

Analysis of the Social Factors of College Student Cadres' Leadership Ability: Based on the Grounded Theory Approach of NVivo



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Abstract:

Introduction: College student cadres are not only the core force of campus management and organization activities, but they also play an important role in shaping campus culture and promoting social progress. College student cadres' leadership ability is not innate but deeply influenced by many factors. The objective of this study is to explore the social factors affecting college student cadres' leadership ability and their functional relationships.

Methods: This study carried out data collection through in-depth semi-structured interviews with 18 college student cadres based on the Grounded Theory Approach. NVivo was used to analyze the interview data through three-level coding.

Results: The analysis resulted in six key themes, which reflect the main social factors: social practices, social training, social models, social media, social recruitments and social cultures and policies.

Conclusion: The study concluded that college student cadres' leadership ability was affected by six main social factors: social practices, social training, social media, social models, social recruitments and social cultures and policies. Social practices, social training and social media were subjective controllable factors, and social models, social recruitments and social cultures and policies were objective uncontrollable factors, which provided new ideas and perspectives for the formulation of countermeasures for improving their leadership ability.

Keywords: College student cadres, Leadership ability, Social factors, Grounded theory approach, NVivo.

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1. INTRODUCTION

College student cadres are a specific group of students who hold a leadership position within the student organizations and assist the school in the management of student affairs in higher education institutions. These positions include roles in party and league organizations, cadres of student federations and student unions at all levels, student league cadres, and class committees [1]. In

an increasingly complex and dynamic higher education environment, student cadres serve as vital intermediaries between students, educational institutions, and other organizations. They play key roles as organizers, coordinators, and executors of educational, managerial, and service-oriented tasks within their institutions. Their contributions are instrumental in fostering institutional reform, development, and stability [2].

Given the growing emphasis on leadership development in higher education, enhancing the leadership abilities of college student cadres is crucial for cultivating future professionals with strong social responsibility, diverse competencies, and broad knowledge [3]. However, existing research highlights several challenges in the leadership training of student cadres. These challenges include (1) deficiencies in leadership theory within the education system, (2) insufficient leadership awareness among students, (3) limited opportunities for participation in social activities that foster leadership skills, and; (4) outdated selection and assessment methods for student cadres, which rely heavily on voting and teacher appointments [4-6]. Addressing these issues requires a deeper understanding of the social factors that influence the leadership development of student cadres.

This study aims to identify and analyze the key social factors that affect the leadership ability of college student cadres. Specifically, the research seeks to answer the following questions:

1. What are the primary social factors influencing the leadership development of college student cadres?
2. To what extent do these social factors impact their leadership ability?

To achieve these objectives, the study employs a qualitative approach, utilizing semi-structured interviews with college student cadres. The interviews were designed based on a thorough review of existing literature on leadership development in student organizations. The collected data were analysed through three-level coding using NVivo software, leading to the identification and classification of six major social factors influencing leadership ability.

The findings of this study contribute to the existing body of knowledge by offering a deeper understanding of the social dynamics that shape student leadership. The results provide valuable insights for educational institutions to refine their leadership training programs and develop evidence-based strategies for fostering student leadership. Additionally, this study offers a foundation for future research on leadership development from a social environment perspective.

2. LITERATURE REVIEW

2.1. Research on the Concept of College Student Cadres' Leadership Ability

The Constitution of the 12th Communist Party of China (CPC) National Congress clearly states that "cadres are the backbone of the Party's cause and public servants of the people" [7]. Local scholars have defined college student cadres as people with specific leadership attributes and roles appointed or elected by the university to hold certain positions, take charge of specific responsibilities, and assist the university in management [6]. In the book 'The Student Leadership Challenge', Kouzes *et al.* (2008) defined college students' leadership ability as the capability of leaders to motivate others to volunteer for excellence in their organizations. Moreover, leadership ability is a relationship between a leader and a follower

[8]. Xu expressed the connotation of college students' leadership ability as the ability of college students to influence and change the psychology and behavior of other college students by exerting their influence and appeal in the process of communicating with others [9]. Northouse defined leadership ability as "a process of influencing others to achieve common goals", emphasizing its social and interactive nature [10]. Based on the above findings, college student cadres' leadership ability in this study is the capability of college student cadres to have clear value orientation and vision goals, to motivate the college students under their leadership to make outstanding achievements in the organization voluntarily and actively play their roles.

2.2. Research on the Measurement of College Student Cadres' Leadership Ability

The measurement of college student cadres' leadership ability has become an essential area of research in educational psychology. Accurately assessing their leadership ability is crucial for understanding their development and for designing effective leadership programs. The measuring methods of college student cadres' leadership ability mainly involve qualitative research methods and quantitative research methods. In qualitative studies, most domestic and foreign scholars obtain participants' subjective experiences and feelings by observing their behaviors, conducting in-depth interviews with them and journal analysis, and conducting subjective narration and qualitative evaluation on the effect of their development of leadership ability [11-17].

The questionnaire survey in the form of self-test is the most widely used quantitative research on college students' leadership ability, which mainly includes the following: Socially Responsible Leadership Scale (SRLS) [18], Leadership Practices Inventory (LPI) [19], Leadership Skills Inventory (LSI) [20] and Student Leadership Practices Inventory (SLPI) [21] and Student Leadership Behavior Scale (SLBS) [22].

To sum up, both qualitative and quantitative research methods are involved in the measurement of college students' leadership ability, which have advantages and disadvantages in the measurement process. Considering the frequency and depth of college student cadres' social participation varies from person to person due to academic pressure and time constraints [23], the researcher¹ used the interview method to get a deep and comprehensive understanding of the social factors influencing their leadership ability.

