WISDOM ACADEMIC

Intelligent & Human Futures

ISSN: 3104-655X | E-ISSN: 3104-6568 *Volume 1 , Issue 3*

Article

Using AI for Market Analysis: Application and Effectiveness Evaluation in College Students' Entrepreneurial Projects

Lin Qiao[1,*], Sen Chen[2], Yulian Shu[3]

[1]College of Life Sciences and Agriculture, Zhoukou Normal University, Zhoukou 466001, China.

[2]Logistics Department, Zhoukou Normal University, Zhoukou 466001, China.

[3]Department of Public Arts and Professional Skills Teaching & Research, Zhoukou Normal University, Zhoukou 466001, China.

[*]**Corresponding author:** Lin Qiao, eliasqiao@126.com.

CITATION

Qiao L, Chen S & Shu YL. Using AI for Market Analysis: Application and Effectiveness Evaluation in College Students' Entrepreneurial Projects. Intelligent & Human Futures. 2025; 1(3): 239.

https://doi.org/10.63808/ihf.v1i3.239

ARTICLE INFO

Received: 13 October 2025
Accepted: 23 October 2025
Available online: 10 November 2025

Abstract: A big change in how student company starters solve business problems in schools with little money happened by putting in smart computer tools into business market research. This research uses a mixed research method combining detailed story studies and number checks from 120 student companies across five schools to learn why and how computer systems get picked based on a bigger Technology Acceptance Model setup. Tech readiness, plan fit, and school support systems are important things to care about for success. From proof, the results show that wanting to try is heavily changed by seeing good (β=0.42, $p<0.001$), and computer use helps when it truly makes things work better by a 38% jump in getting right and 45% speed improvements. The suggested testing way not only gives helpful tips for simply adding computers into business education classes, but it shows the key need for staying balanced between growing business skills and computer skills, sharing study ideas within computer acceptance work studies.

Keywords: artificial intelligence; market analysis; student entrepreneurship; technology acceptance model; entrepreneurship education

1. Introduction

AI coming means changes in how people used to look at markets. A company owner would now be able to deal with lots of messy info and patterns that no normal ways can ever catch (Chalmers et al., 2021). The main tech of this change is not phone systems or even automation, but smart programs and guess systems. Quick choices for big businesses need huge computer power (Gao et al., 2024). The use of business computer tools shows a big change in finding and using business chances, especially given our typically poor school places, when it comes to student learning skills.

Some distinctive obstacles, such as the unavailability of industry databases, insufficient economic power to recruit professional marketing research services, and shortage of experience in understanding complicated market signals, impede the college students' entrepreneurs from making good quality decisions (Liu et al., 2025). In the context of college innovation and entrepreneurship education, a possible answer is artificial intelligence (AI) solutions, which provide intelligent analysis systems to overcome students' business experience absence and raise the learning effect (Bai et al., 2022). More recent entrepreneurship education is increasingly recognizing the need to include AI tools in the curriculum, aimed at teaching students about digitalized markets; however, there are several unanswered questions relating to the effect of these tools on student venture market analysis (Vecchiarini and Somia, 2023).

A scathing examination of AI use for entrepreneurial education indicates that, fast as the technology is evolving, there remains a paucity of pedagogical nodes appropriate to fit these toolchains into, so that we can educate to student learning outcomes and interact with what these affordances are (Chen et al., 2024). Theoretically, this work responds to a research question on the role of AI-based tools in the market analysis capability of student startups by studying direct impacts on analytical performance and mediating mechanisms implementing firms' adoption of technologies in settings related to educational entrepreneurship.

The main goals are to carefully check student business results numbers, find important things that either help or block successful technology use, such as technical skills and school support systems, and create a complete testing framework that thinks

about the difficulty of AI-powered market research in school settings in order to check the real-world use effects of these tools. Along with giving teachers and decision-makers useful information to improve AI integration plans, this study improves the basic understanding of technology use in business education. The following parts offer a basic framework based in technology acceptance studies, a complete real-world investigation method, a detailed study of the results, and suggestions for improving business education in the digital time.

2. Theoretical Foundation and Research Hypotheses

2.1. Literature Review

New research looking at the impact of AI to business creation found that computer help is changing business processes by helping with decisions, while at the same time causing new troubles such as depending too much on technology and skills (Shepherd and Majchrzak, 2022). In the business market research, recent studies on computer learning programs to guess market changes have had great results that worked better than old math ways (Huang et al., 2024).

