Editorial Note

The Journal of Social Science and Humanities (JSSH) is a journal focusing on issues of society and development. For Vol. 1, Issue 1 (2025), the journal received a total of six submissions. Following peer review, two outstanding contributions were selected for publication.

The research article by Wu Yundong et al. reveals that the level of social support among art and design students is significantly and positively correlated with both positive thinking and subjective well-being. The study further finds a strong positive correlation between positive thinking and subjective well-being, and, based on these findings, offers a series of recommendations. In the research note, Gao Yang examines the "solar photovoltaic power generation + ecological restoration" model and its role in alleviating the long-standing challenges of extreme drought and land degradation in Bayannur City.

The JSSH Editorial Office sincerely thanks all authors for their contributions. We also extend our appreciation to the reviewers for their valuable insights and rigorous evaluations. Looking ahead, we warmly welcome future submissions and encourage scholars to continue sharing their innovative research with our readership.

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Improvement Effects of Solar Photovoltaic Facilities on Desert Environments: An Analysis Based on the Case of Bayannur, China

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ABSTRACT
In the arid regions of northwestern China, Bayannur City has long struggled with extreme drought and land degradation. In recent years, the city has implemented an innovative "solar photovoltaic power generation + ecological restoration" model in the Ulan Buh Desert to achieve both desert greening and renewable energy production. This approach offers a sustainable solution that integrates environmental improvement with clean energy development.

1. Introduction

In the arid regions of northwestern China, severe desertification has been a persistent issue for many years. Among these areas, Bayannur City in the Inner Mongolia Autonomous Region faces the compounded challenges of an extremely dry climate and land degradation, which have exerted serious impacts on both the local ecosystem and residents' livelihoods. Under such circumstances, traditional sand-control measures alone have proven insufficient, calling for a more integrated and sustainable approach. In recent years, Bayannur City has introduced an innovative model of "solar photovoltaic power generation + ecological restoration," which aims to achieve two objectives simultaneously: desert greening and renewable energy production. This paper examines the initiatives in the Ulan Buh Desert within Bayannur to explore how solar photovoltaic facilities contribute to the improvement of desert environments.

Fig.1 The Map of China

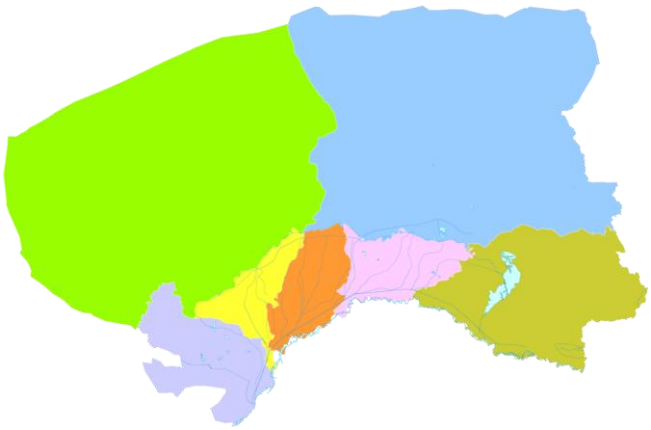
Doi:10.64583/81301

Source: Wikipedia, n.d.

2. Natural Environment and Current State of Desertification in Bayannur

Bayannur City is located in the western part of the Inner Mongolia Autonomous Region, bordering Mongolia to the north and the Yellow River to the south. Its terrain is dominated by plains and deserts, with the eastern edge of the Ulan Buh Desert, one of China's eight major deserts, extending across its territory. Approximately 3.86 million mu of this desert are located in Dengkou County, accounting for 77% of the county's total land area. The region's extremely arid climate, with an annual precipitation of only about 130 mm and an annual evaporation rate reaching 2,258 mm, makes securing water for both agricultural and domestic use highly challenging, thereby exacerbating ecological degradation.

Fig.2 The Map of Bayannur



Source: Wikipedia, n.d.

3. Conventional Desertification Control Measures and Their Foundations

In 1978, the Chinese government launched the "Three-North Shelterbelt Program" to promote large-scale afforestation across the northeast, north, and northwest regions. In Bayannur City, the state-owned Xinhua Forest Farm was established in the 1960s, and to date, it has completed afforestation over a total of 39,000 mu and planted 4.3 million trees. While these efforts have produced certain positive outcomes, technical and managerial constraints have limited their effectiveness in addressing the vast expanses of desert land.

4. Introduction of Solar Photovoltaic Facilities and Their Ecological Effects

Since the 2000s, Bayannur City has actively promoted the adoption of renewable energy, implementing a large-scale plan to install solar photovoltaic (PV) facilities across the Ulan Buh Desert. The region's long hours of sunshine and abundant solar resources make it highly suitable for PV power generation.

Fig.3 Solar PV Facilities

Source: Xinhuanet, 2024

Solar panels serve not merely as power-generating devices but also play an important role in improving the local ecosystem. By blocking direct sunlight from reaching the ground surface, the panels reduce soil moisture evaporation, thereby creating a cooler and more humid microclimate beneath them. This environment is conducive to plant growth, while the supporting structures help stabilize the sand and enhance surface stability. In addition, water used in panel cleaning operations flows directly onto the ground and is effectively utilized for irrigating vegetation.