¹The first author, Chen Chen was the researcher who conducted the interview of this study. The researcher is male and holds a master's degree in applied psychology. The researcher's occupation is college counselor with 7 years of experience in individual psychological counseling for college students at the time of the study. The researcher is highly proficient in conducting case interview research targeting college students.

2.3. Research on the Influencing Factors of College Student Cadres' Leadership Ability

Most studies have explored the influencing factors of college student cadres' leadership in terms of individuals, families, schools and society [24-30], but the specific influencing factors of one aspect are worthy of further in-depth analysis. This is to provide a more scientific and comprehensive reference value for relevant subjects to formulate leadership ability promotion countermeasures. However, most college student cadres actively participate in campus organization activities, club activities and volunteer services but have relatively little contact with external social organizations and enterprises [31]. Therefore, the influence of society on college student cadres' leadership ability is weaker than other aspects (individual, family and school aspects). It is helpful to thoroughly explore their leadership ability to provide an important scientific basis for society to strengthen their leadership ability.

According to the results of previous studies, the social factors affecting college student cadres' leadership ability were manifested in many aspects: The empirical research results of Zhang *et al.* indicated that social policies, traditional culture and social division of labor in the social environment had a significant impact on the leadership ability of female college students [32]. A study of the influencing factors of college students' leadership ability showed that social responsibility and social participation have a significant positive impact on college students' leadership ability [33]. Yang proposed the positive impact of social education on college students' leadership ability [34]. In addition, social practice played a positive role in predicting college students' leadership ability [35]. Although the research on the social influencing factors of college students' leadership ability has formed some theoretical achievements, it can also be seen that these studies only analyze the influence of a specific aspect of social factors on college students' leadership ability and the whole social factors of college students' leadership ability and their influence degree still need further systematic verification and in-depth discussion.

2.4. Triadic Reciprocal Determinism

Triadic Reciprocal Determinism was proposed by American psychologist Albert Bandura, in which "Triadic" referred to an individual's personal factors (P), environment (E), and behavior (B). This theory proposed that there were dynamic and bidirectional interactions among personal factors, behavior and environment [36]. Based on Triadic Reciprocal Determinism, this study regarded the three factors to deeply explore how the social environment influences college student cadres' personal factors and their leadership ability.

Based on the grounded theory approach and utilizing NVivo software for data analysis, this study aims to explore the social factors influencing student cadres' leadership ability. The systematic analysis of the main social influencing factors and their functional relationships in the leadership ability development process of college

student cadres is expected to provide a profound insight into the formation mechanism of their leadership ability and provide an empirical basis for further optimizing their training strategy.

3. METHODS

3.1. Grounded Theory Approach

Grounded Theory Approach is a qualitative research method whose main purpose is to establish theories based on empirical data. Researchers generally do not have theoretical assumptions before the start of research but directly start from actual observation, and based on systematic collection of data, find the core concepts that reflect social phenomena and then construct relevant social theories through the connections between these concepts. Among them, the step-by-step encoding of data is the most important link in the grounded theory approach, including "open coding", "associative coding," and "selective coding" [37]. This study adopted the grounded theory approach to explore the main social factors affecting the leadership ability of college student cadres through these three-level coding.

In a grounded theory approach, the sample size is typically determined by data saturation, not pre-determined at the beginning. Usually, the sample size should be between 25 to 30 participants [38]. Data saturation occurs when additional data collection no longer provides new insights or themes relevant to the research questions. This ensures that the findings are comprehensive and well-grounded in empirical data, allowing for a more accurate and meaningful construction of theory based on the observed social phenomena.

3.2. Interview Method

The interview method is a research method used by researchers to collect the psychological characteristics and behavioral data of the subject through oral conversations with interviewees. Depending on whether the interview content and process have uniform design requirements and certain structure, interview methods are divided into structured interviews, non-structured interviews and semi-structured interviews. The semi-structured interview is a combination of a non-structured interview and a structured interview. It is conducted according to a broad outline of the interview, but the interviewer can flexibly make necessary adjustments according to the actual situation of the interview. This kind of interview not only ensures that the interview does not deviate from the topic and needs but also leaves enough space for the interviewee to express their opinions. This flexibility allows the interviewer to make targeted inquiries based on interviewees' answers, thereby gaining a deeper understanding of their perspectives and experiences [39]. Therefore, this study adopted semi-structured interview method based on the above advantages.

Before the interview, the researcher designed a semi-structured interview outline according to the research objectives. This process was guided by previous literature on the social factors influencing college student cadres' leadership ability. After designing the interview outline, the research

cher first conducted a pilot test with three interviewees to ensure that each interview question could guide them to comprehensively and thoroughly answer the contents related to the social influencing factors of college student cadres' leadership ability before starting the formal interview. The interviewees were scheduled in advance to ensure sufficient time for in-depth interviews. The semi-structured interview outline contained a total of 10 open questions, and there was no right or wrong answer to each question. The purpose is to guide the interviewees to make a detailed and comprehensive statement based on their experiences. The interview questions are as follows: (1) What is your reason for applying for the position of a college student cadres in your first year of college? (2) Have you read a book or literature on the promotion of leadership ability? If you have read this kind of book, please give a short summary of the book. If you haven't read it, please share a summary of any book you have read recently. (3) Have you attended any leadership training before? If so, in what form did the training take place? In particular, which aspect of the training has influenced you the most, and which aspect has been significantly improved after the training? If not, are you willing to participate in similar training? (4) Please describe the most successful activities you have led or organized in your daily work and study. If possible, be as specific as you can about the situation, task, behavior, and outcome of the experience. (5) Who is the leader you most admire? Talk about why you admire him/her. (6) What kind of online platform articles do you usually read? Why are you interested in this type of topic and how has it affected your growth and development? (7) Have you ever worked as an intern or part-time employee in a company or social organization? If so, did the experience contribute to your leadership ability development? (8) Do you know the current employers' attitude towards the experience of college stu-

dent cadres when recruiting fresh college graduates? (9) What factors do you think affect or hinder your leadership development? How did you overcome these disadvantages? (10) Do you think it is necessary to use social forces to help you improve your leadership ability? If necessary, what social resources do you think would be most helpful? In the actual interview process, the researcher handled the interview questions flexibly according to the actual situation, not limited to the order of the questions in the outline, and allowed the interviewees to actively share their ideas and questions within the scope of the research purpose.

