Sustainable Career Development of Chinese Generation Z (Post-00s) Attending and Graduating from University: Dynamic Topic Model Analysis Based on Microblogging

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Abstract: Chinese generation Z (post-00s) are about to confront career decisions as the first batch of post-00s graduates. However, current career studies rarely take the post-00s, the liveliest group with characteristics of the era, as research subjects to investigate their beliefs, attitudes, values, motivation, career behavior, etc. Existing studies focused on the status quo of post-00s career education without dynamically studying the career development process from college to graduation. This study performed big data analysis, using the dynamic topic model (DTM), combing the golden triangle theory to study the career development of the post-00s in China. We summarized the "connection between individuals and others" as a new dimension and tried to propose a corrected theoretical model of the "golden triangle" that can help the post-00s make sustainable career decisions.

Keywords: post-00s; career development; dynamic topic model; career "golden triangle" theory

1. Introduction

Career development is a lifelong process of preparing for, being, and continuously selecting from the various careers offered by society [1]. It extends throughout a person's life. As the golden stage of individual career preparation [2], the university period is of great significance to the future career choice and career development of individuals. Since the post-00s have now entered and become the main members of the university, a dynamic study of the career development of the post-00s from college to graduation can help us understand post-00s and help schools develop corresponding interventions to help the post-00s better plan their career paths.

DTM is an evolved form of latent dirichlet allocation (LDA) [3]. LDA is a mining algorithm that models the implicit semantics of text. Based on the LDA model, DTM adds a temporal factor so that it can be used to explore the evolution of topics over time [3]. In this paper, we use DTM to summarize the post-00s characteristics of the career development process during college years by analyzing the information of the post-00s college attending and graduating microblogging texts.

The main contribution of this paper is to study the dynamic process of post-00s career development during college using the DTM method, targeting the specific group of post-00s and combining the microblogging discussion topics of "post-00s going to college" and "post-00s graduating". The following will introduce the related content in detail.

2. Related Work

2.1. Dynamic Topic Model

DTM is an unsupervised dynamic temporal topic model, which is an improved model integrating time factors based on the LDA model. It can mine document topics and analyze the evolution trend of different topics in time series [4]. The earliest topic model technology can be traced back to 1998. Papadimitriou et al., proposed a latent semantic indexing (LSI) algorithm model to capture the underlying semantics of the corpus based on the spectral

analysis of the document matrix [5]. In 2003, Blei et al., proposed the LDA model [6]. Based on the Bayesian algorithm model, the prior distribution was used to estimate the likelihood of data, and the posterior distribution was obtained to recognize the topic mining of time series. In 2012, Li et al., showed that the DTM could dynamically process document data sets with timestamps, realize dynamic topic recognition and tracking, and capture dynamic features and collaborative evolution context of topics at different times [7].

Compared with text methods such as word frequency and co-word analysis, the DTM for topic recognition has a good level of topic detection. It can effectively identify topics, characterize the development and change of the dynamic temporal topic chain, and reveal the development trend of topics. Therefore, some studies have applied DTM for text mining and analysis. For example, some applied DTM to synthesize the historical record and found that the results largely match the known turning points, key players, and technologies in the history of British infrastructure [8]. Some demonstrated that DTM could be a powerful computational approach for clustering time-series gene expression profiles with the probabilistic representation of their dynamic features along sequential time frames [9]. Therefore, this study selected the DTM to dynamically study the career development of the post-00s.

2.2. Career Golden Triangle Theory

The golden triangle theory was proposed by Professor Swain. He believed that when individuals make career decisions, people must consider three dimensions: personal factors, environmental factors, and information factors [10]. Specifically, the personal factor refers to the understanding of self, including personality, interest, ability, academic performance, etc.; the environmental factor includes the expectation and support of family and society, family economic situation, domestic and international political and economic situation, etc. Information factor refers to proficiency in workplace information, such as understanding the direction of employment, future work environment, work trends, etc. [11,12]. These three dimensions contain the basic factors of career planning. Individuals' career development will be influenced by these factors, but different groups in different contexts will be influenced by different factors [13,14], and the degree of influence will vary. As a group growing up in the new era, the post-00s (Generation Z) will soon face career decisions such as employment, and it is worthwhile to further explore what factors influence them and to what extent during the period between college and graduation.

However, there have been few studies related to the golden triangle theory. For example, Li [15] explored the practical path of the golden triangle model in the career education of secondary school students from the theoretical level; Kang [16] compiled a questionnaire suitable for secondary school students based on the model, investigated the current situation of career education of secondary school students, and proposed the path of career planning education. Moreover, the golden triangle theory has not been applied to the study of post-00 career development. Therefore, this study selected the golden triangle theory to study the career development of post-00s and further enrich the application scenarios of the golden triangle theory model.