5. Straw-Checkerboard Technology: Tradition and Innovation as Keys to Desert Restoration

Another important technique supporting ecological restoration is the "straw checkerboard" method. This involves arranging wheat or rice straw on sandy terrain to form a grid structure measuring one square meter per cell.

Fig.4 Straw Checkerboard

Source: National Ecosystem Research Network of China, 2018

The technique reduces wind speed and promotes the stabilization of shifting sands. First introduced during railway construction in the 1950s, it later spread nationwide as a traditional sand-control method. In recent years, research institutions such as the Chinese Academy of Sciences have developed a "brush-shaped mesh-rope straw checkerboard" design, which, through mechanized installation, has increased work efficiency by over 60% and extended its lifespan to six years.

This method is often combined with the planting of drought-tolerant species such as *Caragana korshinskii* and *Calligonum mongolicum*, raising their survival rate to over 80%. Through the synergistic effects of straw checkerboards and solar photovoltaic panels, the desert ecosystem has been steadily recovering.

6. Formation of the "Photovoltaics + Agriculture + Ecology" Integrated Model

In addition to contributing to ecological restoration, solar photovoltaic (PV) facilities have opened up new opportunities for local agriculture and economic development. In particular, "under-panel farming" (also known as solar sharing) has gained attention as an innovative agricultural model tailored to the challenges of arid regions.

Fig.5 Bayannur's Green Miracle

Source: Xinhuanet, 2024

Beneath the PV panels, direct sunlight is blocked, ground temperatures are lowered, and moisture retention is enhanced. Leveraging this microclimate, forage crops such as alfalfa (*Medicago sativa*), medicinal plants such as honeysuckle (*Lonicera japonica*), and even halophytes are cultivated, strengthening linkages with the livestock industry and traditional Chinese medicine sectors.

This model generates a virtuous cycle of "power generation → environmental improvement → crop cultivation → economic revitalization," which in turn increases local employment opportunities and household incomes. A tripartite collaborative framework involving the government, enterprises, and local residents has been established: the government provides policy support and infrastructure development; enterprises manage PV facilities and agricultural operations; and residents engage in fieldwork and maintenance, thereby supporting sustainable development.

Beyond economic benefits, this model has yielded multiple positive outcomes, including sand stabilization through vegetation, biodiversity restoration, and the revitalization of local communities. As such, the "photovoltaics + agriculture + ecology" approach has emerged as a new strategy for regional regeneration.

7. Achievements and Future Prospects

As of 2023, approximately 3,000 mu of sandy land in Bayannur City have been equipped with solar photovoltaic (PV) facilities, of which 1,600 mu have been afforested. A total of 2.65 million trees and shrubs have been planted, with the

restoration area reaching 5,000 mu. Vegetation coverage of forests and grasslands has increased from 65% in 2021 to 88% at present.

In terms of power generation, the facilities produce 200 million kWh of green electricity annually, reducing standard coal consumption by 62,000 tons. Emissions of carbon dioxide, sulfur dioxide, nitrogen oxides, and other pollutants have been significantly curtailed, realizing a "triple benefit" across environmental, economic, and social dimensions.

This integrated model of "photovoltaics + desertification control" holds the potential to serve as an effective response to the global challenges of climate change and land degradation. Looking ahead, further technological advancements and institutional improvements are expected to position it as a replicable and sustainable development model for other arid regions worldwide.

Conflict of interests

The authors declare that they have no conflict of interest.

References

CCTV News. (2023, June 17). How remarkable is China's tree-planting capacity? Satellites provide the answer. CCTV News. https://contentstatic.cctvnews.cctv.com/snowbook/index.html?item_id=10543443321874386905&t=1686966396564&toc_style_id=feeds_default&share_to=copy_url&track_id=c2f8afaf-4171-409b-89cb-f53c82e058bb

China Green Times. (2023, August 2). Walking in Bayannur: experiencing stories of living with sand. China Green Times. https://www.forestry.gov.cn/c/www/xxgcjqdxal/515381.jhtml

Mobile China Network. (2023, September 14). How Bayannur transformed wasteland into greenery and found wealth in the sea of sand. Mobile China Network. https://baijiahao.baidu.com/s?id=1777000662291125863&wfr=spider&for=pc

National Ecosystem Research Network of China. (2018). The Untold Stories Behind the News: The Sand-Control Wonder 'Grass Grid' — Please Don't Forget My Birth Story.https://cnern.cern.ac.cn/getContent_class.action?class_id=spd14&article_class_id=2&id=42752&pid=spdroot

Science and Technology Daily. (2025, July 2). Inner Mongolia's Bayannur explores a new path for desertification control: stabilizing sand with a "field-grid" pattern

and fostering life under panels. Science and Technology Daily. https://www.stdaily.com/web/gdxw/2025-07/02/content_364139.html

Wikipedia. (n.d.). Bayannaɣur city. https://ja.wikipedia.org/wiki/%E3%83%90%E3%83%A4%E3%83%B3%E3%83%8E%E3%83%BC%E3%83%AB%E5%B8%82

