

# The Influence of Film and Television Work Appreciation on Entrepreneurial Intentions of College Students Based on Artificial Intelligence

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**Abstract:** The purpose is to study the influence of Film and Television (FAT) appreciation on college students' Entrepreneurial Intention (EI) based on Logistic regression. Studies on the influence of FAT appreciation on entrepreneurial psychology exist sufficiently, only without a clear specific influencing factor and mechanism analysis. Firstly, Entrepreneurial Psychology is introduced, including optimism, resilience, and EI. Next, the three major FAT added-values are summarized, hypotheses are proposed, and a conceptual model is proposed along with a Questionnaire Survey (QS) design. Finally, correlation and regression analyses explore the influencing factors and mechanism of FAT added-value on college students' EI. The results indicate that the EI of college students, varying in gender, major, and grade, are influenced to varying degrees by the plot, shooting techniques, and social themes of FAT works. The difference in the influence of shooting techniques on EI is statistically significant at less than 0.01. The difference in influence between social themes and plots reflected in FAT works is statistically significant at less than 0.05. Meanwhile, deep learning and artificial intelligence significantly influence the EI of college students in terms of the plot, shooting techniques, and social themes portrayed in FAT works. This work employs quantitative analytical methods, validating the hypotheses mentioned through the specific application scenarios of deep learning and artificial intelligence in FAT works. The research results underscore that the plot and social themes reflected in FAT works have a greater influence on the EI of college students than shooting techniques. The introduction of deep learning and artificial intelligence further enhances the shaping of psychological factors for entrepreneurship within FAT works. By elevating the audience's emotional experiences and cognitive processes, they actively influence the formation of EI. This work aims to delve into the influencing factors and mechanisms of the additional value of FAT works on the EI of college students, providing a reference for relevant entrepreneurial research.

**Keywords:** entrepreneurial intention; college student; film and television appreciation; logistic regression analysis; influence mechanism; entrepreneurial psychology

## 1. Introduction

In the context of rapid globalization and digitalization, entrepreneurial spirit is regarded as one of the key driving forces behind socio-economic development [1]. Particularly in higher education, how to foster students' Entrepreneurial Intention (EI) has become a focus for governments and educational institutions worldwide [2]. EI is influenced not only by individual psychological traits, such as optimism, resilience, and self-confidence, but also closely relates to external factors, including education, socio-cultural elements, and technological advancements [3]. For instance, Baldo et al. (2024) [4] collected 315 valid responses from universities in the American Midwest, and over 40% of the enrollment rates came from universities located in rural communities. They intended to assess how perceived internal and external barriers affect students' entrepreneurial orientation. The findings revealed that students' perceptions of these barriers significantly influenced their innovation and risk-taking tendencies.

Recently, the widespread dissemination of Film and Television (FAT) works has attracted researchers' attention to their impacts on socio-cultural dynamics and individual psychology [5]. These works not only shape viewers' aesthetic experiences through artistic expression but also stimulate emotional resonance and critical thinking [6]. Elements such as plot, cinematography, and the social themes reflected in these works may significantly influence viewers' motivations and intentions, particularly in entrepreneurship [7]. By deeply appreciating and understanding these media, audiences can experience

diverse social phenomena and life choices, subtly affecting their cognition and decision-making, including their entrepreneurial motivations and beliefs.

With the advancement of Artificial Intelligence (AI) technology, the production and presentation of FAT have undergone profound changes. The application of AI, especially through deep learning, has significantly enhanced visual effects, narrative structure, and emotional rendering [8]. For example, Wang et al. (2022) [9] analyzed university students' reflective thinking regarding expressed ideas and the impact on their values using a deep learning model. Based on this conceptual foundation, a questionnaire was designed to explore factors influencing college students' EI related to FAT. The innovative presentation methods of these works not only enhance viewer immersion but also influence their content choices and understanding through personalized recommendation systems, potentially impacting their psychological states and behavioral intentions [10]. The use of AI in FAT is reshaping cognitive patterns for audiences, particularly for university students in the learning and exploratory phases, which may have profound implications for their EI.

Although previous studies have examined the relationship between arts education and EI, there remains a lack of systematic analysis regarding the specific role of film appreciation in this process [11-13]. This work aims to explore the specific impact mechanisms of AI-based film appreciation on university students' EI, providing new insights and empirical evidence for innovative education and the cultivation of entrepreneurial spirit. By analyzing the influence of film appreciation on students' EI, it fills a gap in the existing literature. While there has been discussion on how arts education affects entrepreneurial psychology, systematic analyses of specific influencing factors and mechanisms are still insufficient. The contribution of this work lies in establishing a conceptual model linking FAT and EI, enriching the theoretical foundations at the intersection of entrepreneurship and arts education, and providing a framework for future related research. This work employs quantitative analysis to validate how the added value of different films influences university students' EI, offering specific empirical evidence. The results can serve as a reference for higher education institutions in curriculum design and policy-making. They can promote the effective integration of arts education and entrepreneurship education to better cultivate students with innovative spirits and entrepreneurial capabilities.

The structure of this work is as follows: Section 1 briefly introduces the background of college students' entrepreneurship and appreciation of FAT. Then, Section 2 introduces the theoretical structure of Entrepreneurial Psychology. Section 3 discusses the relevance of the findings of EI research through empirical analysis. Lastly, Section 4 summarizes research conclusions.

