Analysis of drought climate ecology and college students’ entrepreneurial ability based on an ant colony optimization model

Huiying Wang

Received: 2 June 2021 / Accepted: 10 July 2021 / Published online: 28 July 2021
© Saudi Society for Geosciences 2021

Abstract
This paper first proposes an ant colony optimization model. The model defines the probability that acts on the number of average branch nodes, which always maintains the balance between “exploration” and “use”, so that the algorithm maintains a higher search capability while avoiding mistakes. According to this, the relationship between the drought climate development and the ecological impact of the grassland has summarized the accumulation mechanism of grassland ecological effects by studying the combination characteristics of grassland and ecological effects and the comprehensive response to important ecological elements. The entire life cycle of the arid climate can summarize the initial, developmental acceleration period, stable development period, and the end of development. Its integrated ecological effects of grasslands have time accumulation, spatial extension, and aggregation source, and also have characteristics such as hidden and dominant properties, threshold sensitivity, and ecological recovery. Finally, this paper creates a system for evaluating students’ entrepreneurial capacity. According to the elements collected, the index is obtained by theoretical analysis, and three-level indicators of entrepreneurial quality, entrepreneurial capacity, and entrepreneurship knowledge are extracted. Through professional communication and group exchange, the entrepreneurial capacity elements are classified. Through the questionnaire survey and causal analysis, we are able to check the entrepreneurial capacity index, improve the indicator system, and finally obtain an indicator of evaluating students’ entrepreneurial capacity evaluation, including level III indicators, level II indicators, and 32-level III-level indicators and use them. The method will be described. We also calculated the weight and determined the assessment model by the level process. This paper uses a comprehensive fuzzy evaluation method as an evaluation method to establish an evaluation system to ensure its rationality and availability.

Keywords Ant colony optimization model · Drought climate · Ecological impact · Entrepreneurial ability evaluation

Introduction
This article first pays attention to the principle, theory, and application of ant colony optimization, and the basic algorithm for improving ant colony optimization. The same ant colony optimization implementation method, the application and improvement of the application, and improvement of ant colony optimization algorithm are systematically studied; similar achievements of ant colony optimization models are proposed (Bi et al. 2019). The algorithm uses traveling salesperson problem (TSP) issues to classify them to many small data subscriptions. Using an algorithm for optimizing ant colony, solving each child problem, and finally, all subproblem solutions are determined by a specific number and combine the rules together with the problem to be solved (Jia 2007). The results of the TSP problem in group feature show that the algorithm can meet the best solution (close to basic solutions) with the fastest speed (Jin et al. 2008). If the number of clusters in the TSP problem increases, the ant colony optimization model performance will be higher, but if the packet feature of the TSP problem is unclear, the algorithm will decompose the calculation in general (Kramers and Mcssop 1987). Based on this point, this paper combines theory and practice, considering the development of arid climate in the northern province and its ecological impact on grassland.
First, the relationship between the process and evolution of the drought climate will begin (Liu 2013). The effects of ecological bearing capacity of the plant ecosystem and the accumulated environment, and the grassland ecological effects have been summarized as the effects of ecological accumulation of grassland mining regions (Luo 2013). Secondly, according to remote sensing data, the ecological effects of vegetation evolution in the eastern part of the notion in recent years have been explored in a macro-analysis (Murnion 1996). Then, according to the information and experimental remote sensing data, the internal ecological response has been fully analyzed from the ecological zone quality and soil ecological hazard. In the end, the article explains the basic components of the students’ entrepreneurial capacity (Rumelhart et al. 1986). A decomposition of the relevant elements of students’ entrepreneurial capacity was done using literature review, preliminary screening, eliminating repeated and uncommon elements, then conducting expert ratings, two screening and filtration, and finally got a student’s literacy collection of entrepreneurial power components (Shan et al. 2007). This paper uses the established assessment student entrepreneurial capacity evaluation system. The discrete comprehensive assessment is used to calculate, and the city’s entrepreneurial capacity is divided into 72.88 points and is in a good level (Shi et al. 2019). By dividing the investigative population into the entrepreneurial courses and entrepreneurial competitions between the systems, the study found that students participating in these two activities have the best entrepreneurial capacity, higher than the whole level (Suwansawat and Einstein 2006). The system’s entrepreneurial course is higher than entrepreneurial competition, and the entrepreneurial skill indicators of students who do not participate in the activities are small (Wang et al. 2008).