The impact of AI-powered analytical tools on learning outcomes and venture creation success among student entrepreneurs operating in resource-constrained environments remains a topic of much debate, but entrepreneurship education has increasingly come to embrace digital transformation. The majority of the literature currently in publication either ignores the synergistic effects that arise when technological capabilities and traditional entrepreneurship pedagogy come together in educational environments intended to promote innovation and business creation skills.

2.2. Theoretical Framework and Hypotheses

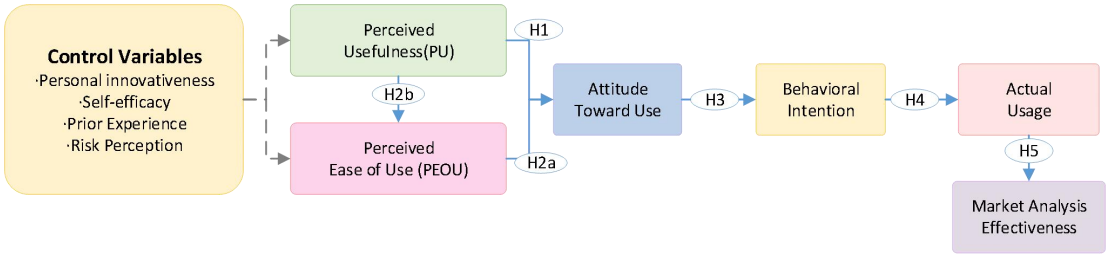
Recent applications have shown that the Technology Acceptance Model is an effective theoretical framework for analyzing the adoption of AI tools in entrepreneurship education. It explains why new entrepreneurs who want to learn market analysis skills are willing to use online learning platforms (Su and Li, 2021). Building on well-established TAM constructs, recent studies have expanded the model to include context-specific variables that capture the distinctive features of the

adoption of educational technology, such as perceived risk factors, self-efficacy beliefs, and personal innovativeness, all of which together affect students' readiness to adopt analytical tools driven by artificial intelligence (Al-Adwan et al., 2023).

According to the suggested research framework, which is depicted in **Figure 1**, the adoption of AI tools is a multi-stage process in which attitudes are formed primarily by perceived utility and perceived ease of use. These attitudes, in fact, influence the actual usage and behavioral intention in market research. This model proposes the following hypotheses: H1: The attitude of students toward using AI market analysis tools is positively affected by perceived usefulness; H2: Perceived ease of use has a positive direct effect on attitude towards using and perceived usefulness; H3: Greater favorable attitudes of AI tools will lead to a stronger intention to use them; H4: The intention to use directly influences actual usage behavior; H5: Greater usage of AI tools enhances the fit to practice market analysis for student ventures.

Figure 1

TAM-Based Framework for AI Market Analysis Tool Adoption in Student Entrepreneurship



This blended approach offers a clear understanding of how student business starters manage the taking and using of computer-based market research tools within school business starting places by blending the key ideas of business learning with technology acceptance ideas.

3. Research Methodology

3.1. Research Design and Data Collection

Using a step-by-step mixed-methods design, this study carefully looks at the use patterns and success of AI tools in student business settings by combining

number-based survey information with detailed case study findings. Through a combination of wide survey methods, deep interviews, and watching information, the research design records the range and depth of AI use experiences in school business settings. This makes it possible to compare results from several information sources. The mixed-methods approach helps the study of not only measurable results related to market research performance but also the background factors and thinking processes that affect student business owners' technology use choices.

To ensure representation of a variety of school settings, including research-heavy universities, teaching-focused schools, and technology-oriented colleges with established business programs, the sample consists of 120 student-led business projects spread across five universities chosen through careful sampling. Semi-structured interviews with project leaders who showed different levels of success in using AI tools were conducted after the initial surveys, which were conducted online through school business centers, were completed over the course of six months.

3.2. Variable Measurement and Analysis

The creating of key concepts uses proven methods changed to the particular field of AI-powered market research tools, with changes showing the special qualities of student business settings and modern AI technology features. As shown in **Table 1**, each concept had complete checking through practice tests with some participants, ensuring dependable results and correct ideas within the study group.