## **2. Theoretical basis and model building**

### ***2.1 Theoretical basis of entrepreneurial psychology***

Entrepreneurship refers to the behavior in which the entrepreneurial subject turns their ideas and thoughts into reality through practice. The entrepreneurial ideas or thoughts mentioned here mainly include psychology, management, economics, pedagogy, and technical connotation [14]. Entrepreneurial Psychology is not commonly offered as a standalone college course, at least not under that specific name within China's educational system. However, this does not mean its concepts and content are absent from higher education. Instead, elements of Entrepreneurial Psychology may be integrated into various courses and teaching modules such as entrepreneurship studies, management, psychology, and career planning. Entrepreneurial Psychology focuses on the psychological characteristics, behavioral patterns, and dynamics involved in entrepreneurship. It explores how entrepreneurs think, make decisions, and cope with challenges throughout the entrepreneurial process. This field encompasses topics such as entrepreneurial motivations, risk-taking propensity, innovative thinking, self-efficacy, resilience, and how these factors influence the growth and success of new ventures. There are several reasons for studying Entrepreneurial Psychology among college students:

1) **Fostering Entrepreneurial Spirit:** Encouraging students to develop entrepreneurial spirit and innovation capabilities helps them demonstrate leadership and creativity in both entrepreneurial ventures and their careers.

2) **Adapting to the Job Market:** As the job market becomes increasingly competitive, students with entrepreneurial traits are better equipped to adapt to market changes and even create job opportunities.

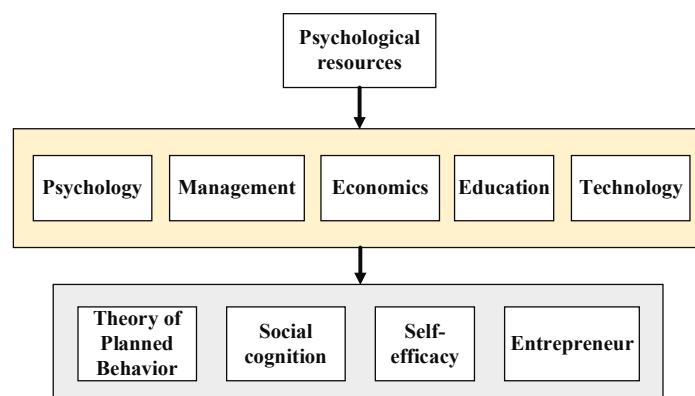
3) **Economic Development:** Entrepreneurial activities are a significant force driving economic development, innovation, and social progress. Understanding and cultivating entrepreneurial

characteristics can empower students to make greater contributions to society in the future.

4) Educational Reform: One of the trends in current educational reform is emphasizing holistic student development, including fostering innovation and practical skills. Entrepreneurial Psychology aligns with this educational philosophy.

5) Personal Development: Studying Entrepreneurial Psychology helps students self-reflect, uncover their potential, enhance problem-solving skills, and strengthen psychological resilience when facing challenges.

Therefore, while "Entrepreneurial Psychology" may not be a standalone course, its concepts and teaching content are widely recognized as important and are integrated into multiple related courses to prepare students for future entrepreneurial activities and career development. As entrepreneurship education continues to gain prominence in Chinese higher education, it is foreseeable that the teaching content related to Entrepreneurial Psychology will receive more attention and integration. This work mainly studies from the perspective of Entrepreneurial Psychology, including the theory of planned behavior, social cognition theory, self-efficacy theory, and entrepreneur theory. Entrepreneurial Psychology, as a field of study, does not originate from a single scholar, but evolves gradually through the contributions of numerous researchers and scholars over an extended period of research and practice. It integrates theories and concepts from multiple disciplines such as psychology, management, and economics to explain and understand the psychological traits, behavioral patterns, and dynamics of entrepreneurs throughout the entrepreneurial process. In the development of Entrepreneurial Psychology, many scholars have made significant contributions to its theories and concepts. For instance, the theory of self-efficacy proposed by Bhati et al. (2022) has had a profound impact on Entrepreneurial Psychology [15]. Etherton et al. (2022) emphasized how an individual's confidence in completing specific tasks affected their motivation, performance, and resilience, which was crucial for understanding how entrepreneurs face challenges and overcome difficulties [16]. In addition to Etherton's work, Ndofirepi et al. (2020) also contributed to the development of Entrepreneurial Psychology through their research on the entrepreneurial process and traits [17]. Furthermore, the theory of planned behavior has contributed to Entrepreneurial Psychology by explaining how individual behavioral intentions are influenced by attitudes, subjective norms, and perceived behavioral control. Overall, the theoretical foundation of Entrepreneurial Psychology has been collectively constructed from the research achievements of multiple scholars. These scholars have provided multidimensional perspectives through different theories and models to help people understand the psychological factors in the entrepreneurial process. As time progresses, the field of Entrepreneurial Psychology continues to evolve, with new theories and concepts emerging to adapt to the evolving entrepreneurial environment and practical demands. Traditionally, entrepreneurial psychology has focused on understanding the psychological factors that drive individuals towards entrepreneurship. In today's era of rapid technological development, it is necessary to extend theoretical understanding to the influence of deep learning and artificial intelligence on entrepreneurial psychology. This section explores the evolution of entrepreneurial psychology in the context of emerging technologies, laying the groundwork for subsequent analyses of FAT appreciation and college students' EI. Fig. 1 shows the theories involved in Entrepreneurial Psychology and their relationships.