Materials and methods

Overview of research area

There are five administrative regions in the eastern region of the Ni Province: H city, X alliance, Yeng, C city, and T city. There are 54 flag counties under its jurisdiction, with a total area of approximately 670,000 km², accounting for 56% of the total area. In 2017, the total registered population was estimated to be 3.04 million. Most of them are in the climate zone of arid and semi-arid in China (Xue and Pan 1999). The average annual rainfall is 200–480 mm, and the rain is usually distributed in hot summer. The rain is often uneven in time and space, which is easy to erode and destroy the soil (Yan et al. 2013). The average altitude of the area is about 800 m, and the type of land use is mainly grassland and forests, accounting for 50.66% and 30.31% of the total land area of the eastern part (Yang et al. 2013).

Research method

Ant colony optimization model

The self-organized behavior of ants in nature has already attracted the attention of insectologists. The ant colony was found from the natural world by Deneubourg et al. A symmetrical double-bridge (two bridge lengths) A and B are separated from ants from food sources, while ants do not have any laws during the movement of the ant pockets. The experimental results show that after a period of shock (due to certain random reasons, the number of ants through a bridge has increased dramatically or decreased), these ants tend to follow the same path. In this experiment, most ants have chosen a bridge (Zhang et al. 2002). Goss et al. provides a model of high-altitude experimental probability. First, it is assumed that the number of pheromones remaining on the bridge is proportional to the number of ants through the bridge (which means that the vaporization of the pheromone is not considered); secondly, the amount of pheromone in the bridge is enlarged by the ants. We determined the choice of the bridge and the probability of selecting the bridge with the number of ants through the bridge. If all ants...
pass the two bridges, the AM and BN are set to the number of ants of bridge A and bridge B (AM + BM = m), then m + 1 has
selective probability on bridge A:

\[
P_A(m) = \frac{(A_m + k)^h}{(A_m + k)^h + (B_m + k)^n}
\]

(1)

The probability of choosing the B bridge is:

\[
P_B(m) = 1 - P_A(m)
\]

(2)

Drought climate ecological impact assessment

Subsystem Assuming that the subsystem \( j \) has a factor that does not affect each other, the force of any element is
\( X_j (i = n, j = 3) \), then the force applied to the environment comes from the calculation formula of the subsystem is as
follows:

\[
|P| = a\sum_{i=1}^{n} (X_{ji} \cdot \cos \theta_i)
\]

(3)

In practical applications, \( \cos \theta_i \) is the weight \( w_i \) affair factor in the subsystem:

\[
|P| = a\sum_{i=1}^{n} (X_{ji} \cdot w_i)
\]

(4)

System The stable synergy of the impact of natural factors \( P_1 \), society and economic \( P_2 \), the original ecological health factor
\( F_1 \), is the resource environment that carries the capacity of
ecosystem status RECS (resource and environmental driver). The
specific calculation formula is:

\[
\text{RECS} = |P_1| + |P_2| + |F_1|
\]

\[
= \sqrt{\sum_{i=1}^{n}(X_{ji} \cdot w_i)^2 + \sum_{i=1}^{m}(X_{yi} \cdot w_i)^2 + \sum_{j=1}^{n}(X_{ij} \cdot w_i)^2}
\]

(5)

In the formula, \( K \) and \( L \) represent the number of factors affecting each subsystem.

Experimental design

The research content is mainly concentrated in the following aspects: basic information of J city students, including
school, gender, identity; J city students’ spirit of entrepreneurship; and Jian students’ entrepreneurial enthusiasm. J city
students are engaged in business self-examination and have the ability to acquire related knowledge. J city’s
environment is advantageous and disadvantageous, and can influence of business factors for students; education
about J city university entrepreneurial affairs and content related to students’ entrepreneurial policies are also
studied.

Results

Changes of vegetation coverage of arid climate

Figure 1 shows the trend of plant coverage in eastern region in recent years. Figure 1a shows that the slope of the crop area
will change the slope of the eastern region of the entire N to 0.002.