2.3. Post-00s Career Development

The post-00s have now entered university and become the main members of the campus. They generally have better living conditions, healthy psychological development, strong self-awareness, individual independence, and broad knowledge, but post-00s college students have weaker stress tolerance and weaker career planning awareness [17–20]. At present, career research focusing on the post-00s mainly focuses on the current situation of their career education. For example, Yang et al. [21] investigated the current situation of the career development of post-00 college students through a questionnaire; Zhang et al. [18] explored an educational model to improve the science of career planning among Chinese college students in the post-00s in the context of generational differences; Maloni et al. [22] assessed the career work expectations of business students in US universities; Isaacs et al. [23] also assessed the

characteristics of Generation Z pharmacy students to promote their development as competent, confident, and influential practitioners. Students' characteristics facilitate their development as competent, confident, and influential practitioners. In addition, some recent studies of career development may have used the post-00s group as subjects, but the focus was not on the characteristics of the post-00s group itself. These studies mainly focus on topics such as career decision-making [24–26], career adjustment [27–29], and career planning [30,31] among college students and focus on the mechanisms of interaction between variables, such as exploring the effects of parenting style on college students' self-efficacy in career decision-making [24] and positive predictors of college students' career adjustment in different communities [27].

Current researchers have used traditional statistical methods from the perspective of cross-sectional studies, such as the current situation of career development and influencing factors and have not dynamically studied the career development process of the post-00s from college to graduation. In this paper, we try to describe and analyze the data through DTM, a machine learning approach, to discover the characteristics of career development during post-00s college years and to validate. The specific research process is shown in Figure 1.
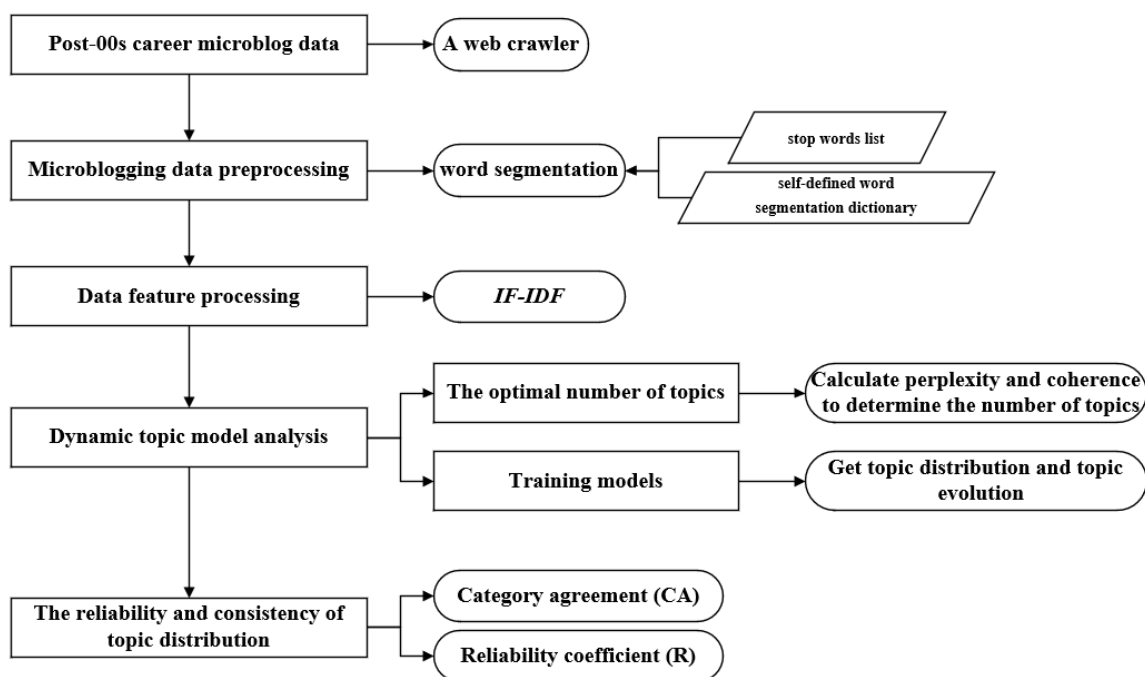
Figure 1. Research process framework.

3. Methods

3.1. Data Collection

A web crawler, also called a spider crawler, works according to predefined rules. It automatically collects web pages from targeted sources [32]. If we regard the network as a spider web, the web crawler is analogous to a spider that can crawl through information and data on the web page and then proceed to loop and crawl the web pages on the site for which the data is to be attained. With the development of the Internet, social media has progressively become an essential part of people's lives. Sina Weibo is China's leading microblogging platform and the largest social media platform in the country [17]. The online behavior of users can be traced in real-time in cyberspace through electronic records, forming rich user behavior data in natural situations, providing a new data platform and research approach.

Based on this, we collected original microblog posts from Sina Weibo through the web crawler using Python code, searching for "post-00s going to university" from 7 June 2018, to 1 October 2018, and for "post-00s graduation" from 1 May 2022, to 30 June 2022. The big data analysis process in this study used Python software programming. We set

the publishing location as "REGION = ['all']", set the threshold of subdivision search as "FURTHER_THRESHOLD = 40", and configured MongoDB database "MONGO_URI = 'localhost'". In addition to the collected text content, we also provide metadata sources for each microblog post, including ID, nickname, publishing location, topic, forwarding number, comment number, number of positive reactions, publishing time, publishing tools, etc. We deleted ads related to these keywords and collected a total of 12,991 original microblogs in comma-separated values (CSV) format. Of these, 4259 concerned "post-00s going to university" and 8732 concerned "post-00s graduation".

3.2. Data Preprocessing

Since there is no clear boundary between words in Chinese text, word segmentation is necessary to extract words from the text. The segmentation results contain many punctuation marks and meaningless words, which have a considerable impact on the subsequent analysis and need to stop word filtering [33]. For this, we used word segmentation and stop-word filtering for data preprocessing.