*Fig. 1 Theoretical model of entrepreneurial psychology*

Entrepreneurial behavior is a creative activity with relatively high psychological requirements. Throughout entrepreneurial behavior, entrepreneurs often experience psychological pressure, ups and downs, and challenges from misunderstandings [18]. Therefore, exploring the psychological activities

behind entrepreneurial behavior leads to Entrepreneurial Psychology, roughly divided into two aspects from the perspective of entrepreneurs' needs. One aspect is external needs, including physiology, safety, and material needs, or the basic external needs. The other is the entrepreneur's demand for self-realization. Self-realization starts from the individual's independent personality, that is, the person's independence, autonomy, and creativity. Entrepreneurship is just a specific activity of one's self-realization.

The planned behavior theory is the framework of Entrepreneurial Psychology analysis, mainly including five levels: personal attitude, subjective norm, perceived behavior control, intention, and behavior. Fig. 2 is the main theoretical model.

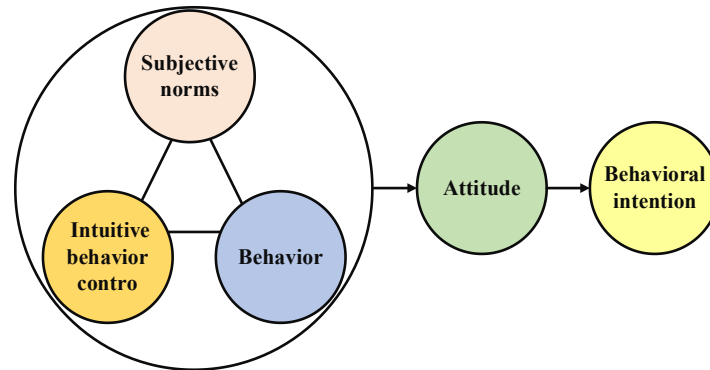


Fig. 2 Theoretical model of planned behavior

Attitude refers to a person's positive or negative feelings about behavior and results from an individual's subjective evaluation of this specific behavior. Therefore, the constituent of attitude is often understood as what value an individual believes he can obtain through the behavior [19]. Subjective norms are the individual's subjective judgment of social pressure from specific behaviors. Meanwhile, subjective judgment can sometimes be influenced by group behaviors. Perceived behavioral control reflects on experiences and predicts obstacles. Fewer obstacles will be expected with more resources and opportunities, thus generating a stronger perceived behavioral control. Perceived behavioral control affects an individual's motivation and predicts a specific behavior. Lastly, behavior intention is an individual's subjective judgment on the probability of taking the specific behavior, reflecting his willingness to act.

American psychologist Albert Bandura put forward the social learning theory in Entrepreneurial Psychology in 1952. Social learning theory focuses on the interaction between human behavior and the environment by observing the role of the psychological state of learning and self-regulation in triggering individual behavior [20]. Researchers generally believe that social learning theory explores the influence of cognition, behavior, environment, and their interaction on human behavior. Correlations are established among cognition, behavior, and environmental factors. Fig. 3 shows the specific relationship.

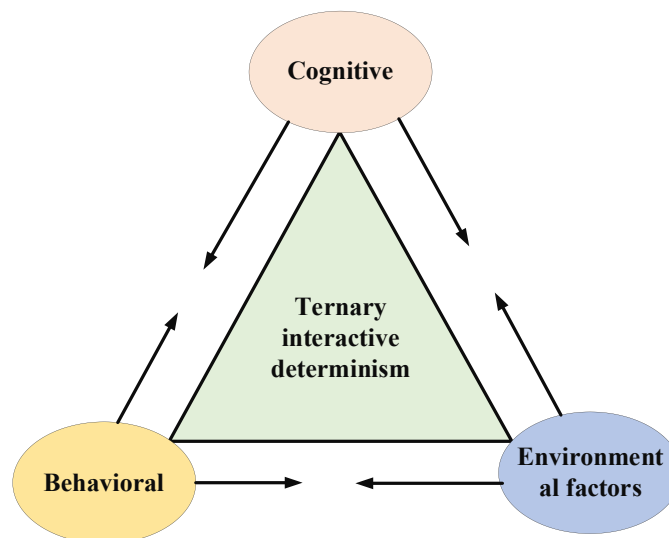


Fig. 3 Social cognitive theory model

Social cognitive theory mainly includes ternary interactive determinism, observational learning, and self-efficacy. The most important theoretical basis is the human nature hypothesis: ternary interactive determinism. The hypothesis claims that behavior, human cognition, and the environment are interrelated and mutually determined [21]. Bandura believes that psychological function is a continuous interaction among human internal factors (such as cognition and emotions), behavior, and environment. Man is the product of the dynamic interaction among the external environment, internal subjective factors, and past and present behaviors. For a simple example, perceiving similar examples can enhance learners' self-efficacy to learn the example's behavior more efficiently.

Bandura puts forward the self-efficacy theory in Entrepreneurial Psychology from the perspective of social learning to explain motivation in special situations. Self-efficacy is a subjective assessment of an individual's ability to complete a certain aspect of work, and it directly affects behavioral motivation. The self-efficacy theory has aroused great interest in motivational psychologists [22]. There are four ways to form self-efficacy: review, success or failure experiences, alternative experiences, and verbal persuasion. Fig. 4 shows the specific relationship among their factors.