The change in plant slope in the city is approximately 0.002, 58.65% of the pixel dollars have the same plant coverage,
and 20.43% of the pixel elements may grow mainly with \( x \) left flag, \( x \) right flag, e-city, and \( z \) distribution. The plant
coverage fell by 20.92%, mainly distributed in \( x \) and \( z \) flag. The vegetation coverage rate of the Xeng is approximately 0.005–0.002. The brightness
of the pixel is 80.12% and the variation is not obvious, and the vegetation coverage rate is 0.52% of the pixel dollar,
which is mainly distributed in \( x \) and \( w \) flag. The plant coverage decreased by 9.46% pixel, mainly due to
the slope of the plant coverage of C, 47.45% of the standard constant plant coverage, such as W Flag, E Flag, A flag
and \( x \) region. The plant coverage pixels significantly increased. The growth
slope of the T-plant covered slope is between −0.005 and 0.007. The 35.80% pixel plant coverage has not
changed significantly, while 50.37% of the pixel plant coverage showed an increased trend, mainly distributed in \( x \) and \( z \) flag. The slope value of the X-ring plant has ranged from −0.004 to 0.007. In total, 56.45% of the plant coverage
pixel dollars without significant changes and 29.55% of the plant coverage pixels significantly increased. The growth
trend of plant coverage in each city in the alliance had a significant increase and had a larger range of pixels, the vegetation
condition of the city \( T \) is better, the plant conditions of the city \( H \) are poor, and the plant status of the city \( X \) has the most
difference. This is consistent with the results of the package and other people.

The relationship between the 25 mine regions and 10
km, 20 km, 30 km, 40 km, and 50 km buffers was analyzed
using SPSS 21.0, as shown in Figure 2. The 0.01
coefficient level indicates that there is a specific correlation
between GNDVI and the GNDVI of the eastern mining
area in the N city. The overall trend of the two changes
is similar, and the relationship between the mine is
high, indicating that the coal mining activity has affected
the changes in crops around the mining area to a certain extent. L mine and T mine mining before the mining of
50 km buffer is less than 0.5, and the correlation between
the mining is high. The GNDVI correlation coefficient 
between the buffer and the B mine is less than 0.5.
Compared with other mining regions, the impact of vegeta-
tion on adjacent vegetation is reduced. Before the
mine, the mining area had a small impact on vegetation,
approximately 20–50 km. After the mine, the mining area is
less affected by the surrounding vegetation. Limited to
Fig. 1  In recent years, the coverage of changes in the provincial east

Fig. 2  Correlation between GNDVI mean before and after the mining of the eastern mine and its buffer
the mining area, the impact of the mining area on adjacent plants has been further improved.

**Drought climate temperature and precipitation**

Using ArcGIS statistical analysis tools, the annual average temperature and annual precipitation of the 16 sites in northeastern provinces were spatially interposed to obtain the space distribution of annual average temperatures and annual water volume in the eastern province in recent years. The temperature change slope is shown in Figure 3.

The change in precipitation is shown in Figure 4.

As can be seen from Figures 3 and 4, in recent years, the annual average temperature change slope ranges from 0.023 to 0.071, greater than 0, indicating that the temperature in eastern region is a growth trend. Regarding the space temperature distribution, the temperature rise in the western city H and the northeast is higher than that of the central and northern parts. The temperature in northeast China, the northwest of C city, the northwest of the T city, and the northwest increases, of which the temperature rise in the western region of the X alliance is most obvious. In recent years, the slope of the annual precipitation changes in the eastern part of the province has a significant change in spatial distribution. The rainfall of urban C and T showed a significant decline.
**Ecological effects of human activities of arid climate**

Figure 5 shows the comparison of the precipitation, temperature, and GNDVI average in the alliance in recent years. The rainfall of H cities has a significant annual change. The trend of rainfall and GNDVI values is similar. In 2007, the minimum precipitation was approximately 215.6 mm, while the GNDVI value was the lowest, which was 0.73. In 2013, the rainfall increased to 790.4 mm, the plant GNDVI value was 0.78, and the temperature change and the GNDVI value of the plant were different; the amount of rainfall in X alliance is generally lower than that in the H city. In 1998, the rainfall was 373.8 mm, and the GNDVI value of plants was 0.44. In 2017, the precipitation was reduced by 154.5 mm. The GNDVI value is 0.35, the standard change in precipitation and GNDVI plants is the same, and the temperature is around 12–13 °C, which has no significant change, but the GNDVI value changed more obvious in plants; the change in the annual rainfall of C and T is more obvious, which is more consistent with the change trend of GNDVI values. Typically, the crop growth changes and precipitation changes in the eastern part of the northern province have significant differences in temperature changes and plant growth changes, and rainfall may be climate factors affecting plant growth and changes.