Xinhuanet. (2024, March 14). Building an ecological defense line through "photovoltaics + desertification control" to realize Bayannur's "green miracle." Xinhua News Agency. http://www.news.cn/energy/20240314/39343e124d6e47119c4ace51ce5d68d0/c.html

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Social Support and Subjective Well-Being in Chinese Art Students: The Moderating Effect of Positive Thinking

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ABSTRACT

This study focuses on the correlation between social support, positive thinking, and subjective well-being among Chinese art and design college students. In order to obtain the relevant data, the research team distributed and collected 280 questionnaires from sophomore to senior art and design students of university in Quanzhou city, Fujian province, China, from 4 March 2025 to 10 March 2025, and then collected the data. After the completion of data collection, the researchers used SPSS professional statistical software to conduct a comprehensive and in-depth analysis of the collected data. The results of the analyses showed that there was a significant positive correlation between the level of social support and positive thinking as well as subjective well-being for the art and design students. This means that the more social support students receive, the better their positive thinking tends to develop and the stronger their subjective well-being is experienced. In addition, the study also found a significant positive correlation between positive thinking and subjective well-being, meaning that the richer the students' positive thinking, the higher their level of subjective well-being. Based on the above findings, this study suggests that effective measures should be taken to improve the social support and positive thinking ability of art and design majors, so as to improve the subjective well-being of the majors as a whole, and to help them grow and develop better.

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1. Introduction

1.1 The necessity of research

College students are in an important transition stage from youth and ignorance to maturity and stability. During this period, they need to carefully choose their future career direction and gradually assume the responsibilities and roles as members of society. However, the actual situation is not satisfactory. The severe situation in the employment market makes many college students have no choice but to choose a career path that is not their ideal. As a result, they are under great psychological pressure, and it is difficult to adapt to the new environment (Gordon & Steele, 2015). In the professional field of art and design, this problem is particularly prominent. Many students have stepped into this professional threshold under the advice of parents, teachers and other people around them. With the advancement of the academic process, the difficulty of the course continues to rise, and the high standard requirements of design courses for professional literacy and practical ability gradually reduce their satisfaction with the major. This lack of professional identity has further led to the impact of their self-esteem and subjective happiness, and they are overwhelming in the face of various challenges in college life (Jue & Ha, 2018). When the happiness of college students majoring in art and design continues to decline, their ability to adapt to college life and learning environment will be greatly reduced, which not only affects their academic performance, but is also more likely to lead to a series of mental health problems, such as anxiety, depression, etc. Therefore, cultivating positive emotional experiences among college students majoring in art and design, improving their sense of happiness, is of great significance for ensuring their personal quality of life and promoting physical and mental health.

As an inherent psychological feeling, happiness is an individual's positive emotional experience of life (Ryff, 1989), which is specifically presented as a quantifiable indicator of subjective happiness, which deeply reflects the individual's positive perception and positive attitude towards life (Yazdani & Siedlecki, 2021). College students majoring in art and design are in an education system with design as the core. If they cannot smoothly adapt to this unique learning process, as professional designers, it will be difficult to create an active creative atmosphere in the future, which will lead to greater psychological pressure, and the subjective happiness will also be reduced (Chen Et al., 2020). In view of this, it is particularly necessary to deeply explore various variables closely related to subjective happiness. By clarifying these variables, we can specifically improve the positive cognitive level of students facing academic difficulties in art and design majors, and at the same time explore effective intermediary ways to help them better cope with learning challenges and improve their happiness.

Many research reports point out that factors such as self-esteem, professional satisfaction, social support and positive thinking will affect the subjective happiness

of individuals (Kong Et al., 2013; Martínez-Martí & Ruch, 2017). Among them, although the current research on the relationship between social support and positive thinking and subjective happiness is insufficient, studies have shown that social support has a positive impact on individual adaptability and mental health (Holliman Et al., 2022); At the same time, people with a high level of positive emotions can often cope with stressful situations with a good attitude, and can adapt well to the rhythm of life in their environment. It can be seen that positive thinking seems to be highly related to subjective happiness.

Social support is one of the key factors affecting subjective happiness as a positive resource obtained by individuals in the relationship network built with family, friends, professors and others (Siedlecki Et al. , 2014). Thoits (1995) proposed that individuals with high levels of social support may experience relative stress when facing pressure. However, even in this seemingly contradictory situation, with high social support, they can minimize the negative impact of resource loss and solve the problems they face more effectively. In the past relevant studies, the higher the degree of social support obtained by students majoring in art and design, the more likely they are to adopt active strategies when facing difficulties, and their self-esteem will also be improved, thus enhancing their adaptability to college life. Many research results show that social support has a positive role in promoting the growth and development of students majoring in art and design (Wei, 2022).

Positive thinking is reflected in the cognitive tendency and coping mode of individuals to view themselves and their lives with a positive and acceptive attitude, which is a core variable closely related to happiness (Caprara, 2006). Subramaniam & Vinogradov (2013) focused on studying the positive cognitive aspects of human happiness and delved into the underlying mechanisms of positive cognition. Lushyn & Sukhenko (2022) found through their research that positive thinking plays a more critical role in determining individual adaptability compared to negative thinking. The more positive thinking an individual experiences, the higher the happiness they experience.

