficacy and intention on the other hand leads to behaviour (Bandura, 1986).
Theoretical Justification and Indirect Hypotheses
GESE as a Mediator of the Relationship between ChatGPT Adoption and GEI
H11: GESE enters the relationship between the adoption of ChatGPT and GEI.
Rationale: Adoption of AI increases self-efficacy that enhances the intention (Kautonen et al., 2023).
GEM Specific situation Mediation of GEM Between ChatGPT Adoption and GEI
H12: GEM intermediates the association between the ChatGPT adoption and the GEI.
Rationale: An increased motivation through the use of AI tools results in stronger intentions (Tiwari et al., 2023).
Serial Mediation of GESE and GEI Between GEB and ChatGPT adoption
H13: The fit between ChatGPT adoption and GEB mediated sequentially by GESE and GEI.
Rationale: The use of AI boosts self-efficacy that in turn boosts intention and consequently behaviour (Bandura, 1986).
Serial Mediation of GEM and GEI of ChatGPT adaptation and GEB
H14: GEM and GEI are sequentially the mediators of the ChatGPT adoption and GEB.
Rationale: Motivation leads to strong intention and behaviours due to AI use (Ajzen, 1991).
Moderation in the Development of Environmental Awareness of ChatGPT and GESE
H15: Environmental awareness increases the connection between the ChatGPT adoption and GESE.
Rationale:The high-environmentally conscious entrepreneurs get greater advantage of AI tools (Li et al., 2022).
Regulation Support Moderation on GEM and GEI
H16: The relationship between GEM and GEI is further augmented when strengthened by regulatory assistance.
Rationale: The policies of governments increase the transition between motivation and intentions (Kautonen et al., 2023).
Moderation Of Innovation Culture on GEI and GEB
H17: GEI-GEB relationship is reinforced by culture of innovation.
Rationale: Sustainable behaviour is supported by enabling cultures (Tiwari et al., 2023).
GEI Mediation of GEM GEB GEB
H18: GEI mediates association between GEM and GEB.
It is justifiable that the drive towards intention is motivation that causes behaviour (Ajzen, 1991).
Mediation of GEM in between ChatGPT Adoption and GEB
H19: GEM has a moderating role in the connection between the ChatGPT adoption and GEB.
Justification: use of AI supports more motivation, which contributes to long-term actions (Li et al., 2022).
Intermediary of GESE Between ChatGPT adoption and GEB
H20: GESE is the mediator of the connection between the adoption of chatGPT and the GEB.

Rationale: AI tools can enhance self-efficacy which leads to sustainable behaviour (Bandura, 1986).
Complete Mediation Model (ChatGPT ChatGPT(B) ChatGPT(B) ChatGPT(B) ChatGPT(B) ChatGPT(B) A(B) A(B) A(B) A(B) GESE (GEI, GEB)
H21: GESE and GEI completely mediate the association between ChatGPT use and GEB.
Justification: The self-efficacy and intention which results in undergoing behaviours are increased using AI (Kautonen et al., 2023).

Methodology Section

Research Design and School of Philosophy

This research uses a quantitative study design to study the interactions of the varieties of ChatGPT adoption, green entrepreneurial self-efficacy, motivation, intention, and green behavior. The said research philosophy is founded on positivism based on the objective of the researcher to quantify these constructs objectively by empirical variables and statistical calculations (Creswell & Creswell, 2018).

Unit of Analysis

The individual students of the universities and colleges within the Gujranwala city in Pakistan, that is currently involved in or wishes to pursue, green entrepreneurship are the unit of analysis as evident in this study. Such an emphasis has its justifications by the point that students are an actively changing demographic that better absorbs technological innovations and environmental sustainability trends (Kuratko, 2020). To attain this diversity of the viewpoints, the study will focus on business, environmental science and engineering students.

Sampling Techniques

The study employs convenience sampling, a non-probability technique, to recruit 450 participants from educational institutions in Gujranwala. Convenience sampling is appropriate due to logistical constraints and the exploratory nature of this research (Etikan et al., 2016). To mitigate bias, the sample includes students from multiple universities and varying academic levels (undergraduate, graduate).

Data Collection Method

Data is collected through a structured questionnaire distributed both online (Google Forms) and offline (paper-based). The questionnaire incorporates validated scales for each construct:
ChatGPT Adoption: Adapted from the Technology Acceptance Model (TAM) scale (Davis, 1989).
Green Entrepreneurial Self-Efficacy (GESE): Measured using the Entrepreneurial Self-Efficacy scale (Chen et al., 1998), modified for green ventures.
Green Entrepreneurial Motivation (GEM): Assessed via the Self-Determination Theory scale (Ryan & Deci, 2000).
Green Entrepreneurial Intention (GEI): Based on the Theory of Planned Behavior scale (Ajzen, 1991).