3.3. Data Analysis Method

After each interview, the researcher encoded the interview content step by step and tested whether the interview content reached saturation according to the coding results. Based on a study of operationalizing data saturation for theory-based interview studies, the researchers proposed principles for deciding saturation in theory-based interview studies and designed to identify three belief categories using an initial analysis sample of 10 and a stopping criterion of 3 [40]. Therefore, the researcher continued to interview the remaining 2 interviewees recruited for the first time and 1 newly recruited interviewee (a total of 3 interviewees) repeatedly to verify whether the research data had reached saturation. When encoding the data of the eighteenth interviewee, it was found that no new coding reference points appeared. The result showed that no new reference points appeared, indicating that the data had reached saturation, and the researcher ended the interview process with 18 participants.

This study employed the analytical process of Grounded Theory to construct categories and utilized NVivo software for coding analysis. The research process is illustrated in Fig. (1).

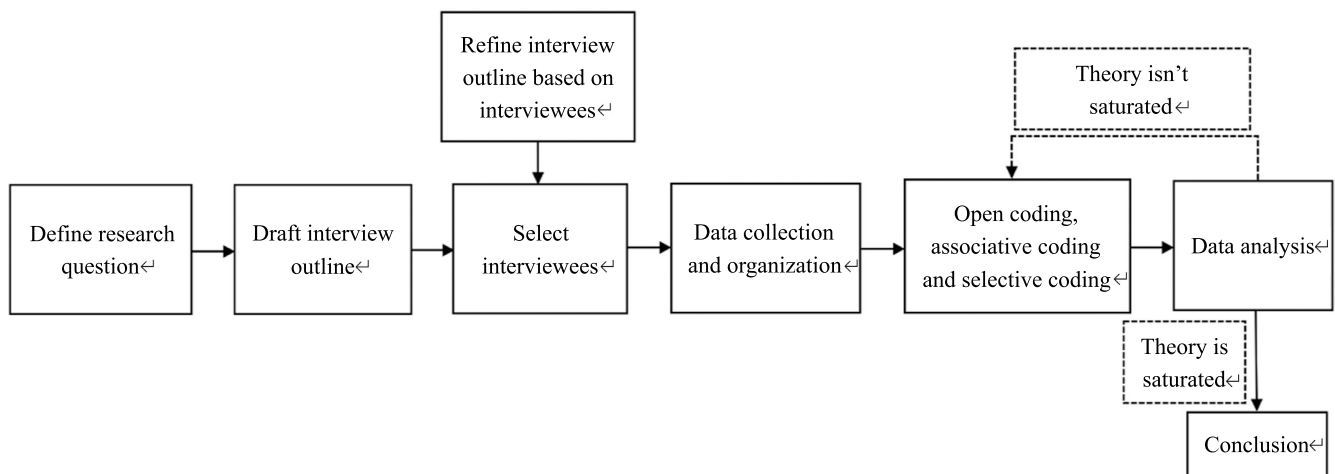


Fig. (1). Research process.

4. INSTRUMENTS

The researcher processed the text and audio data obtained after the interviews through NVivo version 12.0 for qualitative data management and analysis.

NVivo is a desktop application that allows users to organize, analyze, and visualize information from Word documents and PDFs. It also allows videos, podcasts, photos and database table formats. Users can organize their material by topic and uncover trends and emerging themes. The visualization tools let them create diagrams, charts or maps to present and clarify their discoveries [41].

5. RESEARCH PROCESS

5.1. Collecting Data

5.1.1. Study Participants

In order to comprehensively collect the data needed for the study, the researcher set the inclusion criteria for the interviewees, including: (1) Attending the selected schools at the time of study; (2) At least 2 years of working experience as a class leader or student union leader since college; (3) Experienced in organizing off-campus social practice activities; (4) Able to read Chinese and communicate fluently in Mandarin.

Twenty-one college student cadres of Shandong Youth University of Political Science were recruited *via* an advertisement published on the WeChat Official Account, and they were interviewed face-to-face in a one-to-one session; the average interview duration was about 30 minutes. All the interviewees voluntarily participated in the study and signed

the "Research Information" and "Participant Information and Consent Form" prior to the interview. No interviewee refused to participate in or dropped out of this study. The interviewees knew the personal goals, reasons for doing the research, study procedures, risks, *etc.*, from these two forms. The researcher did not establish a relationship with the interviewees prior to the study's commencement. After each interview, the researcher returned the transcript to the participant for review and correction. Once the participant confirmed there were no objections, the researcher coded and analyzed the interview data. According to the "Research Information" signed by the participants, the study findings will not be given to them. A total of 18 valid interview records were collected and collated for the subsequent NVivo data analysis process. An experiment with data saturation and variability found that saturation occurred within the first twelve interviews. Thus, the data in this study is considered as reliable [42]. Among the 18 college student cadres interviewed whose interview data were formally used for follow-up research analysis, 8 students were male and 10 students were female; 4 sophomores and 14 juniors; 9 students have two years of work experience as student cadres since college, and 9 students have two and a half years; 4 monitors, 7 student union presidents and 7 student club presidents; 16 students were Communist Youth League members and 2 students were probationary party members, as was shown in Table 1. The extra 3 participants were added for verifying the saturation of data, 1 student was male, and 2 students were female; 2 sophomores and 1 junior; 2 students had two years of work experience and 1 student had two and a half years; 2 monitors and 1 student union president; 3 students were Communist Youth League members, as was shown in Table 2.