**College students’ entrepreneurial capacity evaluation results**

We need to understand the concept of entrepreneurship. Through the results of the survey, we found that 78.8% of students believe that “starting their own careers” is called entrepreneurship, and there is no need to open an enterprise or company. It can be seen that students have an ambiguous concept of entrepreneurship and think that there are many forms of entrepreneurship, not just a company or business, but also a variety of forms, such as self-operated occupations and open online stores. Students’ understanding of the concept of entrepreneurship is shown in Figure 6.

Understanding the business and entrepreneurial environment is also needed. According to the survey, 60.6% of students believe that they do not understand the knowledge of entrepreneurship, so it is only “very little.” 22.7% of students “do not understand” entrepreneurship knowledge; no one thinks that they have an “thorough understanding” of entrepreneurship knowledge. It can be seen that students do not have enough understanding of the knowledge of entrepreneurship, and they also need to do more work. About entrepreneurial environments, more than 80% of students believe that the current entrepreneurial environment is “medium” or higher. It can be seen that students are very optimistic about the views of the entrepreneurial environment.

About “entrepreneurial motivation,” 63.6% of the motivation of students belongs to “personal interests,” and only 22.7% of the students’ entrepreneurial motivation belongs to “solving work issues.” It can be seen that “self-preference” is the main reason for students to choose entrepreneurs, which also reflects that students are more willing to choose their favorite careers. Students’ understanding of entrepreneurial motivation is shown in Figure 7.

There are three main areas of entrepreneurial education including the establishment of entrepreneurial courses, establishment of entrepreneurship, and start-up of entrepreneurial competitions. For the three forms entrepreneurship, we invite entrepreneurs and entrepreneurship. When promoting entrepreneurial education, the school can take a variety of forms to provide students with more opportunities to participate in
personal activities and improve their entrepreneurial skills. The main form of entrepreneurial education is shown in Figure 8.

**College students’ entrepreneurship ability evaluation system**

The equalization analysis of the “entrepreneurial quality” scale The KMO value is 0.841, between 0.8 and 0.9, indicating that the table is applicable to causal analysis. At the same time, \( P = 0 < 0.05 \) can negate zero assumptions, and the general matrix associated with the common context indicates that the standard applies to causal analysis, as shown in Table 1.

An analysis of the change in the measurement of the entrepreneurial capacity The KMO value is 0.878 and changes between 0.8 and 0.9, indicating that the scale is suitable for causal analysis. At the same time, \( P = 0 < 0.05 \) can negate zero assumptions, and the general matrix associated with the common context indicates that the standard applies to causal analysis, as shown in Table 2.

The confidence is mainly the accuracy of the problem. A reliability analysis is done to examine the consistency and stability of the test results discussed, and its main purpose is how to prevent and reduce errors. The larger the quantity, the more reliable results are. Usually, 0.8–0.9 is very good, 0.7–0.8 is quite good, 0.6–0.7 is considered to be the minimum acceptable amount, and 0.6–0.65 is considered unsafe.

Table 3 below shows three levels of “entrepreneurial quality,” “entrepreneurial capacity,” and “entrepreneurial knowledge” reliability analysis.

Through the combination of qualitative and multiple advanced methods, the students’ entrepreneurship skills evaluation system is shown in Table 4.

**Discussion**

**Analysis of drought climate ecological impact analysis**

Based on GDMS NDVI 3G data, the cumulative time and space change of plant growth stage and plant coverage before and after mining in the eastern region and nearly 25 major mines in the eastern region and nearly 25 major mining areas were analyzed. We checked the temperature and precipitation changes before and after mining, crop changes, and annual

![Fig. 7 Entrepreneurial motivation](image)

![Fig. 8 Main form of entrepreneurial education](image)
changes. The relationship between the average temperature and the annual rain is calculated, and the rest of the mistake is preserved to explain the effect of human activities on the vegetation of the mining area.