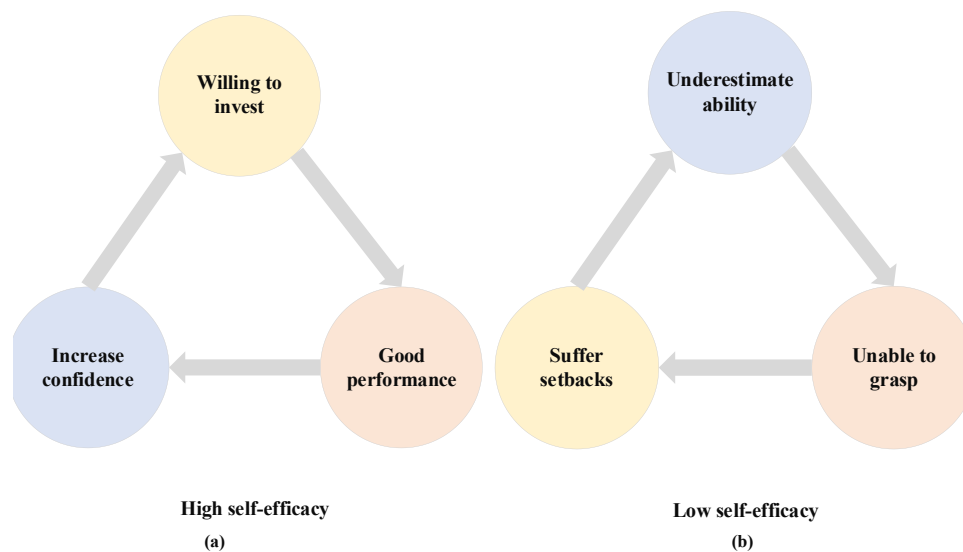


Fig. 4 Theoretical model of self-efficacy (a: high self-efficacy model; b: low self-efficacy model)

Fig. 4 shows that an individual's experience is critical. For example, a successful experience can effectively and positively affect the individual's sense of self-efficacy. The model example of agent experience is also one of the important factors. It can replace actual personal experience to eliminate task-handling uneasiness. However, the experience is not as good as the actual one. Verbal persuasion can make individuals work harder, which is one factor contributing to increased self-efficacy. Nevertheless, it has a short-term effect, not likely to last [23]. Also, self-ability is sometimes used interchangeably with self-efficacy. Overall, self-efficacy is enhanced by successful experiences and reduced by repeated failure.

## 2.2 Concept and theoretical basis of EI

Intention refers to the heart's desire of an individual, which is an undifferentiated and unconscious need. People feel vague about wanting to do something without a clear reason and method. The intention may disappear soon or turn into a purpose that incurs motivation [24]. In particular, EI is the personal attitude of creating a new company or creating a new value in an existing company. It is a person's cognitive and creative behavior to establish a new enterprise and an embodiment and description of personal entrepreneurial attitude and ability.

EI is an individual's awareness and plans for the idea of starting a business. EI is the decisive factor of entrepreneurial behavior determined by behavioral intention. Mostly, behavioral intention is a reliable precursor of actual behavior. Therefore, entrepreneurial behavior will occur only when individuals fully have a strong EI [25]. College students' entrepreneurship refers to the behavior of students in schools and graduates with the ability and expertise to practice entrepreneurship. They master certain value creation abilities and can pinpoint opportunities to develop new products or services or create added values.

### 2.3 Establishment of theoretical model and QS design

Here, the theoretical model of the FAT appreciation is built. The establishment of the theoretical model involves strengthening the integration of factors related to deep learning and artificial intelligence within the frameworks of FAT appreciation and college students' EI. The questionnaire survey design includes specific survey questions about the influence of emerging technologies on entrepreneurial psychology, comprehensively exploring the influence of technological innovation on college students' EI. Before conducting the formal questionnaire survey, the research team implements a pilot study aimed at preliminary testing the validity and reliability of the questionnaire to ensure it accurately measures the research objectives. In order to ensure the relevance and adaptability of the questionnaire design, this work selects a sample group of 40 college students from diverse academic backgrounds to obtain varied feedback and ensure broad applicability. The pilot study includes questionnaire distribution, data collection, preliminary analysis, and questionnaire evaluation. Initially, the research team conducts a trial filling of the questionnaire within a small sample group and then collects feedback from participants regarding their understanding of the questionnaire items and their experience in filling it out. Through the analysis of pilot study data, the research team identifies ambiguities in certain question wordings and notes that some questions might lead to participant biases in understanding. Additionally, it is found that some participants are confused by certain options in the questionnaire, which do not accurately reflect their true thoughts. Based on the feedback from the pilot study, the research team makes several revisions to the questionnaire. These revisions involve rephrasing questions that are ambiguous, adding explanatory text to aid participants' understanding, and adjusting answer options to ensure they comprehensively cover potential responses and are easy to understand. The revised questionnaire undergoes another round of small-scale testing to validate the effectiveness of the modifications. This subsequent testing indicates significant improvements in participants' understanding of the questionnaire and more reasonable completion times, demonstrating that the revision efforts have achieved the intended results. Through this series of pilot studies and revisions, the research team is confident that the final version of the questionnaire effectively measures the research objectives, specifically investigating the impact of emerging technologies on entrepreneurial psychology and EI among college students. This provides a solid foundation for subsequent large-scale questionnaire surveys.