Table 1. Basic information of college student cadres interviewed (n=18).

No.	Gender	Grade	Major	Years of Work of Student Cadres	Position	Political Background	Interview Date	Interview Duration
S1	Male	Junior	Human Resource Management	Two and a half years	Monitor	Communist Youth League members	March 4, 2024	35'22"
S2	Male	Junior	Computer Science and Technology	Two years	Student union president	Communist Youth League members	March 6, 2024	34'21"
S3	Female	Junior	German	Two years	Student union president	Communist Youth League members	March 8, 2024	30'14"
S4	Female	Junior	Science of Auditing	Two years	Student union president	Communist Youth League members	March 11, 2024	30'3"
S5	Female	Junior	Art of Broadcasting and Hosting	Two years	Student union president	Communist Youth League members	March 18, 2024	31'45"
S6	Female	Junior	Ideological and Political Education	Two and a half years	Monitor	Probationary Communists	March 22, 2024	31'16"
S7	Female	Junior	Social Work	Two and a half years	Student union president	Communist Youth League members	March 25, 2024	31'3"
S8	Female	Junior	Social Work	Two and a half years	Student union president	Communist Youth League members	March 28, 2024	25'1"
S9	Male	Junior	Marketing	Two years	Student union president	Communist Youth League members	April 8, 2024	30'50"
S10	Female	Junior	Ideological and Political Education	Two and a half years	Student club president	Communist Youth League members	April 11, 2024	42'23"
S11	Male	Junior	Social Work	Two and a half years	Student club president	Communist Youth League members	April 15, 2024	29'45"
S12	Female	Sophomore	Social Work	Two years	Monitor	Communist Youth League members	April 19, 2024	32'43"

(Table 1) contd....

No.	Gender	Grade	Major	Years of Work of Student Cadres	Position	Political Background	Interview Date	Interview Duration
S13	Male	Junior	Ideological and Political Education	Two and a half years	Student club president	Probationary Communists	April 22, 2024	31'11"
S14	Female	Junior	Social Work	Two years	Student club president	Communist Youth League members	April 24, 2024	35'35"
S15	Male	Sophomore	Social Work	Two years	Monitor	Communist Youth League members	April 26, 2024	32'18"
S16	Male	Sophomore	Social Work	Two years	Monitor	Communist Youth League members	May 7, 2024	29'1"
S17	Female	Sophomore	Social Work	Two years	Student club president	Communist Youth League members	May 9, 2024	26'2"
S18	Male	Junior	Public Affairs Management	Two and a half years	Student club president	Communist Youth League members	May 13, 2024	27'12"

Table 2. Basic information of interviewees for whom the researcher conducted repeat interviews to verify the saturation of research data (n=3).

No.	Gender	Grade	Major	Years of Work of Student Cadres	Position	Political Background	Interview Date	Interview Duration
S19	Female	Sophomore	Accounting	Two years	Monitor	Communist Youth League members	May 17, 2024	28'22"
S20	Female	Junior	English	Two and a half years	Student union president	Communist Youth League members	May 20, 2024	27'12"
S21	Male	Sophomore	Property Management	Two years	Monitor	Communist Youth League members	May 24, 2024	29'5"

5.1.2. Conducting Interview

The interview period was from March 4, 2024, to May 24, 2024. Before each formal interview, the researcher provided a consent form to the interviewees. After reading the informed consent form and being given the chance to ask questions about the study, the interviewees signed the form, and the interview was formally conducted. All interviews took place in a quiet room equipped with a soft sofa and coffee table, which provided a comfortable and quiet interview environment for the interviewees to ensure the interview happened smoothly while maximizing the authenticity and effectiveness of the study results. Only the participants and the researcher were present in the room. To ensure anonymity, each interviewee was assigned a code from S1 to S18. With the participants' consent, the interviews were voice recorded, and field notes were taken. After each interview, the researcher manually transcribed the audio data into Word text data word for word according to the transcript and audio recording during the interview in his personal workplace. The codes and not the names were used to name each Word text data.

5.2. Data Coding and Analysis

The researcher standardized the Word text data and imported it into NVivo version 12.0 software. The text data were coded step by step by using the method of grounded theory approach, that is, in the order of "open coding", "associative coding" and "selective coding". Coding refers to the process of decomposing, discriminating and conceptualizing collected empirical materials [43]. Nodes were collections of reference points extracted from the

material, including reference points for specific subjects, places, people, or other aspects of interest to the researcher. Free nodes were independent nodes that had no clear, logical connection to other nodes. Tree nodes were related nodes that were logically connected to other nodes.

The first stage was "open coding". Researchers need to process the text data line-by-line coding so as not to miss any reference points that are helpful for further exploration of important social factors affecting college student cadres. Based on a preliminary analysis of Word text materials, the researcher found many concepts commonly used by interview subjects. For example, "broadening the ideas of student cadres' work through the network platform", "taking the great leaders of China as a model", "participating in social practice activities to exercise", "improving the leadership ability through this training", "exercising my communication ability and coordination ability through organizing this activity", "the guidance and support of seniors", and "hope that enterprises will provide more internship positions for college students that match their own majors". After many modifications, screening and comparison, 515 reference points and 81 codes were initially generated. The researcher labeled these codes as free nodes, which will become an important basis for subsequent data analysis.

The second stage was "associative coding". The researcher looked for associations among the 81 free nodes found in open coding to see if these larger concepts could be reduced to a smaller number of higher-level concepts. After repeated comparison and discrimination, 15 nodes were formed and marked as tree nodes.