Based on this, this study focuses on the professional field of art and design. It aims to deeply analyze the intrinsic relationship between social support, positive thinking and subjective happiness, and strives to provide solid data support for the formulation of intervention measures that can effectively improve the subjective happiness of college students majoring in art and design.

1.2 Research purpose

This study aims to explore the relationship between social support, positive thinking and subjective happiness in art and design majors. The specific purposes are as follows.

1) Determine the general characteristics of the subjects.

2) Determine the degree of social support, positive thinking and subjective happiness of the subjects.

3) Determine the differences between social support, positive thinking and subjective happiness according to the general characteristics of the subjects.

4) Determine the correlation between the subject's social support, positive thinking and subjective happiness.

2. Research methods

2.1 Research and design

This research belongs to the category of descriptive investigation and research. Its core goal is to deeply explore the intrinsic relationship between social support, positive thinking and subjective happiness among college students majoring in Chinese art and design.

2.2 Research subjects

This study takes students from the second to fourth grades majoring in art and design at A University in Quanzhou city, Fujian province, China. Before the research was carried out, the relevant matters were explained in detail to the subjects participating in the study, including ensuring their anonymity, the possibility of mid-term withdrawal during the research process, and the preparation of gifts for the subjects participating in the study. When determining the number of subjects participating in the study, according to the requirements of correlation analysis, when the significance level of the bilateral test is set to 0.05, the effect size is at the intermediate level of correlation (the size is 0.30). When the test force is set to 0.90, it is calculated that the minimum sample size required for analysis is 224 people. However, considering the possible elimination rate in the actual research process, in order to ensure the adequacy and representativeness of the sample, 296 people were finally selected as the subjects using a convenient sampling method. After the data collection was completed, the recovered questionnaires were strictly screened. After removing 16 missing questionnaires, a total of 280 (accounting for 94.6%) of valid questionnaires were finally used for subsequent data analysis.

2.3 Research tools

2.3.1 Social support

This study uses the scale developed by Park (1985) to measure the level of social

support. The scale adopts a 5-point scoring method, which contains a total of 25 questions, covering four sub-dimensions: emotional support, material support, evaluation support and information support. The higher the score, the higher the level of social support perceived by the individual. In the practical application of this study, the Cronbach's alpha value reached 0.96, further verifying its high confidence in the sample of this study.

2.3.2 Positive thinking

This study uses the scale developed by Kim et al. (2006) to evaluate the level of positive thinking. This scale adopts a 5-point scoring rule, which contains a total of 18 questions, mainly covering two sub-dimensions of subjective satisfaction and goal pursuit. The higher the score, the higher the individual's positive thinking. In the practical application of this study, the Cronbach's alpha value of the scale reached 0.88, fully verifying its good confidence level in the sample of this study.

2.3.3 Subjective happiness

This study uses the scale developed by Lyubomirsky & Lepper (1999) to measure subjective happiness. The scale adopts a 7-point scoring method, with a total of 4 questions. The higher the score, the stronger the subjective happiness of the individual. In the practical application of this study, the Cronbach's alpha value of the scale was 0.91, indicating that the scale has a high confidence level for the sample in this study.

2.4 Data collection and analysis

Before officially carrying out data collection, this study has clearly explained the purpose, specific methods and related processes of the research to the research subjects. Only those who fully understand the purpose of the research and clearly indicate their voluntary participation in the research are subjects with their written consent. The data collection will be carried out from March 4, 2025 to March 10, 2025. In the process of collecting data, the researchers emphasized to the subjects that not participating in this study will not have any adverse effects on them; if the subjects change their minds during the research and do not want to continue to participate, they can terminate their participation at any time. At the same time, it is explained to the subjects that the information related to the subjects obtained during the data collection process will only be used for the purpose of this study and will not be transferred to other purposes. The data collected in this study are all statistically analyzed and processed by SPSS software. For the general characteristics of the subjects, the frequency and percentage are used for in-depth analysis. The subjects' social support, positive thinking and subjective happiness level are analyzed and presented using averages and standard deviations. According to the general characteristics of the subjects, t-test and ANOVA are used for analysis of the

differences in social support, positive thinking and subjective happiness between different groups; when the test results show that there is a significant difference, the Tukey post-event test is further used to determine the specific difference. Using Pearson correlation coefficient to analyze the relationship between social support, positive thinking, and subjectivity of the subjects, in order to reveal the degree of correlation between them.

3. Research results

3.1 General characteristics of objects

This study takes students from the second to fourth grades majoring in art and design. In terms of gender distribution, the number of female students is 234, accounting for 83.6%; the number of male students is 46, accounting for 16.4%. In terms of age, there are 230 students under the age of 20, accounting for 82.1% of the total number; there are 50 students under the age of 20 and above (including 20 years old), accounting for 17.9% of the total number. In terms of grade distribution, there are 98 second-year students, accounting for 35.0%; there are 96 third-year students, accounting for 34.3%; There are 86 fourth-grade students, accounting for 30.7%. As for the motivation for choosing the major of art and design, the factor of "suitability and interest" is the most prominent. 96 people (accounting for 34.3%) chose the major for this reason; followed by "recommended by parents or people around them", 84 people (accounting for 30.0%) chose the major because of this; in addition, 62 people (Accounting for 22.1%) chose this major because of the "employment rate". In terms of professional satisfaction, the largest number of students who choose the "satisfied" option is 130, accounting for 46.6%; there is also a certain proportion of students who choose "general" and "very satisfied" (see Table 1 for details of specific data).