Every individual has a unique aesthetic tendency and sensitive, romantic, strong, and unique psychological characteristics. Thus, the human can resonate with art. Here, 350 Qs are distributed, recovering 330, with an effective rate of 94.3%. The target is graduate and college students, and the QS is directly issued on campus. The collected data are analyzed in the Statistical Packages of Social Science (SPSS)22.0 to screen the multiple-choice, wrong-choice, and missing-choice Qs. Looking at artistic aesthetics, FAT is a highly integrated art form that visualizes themes, usually with concise expressions. Thus, good FAT works can show Artistic Aesthetics and involve aesthetics, education, entertainment, and many other functions. Accordingly, this section summarizes the connotation of the core variables for modeling the influence of FAT appreciation on college students' EI and correlations between the related variables. Based on the theory of planned behavior, self-efficacy theory, and social cognitive theory sorted out above, the influence mechanism of FAT appreciation on college students' EI is deeply analyzed, and a theoretical model is proposed [26]. Fig. 5 demonstrates the theoretical model of the influence mechanism of FAT appreciation on college students' EI.

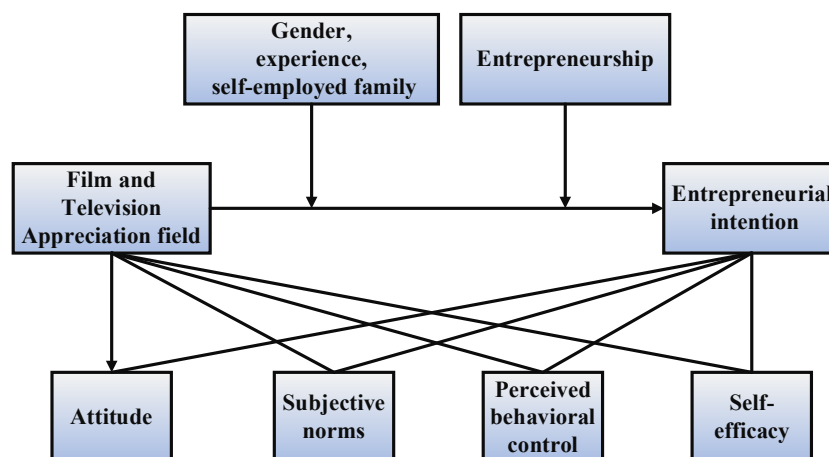


Fig. 5 A theoretical model of the influence mechanism of FAT appreciation on college students' EI

The following analysis will follow the theory of planned behavior [27, 28], self-efficacy theory [29, 30], and social cognition theory [31, 32]. Moreover, the research results of experts and scholars in FAT appreciation entrepreneurship education are cited. This work deeply analyzes the interaction laws among various factors such as attitude, subjective norms, and perceived behavior of FAT appreciation and their influence on college students' EI.

According to the characteristics of college students, small sample testing, collection, and investigation methods are used. The QS is designed using the control variable based on the measured variables. The QS mainly includes four categories to reduce the influence of other factors and highlight the influence mechanism of FAT appreciation on college students' EI. The EI includes four items. Variables are scored using the Likert 5-point scale. The lowest score is 1 point for "very inconsistent," and the highest is 5 points for "very consistent." This measurement method can improve reliability and be adjusted according to the description of the relevant item. The distribution of specific items is shown in Fig. 6.

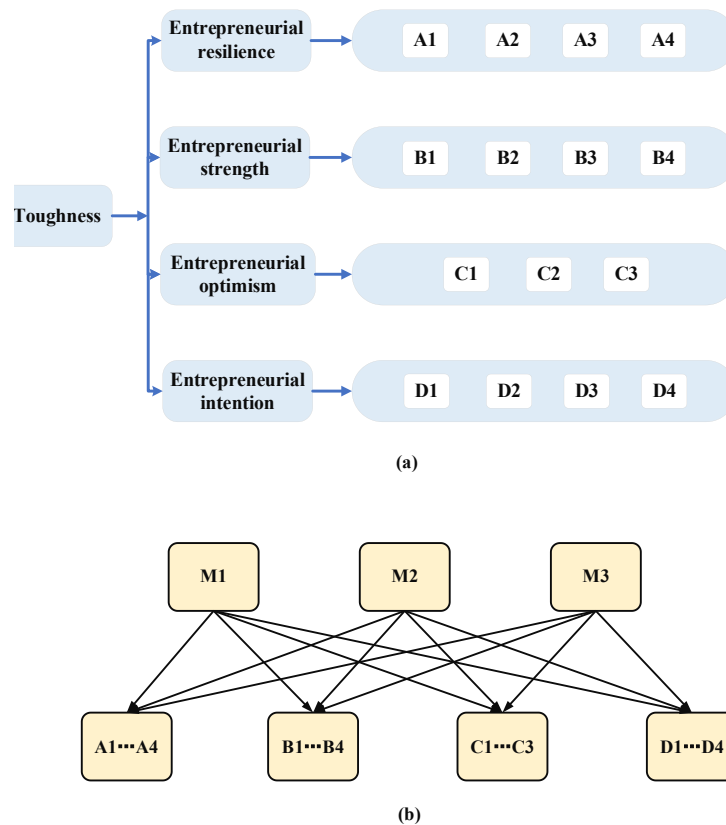


Fig. 6 Distribution and correlation of items (a: distribution correlation among dependent variables b: distribution correlation among all variables)

In Fig. 6, there are three key factors (added values) in FAT appreciation. The correlation of many variables under three important factors is studied based on the interactive analysis of college students' entrepreneurial resilience, entrepreneurial strength, optimism, and EI. Through item-specific distributional correlations, questions are designed to ensure that interactions and correlations between variables are captured. The statistics and analysis of the QS results adopted the methods of correlation, regression analysis, and hypothesis testing. Correlation analysis uses SPSS 22.0 to analyze the correlation of each two variables. Regression analysis also uses SPSS 22.0 to make statistics on the collected data. Moreover, according to the correlation among variables, a regression equation with good correlation is established and extrapolated to predict the variable changes.