Chinese word segmentation refers to the division of a sentence into individual words or phrases [34]. It is the process of recombining consecutive words or words into word sequences according to certain rules [35]. Additionally, in machine learning, some meaningless words or characters are automatically filtered out before processing the text; these are called stop words [33], mainly composed of verbs, nouns, adjectives, and other words, but it also contains many functional words, which do not contain text information, such as words "well", "and", "of", and so on. We usually refer to this set as a stop word list [36]. Filtering out these words without practical significance can upgrade the accuracy of later text classification. The use of a stop-word list is justified by research suggesting that over 50% of all words in a small typical English passage are contained within a list of about 135 common words [36,37].

In this study, through the data collection mentioned above, we have gotten a dataset of 12,991 original microblogs. These original microblogs constituted the corpus for further DTM analysis. First, we created a self-defined word segmentation dictionary according to the features of the Chinese language using and the content of the corpus [38]. It included 31 words such as "go to school empty-handed", "good learning", "anti-involution", "Millennial baby", and so on. They appeared in microblogs but may be separated in word segmentation, so we added this self-defined word segmentation dictionary to let them be read as a complete word. Then, we selected the stop words list of the Harbin Institute of Technology to filter the stop words. The above self-defined word segmentation dictionary and stop words list were written into the documents (txt. format) separately. Finally, we wrote a python program using the jieba (a word segmentation tool of Chinese letters) and importing the above two documents to segment the contents. After data preprocessing, the sentences can be segmented into words, and the corpus can be used for feature processing and DTM analysis.

3.3. Data Feature Processing

This study used the term frequency-inverse document frequency (TF-IDF) weighting algorithm to weight the features of text data. TF-IDF is one of the most commonly used weighting algorithms. This method is usually used to measure the importance of words or words contained in a text message [35]. TF-IDF is the most fundamental form of document representation. It is based on the bag-of-words model in which a document can be represented by the collection of words used in the document. The parameter tf_{ij} is defined as the number of times words i appear in document j; the larger the value, the more important the word is. The parameter df_i is the number of documents in which the word i appears at least once; the larger the value, the more common the word is. If word i

can be considered important for document *j*. It should have a large TF (tf_{ij}) and a small DF (df_i). The core formula is as follows:

$$\text{TF} - \text{IDF}_{\text{ij}} = \text{tf}_{\text{ij}} \times \log\left(\frac{N}{df_i + 1}\right) \tag{1}$$

Data feature processing is a step before DTM analysis, which can help us to perceive the features of the data in advance so that we can write programs more clearly and appropriately for DTM analysis. To realize this, we mainly wrote a python program based on the above TF-IDF weighting algorithm to analyze the corpus we had gotten in the step of data preprocessing.

3.4. DTM Analysis

We used DTM for data analysis [4]. Its basic idea is divided into two parts. First, the whole period is divided into segments, and the documents in the document collection are divided into the corresponding time slices according to their intrinsic timestamp information. Secondly, LDA is used to mine the topic of the document subset in each time slice to obtain the dynamic evolution of the topic over time. The distribution results on each time slice are dynamically changed according to the topic training results of the previous time slice. Its topic evolution model formula is as follows [4,39]:

$$\beta_{t+1,k}|\beta_{t,k} \sim N\left(\beta_{t,k}, \sigma^2 I\right) \tag{2}$$

In order to conduct DTM analysis, we mainly divided it into two steps. Firstly the first step is to obtain the optimal number of topics. Similar to the qualitative coding of interview data, each corpus will express a lot of meanings and contain multiple topics. In this study, we used the perplexity algorithm and also calculated the topic coherence to obtain the best number of topics that can represent the most suitable meaning of the whole corpus. Then, the second step is training models. In this study, two time series were divided, including "post-00s going to university" for the first time series and "post-00s graduation" for the second. According to the optimal topic number, a program was written based on the DTM algorithm mentioned above to train the corpus obtained by preprocessing, and finally, the distribution and evolution of topic words were output.

3.4.1. The Optimal Number of Topics

Perplexity is an effective method to evaluate the effect of language probability models and assist in improving parameters [40]. It is based on information theory and calculates the uncertainty (information entropy) of probability distributions or models. Perplexity represents the uncertainty of the topic to which document "d" belongs. Therefore, in theory, the smaller the perplexity, the better the performance of the model. The number of topics corresponding to the lowest point or inflection point of the perplexity curve is the optimal number of topics [41]. The calculation formula is as follows:

$$perlexity(D) = \exp\left|-\frac{\sum_{i=1}^{M} ln p(di)}{\sum_{i=1}^{M} N_i}\right. \tag{3}$$

$$p(di)\sum_z p(z,d) = \sum_z p(z)p(d|z) \tag{4}$$

We initially wanted to use perplexity to confirm the best number of topics, but the results did not significantly achieve the desired effect. The research literature shows that evaluating the topic model has always been an open problem in academia. Perplexity is a common leveraged evaluation measure used to confirm the number of topics in many studies about various topic models such as LDA and DTM. However, the result of perplexity has been proven to be less correlated with human interpretability [42]. Therefore, we finally decided to combine the coherence of topics to confirm the number of topics [43].