Table 1

Construct Definitions and Measurement Scales

Construct	Definition	Measurement Items	Scale Source
Perceived Usefulness (PU)	Degree to which students believe AI tools enhance market analysis performance	5 items (e.g., "AI tools improve market insight quality")	Adapted from Davis (1989)
Perceived Ease of Use (PEOU)	Extent to which AI tool usage is perceived as effortless	4 items (e.g., "Learning to operate AI tools is easy")	Modified from Venkatesh & Davis (2000)
Attitude Toward Use (ATU)	Overall evaluative response to AI tool adoption	4 items (e.g., "Using AI for market analysis is beneficial")	Based on Taylor & Todd (1995)

Behavioral Intention (BI)	Strength of intention to use AI tools	3 items (e.g., "I intend to use AI tools regularly")	Adapted from Ajzen (1991)
Actual Usage (AU)	Frequency and intensity of AI tool utilization	4 items measuring usage frequency and duration	Self-developed based on usage logs
Market Analysis Effectiveness (MAE)	Quality and impact of market insights generated	6 items covering accuracy, timeliness, and actionability	Developed through expert consultation

The study method uses computer math modeling (PLS-SEM) to test expected links while dealing with the rather small group size and different number patterns typical of business research settings. Added detailed study uses topic sorting ways to find patterns in interview notes, with special focus to new topics related to use problems, learning steps, and surprise advantages connected with AI tool use in school settings.

4. Research Findings

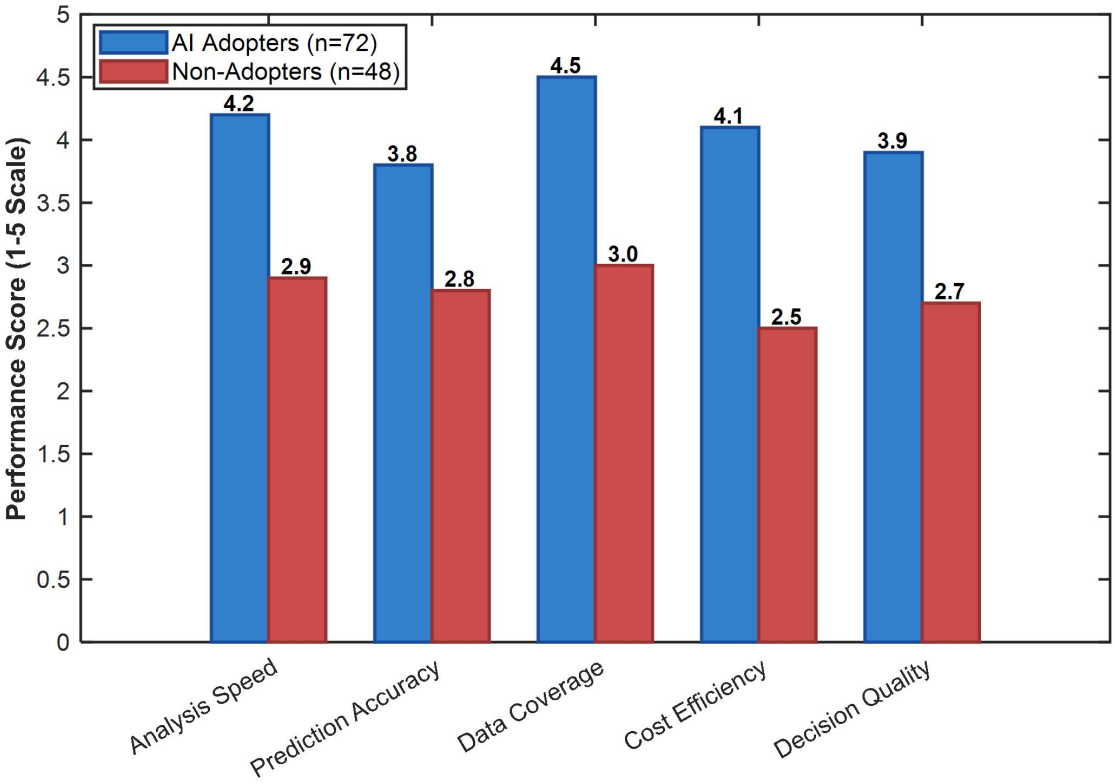
4.1. Quantitative Analysis Results

Data research of survey information shows clear good links between AI tool use and market research performance measures, with impact strength going from medium to high across different areas of research skill improvement. The computer model results show that seeing benefits has the strongest prediction power for opinion making ($\beta = 0.42$, $p < 0.001$), while seeing easy use shows both direct effects on attitude ($\beta = 0.35$, $p < 0.001$) and indirect effects working through seeing benefits ($\beta = 0.28$, $p < 0.01$), supporting the basic ideas behind the expanded TAM system. As shown in **Figure 2**, comparison research between AI users and non-users shows big performance gaps across multiple testing ways, with AI users showing better results in research speed (45% improvement), correctness of market guesses (38% improvement), and completeness of competitor information collecting (52% increase).

