

The Mechanisms of Social Media Influence on Innovation and Entrepreneurship among University Students in Shanxi, China

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Abstract

This study aimed to study universities' students in innovation and entrepreneurship in Shanxi Province, China. As the research objectives to determine the factors that social media should have to improve the innovation and entrepreneurship ability. With analyze the key entrepreneurial and innovation competencies among university students, and also to investigate the effect social media on the promotion of university students' innovation and entrepreneurship ability. The study identified the important influencing factors of social media content that affect university students' innovation and entrepreneurship. Combining theory and interview analysis with mixed research method. Quantitative method which questionnaire surveys 466 valid questionnaires were analyzed for data analysis, and Qualitative method which 25 experts from 5 colleges were collected as dept-interview as well. At the results in qualitative method, domains of interview are the main points supported research objectives clearly in qualitative method that Social Media have to improve the innovation and entrepreneurship ability. And the results in quantitative method, Independent variables as Social Media, Media literacy, and Content usage factors have average value in correlation (r) at p-value <0.05 at high in relate to dependent variable on social usage factors. Finally, this study proposes research suggestions that schools should improve the innovation and entrepreneurship capabilities of Shanxi college students through course education and practical help from the knowledge information, case experience, entrepreneurial resources, personal network, entrepreneurial channels, content-based use, and social-based use of social media. For research in future should to search to factors affecting innovation and entrepreneurial performance will be more worldwide.

Keywords: Social Media; Innovation; Entrepreneurship

Introduction

The innovation and entrepreneurship capabilities of university students are often regarded as a key driver of social progress and economic growth. These abilities not only reflect the quality and competitiveness of higher education but also serve as a valuable resource for local economic and social development (Fayolle, A., 2023).

Shanxi Province in China has seen rapid annual growth in its university graduate population, the employment rate for this massive graduate cohort stands at only 55.5% (Chen et.al., 2021), significantly increasing pressure on both Shanxi's and the nation's job markets and creating an extremely challenging employment situation (Zang, Y., 2023).

However, the employment situation for college graduates in Shanxi Province has become increasingly severe, making the promotion of innovation and entrepreneurship an urgent priority. According to statistics from Shanxi Provincial Department of Education, the total number of regular college graduates in 2025 is projected to reach approximately 293,000, setting a new historical record. The employment challenge facing college students has evolved into a significant social issue.

Resolving this employment problem is not only crucial for the graduates themselves, but also holds profound implications for:

1. Effective accumulation of talent resources at both national and provincial levels
2. Sustainable socioeconomic development
3. Economic progress in Shanxi Province and the nation as a whole

In light of this research gap and within the specific context of Shanxi Province (Zhu, Z., 2022), this study aims to establish an analytical framework examining the impact of social media on university students' innovation and entrepreneurial capabilities (Zhang, X. & Wang. Y., 2023).

Research Objectives

1. To determine the factors that social media should have to improve the innovation and entrepreneurship ability.
2. To analyze the key entrepreneurial and innovation competencies among university students.

Conceptual framework

The research framework elaborates on the social media, innovation and entrepreneurship capabilities, and media literacy of college students in Shanxi Province from multiple dimensions. It analyzes the factors influencing college students' innovation and entrepreneurship capabilities and describes the interrelationships among these factors. The theme of this study is to explore the impact of social media on college students' innovation and entrepreneurship capabilities.

It aims to enhance college students' innovation and entrepreneurship capabilities. Focusing on the concept of social media, relevant theories, and literature analysis, it proposes seven dimensions of independent variables: knowledge information, case experience, entrepreneurial resources, network expansion, entrepreneurial channels, content-based use, and social-based use.

Combining theory with the theme of this study, seven dimensions of college students' innovation and entrepreneurship capabilities are proposed: goal setting ability, action planning ability, decisive decision-making ability, communication and cooperation ability, opportunity-grasping ability, risk prevention ability, and resilience in adversity. Media literacy serves as a moderator with a single dimension.