Topic coherence is an indicator to evaluate the effect of the topic experiment [44]. A single topic is scored by measuring the semantic similarity between high-scoring words in different topics. The higher the score, the higher the topic coherence and the better the interpretability and topic representation effect. At present, Gensim (an open-source library for topic modeling, document indexing, retrieval by similarity, etc.) has integrated and provides four coherence measurement methods: "u_mass", "c_v", "c_uci" and "c_npmi". Among them, "c_uci" uses the sliding window to calculate the probability distribution of semantic keywords by using an external corpus, which has high operation efficiency and high calculation accuracy. In this paper, we used the topic model quantitative evaluation method, using Python transfer "get_coherence_per_topic ( )" function to obtain each coherence under a topic.

This study combined perplexity analysis (low point) and coherence analysis (high point) to confirm the number of microblog topics. Perplexities and coherences under each topic are illustrated in the Figure 2 The optimal number of topics is 9.
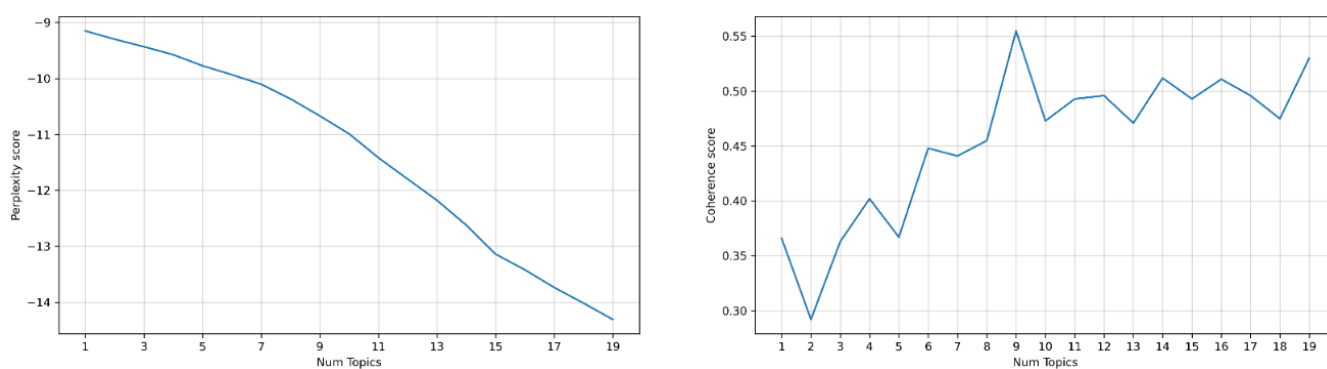
Figure 2. Perplexities and coherences under each topic.

3.4.2. Training Models

After obtaining the optimal number of topics, we began to train the corpus using the program we wrote based on the DTM algorithm. The main code settings are as follows: We called the Gensim library in Python for dynamic topic recognition. The "time_slice ( )" function represents the text sequence with a timestamp. According to the results of data processing, the code "time_slice = [4259, 8732]" is written, which indicates that the corpus is divided into two periods: 4259 microblogs in the first period and 8732 microblogs in the second period. The optimal number of topics is 9, so we set the code "num_topics = 9". Used the code "ldaseq = ldaseqmodel.LdaSeqModel (corpus = corpus, id2word = dictionary, time_slice = time_slice, num_topics = num_topics, random_state = 100)" to load the corpus, dictionary, parameters into the model for training; saved the trained data "np.save ('doc_topic.npy', doc_topic)"; read and calculated the average "doc_list_T = np.array (doc_topic).T", and connected the two periods "doc_list_T_mean = np.concatenate((doc_list_T_0, doc_list_T_1))" "time_topic = doc_list_T_mean.reshape((2, 9)).T". Finally, the program printed out the topic distribution and topic evolution.

3.5. The Reliability and Consistency of Topic Distribution

The results of the topic distribution and topic evolution printed out from DTM analysis are the clustering of keywords. In order to better explain the topic, we need to name these topics clusters. DTM analysis is similar to the qualitative coding of interview data. The difference is that the former uses models that have been trained to mine the topics of data, and the latter is analyzed by researchers themselves using coding methods based on the theory. Therefore, in order to ensure the reliability of topic naming, we chose two researchers for coding and used the reliability of the content analysis method to guarantee.

The reliability of the content analysis method refers to the consistency of the two researchers' evaluation results of the same material according to the same analysis dimension,

which is an important indicator to ensure the reliability of content analysis results. Category agreement (CA) refers to the percentage of the total number of categories classified by the same number of coding categories for the same interview text data between the scorers—that is, CA = 2 × S/(T1 + T2), with "S" representing the same number of coding categories for the scorer, "T1" representing the number of coding categories for scorer 1, and "T2" representing the number of coding categories for scorer 2. The formula for coding reliability coefficient is R = (n × average mutual consent)/(1 + (n − 1)) × average mutual consent. In the formula of average mutual consent = 2 × M/(N1 + N2), "M", "N1", and "N2" have the same meaning as "S", "T1", and "T2" in the formula of classification consistency.

In this study, CA and coding reliability coefficient (R) are used to test the reliability of the named coding.

4. Results

4.1. Dataset

Afterword segmentation and stop-word filtering for data processing, we have the dataset as Table 1 (This is artificial machine language). The original sentence on the left is the original Sina Weibo microblogging data, and the processed sentence on the right is the sentence that will be subject to topic model analysis after data processing.