The third stage was "selective coding". By thinking deeply about the generic relationships between tree nodes in

the stage of “associative coding”, this stage gradually refined six more meaningful and conceptual main categories as the social factors affecting college students’ leadership ability: “Social cultures and policies”, “Social media”, “Social models”, “Social practices”, “Social recruitments”, “Social training” and marked them as tree nodes, as shown in Fig. (2).

5.3. Building Model

After three stages of coding, the social factor model of college students’ leadership ability was established according to the logical relationship between nodes and sub-nodes, and the project diagram was formed through the visualization function, as shown in Fig. (3).

Name	Files	References	Created on	Created by
Social factors of college student cadres' leadership ability	18	515	2024/7/5 10:37	CC
Social training	18	144	2024/7/4 15:10	CC
Social recruitments	15	27	2024/7/4 10:23	CC
Social practices	18	210	2024/7/4 15:08	CC
Social models	18	85	2024/7/4 15:09	CC
Social media	18	43	2024/7/4 15:11	CC
Social Cultures and policies	5	6	2024/7/7 9:59	CC

Fig. (2). Six social factors that affect college student cadres’ leadership ability.

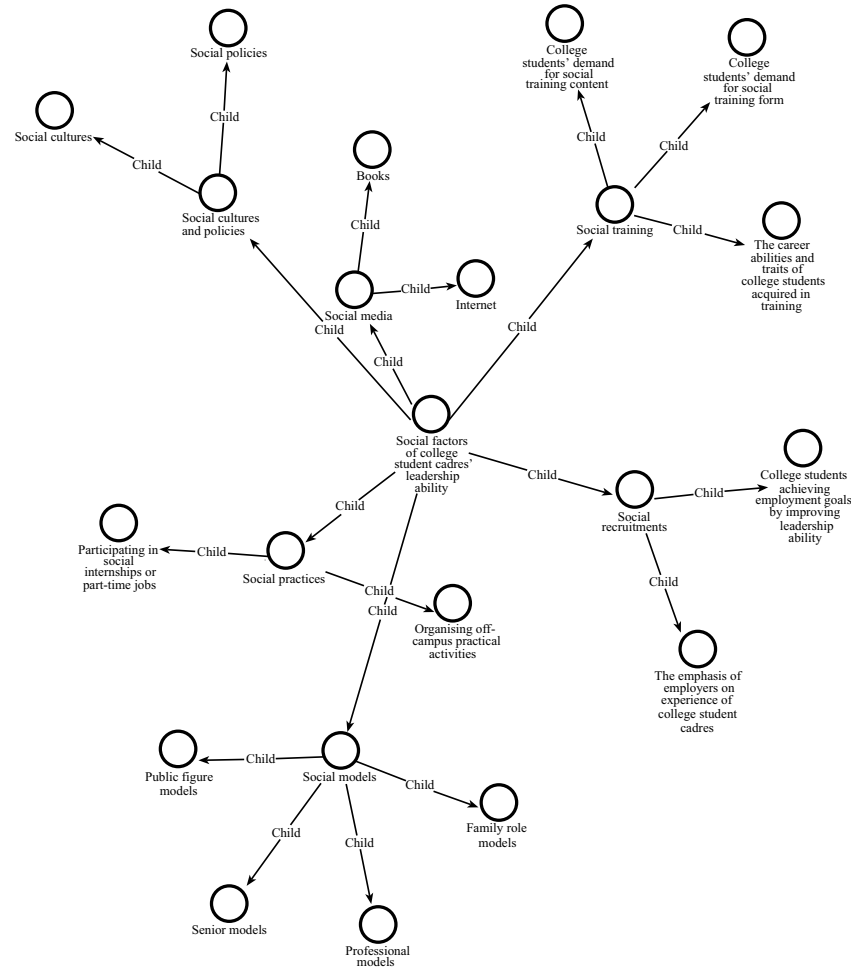


Fig. (3). Project diagram of college student cadres’ leadership ability.

Table 3. Summary of data analysis results (n=18).

Selective Coding	Associative Coding	Material Sources	Reference Points	Material Sources List
Social cultures and policies	Social cultures Social policies	2 3	3 3	S2, S5 S12-S13, S17
Social media	Books	7	8	S6, S9, S12-S14, S16-S17
-	Internet	18	35	S1-S18
Social models	Family role models	6	7	S4, S8, S10-S11, S15, S18
-	Senior models	7	15	S9, S12-S17
-	Public figure models	14	51	S1-S2, S4-S12, S14, S16-S17
-	Professional models	7	12	S3, S6, S8, S10, S13, S17-S18
Social practices	Organize or participate in off-campus practical activities	18	177	S1-S18
-	Participate in social internships or part-time jobs	15	33	S1, S2, S4, S6-S7, S9-S18
Social recruitments	The emphasis of employers on the experience of college student cadres	8	9	S2-S3, S5, S9-S12, S18
-	College student cadres achieve employment goals by improving leadership	12	18	S1-S2, S4, S7, S9-S10, S12-S14, S16-S18
Social training	College student cadres' demand for social training content	8	17	S2-S3, S6, S9, S14-S15, S17-S18
-	College student cadres' demand for social training form	11	16	S1-S2, S6, S8-S10, S12, S14-S15, S17-S18
-	The career abilities and traits of college student cadres acquired in social training	18	111	S1-S18

6. RESULT AND DISCUSSION

6.1. Data Analysis

For the coding and analysis of interview materials, combined with further analysis of interview materials, the researcher extracted six major social factors that affect the leadership ability of college students. A detailed summary table of the data analysis results (where **S1** to **S18** indicate interview record file numbers) is shown in Table 3.