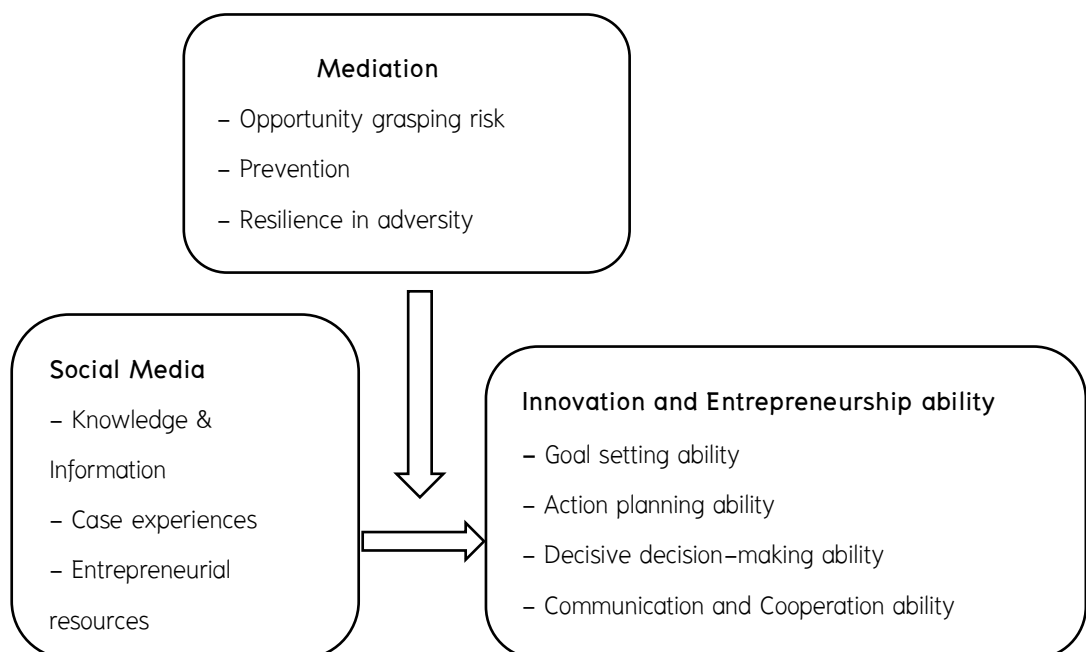


Figure 1: Conceptual Framework from Original Research

Research Methodology

Research design

This study primarily targets university students enrolled in entrepreneurship and innovation courses. The questionnaire includes basic information, a social media scale, an entrepreneurship and innovation scale for students, and a media literacy scale for students, aiming to objectively reflect issues concerning the impact of social media on students during their entrepreneurial processes (Chen, Y., Lei, Q. & Yao, S., 2021). The questionnaire was distributed in two main forms: one online via the WeChat platform, and another in paper form for on-site surveys (Zeng, F., 2024). Subsequently, the "snowball sampling method was employed, where already surveyed university students were asked to recommend their classmates and friends to participate in the survey, ensuring that the sample had a high willingness to be interviewed (Zhou, K. 2024).

Population and sample size

There are totaling 218,032 students in 8 universities in Shanxi province. (Zang, R., 2021). Which questionnaire surveys 466 valid questionnaires. Further, snowball sampling method were analyzed for data analysis to search for sample size as well.

Table 1: Universities in Shanxi province, China

Universities in Shanxi province	Student
Taiyuan University of Technology	43,161
Taiyuan University of Science and Technology	28,093
Shanxi University of Finance and Economics	20,924
Shanxi Agricultural University	20,884
North China University	24,124
Shanxi Institute of Business and Technology	23,014
Shanxi Medical University	29,991
Taiyuan Normal University	27,841
Total	218,032

The sample size is calculated based on the overall population size. In quantitative research, a sample refers to the study participants who provide data (Yamane, 1973). This study adopts Yamane's (1973) method to determine the sample size. Firstly, if the population size is known, it should be handled according to the formula for finite populations. Yamane's formula as: $n = N / (1 + Ne^2)$

According to the research conditions, the Yamane formula is used to determine the sample size: n is the sample size, N is the population size, and e is the assumed sampling error, set at 0.05. Based on the data, the study subjects are approximately 218,032 university students in Shanxi Province. Under a 5% margin of error and a 95% Confidence level, the sample size is: $n = 218,032 / (1 + 218,032(0.05)^2)$, And more in Qualitative, the sample size is as 25 Experts from 5 colleges related in field.

Research Methods

In this research, as mixed method, the following methods are included are the theoretical research method which involves systematically analyzing and logically reasoning through existing theories and literature to reveal the essence, laws, and intrinsic connections of the research subject. And In-depth Interview, as a semi-structured interview approach, typically conducted by professional interviewers in one-on-one conversations with respondents to uncover their in-depth responses to specific questions (Mu, L., 2020).

Finally, after internal discussions within the research team and combined with the analysis results of the pre-test, the research team made final revisions and improvements to the clarity of the item content, as well as the overall structure, format typesetting, font line spacing, and style design of the questionnaire, to maximize the professionalism, rigor, and operability of the questionnaire (Ma, C., 2020). On this basis, the formal questionnaire for this study was ultimately formed.

Data Analysis

According to the research purpose, this research gradually analyzes the interview results, extracts the typical opinion sentences of the interviewees, summarizes the key words, and then summarizes the influence of social media adaptation on college students; innovation and entrepreneurship through their real evaluation (Xu, W., 2023).