Table 1. Filtering results.

Original Sentences	Processed Sentences
The post-00s went to college, and the seniors finally sighed the years.	the post-00s went to college seniors finally sighed the years
This graduation season, no one should be able to escape the advice of these super-quality seniors, right! Reading more, charging more, and enriching yourself is the best way to relieve anxiety!	graduation season should no one be able to escape super-quality seniors advice reading more charging more enriching yourself relieve anxiety best way
I appreciate this post-00s renting house also has a measuring instrument. Let me Let me acquire knowledge, it is excellent. This post-00 started to rectify the rental market!	Appreciate post-00s renting house measuring instrument acquire knowledge excellent post-00 rectify the rental market

4.2. Word Frequency Statistics

In this study, the TF-IDF algorithm is used to calculate the word frequency of effective keywords in microblogs. Equation (1) calculates the word frequency weight; partial results are shown in Table 2.

Table 2. High-frequency words and word frequency weight.

Words	Frequency	Words	Frequency
post-00s	0.726	post-90s	0.045
graduation	0.153	peer	0.032
graduation ceremony	0.087	youth	0.029
video	0.071	pressure	0.025
going to university	0.057	workplace	0.024

Through the analysis of high-frequency words, it can be found that the topic mainly focuses on "post-00s going to university" and "post-00s graduation". The research content is abundant and involves many aspects. There are intergenerational differences in the 90s, peer pressure, workplace environment, and so on.

4.3. Topic Distribution

Based on the TF-IDF algorithm, according to the calculation results of confusion, consistency, and the threshold set at modeling, we obtained nine categories of word groups and counted the top 10 high-frequency words in each category (see Table 3), which have high representativeness. In fact, different categories of phrases contain words with similar meanings, such as words representing the subject ("college student" and "students", etc.). If you look only at the words, they have poor meaning and do not accurately reflect the significance of the study results. In this study, the topics were manually summarized by two researchers [45]. The CA of the two researchers is 0.89, and the coding reliability coefficient (R) is 0.94. After discussion and research by the researchers, the final topic distribution is shown in Table 3.

Table 3. Topic distribution.

	Topics	Details
Topic 1	Survival and development	Graduation; renting a house; formaldehyde; youth; life; technology; senior schoolmates; occupation; recommendations; independence
Topic 2	Intergenerational differences	Post-00s; post-90s; post-80s; music; tencent QQ application; health; aunt; together; feelings; young
Topic 3	Graduation ceremony	Graduation ceremony; interaction; shenanigans; students; president; principal; site; arms carry; college; concert
Topic 4	Volunteer service	At high temperatures; selling cold drinks; daily; continuous; one month; hope; donate; poverty; peer; classmates
Topic 5	University life	Post-00s; college entrance examination; university; freshmen; city; universities; tuition fee; college students; major; travel
Topic 6	Graduation blessings	First batch; graduation; pleasure; youth; speeches; future; blessing; hope; a promising future; moved to tears
Topic 7	Life attitude	School begins; go to school empty-handed; packages; express; delivery; refrigerator; Simmons mattress; TFboys; Lu Han; Jackson; fans
Topic 8	Peer anxiety	Young people; response; workplace; work; pressure Peer pressure; society; hope; efforts; life
Topic 9	Rectifying the environment	Post-00s; rectify; market; scale; detector; house; considering; satisfaction; work; experience

4.4. Topic Evolution

Based on the above results, this study shows the evolutionary trend of post-00s career development research topics, as presented in Figure 3. Horizontal coordinates represent time ("0.0" for the beginning of the first period; "1.0" for the end of the second period), while ordinates represent topic intensity. Topic intensity refers to the probability that each topic is generated at a certain time, which is generally used to describe the attention or activity of the topic. Putting the intensity in the time series can be used as an indicator to measure the evolution of the topic.
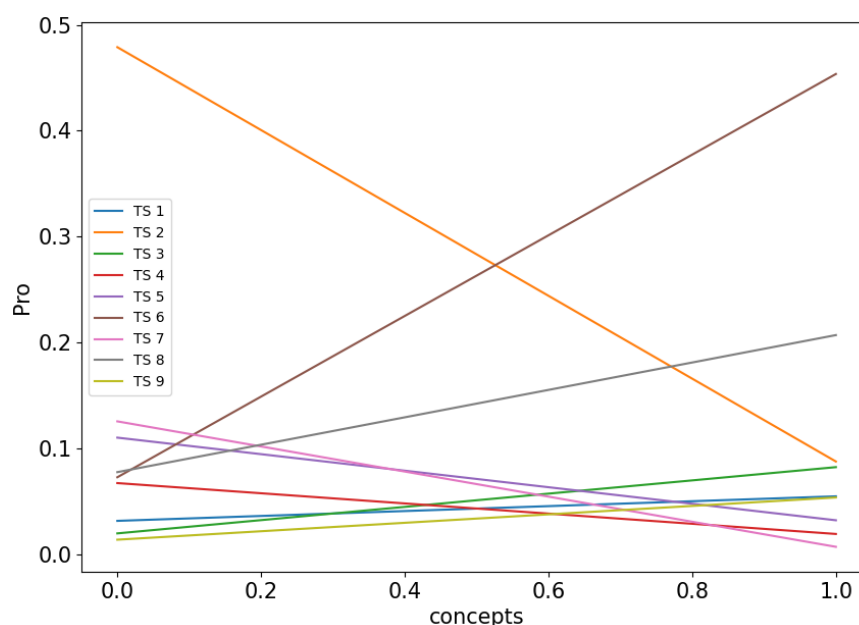
Figure 3. Topic evolution.