In recent years, the pixel plant coverage in the eastern region of N will remain unchanged, while 16.86% of the pixel plant coverage is declining, mainly distributed in the northwest of the city T, the central region of the city C, and the central region of the city H. The plant coverage is 21.85% pixel distribution in the northwest of the city H. The southwest of X-Ying, the southwest of urban C, and city Q exhibited a significant trend. The trend of comparing the increase in plant coverage is much better, and the growth status of the H city and X alliance is poor. There was a reduction in large-area plant coverage levels in R mine, and Y mines have a high level of contribution to the reduced plant coverage level of urban H. In mine S, mine B, mine S2, mine B4 phase II, and mineral area D, plant coverage trends have increased significantly, indicating that the growth of mine plants has greater contribution to overall growth.

In the past 35 years, in the 25 main mining regions in eastern n, the plant coverage of 60% mining area has declined, and the plant coverage of 40% mining area has increased. The relationship between plant growth, climate, and human activities is that 45.83% of plant growth will be affected by rainfall, and 25% of human activities in the mining area promote plant growth and 8.34% of the mining area damage. There is no clear relationship between 20.83% of plant growth and rainfall and human activities. Precipitation and human activities have a significant effect on the growth of plants in the S mine.

College students’ entrepreneurial ability evaluation status

If the entrepreneurial quality is higher than the integrity of entrepreneurial capacity, students are honest, trustworthy, and responsible; have active progress; work hard; and have basic entrepreneurial qualities; at the same time, their psychological quality is also higher, indicating that students are full of confidence and perseverance, with a passion for adventure, professionalism, and strong will (Zhang et al. 2017). However, the lack of entrepreneurship usually means those students’ ambitions and entrepreneurial enthusiasm are not very high.

Entrepreneurial capacity is always in a good level; personal ability is relatively low. We have found that in three elements with basic capabilities, practical ability, and management capabilities, the score of practical ability is lower than the score of the other two skills, which indicates that the four class students are the same, which means that students have very few practices. Opportunities and lack of practical exercise have a relatively small association with related ability factors (Zhang and Pan 2009).

Through the survey, we found that the entrepreneurial knowledge in the four types of students has the lowest score, which indicates that students do not pay enough attention to entrepreneurship knowledge (Zhang et al. 2005). If you participate in entrepreneurial competitions and accept the system’s entrepreneurial education, you will have a comprehensive entrepreneurial knowledge reserve (Zhao and Gui 2005). In three different types of knowledge including entrepreneurship, entrepreneurial management is ranked as relatively good, professional knowledge is ranked second, and legal knowledge reserves are the worst.

Analysis of the cause of college students’ entrepreneurial capacity

College students’ entrepreneurial knowledge reserves are relatively weak, and business capabilities are relatively weak. Affected by traditional concepts, many students prefer to serve as civil servants and serve at institutions of “iron rice bowl,” and they are universal and enthusiastic for entrepreneurship, and they will encounter failures, so they finally choose to give up. At the same time, because students have not contacted
Entrepreneurial education in colleges still needs attention and improvement. With the consistent investigation, we found that many school students did not accept comprehensive and systematic entrepreneurial education. A course related to entrepreneurship is only included in the theoretical level; there is no in-depth practice; the content of the course is traditional; and this is a gap with the goal of entrepreneurial education. The school only provides an independent course to students in the third year or fourth year and has nothing to do with other courses, and the form of the course is low, which is unable to improve students’ interest in entrepreneurship. Due to the lack of professional teachers, the course is taught mostly by part-time teachers than other subject teachers. The teacher herself/himself has no entrepreneurial experience; entrepreneurship knowledge is incomplete, they cannot systematically promote and encourage small entrepreneurial competitions, and there is no participation among a small number of students in the entrepreneurial competition; most students will not participate.

There is a problem when developing and implementing relevant entrepreneurial policies. It is not enough to develop and improve entrepreneurship only by relying on the university and a few individuals. National policies can play an important role in launching and ensuring macro-levels, which is critical to cultivating students’ entrepreneurial capacity. In recent years, the national and local governments have launched many entrepreneurial preferential policies, with the aim of mobilizing and promoting students’ entrepreneurial spirit, but some policies have not been achieved, and there is no ideal policy.