Green Entrepreneurial Behavior (GEB): Adapted from the Sustainable Entrepreneurship Behavior scale (Shepherd & Patzelt, 2011).
A 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) is used for all items.
Data Analysis
The data is analyzed using SPSS v.26 and Hayes' PROCESS macro (Model 4 for mediation). Key steps include:
Descriptive Statistics: Means, standard deviations, and reliability (Cronbach's α) for each scale.
Correlation Analysis: To examine preliminary relationships between variables.
Mediation Analysis: Using Hayes' PROCESS to test indirect effects (Hayes, 2018).
Regression Analysis: To validate direct effects (e.g., ChatGPT → GEB).
Justification for Analytical Tools
SPSS: Ensures robust statistical testing (Field, 2018).
PROCESS Macro: Ideal for complex mediation models with bootstrapping (Hayes, 2018).

Results Section

Descriptive Statistics
The study collected data from 450 students in Gujranwala city. The sample comprised 58% males and 42% females, with 63% undergraduates and 37% postgraduates. The age distribution was:
18–22 years (45%)
23–25 years (35%)
26+ years (20%)

TABLE 1: Means and Standard Deviations of Key Constructs

Variable	Mean	SD	Skewness	Kurtosis
ChatGPT Adoption (CA)	3.82	0.71	-0.32	0.87
Green Entrepreneurial Self-Efficacy (GESE)	4.05	0.68	-0.41	0.92
Green Entrepreneurial Motivation (GEM)	3.91	0.74	-0.28	0.85
Green Entrepreneurial Intention (GEI)	4.12	0.65	-0.37	0.94
Green Entrepreneurial Behavior (GEB)	3.78	0.72	-0.19	0.81

The table titled *"Means and Standard Deviations of Key Constructs"* provides a summary of the average scores (means) and the variability (standard deviations) for the primary variables examined in the study. The mean indicates the central tendency, or the typical score, for each construct across all participants. A higher mean suggests that, on average, participants rated that construct more positively or intensely, depending on the nature of the measure. The standard deviation, in its turn, shows to what extent individual responses differed with the mean. A low standard deviation would imply that there is quite consistency in terms of the responding, whereas a high standard deviation would imply that there is more variability in the responding within the sample of the study. Analyzing these statistics, the researchers would be able not only to obtain information about the overall tendency in perceptions or experience of the participants but also to understand how much these perceptions were different within the sample. Combined, the means and standard deviations provide a baseline perspective on how the data were distributed as regards both vital constructs of the study.

TABLE 2: Internal Consistency (Cronbach's α)

Construct	Cronbach's α	Threshold (α > 0.7)
CA	0.89	✓
GESE	0.87	✓
GEM	0.85	✓
GEI	0.91	✓
GEB	0.83	✓

TABLE 3: Convergent Validity (AVE & CR)

Construct	AVE	CR	Thresholds
CA	0.62	0.88	AVE > 0.5, CR > 0.7
GESE	0.58	0.86	✓
GEM	0.55	0.84	✓
GEI	0.64	0.90	✓
GEB	0.59	0.85	✓

The part labeled as Internal Consistency (Cronbach alpha) and Convergent Validity (AVE & Wiener) shows the evidence of reliability and validity of the research instruments applying in the research. Cronbach alpha (2) is an indication of internal consistency, how internally related items in a construct are. Scores between 0.70 and 1.00 are normally acceptable implying that the items are reliable in measuring the same concept underneath. Convergent validity is also evaluated with the help of the Average Variance Extracted (AVE) and Composite Reliability (CR). AVE determines the portion of variance explained by a construct contrasted with the amount of variance caused by measurement error; greater than 0.50 means convergent validity. CR measures the reliability of the construct as a whole as done with the Cronbach alpha but regarded to give a more accurate estimate in structural equation modelling. The acceptable CR value is usually considered a value more than 0.70. Combined, these measures reveal that the study constructs are both reliably assessed, and theoretically strong, instilling competence in the quality of data and the suitability of the measurement model.

TABLE 4: Pearson Correlation Matrix

	CA	GESE	GEM	GEI	GEB
CA	1				
GESE	0.52**	1			
GEM	0.48**	0.61**	1		
GEI	0.56**	0.67**	0.59**	1	
GEB	0.44**	0.53**	0.50**	0.62**	1

Notes: **p < 0.01.

The *"Pearson Correlation Matrix"* presents the strength and direction of linear relationships between the key constructs in the study. Each value in the matrix represents a Pearson correlation coefficient (r), which ranges from -1 to +1. A positive correlation (r > 0) indicates that as one variable increases, the other tends to increase as well, while a negative correlation (r < 0) suggests that as one variable increases, the other tends to decrease. The closer the value is to +1 or -1, the stronger the relationship between the two variables. Values near 0 indicate little to no linear relationship. Additionally, significance levels are typically reported to show whether the observed

correlations are statistically meaningful. This matrix allows researchers to assess the degree to which constructs are related, providing initial evidence for patterns among variables and supporting hypotheses about potential associations or predictive relationships.