Topic 1—Survival and development: With graduation in the post-00s, survival, and development problems are put on the agenda, and the topic heat has increased. As to survival problems, for post-00s graduates into society, renting a house has become the primary problem. Many netizens say that these post-00 graduates are excellent because they can take tapes, detectors, and formaldehyde test paper to test the situation of renting houses and do what they want to do, but they dare not do so. After this session, the rental market began to rectify itself. For employment, the survey shows that 2022 college graduates reached a record high of 10.76 million, an increase in 1.67 million. Affected by the COVID-19 epidemic, during an economic slowdown and job cuts, this generation will encounter the most difficult employment problem in history. However, the post-00s are constantly opening up a career outlook and working methods that belong to their generation, driving business innovation and changes in the market environment through their own set of employment standards and rising economic capacity. Many post-00s have said that the first lesson of their university was "academic career planning", whereas the last lesson was "career planning", so their careers have had a clear positioning.

Topic 2—Intergenerational differences: The post-00s began to go to college and encountered Weibo memes such as "the first post-90s are already going bald", "the first post-90s are starting to need glasses", "the post-00s have started talking about healthcare", etc. There was a discussion about age anxiety between the post-80s and post-90s, and they posted: "It was only then that I realized that I was getting old". In addition, intergenerational differences have also been widely discussed by others online, who find that post-00s dare to be themselves. Most young people born in 2000 now hope to obtain positive feedback so that they can stay more comfortable in the current environment. However, young people born in the 1980s are perceived as always being uneasy and wanting to actively fight the world. These are two completely different faces of young people. A post-80s user posted:

I went to Comic-Con a few days ago. It was the first time I came into contact with the second dimension, which completely changed my view of the post-00s. They are confident, polite, and have their own independent personalities. Compared with the post-70s and post-80s, our generation is too selfless, timid, and aggrieved. The discussion was heated at the beginning of college in the post-00s, and the intensity of the topic was about 50%, and then its popularity declined sharply.

Topic 3—Graduation ceremony: Post-00s graduation ceremonies were interactive and light-hearted. Graduates interacted cordially with faculty members, hugging and even

teasing them, with teachers commenting, "These post-00s are happy and open". Other commenters said, "Look at the smiles on each face—this graduation ceremony is fantastic". "I envy young people today. Everyone is very imaginative, and the photos are so cute in various styles. This kind of ceremony is very meaningful, and it will be wonderful to recall in the future". As the comments show, post-00s have extraordinary ideas. Their graduation ceremony is similar to a large-scale concert so people born in the 1980s and 1990s wanted to graduate again when they saw the post-00s graduation ceremony. This also reflects the attitude of the post-00s toward life, daring to think and act and live with sincerity. With the holding of graduation ceremonies for post-00 graduates in various places, the topic has become more and more prominent.

Topic 4—Volunteer services: In the summer vacation of 2018, the story of the post-00s selling cold drinks and donating to their peers who were poor in the high temperatures trended on Weibo, making money not for themselves but for the public good and everyone lauded the post-00s. At the same time, the post-00s volunteer activities have also changed the views of many people in society. In the past, they believed that the post-00s lived in a satisfying age and could not suffer hardships but could only ask for and enjoy. However now, they believe that the post-00s are brave. They appreciate life, can enjoy life, and can also work hard for life. As the post-00s entered university, the popularity of this topic steadily decreased.

Topic 5—University life: With the advent of the post-00s college entrance examination, issues such as college entrance examinations and voluntary reporting have been widely discussed. The post-00s started a new university life, and then the popularity gradually declined. The data shows that before the college entrance examination, 95% of the post-00s considered schools and majors. Most of them investigated a spectrum of careers, and 25% of the candidates are working toward a clear goal. Of course, their attitude is related to changes in the social environment. In addition to taking the general college entrance exam, more than a quarter of the post-00 students will also go to college through independent enrollment, art examinations, and going abroad. When the post-00s are filling out applications, they should consider the national plan, the needs of society, the positioning of the school, the characteristics of the major, their own interests, personal expertise, and level of performance. During their college years, they made friends with like-minded people, explored their career plans and goals, mastered their professional knowledge, and after finding a job, their professional identity became higher and higher. Huang Wenlong, a post-00 man, was interviewed to become a flight attendant. He said that for this job, he lost 50 pounds in three months. Some users said that after graduating six years ago, it would be good to have a monthly salary of 4000 to 5000 yuan. They can do any job with money, and they have no plans for their future career. Now, most of the post-00s have strong personal consciousness and better preparation and feel a little ashamed.

Topic 6—Graduation benefits: With the arrival of graduation season, the first batch of post-00 graduates received widespread benefits from all walks of life, and its popularity rose sharply—nearly half of the total topic. Commenters were not only surprised by the post-00 graduates but also deeply moved by their speeches. The post-00s are also growing up quietly, and they have learned some life principles in the process of growing up. Most people felt that the future is bright for the post-00s.