Table 1. General characteristics of subjects

Categories	Characteristics	n(%)
Gender	Male	46(16.4)
	Female	234(83.6)
Age	Under 20 years old	230(82.1)
	Over 20 years old (including)	50(17.9)
Grade	2	98(35.0)
	3	96(34.3)

	4	86(30.7)
Motivation of major selection	Employment rate	62(22.1)
	Parents and surrounding invitations	84(30.0)
	Aptitude and interest	96(34.3)
	Professional occupation	38(13.6)
Satisfaction of major	Very Satisfaction	40(14.3)
	Satisfaction	130(46.6)
	Moderate	96(34.3)
	Dissatisfaction	10(3.6)
	Very dissatisfaction	4(1.4)

3.2 Social support, positive thinking, subjective happiness

The average score of the subjects' social support is 3.86 (out of 5).

Table 2. Social support, positive thinking and subjective happiness

Variables	Min	Max	M±SD
Social Support	2.52	5.00	3.86±.59
Emotional Support	2.33	5.00	3.92±.62
Material Support	2.00	5.00	3.73±.61
Appraisal Support	1.00	5.00	3.91±.71

Informational Support	2.60	5.00	3.86±.34
Positive Thinking	2.55	4.83	3.52±.61
Subjective Satisfaction	2.23	4.92	3.45±.54
Goal Pursuit	2.40	5.00	3.69±.58
Subjective Happiness	2.00	7.00	4.68±1.18
In general,happy	1.00	7.00	4.92±1.35
happier than my friends	1.00	7.00	4.68±1.37
enjoy life to the fullest	1.00	7.00	4.66±1.23
not depressed,but it doesn't seem very happy	1.00	7.00	4.46±1.39

The scores of each factor are shown in the social support-related factors. The average score of emotional support factors is 3.92 points; the average score of material support factors is relatively low, 3.73 points; the average score of evaluation support factors is 3.91 points; and the average score of information support factors is 3.86 points. The average score of positive thinking about this factor is 3.52 points (the full score of the scale is 5 points). Further subdivided into its sub-fields, the average score of the subjective satisfaction sub-field is 3.45 points, and the average score of the goal pursuit sub-field is 3.69 points. The average score of subjective happiness factor is 4.68 points (the full score of this scale is 7 points). Specifically to each question, on the question of "In general, I am a happy person", the average score is 4.92; on the question of "I think I am happier than my friends", the average score is 4.68; on the question of "I enjoy life as much as possible", the average score is 4.66. Score; On the issue of "I'm not depressed, but I don't seem to be happy", the average score is 4.46.

3.3 According to the general characteristics of the subjects, social support, positive thinking and subjective happiness

Based on the general characteristics of the subjects, gender analysis revealed that girls have significantly higher levels of social support awareness than boys (t-value of -2.121, p-value of 0.036). In the two dimensions of positive thinking and subjective happiness, there is no significant difference between different genders. Further exploration of other general characteristics other than gender shows that social support, positive thinking and subjective happiness have not reached the statistically significant level in these aspects. Through post-event analysis, it is further confirmed that there is no significant difference between the groups.

Table 3. Difference of social support, positive thinking and subjective happiness by general characteristics

Categories	Characteristics	Social Support		Positive Thinking		Subjective Happiness	
		M ±SD	t or F (*p*)	M± SD	t or F (*p*)	M± SD	t or F (*p*)
Gender	Male	3.62±.68	-2.121 (.036)	3.53±.51	.096 (.923)	4.50±.95	-.799 (.426)
	Female	3.91±.59		3.528±.50		4.72±1.22	
Age	Under 20 years old	3.91±.59	2.850 (.061)	3.54±.49	.948 (.390)	4.71±1.17	.696 (.500)
	Over 20 years old	3.47±.27		3.19±.17		4.00±.91	
Grade	2 grade	3.87±.68	.217 (.805)	3.45±.48	.782 (.460)	4.58±1.24	1.458 (.229)
	3 grade	3.82±.54		3.54±.52		4.73±1.17	
	4 grad	3.89±.55		3.58±.49		4.73±1.16	
Motiv	Employ	3.8	.	3.43	1	4.69	1

ation of major selection	ment rate	8±.63	466 (.706)	±.57	.268 (.288)	±1.21	.33 (.940)
	Parents and surrounding invitations	3.9 3±.59		3.57 ±.57		4.65 ±1.33	
	Aptitude and interest	3.8 1±.59		3.58 ±.47		4.75 ±1.02	
	Professional occupation	3.7 7±.56		3.38 ±.43		4.55 ±1.25	
Satisf action of major	Very Satisfaction	3.7 1±.59	. 703 (.591)	3.42 ±.43	2 .168 (.076)	4.36 ±1.13	1 .288 (.278)
	Satisfact ion	3.8 6±.63		3.56 ±.80		4.81 ±1.23	
	Moderat e	3.9 0±.54		3.60 ±.53		4.68 ±1.12	
	dissatisf action	3.8 8±.74		3.10 ±.39		3.95 ±1.23	
	very dissatisfaction	4.3 4±.59		4.11 ±.31		5.50 ±1.06	

3.4 The relationship between social support, positive thinking and subjective happiness

The subject's social support status and positive thinking level (r = 0.48, $p < 0.001$) and subjective happiness (r = 0.49, $p < 0.001$) show a significant positive correlation; at the same time, there is also a positive correlation between the level of positive thinking and subjective happiness. There is a significant positive correlation (r = 0.69, $p < 0.001$).