### 3. Empirical analyses

#### 3.1 Statistical analysis of the research results of EI

The QS is designed according to the above theoretical model and is divided into three parts: the influence of the FAT plot on EI, shooting technique on EI, and social themes reflected in FAT appreciation

on EI [33]. The entrepreneurial resilience factor is measured at three levels, and EI is measured at a single level. Questions A1-A4 measure entrepreneurial resilience, B1-B4 measure entrepreneurial strength, C1-C3 measure optimism, and D1-D4 measure EI [34-36]. Then, entrepreneurial resilience and rating scales measuring the FAT added-value domain are developed. The variable measurement items reference the questionnaire design by Miralles et al. (2016) [37] and have been appropriately modified to better align with the research on the relationship between film appreciation and EI. Table 1 is the entrepreneurial resilience scale. Table 2 is a scale of the main dimensions in FAT appreciation added values.

*Table 1 Entrepreneurial resilience scale*

Independent variable	Question number	Content
Entrepreneurial Resilience (A)	A1	When I appreciate entrepreneurial stories in films and television, I don't easily give up; I believe I can achieve similar entrepreneurial goals.
	A2	I see myself as someone who enjoys challenges and faces difficulties in the entrepreneurial process.
	A3	Through the entrepreneurial cases presented in films, I am more inclined to solve entrepreneurial problems on my own rather than rely on others' decisions.
	A4	I can actively confront the issues and challenges in entrepreneurship, just like the protagonists in the films.
Entrepreneurial Strength (B)	B1	The experiences of entrepreneurs in films make me feel stronger and braver.
	B2	Regardless of the outcome, I will strive to achieve my entrepreneurial goals like the entrepreneurs in the films.
	B3	Inspired by films, I will work hard to realize my entrepreneurial goals, even when faced with problems.
	B4	When the market or environment changes, I can adapt swiftly, just like the entrepreneurs depicted in the films.
Optimism (C)	C1	I believe I can solve any issues encountered during the entrepreneurial process, just like the entrepreneurs in films.
	C2	When facing entrepreneurial difficulties, I will look for solutions from a positive perspective, like the protagonists in the films.
	C3	When under entrepreneurial pressure, I know I have at least one close partner or team to support me, just like the characters in the films.
EI (D)	D1	By appreciating the entrepreneurial stories in films, I feel excited about starting my own company.
	D2	Inspired by films, I plan to establish my own company after graduation.
	D3	I actively learn about entrepreneurial knowledge from films, gaining insight into the detailed entrepreneurial processes.
	D4	Through films, I have developed my own entrepreneurial plan and detailed business ideas.

*Table 2 Ratings of the main dimensions of the added-value of FAT appreciation*

Independent variable	Question number	Content
Dimensions of the added value of FAT appreciation	M1	Plot of FAT
	M2	Shooting techniques of FAT
	M3	Social themes reflected in FAT

Independent variables on each dimension are analyzed. The correlation analysis results are shown in Fig. 7.

(a)

(b)

*Fig. 7 Correlation analysis results of variables (a: correlation among variables; b: correlation among dependent variables)*

In Fig. 7, the content plot represents the influence of the plot of the FAT on EI. The shooting technique represents the influence of the technical level of the FAT on EI. The social theme represents the influence of the social theme reflected on EI. The subjects' entrepreneurial resilience, entrepreneurial intensity, optimism, and EI are all affected to a certain extent by three variables: plot, shooting technique, and reflected social themes. In terms of entrepreneurial resilience, the correlation coefficient of the impact of FAT shooting techniques on EI is 0.285. In terms of entrepreneurial strength, the correlation coefficient of the impact of FAT shooting techniques on EI is 0.289. In terms of optimism, the correlation coefficient of the impact of FAT shooting techniques on EI is 0.364. The three variables have a significant correlation with college students' EI. Therefore, FAT shooting techniques have the greatest correlation with EI, with a correlation coefficient of 0.364. The correlation coefficients of the impact of the plot, shooting techniques, and the social theme reflected by FAT on the EI are more than 0.1. The results prove a positive correlation between the FAT plot, shooting techniques, and the social theme reflected on the EI. Hypothesis M1, M2, and M3 have been preliminarily verified, respectively, and the corresponding regression analysis results can be obtained.