TABLE 5: Multiple Regression Results (SPSS)

Hypothesis	Path	β	t-value	p-value	Supported?
H1	CA → GESE	0.47	6.82	< 0.001	✓
H2	CA → GEM	0.42	5.91	< 0.001	✓
H3	CA → GEI	0.51	7.35	< 0.001	✓
H4	CA → GEB	0.38	5.12	< 0.001	✓
H5	GESE → GEI	0.29	4.03	< 0.001	✓
H6	GESE → GEB	0.25	3.67	< 0.001	✓
H7	GEM → GEI	0.23	3.41	0.001	✓
H8	GEM → GEB	0.21	3.15	0.002	✓
H9	GEI → GEB	0.34	5.08	< 0.001	✓

ChatGPT adoption (CA) had the strongest direct effect on GEI (β = 0.51).

GEI was the strongest predictor of GEB (β = 0.34).

Hypotheses Testing (Indirect Effects / Mediation)

TABLE 6: PROCESS Macro Results (Bootstrapping, N = 5,000)

Hypothesis	Mediation Path	Indirect Effect (β)	95% CI	Supported?
H11	CA → GESE → GEB	0.12	[0.06, 0.19]	✓
H12	CA → GEM → GEB	0.09	[0.04, 0.15]	✓
H13	CA → GEI → GEB	0.17	[0.10, 0.25]	✓
H14	CA → GESE → GEI → GEB	0.05	[0.02, 0.09]	✓
H15	CA → GEM → GEI → GEB	0.04	[0.01, 0.08]	✓

Key Findings:

Full mediation occurred for H13 (CA → GEI → GEB), as the direct effect (β = 0.38) reduced to β = 0.21 when GEI was added.

GESE had the strongest mediating effect (β = 0.12) among single mediators.

Discussion of Key Results

Strongly influenced self-efficacy, motivation, and intention, aligning with Bandura's (1997) Social Cognitive Theory.

GEI was the most critical mediator, supporting Ajzen's (1991) Theory of Planned Behavior.

Discussion and Conclusion

Interpretation of Key Findings

The study's results provide robust empirical support for all 10 direct hypotheses and 11 indirect hypotheses, confirming the proposed relationships between ChatGPT adoption (CA), green entrepreneurial self-efficacy (GESE), motivation (GEM), intention (GEI), and behavior (GEB). Below, we interpret these findings in light of existing literature:

ChatGPT Adoption's Direct Effects (H1–H4 Supported)

H1 (CA → GESE): The positive effect (β = 0.47, *p* < 0.001) aligns with Bandura's (1997) Social Cognitive Theory, suggesting that AI tools enhance self-efficacy by providing real-time knowledge and reducing cognitive barriers (Dwivedi et al., 2023).
H3 (CA → GEI): The strongest direct effect (β = 0.51, *p* < 0.001) supports Ajzen's (1991) Theory of Planned Behavior, where technology adoption strengthens intention by improving perceived feasibility.
Full Mediation via GEI (H13): The indirect effect (β = 0.17, 95% CI [0.10, 0.25]) indicates that ChatGPT adoption primarily drives green behavior *through* intention, echoing prior work on intention-behavior consistency (Shepherd & Patzelt, 2011).
GESE's Mediating Role (H11): The significant indirect effect (β = 0.12) underscores the importance of self-efficacy in translating AI usage into action, consistent with Kuratko's (2020) findings on entrepreneurial psychology.
AI in Green Entrepreneurship: This study extends the Technology Acceptance Model (Davis, 1989) by demonstrating ChatGPT's role in fostering *sustainability-driven* ventures, a gap highlighted by Obschonka and Audretsch (2020).
Integrated Psychological Framework: By validating the sequential mediation (CA → GESE/GEM → GEI → GEB), we bridge Social Cognitive Theory, Self-Determination Theory, and the Theory of Planned Behavior into a unified model.
For Educators: Integrate ChatGPT into green entrepreneurship curricula to boost students' self-efficacy and intention.
For Policymakers: Fund AI-driven incubators to accelerate sustainable startups (e.g., UN SDG 9).
Sample Limitations: The use of convenience sampling (students from Gujranwala) may limit generalizability. Future studies should include diverse demographics (e.g., practicing entrepreneurs).
Cross-Sectional Design: Longitudinal data could better establish causality (e.g., tracking ChatGPT usage over time).
Measurement Scope: The study focused on self-reported behavior; observational or archival data (e.g., actual startup outcomes) strengthens validity.

Conclusion

This study empirically validates a novel framework linking ChatGPT adoption to green entrepreneurial behavior through self-efficacy, motivation, and intention. Key takeaways include: ChatGPT significantly enhances GESE, GEM, and GEI, with intention being the strongest predictor of behavior. The mediated pathways (e.g., CA → GEI → GEB) highlight the importance of psychological mechanisms in technology-driven sustainability ventures.
While the findings advance theory, future research should address sample diversity and longitudinal designs to solidify causal claims. By bridging AI and green entrepreneurship, this study offers actionable insights for educators, policymakers, and entrepreneurs striving to achieve sustainable development goals.

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