Table 4. Relationship of social support, positive thinking and subjective happiness

Variables	Social Support	Positive Thinking	Subjective Happiness

	r(*p*)	r(*p*)	r(*p*)
Social Support	1		
Positive Thinking	.48(<.001)	1	
Subjective Happiness	.49(<.001)	69(<.001)	1

4 Discussion

This study aims to deeply explore the social support, positive thinking and subjectivity of Chinese art and design college students.The intrinsic relationship between the three variables of happiness is expected to provide solid empirical data support for the subsequent formulation of intervention strategies that can effectively improve the subjective happiness of college students in this major through this study.

In this study, the average score of social support perceived by the study subjects was 3.86.,This shows that the level of social support received by the research subjects from professors, parents and friends is higher than average. Further analyze the various social support data of factorsIt was found that the emotional support score was the highest, reaching 3.92, which reflects that the subjects are more recognizing of emotional support than other forms of support. These research results and Wei (2022) Research results on the role of social support mediation for college students majoring in art and design Similar. In this study, the subjects have the lowest recognition Factor. It's material support. Based on this, we think it is necessary to deeply analyze social support. Factor Specific attributes, in order to formulate targeted mediation strategies for students who encounter difficulties in professional life, so as to improve their social support level and help them better adapt to professional life.

The average score for positive thinking among the research subjects is 3.52. Positive thinking is an important source of experiencing happiness (Macleod&Moore，2000). In this study, the subjective satisfaction level of the research subjects was 3.45 points, and the goal pursuit level was 3.69 points. Among them, the subjective satisfaction score of the research subjects seems to be lower than the overall average, which suggests that we need to find effective ways to help them improve their sense of self-identity and guide them to set positive goals. The level of subjective satisfaction is 3.45 points, and the goal pursuit is 3.69 points. Among them, the subjective satisfaction score of the research subjects seems to be lower than the overall average level, which suggests that we need to explore effective methods to help them improve their positive self-identity and guide them to establish positive

goals.

Based on this, this study suggests that faculty and staff in the Department of Art and Design should actively strive to establish an interest cultivation and support system that is in line with the characteristics of the department. By improving the positive thinking level of students majoring in art and design, helping them pursue happiness, and then fully demonstrating the potential of design professionals. Compared with ordinary college students, college students majoring in art and design face multiple pressures such as studying professional courses and obtaining qualification certificates. (Beckman., 2007), these pressures will reduce their subjective happiness to a certain extent, so it is necessary to take measures to reduce their stress in strict departmental training courses.

In this study, there is a positive correlation between the level of social support and subjective happiness, that is, the richer the social support an individual receives, the stronger the subjective happiness. This discovery is similar to the results of LU (2024). Research has confirmed a significant positive correlation between social support and subjective well-being among college students majoring in art and design. This study further suggests that social support has a crucial impact on happiness, which is a key element in overcoming difficult beliefs (King Waiting et al., 2014). Therefore, it is necessary for us to identify those students who lack a social support system, actively build a platform for them to communicate regularly with their tutors and seniors, and make targeted supplements and improvements by understanding the weaknesses of the support system in their self-perception. There is a significant correlation between the positive thinking of college students majoring in art and design and their subjective happiness. The positive thinking of college students majoring in art and design can lay a solid foundation for setting a satisfactory life direction. Therefore, it is necessary for us to explore effective ways to improve positive thinking, improve life satisfaction and enhance subjective happiness. In addition, in view of positive thinking, college students majoring in art and design will also graduate.

Later, career development has an impact. We believe that it is necessary to deeply analyze the influencing factors that promote positive thinking, and formulate a corresponding intervention plan accordingly.

Based on these research results, it can be clearly confirmed that there is a close correlation between the three variables of social support, positive thinking and subjective happiness of college students majoring in art and design. In view of this, in order to effectively improve the subjective happiness of students majoring in art and design, we suggest that we formulate a set of targeted intermediary plans to improve subjective happiness based on the basic data confirmed by our research institute and combined with relevant preliminary research results. In addition, since this study is only for college students majoring in art and design in a specific area, the universality

of its research conclusions may have certain limitations. Therefore, it is necessary to further expand in the future.The scope of the large research object covers students from more regions, and conducts repetitive research to verify and expand the conclusions of the study.