In the research framework, it is evident that a thorough exploration of the role of deep learning and artificial intelligence in FAT works is essential, particularly their influence on the plot, shooting techniques, and social themes, and how these influences further impact college students' EI. Examining the practical applications of emerging technologies in film and television production reveals the crucial roles played by deep learning and artificial intelligence in FAT creation. This work focuses on how these technologies alter plot design, enhance innovative shooting techniques, and contribute to the portrayal of social themes. Through this, this work investigates how they shape the entrepreneurial psychological factors of the audience and ultimately influence the formation of EI by influencing the audience's emotional experiences and cognitive processes. With quantitative analysis methods, this work delves into specific application scenarios of deep learning and artificial intelligence in FAT works. This work further validates the hypotheses mentioned through extensive data analysis, contributing substantial insights and guidance for future research in entrepreneurial psychology. Additionally, it provides practical guiding principles for the application of deep learning and artificial intelligence in the FAT industry.

### **3.2 Model results analysis of the influence of FAT appreciation on college students' EI**

Regression analysis uses the SPSS22.0 software to make statistics on the collected data to establish a regression equation and extrapolate it to predict the variable changes. Logistic regression analysis will be carried out on three independent variables: the impact of the plot, the shooting techniques, and the social theme reflected in FAT on EI. Fig. 8 shows the specific analysis results.

*Fig. 8 Specific results of Logistic regression analysis*

In Fig. 8, a 95% Confidence Interval (CI) is the sample used to calculate the population value. The larger the Variance Expansion Factor (VIF) is, the greater the likelihood of collinearity. Fig. 8 reveals that the independent variables are the plot, shooting technique, and the social themes reflected in the FAT. Then, the analysis shows that when the R variance is greater than 0.37, the impact of the three independent variables on EI is more than 37%. The results prove that the designed QS meets the test requirements, and the F-value is 42.59. The significance of the influence difference of shooting techniques on EI is less than 0.01. The significance of the influence difference between the social theme reflected in FAT and the plot of FAT is less than 0.05. It indicates that at least one of the above three levels has a close interactive relationship with the EI. The sum of the value of the plot and shooting techniques multiplied by the correlation coefficient and the value of the social theme reflected in FAT multiplied by the correlation coefficient is the coefficient of EI. The multivariate collinearity analysis of the test results suggests that the 95% CI is less than 0.25, and the VIF is greater than 5. Thus, there is collinearity. Therefore, all three independent variables impact EI, and the impact from high to low is: plot > social theme reflected > shooting techniques.

The above analysis shows that entrepreneurial attitude and self-subjective performance significantly affect EI. However, the correlation coefficient of the influence of the FAT plot on EI is 0.364. The difference in the influence of the FAT plot on EI is significantly less than 0.05. The results show that the EI of college students of different genders, majors, and grades is affected by FAT plot, shooting techniques, and social themes to varying degrees. FAT added-value can positively influence college students' EI by affecting their entrepreneurial resilience, strength, and optimism. This work has a practical reference for analyzing college students' EI based on the FAT appreciation using hypothetical and modeling approaches.

The Nagelkerke R-squared value of 0.45 indicates that the model explains approximately 45% of the variability in EI. This relatively high value suggests that the model fits the data well and effectively captures the relationships between the independent variables (content plot, filming techniques, and social themes) and the dependent variable (university students' EI). This implies that, after controlling for other factors, the influence of these three variables on EI is well articulated, providing a solid foundation for subsequent theoretical and practical research.

Regarding the odds ratios, they are 1.426 for content plot, 1.458 for filming techniques, and 1.316 for social themes. These values indicate that for each unit increase in the respective independent variables, the odds of EI occurring increase by 42.6%, 45.8%, and 31.6%, respectively. Notably, the odds ratio for filming techniques is the highest, indicating its most significant impact on EI. This suggests that enhancing filming techniques can effectively stimulate university students' entrepreneurial intentions. Therefore, the analysis of both the Nagelkerke R-squared value and the odds ratios reveals that the multidimensional factors in film appreciation collectively influence EI, emphasizing their important role in promoting entrepreneurial spirit among university students.

In the context of the rapid development of deep learning and artificial intelligence, this work further

investigates how these emerging technologies impact the plot, shooting techniques, and societal themes reflected in FAT works and their influence on EI among college students. The application of deep learning in plot generation, character development, and the creative contributions of artificial intelligence to filmmaking may have profound effects on EI. Examining specific scenarios of deep learning and artificial intelligence in FAT works can further validate the hypotheses mentioned, providing a more comprehensive understanding of the impact of technological innovation on college students' EI.

This work reveals varying degrees of influence on EI from the plot, shooting techniques, and societal themes reflected in FAT works. Against the backdrop of deep learning and artificial intelligence, these findings suggest that these emerging technologies may profoundly impact entrepreneurial psychology by shaping the narrative structure of films, enhancing visual and auditory effects, and employing emotional intelligence applications. This work lays the groundwork for further exploring the role of deep learning and artificial intelligence in the field of entrepreneurial psychology and provides direction for future investigations into the mechanisms of EI with the integration of emerging technologies.

### **3.3 Discussion**

This work empirically analyzes the impact of plot, filming techniques, and social themes in FAT on university students' EI, and verifies the key role of deep learning and AI in this process. The results indicate that FAT significantly influences students' entrepreneurial psychology, particularly with filming techniques showing the strongest correlation with EI, at a coefficient of 0.364. This finding underscores the critical role of technological innovation in shaping students' entrepreneurial mindsets. Concerning existing literature, while previous studies have explored the inspirational effects of film on entrepreneurial psychology, they often remain at a macro level, lacking detailed analyses of specific influencing factors. For instance, Khattar & Agarwal (2023) [38] conducted fifteen semi-structured interviews using qualitative methods with practicing female entrepreneurs. They examined the impact of prior entrepreneurial experience on EI but did not delve into the role of cultural factors like film. This work refines the topic by introducing AI and deep learning as key influences on university students' entrepreneurial psychology, filling a gap in the literature.