6.2. Social Cultures and Policies

This code included two aspects: social cultures and social policies. Social cultures can affect college student cadres' leadership ability, as shared by one of the interviewees, "Creating an impartial and positive culture atmosphere is helpful for us to cultivate our leadership ability" (**S5**). Social policies can also affect their leadership ability, such as "The state should further strengthen the publicity of relevant supporting policies for college student cadres to mobilize the enthusiasm of more college students to serve as student cadres and better enhance their leadership ability" (**S12**), "Relevant departments should introduce policies that can certify the experience of college student cadres to ensure its authenticity and fairness as much as possible so that college student cadres are more willing to exercise their leadership ability in their positions" (**S17**).

6.3. Social Media

Social media can be divided into books and the Internet. Reading books could help college student cadres strengthen their ideals and beliefs, expand their theoretical knowledge and work ideas, and then transform them into leadership ability to effectively carry out student work, such as "Through reading 'How the Steel Was Tempered' (i.e., a book by

Nikolai Ostrovsky, 1934), it has strengthened my belief and inspired me to lead students better to create achievements" (**S9**). Internet, especially the articles in the WeChat Official Account, can help college student cadres improve their writing ability and enhance the depth and breadth of thinking, which has important reference significance for them to lead student organizations. For instance, "Reading the articles in the WeChat Official Account of various colleges student union had a positive impact on leading my members to carry out student activities" (**S12**).

6.4. Social Model

The social model included a family role model, senior model, public figure model, and professional model. A family role model who once served as a college student cadre provided strong support and good advice for college student cadres to better show their leadership ability during their tenure, such as "My sister was also a college student cadre, and she supported me very much to serve as a student cadre and shared some of her experiences leading student organizations in college" (**S8**). The excellent work performance of senior students in the same school or organization had a leading role in promoting the leadership ability of college student cadres, such as "An outstanding senior in my student union encouraged me to continue to run for minister so that I could further improve my leadership ability" (**S14**). The positive mentalities of the public figure model had a profound and lasting incentive effect on college student cadres' leadership ability, such as "The modern Chinese president instilled in me a sense of leadership from a young age" (**S10**). Professional models who had achieved certain achievements in their careers (such as school counselors or corporate executives) could guide college student cadres to carry out daily work more efficiently, thus further portraying their leadership ability,

such as "My counselor once supported me to take charge of a major activity independently, which greatly improved my leadership ability" (S17), "Successful people in enterprises can guide college students to exert their leadership ability more comprehensively from a broader social perspective" (S6).

6.5. Social Practices

The social practice activities of college students mainly included the off-campus practical activities organized by them, as well as some social internships or part-time jobs that they participated in. All 18 college student cadres who were interviewed have experience organizing off-campus practical activities, and all of them mentioned in the interview that organizing activities enabled them to lead the team to complete the work or task more efficiently in the future, such as "I have improved my leadership ability by organizing this off-campus volunteer teaching activity for college students, and my working relationship with my team members became more harmonious and positive" (S8), "By organizing this volunteer service project, I feel that I have increased my self-confidence, and I will be more skilled and calm in leading team members to carry out activities in the future" (S17). Participating in social internships or part-time jobs exercised college student cadres' comprehensive ability, helped them to better lead the work team and adapt to the future social workplace environment, such as "By participating in some part-time community jobs, I can get in touch with the workplace in advance, thus laying a foundation for improving my leadership ability in the workplace after graduation." (S13).

6.6. Social Recruitments

Social recruitments included the emphasis of employers on the experience as college student cadres and employment goals they achieved by improving their leadership ability. If more employers pay attention on candidates with the experience as student cadres when recruiting college graduates, the more willing college students are to take the initiative to serve as student cadres, and their leadership ability has been effectively improved, such as "Some positions of civil service examination explicitly require student cadres experience, and my work experience as a monitor can give me an advantage in applying for the examination" (S1); "I know that some state-owned enterprises pay more attention to the experience of college student cadres when recruiting, which is one of the motivations for me to persist as a student cadre during my school life" (S4). College student cadres also wanted to achieve their employment goals by developing their leadership ability, such as, "By serving as a student cadre, I have exercised my leadership ability, and at the same time, I became more rational and calmer when speaking in public, so I feel more confident about my future job hunting" (S10).

6.7. Social Training

Social training included college student cadres' demand for the form and content of social training, as well as

the career abilities and traits of college student cadres acquired in training. College student cadres hope to innovate the form of social training to enhance their leadership ability, such as "I hope to participate in social training including situation simulation to effectively improve my leadership ability" (S8). College student cadres also aim to improve specific skills they may lack by participating in social training, enabling them to indirectly enhance their leadership abilities in the future, such as "I hope to learn how to scientifically assign work tasks to team members through training, so as to lead the team for better development" (S3). Besides, college student cadres acquired many career abilities and traits that contribute to their development of leadership ability through training. The results showed that only two interviewees had participated in leadership training organized by social organizations outside the school, while the rest had only participated in school training, such as "My interpersonal and organizing skills have been improved through this 'Jinan City Young Marxist Training Project', which helps me to establish a more harmonious working relationship with my subordinates" (S9), "The biggest gain I got from this youth leadership training course organized by school is that as a class leader, I should establish an overall situation consciousness in the students' work" (S16).

Weiner's Attribution Theory distinguishes between different types of attribution through key dimensions such as subjective vs. objective, stable vs. unstable, and controllable vs. uncontrollable factors. Subjective factors refer to individuals' own inherent traits and efforts, typically related to personal experiences, cognition, emotions, and motivation, which are usually things that individuals can control or change. Objective Factors are external conditions, the environment, or the actions of others, which are often beyond the individual's control. Controllable Factors are factors that individuals can actively adjust or change, often related to personal behaviors, efforts, or strategies. Uncontrollable Factors are factors that individuals cannot change or adjust, such as luck, the actions of others, or random events [44]. Based on Weiner's Attribution Theory, this study categorized these six factors into two categories: subjective controllable factors and objective uncontrollable factors.