5 Conclusion

This study is a descriptive investigation and research. Its core goal focuses on the in-depth analysis of the intricate intrinsic relationship between the three key variables of social support, positive thinking and subjective happiness of college students majoring in art and design. In today's society, with the diversified development of education and the emphasis on the comprehensive quality cultivation of students, college students majoring in art and design, as a special group, face many challenges such as academic pressure, employment competition and social identity. Understanding the relationship between their social support, positive thinking and subjective happiness not only helps to fully understand the psychological state and development of this group. Demands can also provide a scientific basis for educators, psychological counselors and relevant policymakers to formulate more targeted education and support strategies.

In order to ensure the representativeness and reliability of the research results, this study carefully selected 280 undergraduate students majoring in art and design from A University in Quanzhou City as the research sample. As a famous historical and cultural city, Quanzhou City has a rich artistic and cultural heritage and an active artistic education atmosphere. The art and design major of University A has a high popularity and influence in the region, and its student group is typical and representative. During the data collection stage, the research team formulated a detailed and well-thought-out plan. From March 4, 2025 to March 10, 2025, a standardized questionnaire survey method was used to conduct a comprehensive data collection of 280 selected undergraduates. The content of the questionnaire covers multiple dimensions of social support, such as family support, friend support, school support, etc.; the measurement indicators of positive thinking, including optimism, self-efficacy, problem-solving ability, etc.; and the evaluation criteria of subjective happiness, such as life satisfaction, emotional experience, etc. In the process of data collection, the researchers strictly follow scientific standards to ensure the effectiveness and accuracy of questionnaire distribution and recycling, and carefully screen and sort out the recovered questionnaires to eliminate invalid questionnaires to ensure the quality of data analysis.

Through rigorous statistical analysis of the collected data, the research results show the following prominent characteristics: there is an obvious positive correlation between the level of social support and subjective happiness. Specifically, the higher the degree of social support college students get, the stronger the subjective happiness they experience.

This finding shows that social support systems such as family, friends and schools play a crucial role in improving the mental health and happiness of college students majoring in art and design. For example, the emotional care and financial support given by the family can provide college students with a sense of security and belonging. The companionship and communication between friends can help relieve stress and loneliness. The school's academic resources, teachers and campus culture can also create a good environment for students' growth and development. The level of positive thinking and subjective happiness also show a positive correlation, that is, the more active the positive thinking of college students, the higher their subjective happiness. Positive thinking includes optimistic cognitive style, confident mentality and positive coping strategies in the face of difficulties. These factors can help college students better cope with challenges in learning and life, enhance psychological resilience, and thus improve subjective happiness.For example, college students with positive thinking are more inclined to regard setbacks as opportunities for growth. They can learn from failure and constantly adjust their behavior and attitude, so as to improve their life satisfaction and happiness.

There are inevitably certain limitations in this study. First of all, the selection range of samples is relatively narrow, limited to undergraduates majoring in art and design in one university, which may limit the universality and popularization of the research results to a certain extent. College students majoring in art and design in different regions and different types of colleges and universities may have differences in social support, positive thinking and subjective happiness. Future research needs to further expand the scope of the sample, covering more regions and colleges and universities at different levels, so as to improve the representativeness and reliability of the research results. Secondly, this study mainly adopts the method of questionnaire survey for data collection. Although this method has the advantages of easy operation and low cost, there may be problems such as subjective answer bias of the subjects, which will affect the accuracy of the data. Subsequent research can consider combining various research methods, such as interview and observation, to obtain more comprehensive and in-depth information.

In addition, this study only explores the correlation between the three variables. The causal relationship between variables and the potential regulatory variables and intermediate variables have not been discussed in depth. Future research can further carry out longitudinal research and experimental research to reveal the intrinsic mechanism between variables. In view of the limitations of this study, it is necessary to carry out repetitive research in the future to verify the stability and reliability of the research results. In repetitive research, the scope of research objects should be further expanded, not only including college students majoring in art and design in different regions and different types of universities, but also students in other related majors, such as fine arts, design, etc., in order to more comprehensively understand the psychological state and development needs of art students.

At the same time, the breadth of the research field should be expanded. In addition to the three variables of social support, positive thinking and subjective happiness, other relevant variables, such as personality traits, coping styles, career planning, etc., can also be introduced to build a more perfect research model. On this basis, this study proposes to carry out project development aimed at improving the subjective happiness of college students majoring in art and design, and to verify the effectiveness of the project. Project development can be based on the results of this study, combined with the characteristics and needs of college students majoring in art and design, and design a series of targeted interventions, such as carrying out mental health education courses, organizing social practice activities, and establishing support groups. Through the implementation of these projects, observe and evaluate the improvement effect of the project on the subjective happiness of college students, and provide a basis for further optimizing the content and implementation method of the project.

At the same time, a variety of methods can be used to verify the effectiveness of the project, such as comparison of front and rear measurements, comparison of experimental groups and control groups, etc., to ensure the scientificity and credibility of the research results.

This research provides valuable reference for an in-depth understanding of the relationship between social support, positive thinking and subjective happiness among college students majoring in art and design, but future research still needs to be continuously expanded and deepened to better serve the growth and development of college students majoring in art and design.

Conflict of interest

The authors declare that they have no conflict of interest.