Regarding the start of the start-up funding of entrepreneurship, the relevant national and provincial cities have introduced a small loan guarantee or a full discount loan policy and increased the corresponding loan quota, reducing the pressure of students completely relying on their own funds. The government’s support is not enough. Additional funds can be provided through other channels to relieve the need to more encourage multi-industry and tripartite to enter the entrepreneurial crisis of students from the policy level.

The implementation of the relevant rules is “send umbrella after the rain” instead of “transporting the charcoal in the snow.” By understanding related strategies, we have found that certain strategies have a defective disadvantage. Relevant policies should be encouraged after successful entrepreneurship, rather than providing funds required to solve problems with students. There is an urgent need to make decisions in order to make the “snow in the snow” play a better role in entrepreneurship.

There is a lack of appropriate guarantee mechanisms. Many students do not choose to start a business because they are...
worried that the company might close and cannot withstand the consequences of the business. In order to encourage them to engage in entrepreneurship, the government must work to minimize risks and reduce losses that have been suffered by individuals from the corporate. This requires an appropriate safety mechanism.

**College students’ entrepreneurial ability improvement countermeasures**

In recent years, the state has attached great importance to the spirit of innovation and entrepreneurs and has launched some support policies to encourage and motivate students’ innovation and entrepreneurial spirit. Linking entrepreneurial policies to students, you can see that current national policies focus on financial, industrial, and trade incentives and capital loans. At the same time, different regions have issued relevant promotion policies according to different provinces. It can be seen that all national and provinces and cities can make specific efforts to promote students’ entrepreneurial spirit. In addition to announcement of relevant policies, the government can also use various ways to encourage students to start a business and solve their problems encountered during entrepreneurship.

The government exercises a variety of policies and mergers, and clarifies the rights and responsibilities of the relevant departments to ensure effective implementation. At the same time, we need to increase various policies to form a comprehensive, multi-level policy system, providing students’ entrepreneurial spirit and practical assistance to more scientifically, comprehensive security. Students have problems during entrepreneurial processes, and can develop commercial policies suitable for each region in accordance with different policies released by the central government, and the government may provide more help to local student entrepreneurs.

“Insufficient funds and difficulties in financing” is the first predicament that many students encountered during entrepreneurial processes. Even if the state has issued a small amount of guaranteed loans, it is not enough to solve the financial difficulties of student entrepreneurs. On the one hand, the government may need to participate in a variety of tripartite institutions, such as enterprises, private equity, venture capital, and securities to coordinate and provide a variety of financing channels. On the other hand, the national and local governments can also create appropriate special funds to provide special line roads, form a student venture capital in the form of local assistance and social donations, and provide loan assistance to qualified students. In addition, the state should also provide appropriate risk protection and credit mechanisms to ensure the rights and security of the tripartite institutions and play a good intermediary role.

First, the government can set up a special university entrepreneurial service or transfer it to a professional institution to provide students with entrepreneurial services by purchasing services. For college students, they respond to the charge, tax, legal issues, debt, and other issues before or during their business and provide assistance. At the same time, the government can hire relevant part-time staff to participate in risk assessments to help students identify entrepreneurial projects, assess business project risks, and use professional services to help students reduce the possibility of entrepreneurial failure. Secondly, the government will always continue to transform entrepreneurship, spread entrepreneurship knowledge, provide guidance to regular students who have entered the plan to start a business or have begun to start business, and effectively provide the various services needed in the process business, and the government can provide at the same time some business projects. For students with entrepreneurial trends, the skill assessment and eligibility evaluation mechanism should be implemented, and the relevant projects are transferred to the real entrepreneurial students to improve the success rate of entrepreneurship, reducing the risk of entrepreneurship, and make good projects grow.