Building on this foundation, the current study positions the leadership abilities of college student cadres as the core category influencing six main categories. Their leadership abilities are continuously enhanced through active participation in social activities and the support of both subjective and objective factors within the social environment. College student cadres can participate in social training and social practice activities according to their own needs and improve their leadership ability directly through the combination of theory and practice. Besides, they can also actively search and read various social media articles that they are interested in or find helpful for their personal development, which provides knowledge accumulation and a theoretical basis for the improvement of their leadership ability over time. Therefore, for college student cadres, social practices, social training and social media are processes in which they actively engage and represent subjective, controllable factors that have a direct impact on their leadership abilities.

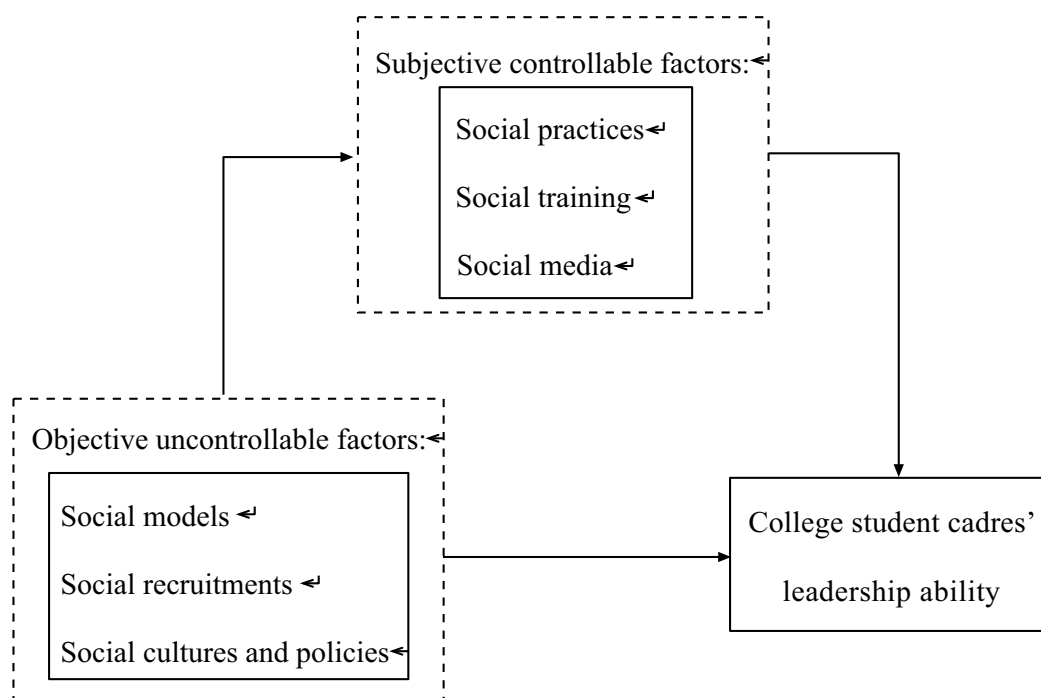


Fig. (4). Social factor model of college student cadres' leadership ability.

Postconditions in social recruitment, contemporary social policies, and cultures can motivate college students to take the initiative in becoming student cadres or participating in social activities, such as social training, practice activities, or engaging with social media. This indirectly impacts the development of their leadership abilities. According to interviewees, employment goals, positive and fair social cultures, and strong policy support encourage student college student cadres to truly fulfill their duties, enhancing their leadership skills.

Moreover, the significant achievements and outstanding abilities of role models admired by college students not only provide guidance and motivation in social activities, indirectly improving their leadership ability but also directly influence the development of essential leadership skills. Thus, role models, social recruitments, cultures, and policies represent objective, uncontrollable factors that can influence college student cadres' leadership ability or indirectly through their participation in social activities.

Based on this narrative, the constructs and presents a new model of the social factors influencing college student cadres' leadership ability, as shown in Fig. (4).

CONCLUSION

This study adopted a qualitative research approach, conducting in-depth interviews with 18 interviewees to comprehensively analyze the data. From this, six social factors influencing the leadership ability of college student cadres were identified. According to the influence degree of each factor in the social factor model on college student cadres' leadership ability and the proportion of each factor's coding reference points, the major themes were

social practices, social training and social media, which belonged to the category of subjective controllable factors. The minor themes were social models, social recruitments, and social cultures and policies, which belonged to the category of objective uncontrollable factors.

Subjective1 (Major themes)

Social Practices

They study found that social practices were the most important social factor influencing college student cadres' leadership ability, accounting for 40.78% of all coding reference points. All 18 interviewees mentioned that organizing off-campus social practice activities helped them manage their work teams more effectively. Therefore, it is crucial for various societal sectors to strengthen cooperation with colleges by creating more opportunities for students to organize off-campus social practices and providing internships or part-time positions that align with students' professional knowledge and career plans. These efforts would collectively support breakthroughs and significant improvement in their leadership ability through social practice.

Social Training

Social training was also identified as an important social factor influencing leadership ability, contributing the 27.96 % of the coding reference points, second only to social practices. All interviewees acknowledged gaining leadership ability-related skills and qualities through participation in social training. However, most had only experienced on-campus training and offered suggestions on the structure and content of social training activities. Based on this,

colleges should enhance the current leadership ability training system by leveraging off-campus resources and extending training opportunities through social institutions. Understanding the psychological needs of student cadres is essential to tailor training programs toward developing the specific skills they are eager to acquire [45]. Additionally, leadership ability education should shift from a primarily theoretical focus to a more practice-oriented approach. Interactive methods like scenario simulations, group discussions, and enterprise visits can help students acquire leadership skills that can be applied to both their academic pursuits and future careers.