Based on the theoretical research framework and design, this study focuses on the theme of social media's impact on the innovation and entrepreneurship capabilities of college students in Guangxi. The research identifies two aspects of social media: social media content, which is based on its usage. It then breaks down these aspects into seven dimensions of social media content, including: knowledge information, case experiences, network connections, entrepreneurial resources, entrepreneurial channels, content-based social media, and social-based social media. These seven dimensions support the formation of independent variables.

The media literacy of college students is taken as a moderating variable. Combined with the theme of innovation and entrepreneurship, this paper designs and distributes questionnaires on the influence of social media on the innovation and entrepreneurship ability of college students. According to the collected questionnaire data, the questionnaire is sorted out and analyzed.

Research Results

The purpose of social media is to provide a vast amount of entrepreneurial knowledge, success and failure stories, extensive networks of contacts, abundant resources for entrepreneurship, channels for starting businesses, as well as proper use of content and social interactions by university students, thereby enhancing the innovation and entrepreneurship capabilities of university students in Guangxi (Wang, S., 2024). Based on the research theme and objectives, it is determined through in-depth interviews what information and expected outcomes are sought (Nan, D., 2024).

Combining theory and interview analysis, this study identified the important influencing factors of social media content on college students' entrepreneurship; Knowledge information, case experience, entrepreneurial resources, social networks, entrepreneurial channels, and the application of college students in the entrepreneurial process; Social media knowledge, case experience, entrepreneurial resources, social networks, and entrepreneurial channels play an important role in college students' entrepreneurship.

As qualitative method, there are 5 domains of interview in qualitative method in this study concluded as the results of study that:

Data on Knowledge and Information: Social Media provides rich information support for entrepreneurs, but there are also problems such as the discrepancy between theory and reality, information mismatch and so on.

Case experience interview: College students need to rationally view these cases, combine their own actual situation, and reasonably apply the experience and lessons in them, so as to better promote the development of entrepreneurship.

Entrepreneurial resource interview: Entrepreneurs need to rationally evaluate and choose resources according to their own needs, and hope that the platform or resource providers can further optimize the content, form and dissemination mode of resources, so as to better meet the actual needs of entrepreneurs.

Network of contacts: Expanding social circles: Social Media provides college students with a wide range of social networks, helping them meet like-minded people, industry experts, and potential investors.

Entrepreneurial Channels: Multi channel promotion: Social Media provides college students with diverse entrepreneurial channels. Through platforms such as Tiktok, Xiaohongshu and WeChat, college students can promote their products and services, find purchase channels, expand brand influence and attract potential customers.

At the results, those domains of interview are the main points supported research objectives clearly in qualitative method that Social Media have to improve the innovation and entrepreneurship ability.

As quantitative method, this study used empirical data analysis, based on the data analysis results were used to identify the social media factors that affect college students' innovation and entrepreneurship abilities;

The social media factors that affect college students' innovation and entrepreneurship abilities include knowledge and information, case experience, entrepreneurial resources, social networks, entrepreneurial channels, content-based use, and social based use.

Therefore, to support research objectives, to determine the factors as social media improve the innovation and entrepreneurship ability. and analyze the key entrepreneurial and innovation competencies among university students.

By Pearson correlation to shows that correlation coefficient as r as range $-1 \rightarrow 1$ (if r close to 1 it means positive strong correlation, r close to -1 it means negative strong correlation, and r close to zero (0) it means no correlation in case p as statistically significant as 0.05).

Presented as showed in conclusion, to interpolate in words:

if $r = 0.85$: variable X and Y have to correlate coefficient almost high level.

if $r = -0.60$: variable X และ Y have to correlate coefficient medium level

if $r = 0.05$: variable X และ Y have to correlate coefficient nearly low level.

Social Media has a positive impact based on social usage factors:

1. Goal setting ability ($r=0.63$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on goal setting ability in medium level.

2. Action planning ability ($r=0.57$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on action planning ability in medium level.

3. Decisive decision-making ability ($r=0.61$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on decisive decision-making ability in medium level.

4. Communication and collaboration skills ($r=0.60$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on communication and collaboration skills in medium level.

5. The ability to seize opportunities ($r=0.52$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on the ability to seize opportunities in medium level.

6. Risk prevention ability ($r=0.58$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on risk prevention ability in medium level.

7. Resilience in adversity ($r=0.62$, $p<0.05$).

It's means: Social Media has a positive impact based on social usage factors on resilience in adversity in medium level.

Media literacy has a positive moderating effect impact:

1. The ability to seize opportunities ($r=0.61$, $p<0.05$).

It's means: Media literacy has a positive moderating effect impact the ability to seize opportunities in medium level.

2. Risk prevention ability ($r=0.58$, $p<0.05$).

It's means: Media literacy has a positive moderating effect impact risk prevention ability in medium level.

3. Communication and cooperation abilities ($r=0.60$, $p<0.05$).

It's means: Media literacy has a positive moderating effect impact communication and cooperation abilities in medium level.