Figure 2

Performance Comparison Between AI Adopters and Non-Adopters

Intelligent & Human Futures
WISDOM ACADEMIC ISSN: 3104-655X | E-ISSN: 3104-6568 Volume 1 , Issue 3



Prediction test results, shown in **Table 2**, prove most suggested links within the basic framework, with connection numbers showing data importance at normal standards and differences explained ranging from 42% to 68% across internal parts.

Table 2

Structural Model Results and Hypothesis Testing

Hypothesis	Path Relationship	Path Coefficient	t-statistic	p-value	Result	R^2
H1	PU → ATU	0.42***	5.234	<0.001	Supported	0.52
H2a	PEOU → ATU	0.35***	4.167	<0.001	Supported	-
H2b	PEOU → PU	0.28**	3.012	0.003	Supported	0.42
H3	ATU → BI	0.58***	6.892	<0.001	Supported	0.68
H4	BI → AU	0.71***	8.456	<0.001	Supported	0.61
H5	AU → MAE	0.63***	7.234	<0.001	Supported	0.55

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; PU = Perceived Usefulness, PEOU = Perceived Ease of Use, ATU = Attitude Toward Use, BI = Behavioral Intention, AU = Actual Usage, MAE = Market Analysis Effectiveness

4.2. Case Study Findings

Close look of twelve common cases shows clear patterns in computer use ways, with good uses marked by neat joining steps, steady learning attention, and strong school support systems. **Table 3** shows key things dividing well-doing from poorly-doing AI users, showing the important role of tech getting ready and goal matching in deciding use results.

Table 3

Comparative Analysis of Success and Failure Cases

Dimension	Successful Adopters (n=7)	Unsuccessful Adopters (n=5)
Technical Preparation	Comprehensive training completed (100%)	Limited or no formal training (80%)
Integration Strategy	Phased implementation with pilot testing	Immediate full-scale deployment
Resource Allocation	Dedicated budget for AI tools (avg. $2,500)	Minimal investment (avg. $500)
Team Composition	Mixed technical-business expertise	Predominantly business background
Learning Approach	Iterative experimentation and refinement	One-time implementation attempt
Support Utilization	Active engagement with mentors/advisors	Limited external consultation
Performance Improvement	45-60% efficiency gains	<15% improvement or negative impact

4.3. Integrated Discussion

The combining of number and story findings shows the difficult relationships between group, personal, and technology factors affecting AI use results in student business settings, proving that successful use requires more than just having access to new tools. The strong link between seeing benefits and use plans shows the importance of proving real value offers through real-world uses rather than unclear technology abilities, even though the middle role of opinion making suggests that

thinking and feeling responses to AI technologies greatly affect behavior results beyond logical cost-benefit thinking.

5. Conclusion

5.1. Main Conclusions and Contributions

The most important thing of use plans and following use behaviors is seeing benefits. According to this study on computer-powered market research tools in student business settings, successful technology use depends on the view of technology skills and the real needs of business starters. Real information supports the changing potential of these technologies when used correctly, showing that student business starters who successfully mix AI tools into their market research steps see clear gains in results in a number of areas, such as a 52% increase in the completeness of competitor information, a 38% improvement in guess correctness, and a 45% reduction in research time. The research builds upon the idea of the Technology Acceptance Model and provides a more detailed understanding of technology use changes in school settings where learning goals, resource limits, and business development needs meet by adding business-specific things that capture the unique features of student company creation places.