Specifically, FAT enhances emotional resonance and a sense of entrepreneurial identity through carefully crafted plots. In filmmaking, the "meticulous construction" of the plot refers to the logical design of the storyline itself, the precise conveyance of emotions throughout the narrative, the development of character identities, and the presentation and resolution of conflicts. Through skillful plot arrangement, a film can guide the audience through the challenges and successes associated with entrepreneurship, thereby sparking their interest and confidence in starting a business. Specifically, a meticulously constructed plot refers to the development of the storyline and the arrangement of character relationships within the film. These designs are intended to evoke emotional resonance from the audience. For example, films often present the entrepreneurial dilemmas faced by the protagonist and their strategies for overcoming them. Through the tense progression of the plot and the character's growth, the film demonstrates the resilience, courage, and innovation required in entrepreneurship. This kind of plot design enables the audience to emotionally connect with the entrepreneurial story, subconsciously fostering a sense of identification with entrepreneurship. Furthermore, the "meticulous" aspect is reflected in the details of the plot design. The director ensures that the audience deeply experiences the complexity and potential challenges of entrepreneurship by carefully setting up conflicts, depicting emotional shifts in characters, and designing climaxes in the narrative. Especially in the context of technology and innovation, the inclusion of technologies like AI and deep learning can craft the key turning points in the plot more finely. This can make the storyline more captivating while providing a richer emotional experience and cognitive stimulation for the audience. Through emotional engagement and cognitive reflection on the film's plot, the audience is subtly encouraged to develop an entrepreneurial mindset, ultimately forming a stronger intention to engage in entrepreneurship. Advancements in filming techniques improve visual and auditory effects and foster deeper audience engagement that influences their entrepreneurial decisions. The representation of social themes prompts viewers to reflect on contemporary entrepreneurial issues, resonating with their personal experiences. This aligns with the findings of Ristovska & Blazheska (2021) [39] and Lambert et al. (2021) [40], who highlighted the role of emotional resonance and social interaction in promoting EI within entrepreneurial education. However, this work uniquely reveals the mechanisms through which these processes are realized via film media.

Furthermore, a significant contribution of this research lies in incorporating AI and deep learning into FAT studies to demonstrate how these technologies transform film production and influence audience entrepreneurial psychology. The deep involvement of AI not only innovates plot generation and character

development but also enhances cognitive and emotional experiences through smarter image processing techniques. This discovery provides new guidelines for future practices in film creation and entrepreneurial education. Specifically, educators can leverage these technologies to spark students' entrepreneurial enthusiasm through more interactive and immersive film content. Theoretically, this work expands the research scope on the intersection of entrepreneurial psychology and the cultural creative industry, and offers new perspectives on the influence of technological innovation on EI. Additionally, the findings suggest avenues for future exploration of deep learning and AI in other cultural products, such as music and games, and their relationship with entrepreneurial psychology.

In summary, this work empirically validates the positive effects of the three core elements of FAT—plot, filming techniques, and social themes—on university students' EI. The work also further investigates the roles of deep learning and AI in this context. The results hold significant theoretical and practical implications for entrepreneurial education and provide a crucial reference for future interdisciplinary studies on the cultural creative industry and entrepreneurial psychology [41].

#### 4. Conclusion

This work aims to comprehensively explore the factors influencing EI among college students through logistic regression analysis, as well as how the FAT appreciation affects the mechanisms of EI from the perspective of deep learning and artificial intelligence. First, a detailed analysis of entrepreneurial psychology is conducted, covering aspects such as optimism, resilience, entrepreneurial intensity, and EI. Besides, relevant hypotheses are proposed by summarizing the three added values in the FAT appreciation. Subsequently, a conceptual model is constructed, and a questionnaire survey is designed. Finally, through correlation analysis and regression analysis, this work investigates the influencing factors and mechanisms of FAT appreciation on college students' EI. Empirical analysis results indicate that students of different genders, majors, and grades are influenced to varying degrees by the plot, shooting techniques, and societal themes of FAT works on EI. The impact of shooting techniques on EI in FAT works shows a significance level below 0.01. The difference in influence between societal themes and plot reflections in FAT works is significant at a level below 0.05. The application of deep learning and artificial intelligence in FAT production, particularly in innovation related to plot generation and character development, profoundly impacts EI. Therefore, it is argued that the added value of FAT works is not only influenced by traditional factors but also enhanced by the innovative application of deep learning and artificial intelligence.

The research results emphasize that FAT works' plots and societal themes impact college students' EI more than shooting techniques. The introduction of deep learning and artificial intelligence further strengthens the shaping of entrepreneurial psychology factors by FAT works, positively influencing the formation of EI by enhancing the audience's emotional experience and cognitive processes. However, a major research limitation is that the research subjects only include currently enrolled and soon-to-graduate college students who have not yet formed entrepreneurial awareness. Future research will further investigate and interview college graduates within five years, combining the perspective of deep learning and artificial intelligence to explore more detailed and in-depth mechanisms of the impact of FAT works on EI.

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