4. Action planning ability ($r=0.56$, $p<0.05$).

It's means: Media literacy has a positive moderating effect impact action planning ability in medium level.

Content usage factors have no impact:

1. Action planning ability, but the regulation of media literacy has an impact ($r=0.61$, $p<0.05$).

It's means: Content usage factors have no impact action planning ability, but the regulation of media literacy has an impact in medium level.

2. Communication and collaboration abilities, but the regulation of media literacy has an impact ($r=0.59$, $p<0.05$).

It's means: Content usage factors have no impact communication and collaboration abilities, but the regulation of media literacy has an impact in medium level.

3. Decisive decision-making ability, but the regulation of media literacy has an impact ($r=0.20$, $p<0.05$).

It's means: Content usage factors have no impact decisive decision-making ability, but the regulation of media literacy has an impact in medium level.

4. Risk prevention ability, but the regulation of media literacy has an impact ($r=0.22$, $p<0.05$).

It's means: Content usage factors have no impact risk prevention ability, but the regulation of media literacy has an impact in medium level.

5. Resilience in adversity, but the regulation of media literacy has an impact ($r=0.22$, $p<0.05$).

It's means: Content usage factors have no impact Resilience in adversity, but the regulation of media literacy has an impact in medium level.

At the results, Independent variables as Social Media, Media literacy, and Content usage factors have average value (in correlation (r) at p -value <0.05) to dependent variable on social usage factors.

Finally, the domains of interview from qualitative method and result from analysis of quantitative method are the main points supported research objectives that Social Media have to improve the innovation and entrepreneurship ability with analyze the key entrepreneurial and innovation competencies as well.

Discussion

Qualitative research results: The purpose of social media is to provide university students with various forms of support on social media, including knowledge and information, case experiences, entrepreneurial resources, social networks, and entrepreneurial channels (Zhang, L., 2024).

These factors work together to help university students better understand market demand, optimize entrepreneurial strategies, enhance innovation and entrepreneurship capabilities and success rates (Zhang, W., 2025). Based on the research theme and purpose, combined with the interview results and the core keywords summarized, the influencing factors are summarized and discussed,

Quantitative research results: Influence relationship: This study used SPSS for empirical data analysis. Based on the data analysis results, structural equation modeling, and other methods were used to identify the social media factors that affect university students' innovation and entrepreneurship abilities;

The social media factors that affect university students' innovation and entrepreneurship abilities include knowledge and information, case experience, entrepreneurial resources, social networks, entrepreneurial channels, content-based use, and social based use. Therefore, the media literacy of university students plays an important moderating role in these factors.

New Knowledge

At the discovered results of objectives from the study, there are new model to create the new concept that developed from the base of research could to present in new idea in qualitative approach knowledge and information, case experiences, entrepreneurial resources, social networks, and entrepreneurial channels. These factors work together to help college students better understand market demand, optimize entrepreneurial strategies, enhance innovation and entrepreneurship capabilities and success rates.

Furthermore, the social media factors that affect university students' innovation and entrepreneurship abilities include knowledge and information, case experience, entrepreneurial resources, social networks, entrepreneurial channels, content-based use, and social based use that will be solve in quantitative approach also.

Suggestion

1. Suggestion from Research

1) This study analyzed the impact of social media on knowledge through interviews and questionnaire surveys. Based on theoretical research, this article has determined the outline and content of in-depth interviews. By analyzing and summarizing interview materials, the social media factors that affect college students' entrepreneurship were identified, thus clarifying research objective one, which is the social media factors that affect college students' entrepreneurship in Shanxi Province. Including: knowledge and information on content, case experience, entrepreneurial resources, network of contacts, entrepreneurial channels, content-based usage, and social based usage.

2) Based on theoretical research, this article has determined the outline and content of in-depth interviews. By analyzing and summarizing interview materials, the social media factors that affect university students' entrepreneurship were identified, thus clarifying research objective one, which is the social media factors that affect university students' entrepreneurship in Shanxi Province. Including: knowledge and information on content, case experience, entrepreneurial resources, network of contacts, entrepreneurial channels, content-based usage, and social based usage (Wang, H., 2020).

3) Based on the theoretical framework, the second research objective of this study is to determine the various abilities of Shanxi university students in innovation and entrepreneurship. include; Goal setting ability, action planning ability, decisive decision-making ability, communication and cooperation ability, opportunity grasping ability, risk prevention ability, and resilience in adversity (Silveyra, G., Herrero-Crespo, N., & Andrea, P., 2021).

4) Based on the theme, a questionnaire design, survey, and analysis were conducted to verify the hypothesis and summarize the important factors of social media that affect university students' ability to innovate in the shipping industry, as well as the significant moderating role of media literacy. These influencing factors can serve as the foundation for designing social media innovation and entrepreneurship courses for university students.

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