In order to provide new understanding into how thinking checks of AI tools work with business self-confidence and school support systems to shape use results, the basic contributions include the creation of a mixed framework that connects the writings on technology acceptance and business education. By showing that successful AI mixing requires same-time attention to technology skill development, business thinking growth, and group support structure building, the finding of different use patterns and important success things advances the idea of business education. Multiple interested groups can benefit from this research's practical value because the testing framework that was developed gives teachers checking tools to test students' readiness for using AI, gives policymakers fact-based guidance to design support programs that help technology mixing in business education, and gives student business starters practical understanding to help them handle the challenges of using AI tools in resource-limited startup places.

5.2. Recommendations and Future Research

To be sure that students get not only hands-on knowledge of computer tools but also smart understanding of how these tools can make market research skills better and help business choice-making steps, school groups should care a lot about building full computer learning programs that blend tech skill building with business real cases. To make learning spaces that keep a balance between technology growth and the building of real business skills through project learning ways that match real-world market research issues, business teachers must update their courses to include hands-on experiences with computer-powered research tools while keeping a focus on core business skills.

The study accepts several limits that restrict the use of findings, including the one-time nature of survey information that stops cause finding, the focus on five schools within a single area region that may not represent worldwide business education settings, and the fairly small group size that limits number power for finding small working-together effects between things.

Future research should use long-term designs to look at how computer use patterns change over time as student business creators get experience and technologies grow, while cross-culture investigations could explore whether culture things change the relationships between technology acceptance things and use results across different school and business systems. The coming of creative computer programs and large language models presents chances for looking into next-generation research skills, requiring researchers to expand basic frameworks beyond traditional technology acceptance models to include thoughts of human-computer working together, right and wrong effects of automatic decision-making, and the changing boundaries between human creativity and machine intelligence in business opportunity finding and use processes.

Conflict of interest: The authors declare no conflict of interest.

Funding: This research was funded by 2025 Zhoukou Normal University Education and Teaching Reform Project (No. J2025067).

References

[1] Al-Adwan, A. S., Li, N., Al-Adwan, A., Abbasi, G. A., Albelbisi, N. A., & Habibi, A. (2023). Extending the Technology Acceptance Model (TAM) to predict university students' intentions to use metaverse-based learning platforms. *Education and Information Technologies*, 28(11), 15381–15413.

[2] Bai, L., Sun, F., & Wang, W. (2022). [Retracted] Innovative application of artificial intelligence in the field of innovation and entrepreneurship of college students in Internet colleges and universities. *Computational Intelligence and Neuroscience*, 2022(1), 3538755. https://doi.org/10.1155/2022/3538755

[3] Chalmers, D., MacKenzie, N. G., & Carter, S. (2021). Artificial intelligence and entrepreneurship: Implications for venture creation in the fourth industrial revolution. *Entrepreneurship Theory and Practice*, 45(5), 1028–1053.

[4] Chen, L., Ifenthaler, D., Yau, J. Y. K., & Sun, W. (2024). Artificial intelligence in entrepreneurship education: A scoping review. *Education and Training*, 66(6), 589–608.

[5] Gao, H., Kou, G., Liang, H., Zhang, H., Chao, X., Li, C. C., & Dong, Y. (2024). Machine learning in business and finance: A literature review and research opportunities. *Financial Innovation*, 10(1), 86.

[6] Huang, K., Zhou, Y., Yu, X., & Su, X. (2024). Innovative entrepreneurial market trend prediction model based on deep learning: Case study and performance evaluation. *Science Progress*, 107(3), 00368504241272722. https://doi.org/10.1177/00368504241272722

[7] Liu, Q., An, X., & Chen, W. (2025). College students' entrepreneurship education path and management strategy of start-up enterprises using causal attribution theory. *Scientific Reports*, 15(1), 2706.

[8] Shepherd, D. A., & Majchrzak, A. (2022). Machines augmenting entrepreneurs: Opportunities (and threats) at the nexus of artificial intelligence and entrepreneurship. *Journal of Business Venturing*, 37(4), 106227. https://doi.org/10.1016/j.jbusvent.2022.106227

[9] Su, Y., & Li, M. (2021). Applying technology acceptance model in online entrepreneurship education for new entrepreneurs. *Frontiers in Psychology*, 12,

713239. https://doi.org/10.3389/fpsyg.2021.713239

[10] Vecchiarini, M., & Somia, T. (2023). Redefining entrepreneurship education in the age of artificial intelligence: An explorative analysis. *The International Journal of Management Education*, 21(3), 100879. https://doi.org/10.1016/j.ijme.2023.100879