Topic 7—Life attitude: This topic mainly discusses the first batch of post-00s who have already gone to college. With the arrival of the school season, the new generation of post-00s likes comfort, having quilts, clothes, mattresses, and other must-have items shipped to their schools. The logistics sites of major universities in Hubei reported an average daily volume of nearly 10,000 parcels. After 2000, college students mostly reported to school empty-handed and no longer carried large and small bags with them as before. It is worth mentioning that, unlike the post-90s, the post-00s "almost moved their families to school": refrigerators, Simmons mattresses, washing machines, bicycles, vacuuming robots, and even tires, motorcycles, etc. have appeared in the express delivery of college students. The post-00s are also chasing their favorite idols. TFboys, Luhan, and other stars become

their entertainment and relaxation, as well as a source of guidance and strength as they grow. This reflects the unique attitude towards life of the post-00s generation, who enjoy life and have unique spiritual pursuits. This topic was widely discussed in the post-00 school season and then gradually decreased to a minimum.

Topic 8—Peer anxiety: After the graduation season, the first batch of post-00 college students officially entered society. Many graduates said that they were not as good as their peers and did not know how to improve themselves quickly. Peer pressure has become one of the most worrisome issues for today's graduates. In this regard, Dong Yuhui said, "In order to fight against pressure, you must keep reading and recharging yourself"; Dr. Tao Yong said, "Do the things right in front of you. Everyone has their own life timetable". Many seniors advise the post-00s.

Don't put too much pressure on yourself. After all, you have just graduated, and there is still a lot to learn from the people around you. Take a good grasp of your own way and measure, listen more and learn more, and actively face it.

As the first batch of post-00s college students officially entered society, the topic has gradually become more popular.

Topic 9—Fixing the environment: The post-00s began with rectification in the rental market: many graduates took formaldehyde test strips, decibel meters, tape measures, and infrared detectors and made use of the knowledge they have learned to choose a satisfactory residence for themselves. The post-00s also rectified the workplace: post-80s looking for a job are basically hard-working and are actively working overtime. They will do whatever the boss mandates and seldomly not talk back. When looking for a job in the 1990s, in the increasingly introverted workplace environment, they basically learned to treat people according to their social positions, and they also learned to lie down on the job. After all, there are car loans and housing loans to repay and children to support, so they must accept what is given. Post-00s just graduated from college. The biggest difference is that they are young and have capital, so they do not have too much pressure. Even if they do not have money, their family will still support them. Therefore, they can change jobs if they are not happy and dare to say "No" to unfair conditions. An online commenter said: "I have to say, I really admire the post-00s who dare to think and act, have ideas and personality". With the graduation season renting a house to find a job, the topic has increased in popularity.

5. Discussion

In this study, we used DTM to analyze the microblogged texts with the topic of "post-00s going to university" and "post-00s graduation", dynamically explored the characteristics of career development during post-00s university and verified it using the golden triangle theory. Eventually, nine topics about career development during the post-00 university were obtained: survival and development, intergenerational differences, graduation ceremony, volunteer service, university life, graduation benefits, life attitude, peer anxiety, and rectifying the environment. Most of these topics are related to the influencing factors in the golden triangle theory, but there are also some topics (Topics 2, 6, and 8) that cannot be better linked to the theory. This part of the topic may reflect the new features of post-00s career development. In addition, good psychological traits contribute to the sustainable career development of college students. This study's results help us better understand Generation Z college students and inspire them to engage in more beneficial career exploration activities.

Studies have shown that Topic 1 (survival and development) involves post-00s housing. They learn from the experience of predecessors and use professional skills to choose a home that meets their requirements, reflecting what they learned from their predecessors' research; post-00s are generally independent and have a wide range of knowledge [20,46]. Specifically, thanks to the convenience and speed of information transmission in the Internet era, people can easily see the suggestions of others. Higher education gives them a clearer understanding of the environment. At the same time, because the growth conditions of

the post-00s are richer, their independence development is better. Under the influence of such socioeconomic and family factors, they dare to do what they want to do. Topic 9 (rectifying the environment) is mainly related to rectifying the workplace. They have a more careful consideration of housing and work. For example, they even use professional tools such as detectors and tape measures to help them find satisfactory housing. This reflects the post-00s' desire for greater job security [17,47]. Because they have not yet established a family and can obtain economic support from their parents, they do not have much pressure at the moment, so they do not want to be treated unfairly at work. In the context of transparent information, they want to pursue more reasonable and fair treatment. These topics are highly related to connection with the environment, at least in theory. Specifically, the new era environment has shaped the characteristics of career development post-00s, and the post-00s have also formed a new connection with the environment. In addition, they are characterized by independence, courage to do what they want, and shaping their environment, as reflected in topics 1 and 9, which corresponds to proactive personality, as proactive personality usually represents a relatively stable tendency to change the setting. In additional, research suggests that individuals with proactive personalities may be more inclined to make clear career choices [48], which significantly positively impacts employees' career adaptability [49]. Although this study cannot infer the proportion of proactive personalities among Generation Z individuals, they show a clear tendency toward proactive personalities. Accordingly, we also believe that this trait contributes to their future sustainable career development.