Short bio

Wu Yundong, male, Han nationality, from Xianning, Hubei, is a doctoral student, network engineer, expert in "Science and Technology Innovation China" of the China Association for Science and Technology, public service expert for small and medium-sized enterprises in Jiangsu Province, innovation and entrepreneurship mentor of the "Sail Plan" in Fujian Province, specially appointed expert of Huai'an Career Planning and Design Research Institute, director of the Shishi Science Popularization Workers Association, entrepreneurial mentor and psychological counselor of the Quanzhou Entrepreneurship Service Team. Has won the first prize in the 10th Vocational Education Excellent Scientific (Educational) Research Achievement Selection, the first prize in the 2021 Fujian Province Vocational Education Excellent Teaching and Research Achievement Selection, and the first prize in the 2021 Fujian Province Summer Excellent Vocational Education Paper. Has written 12 academic papers, including "A Brief Discussion on the Problems and

Countermeasures in Rural Small and Medium sized River Management", "The Importance of Ideological Education and Management for College Students", "Research and Exploration of Innovation and Entrepreneurship Education Curriculum in Vocational College Teaching", and "Exploration of Innovation and Entrepreneurship Education for Vocational College Students Based on Positive Psychology in the New Situation", which have been published in provincial and ministerial level journals. Invented 3 national design invention patents, 2 national utility model patents, 10 software copyrights, and 2 municipal level research projects.

References

Beckman, G. D. (2007). "Adventuring" arts entreprEneurship curricula in higher education: An examination of present efforts, obstacles, and best prac Tices.*The Journal of Arts Management, Law, and Society*, 37(2), 87-112.

Caprara, G. V., & Steca, P. (2005). Affective and social self-regulatory efficacy beliefs as determinants of positive thinking and happi Ness.*European Psychologist*, 10(4), 275-286.

Chen, C., Wang, K., Chen, S., Zhou, Y., & Zhou, M. (2020). The linear and curvilinear relation between personality and subjective well-being in visUal artists: Perceived creation stress as a mediator. *PsyCh Journal*, 9(4), 533-543.

Gordon, V. N., & Steele, G. E. (2015). *The undecided college student: An academic and career advising challenge*. Charles C Thomas Publisher.

Holliman, A. J., Waldeck, D., Jay, B., Murphy, S., Atkinson, E., Collie, R. J., & Martin, A. (2021). Adaptability and social support: Examining links with psychological wellbeing among UK students and Non-students. Frontiers in Psychology, 12, 636520.

Jue, J., & Ha, J. H. (2018). The professional identity, career commitment and subjective well-being of art therapy students. *The Arts in Psychotherapy,* 57, 27-33.

King, K. A., Vidourek, R. A., Merianous, A., & Singh, M. (2014). A study of stress, social support, and perceived happiness among college students.

Kim Hyun-jung, Shin Young-chul, Oh Kang-seop, Oh Yoon-hee, Jung Ji-young, & Seo Dong-woo. (2006). Development and validation study of the positive thinking scale. *The Korean Journal of Health Psychology,* 11(4), 767-784.

King, K. A., Vidourek, R. A., Merianous, A., & Singh, M. (2014). A study of stress,

social support, and perceived happiness among college students. *The Journal of Happiness & Well-Being,* 2(2), 132-144.

Kong, F., Zhao, J., & You, X. (2013). Self-esteem as mediator and moderator of the relationship between social support and subjective well -Being among Chinese university students. *Social Indicators Research*, 112, 151-161.

LU, J. (2024). A Study on the Relationship between Social SuppoRt and Subjective Well being of Vocational College Students. Pacific International Journal, 7(2), 22-27. ULZ 000199

Lushyn, P. V., & Sukhenko, Y. V. (June, 2022). Reconsidering the conceptOf sustainability: personal adaptability dynamics as predictor of positive change. InIOP Conference Series: Earth and Environmental Science (Vol. 1049, No. 1, p. 012080). IOP Publishing.

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46, 137-155.

Macleod, A. K., & Moore, R.(2000). Positive thinking revisited: Positive cognitions, well-being and mental health. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice,* 7(1), 1-10.

Martínez-Martí, M. L., & Ruch, W. (2017). Character strengths predict resilience over and above positive affect, self-efficacy, optimism, soci Al support, self-esteem, and life satisfaction.ThE Journal of positive psychology, 12(2), 110-119.

Park, J. W. (1985). A study to develop a scale of social support.Unpublished doctoral dissertation, Yonsei University, Seoul.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. Journal of personality and social psychology, 57(6), 1069. ULZ 000171

Siedlecki, K. L., Salthouse, T. A., Oishi, S., & Jeswani, S. (2014). The relationship between social support and subjective well-being across age. *Social Indicators Research*, 117, 561-576.

Subramaniam, K., & Vinogradov, S. (2013). Improving the neural mechanisms of cognition through the pursuit of happiness. *Frontiers in Human Neuroscience*, 7, 452.

Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What's next? *Journal Of Health And Social Behavior*, 53-79.

Wei, P. (2022). The impact of social support on students' mental health: A new perspective based on fine art majors. *Frontiers in Psychology*, 13, 994157.

Yazdani, N., & Siedlecki, K. L. (2021). Mediators of the relationship between cognition and subjective well-being. *Journal of Happiness Studies,* 22(7), 3091-3109.