Social Media

Social media was also identified as a significant influencing factor, accounting for 8.35% of the total coding reference points. All interviewees highlighted the role of WeChat Official Accounts in enhancing their leadership, which is consistent with its high usage frequency among Chinese college students [46]. Seven interviewees also emphasized the influence of books. As a result, schools and relevant societal bodies should harness new media technologies that resonate with college students—such as WeChat, Weibo, TikTok, and other platforms—to disseminate theoretical and practical knowledge related to leadership ability development. By doing so, the powerful educational potential of the Internet can be fully realized.

Objective Uncontrollable Factors (Minor themes)

Social Models

The study revealed that social role models play a critical role in shaping the leadership ability of college student cadres. This accounted for 16.5% of all coding reference points, ranking third among all influencing factors. Fourteen interviewees highlighted the positive influence of public figures on their leadership, and 6 to 7 interviewees emphasized the role of family, senior, and professional models. This suggests that public figures exert a stronger influence than family or professional role models. Thus, in addition to drawing inspiration from family and professionals, the role of public figure models should not be overlooked. Social institutions can encourage student leaders to learn from these models through articles, films, and even face-to-face interactions. This will allow students to internalize the qualities of successful leaders and apply them in their own leadership roles.

Social Recruitments

Social recruitment accounted for 5.24% of the total coding reference points. Twelve interviewees noted that some recruitment positions explicitly required student leadership experience, motivating them to perform their roles more effectively. Eight interviewees further stated that their motivation for serving as student leaders was to apply these skills in future employment. Employers could, therefore, introduce more leadership ability-oriented recruitment positions, which would encourage students to take on leadership roles during their studies, ultimately enhancing their job market competitiveness and leadership skills after graduation.

Social Cultures and Policies

Social cultures and policies accounted for only 1.17% of the coding reference points, which may be linked to limited awareness of traditional Chinese culture among college students [47]. Meanwhile, leadership education for college student cadres was still mainly carried out within the school system. It has not yet formed a synergistic and interactive relationship with other education-related subjects such as the government, society, and enterprises, so the efforts in social policy and financial support were limited [45]. Only two interviewees acknowledged the impact of social culture on their leadership ability, and three suggested that national policy support for leadership development should be strengthened. While these factors may not have an immediate impact on leadership ability, they set a long-term trend that can encourage students to engage in leadership development through participation in social activities, gradually aligning with new cultural and policy frameworks.

In conclusion, colleges should collaborate with the government, businesses, and other social entities to enhance the leadership skills of college student cadres. Society must prioritize the primary influence of subjective factors, such as social practices, training, and media, while acknowledging the complementary role of objective factors, including role models, recruitment, culture, and policies. This holistic approach will promote the sustainable development of leadership abilities among college student cadres.

Contributions and Limitations

Contributions

This study offers a deep exploration of the social factors influencing college student cadres' leadership ability and their functional relationships through the grounded theory approach and NVivo software. The findings provide new insights into study methods for studying these factors. Additionally, the study establishes a model of the social factors influencing leadership ability, contributing to the broader field and offering practical guidance for developing supportive measures to foster student leadership.

Limitations

While both qualitative and quantitative research methods were used to measure college student cadres' leadership ability, each has its advantages and disadvantages. To avoid a one-dimensional approach, future research should combine qualitative and quantitative methods for a more comprehensive analysis of social factors influencing college student cadres' leadership ability.

Implications of the Study

This study integrates Triadic Reciprocal Determinism to provide a nuanced understanding of the social factors influencing college student cadres' leadership ability. It proposes a social factor model of college student cadres' leadership development, bridging gaps in existing theoretical frameworks.

By identifying and addressing barriers to leadership development, this study serves as a research reference for enhancing the leadership ability of college student cadres,

contributing to their personal growth and equipping them with essential skills for professional success. Additionally, the study presents specific ideas for college educators to develop targeted interventions, such as workshops, mentoring programs, and leadership training tailored to student needs. These initiatives aim to nurture leadership capabilities effectively. Furthermore, the insights gained from this research have the potential to create a long-term impact by shaping future leaders who are well-prepared to tackle complex challenges and contribute to organizational and societal advancement.

This study also provides valuable perspectives and improves the leadership abilities of Chinese college student cadres from a social-environmental perspective. Moreover, it offers a scientific basis for the Chinese Ministry of Education to formulate policies related to leadership development in college students, underscoring its high theoretical and practical value.

Directions for Future Research

Future research can build upon the conclusions of this study by conducting quantitative investigations into the social factors influencing college student cadres' leadership ability. This approach would not only validate the findings of this study but also enrich the hierarchical dimensions and structural elements of these social factors. Researchers could develop a social factor analysis scale to assess the impact of different social factors on leadership ability efficiently and effectively. Such a tool would also aid educational institutions in designing more targeted strategies for developing college student cadres' leadership skills from a social perspective.

AUTHORS' CONTRIBUTION

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

CPC	=	Communist Party of China
SRLS	=	Socially Responsible Leadership Scale
LPI	=	Leadership Practices Inventor
LSI	=	Leadership Skills Inventory
SLBS	=	Student Leadership Behavior Scale

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study obtained ethical approval from the Human Research Ethics Committee of Universiti Sains Malaysia (Code: USM/JEPeM/KK/23070541).

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

The participants in the study have read the Research Information and signed the Informed Consent Form.

STANDARDS OF REPORTING

COREQ guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information is available within the article.

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None.

CONFLICT OF INTEREST

The authors declare no conflict of interest financial or otherwise.

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