University entrepreneurship is an adventurous process; the university group itself is also a weaker group withholding risk. Establishing an entrepreneurial protection mechanism can help encourage students to start their own enterprises, improve their own strain capabilities, and resolve concerns about the relevant parties. University entrepreneurship insurance is managed by government and related insurance companies, providing some financial subsidies for students who have risks and failure, helping the difficulties of college students and minimize their losses. Before the students start their own business, they can choose to join the insurance plan and pay the fixed insurance premium per month based on their identity; if they face entrepreneurial risks to help them overcome the difficulties of business, they can apply for a commercial insurance fund. They can get a licensed entrepreneurial insurance fund established in the form of government fiscal revenue, commercial insurance as the principal, and personal insurance premiums, as a university student offers specific risk protection. I believe that this insurance mechanism can stimulate students to open larger companies and reduce their fear and worry about entrepreneurship.

**Conclusion**

This paper combines theoretical and practice, and research on the mining area of the northern grassland in the northern province. The content of the ecological effects of meadow eminence and the bearing capacity analysis of the meadow mining area are also explored. Secondly, based on remote sensing data, we conducted a macroscopic analysis of the ecological
effects of vegetation evolution in the eastern part of Ni Province in 1981 and 2015. The effects of comparative analysis and soil coating and ecological protection have similar natural and mining conditions, as well as the three large outdoor mines of different operations and different operating years. Finally, according to the theoretical issues related to research, this paper combines a variety of judgments and methods, and has established a system for assessing students’ entrepreneurial capacity, and an empirical assessment is carried out to give relevant conclusions. According to the actual results of the assessment, the ability of the students’ entrepreneurship is insufficient, and some measures have been implemented in accordance with relevant factors. In the government level, these measures should develop entrepreneurial policy systems, expand financial channels, provide various entrepreneurial services, establish insurance mechanisms at school level, optimize entrepreneurial education courses, develop entrepreneurial education, and create professional education workers to organize and provide specific entrepreneurship service. On the personal level, these measures should establish a correct entrepreneurial consciousness and comprehensively improve entrepreneurial skills.

Open access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third party material in this article are included in accordance with the Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material.

Declarations

Conflict of interest The authors declare no competing interests.

References

Bi L, Xie W, Zhao J (2019) Automatic recognition and classification of multi-channel microseismic waveform based on DCNN and SVM. Comput Geosci 123:111–120. https://doi.org/10.1016/j.cageo.2019.09.026

Liu C (2013) The research on oil sand reservoir sedimentary microfacies and sandbody properties of Y2+3 on ZhenLai county in western slope of Songliao basin. Dissertation, Jilin University (in Chinese)

Luo HH (2013) The reservoir forming main control factors and distribution law of the Upper Cretaceous slope migration type oil sands in Songliao Basin. Dissertation, Jilin University (in Chinese)

Murnion DS (1996) Comparison of back propagation and binary diamond neural networks in the classification of a Landsat TM image. Comput Geosci 22:995–1001. https://doi.org/10.1016/S0098-3004(96)00037-4

Shan XL, Che CB, Li J, Fan YC, Zang CY, Wang QB (2003) Present status of oil sand resources at home and abroad. J China Sch Geol 4:459–464 (in Chinese)

Shi BB, Chang XC, Yin W, Li Y, Mao LX (2019) Quantitative evaluation model of tight sandstone reservoirs based on statistical methods - a case study of the Triassic Chang 7 tight sandstones, Zhenjing area, Ordos Basin, China. J Pet Sci Eng 161:260–268. https://doi.org/10.1016/j.petrol.2018.10.037

Suwansawat S, Einstein HH (2006) Artificial neural networks for predicting the maximum surface settlement caused by EPB shield tunneling. AASHTO/ASCE J Constr Eng 132:34–42. https://doi.org/10.1061/(ASCE)0733-9364.0000507

Wang ZD, Wang XH, Sang W, Yang XM, Ping Y (2008) BP neural network model to recognize carbonate reservoir in Tazhong of Tarim Oilfield. J Oil & Gas Technol 25:257–2588 (in Chinese)

Xue LF, Pan BZ (1999) Identify lithofacies automatically using self-organizing neural network. J Changchun Univ Sci Technol 29:62–67 (in Chinese)

Yin GZ, Li MH, Li WP, Cao J (2013) Model of coal gas permeability prediction based on improved BP neural network. J China Coal Soc 38:1179–1184

Zhang T (2010) Application of BP neural network in logging interpretation. Dissertation, Northwest University (in Chinese)

Zhao C, Gui ZX (2005) Method and application of reservoir parameter prediction based on neural networks. J JPI 27:467–470 (in Chinese)