Topic 3 is mainly related to the graduation ceremony and teacher and student relationships, including interaction, shenanigans, carrying teachers in their arms, and so on. This reflects the results of the previous research, that is, the characteristics of the dare to innovate, active thinking, and pursuing personality [17,20,47]. Specifically, post-00s are braver in pursuing what they like and are more willing to express their emotions. Topic 4 (volunteer service) is mainly related to donation activities. The representative event is "post-00s sold popsicles to be donated when people are too hot", which reflects that post-00s are willing to participate in volunteer activities to help people in need. Previous research also shows that the awareness of daily help of college students is better [50,51]. The spirit of mutual assistance fully reflects China's traditional values and illustrates the important values of the post-00s. Topic 7 (life attitude) mainly reflects the living habits of the post-00s—that is, due to China's convenient express service, they prefer to mail their necessities to the school. This also represents their attitude toward life. These topics are consistent with the "self-knowledge" dimension in the golden triangle theory—that is, personality/interest, values, and attitude toward life. After higher education, post-00s generally know more clearly about themselves [17]. Research shows that the facilitation of self-awareness for professionalism can advance one's career [52], and career awareness and planning ability can positively influence students' career decision-making self-efficacy, which is essential for good career decision-making. Therefore, self-awareness is of great significance in the process of post-00s career development. This helps them make wiser career decisions and promotes their development to become capable, confident, and influential practitioners [23].

Topic 5 (university life) reflects topics such as students' exploration and excavation of future majors, tuition fees for colleges and universities, and graduate holiday tourism, showing post-00s planning and longing for university life. This shows that post-00s have begun to pay attention to their professional choices. In the context of the rapid development of the Internet, post-00s can obtain a great deal of professional information about professionals and make decisions. Generally speaking, the topic is highly related to the "professional and career exploration" in the model. In addition, research has shown that career exploration is an essential factor that positively affects sustainable career development among teenagers [53]. Career exploration behaviors are expected to predict better career decision-making Self-efficacy [38] positively. Moreover, higher levels of career exploration are associated with lower levels of career indecision [54]. The results reflect that Gen Z college students have more career exploration, and they may have good career development.

However, most people do not know where to start or how to plan their career development after entering college [55,56]. Therefore, higher education institutions should focus on providing them with proper career guidance and assistance.

In addition, we also discovered that Topic 2 (intergenerational differences) mainly involved feelings about "age anxiety" published among the post-80s, post-90s, and post-00s. Topic 6 (graduation benefits) is about the reflections of the first batch of graduates from all social circles. People who laud the post-00s say they also inspired their own thinking. Topic 8 (peer anxiety) reflects the pressure of graduates after entering work and fighting against stress through hard learning. This also reflects the results of their predecessors. That is, most of the post-00s lack confidence in their work [19,57]. In general, these three topics reflect similar content: the connection between the post-00s and others. Post-00s shared various things in his career development through social media, and then due to the openness of Sina Weibo [58], other generations of groups also participated. Through this form of communication, people of different generations can understand each other, and even post-00s can obtain some social support [59,60]. However, it is difficult to fit this content into a specific dimension of the golden triangle theory. The reason for this situation may be that the career decision of each group is not only affected by inherent environmental factors such as family or socioeconomic factors, but is also affected by a specific background of the times. The post-00s growth era has changed a great deal. The golden triangle theory was proposed earlier [10], so the theory cannot explain these new factors well. Specifically, in the era of big data, due to the rapid and convenient information transmission [61], post-00s will see other people's abilities that are greater than theirs and a rich life on the Internet, which can produce anxiety [61,62]; they will also participate in and learn from different generations' views on the same topic, which will also affect them. Therefore, the impact of intergenerational differences, graduation benefits, and peer anxiety on the career development of the post-00s will inevitably be prominent. Based on this, we summarize these three factors as a "connection between individuals and others" and take this dimension as a contemporary supplement to the theory. In the end, we tried to propose a corrected theoretical model of the golden triangle. See Figure 4 for further detail. In addition, the social support and peer anxiety reflected by the three topics existed differently for them. Specifically, social support is considered to provide support, help, or comfort to others to help them cope with the psychological, physical, and social stressors in their lives. It is a positive factor. Studies have shown that social support is significantly and positively associated with several career indicators, such as career exploration, career adaptability, and career decision-making [63]. Social support plays a positive role in the career exploration of college students. However, peer anxiety, stemming from social comparisons, can negatively affect them. For example, anxiety may inhibit individuals' career satisfaction [64], and upward social comparison can cause career frustration among people [65]. Therefore, Generation Z college students should minimize the interference of negative factors, such as reducing the frequency of upward social comparisons, when conducting relevant career exploration to achieve more positive career exploration.

To sum up, the results of this study generally fit the golden triangle theory well, but at the same time, we also found some new characteristics in the career development of post-00s; for example, Topics 2, 6, and 8 represent the "connection between individuals and others", which cannot be associated with the theory very well. These results will help us to understand the special group of post-00s and help schools develop appropriate interventions to help post-00s better plan their career path, making our contribution to the development of post-00s career planning. Accordingly, there are still some shortcomings in our research because this study is based on many samples from microblogs, but there is no accurate standard for "sampling". The importance of default entry information is the same, but there may, in fact, be differences [66]. In addition, the format of microblog publishing information needs to be improved, as when many forwards may drown out what the blogger really wants to publish [67]. In the future, for this study, we will expand the number of samples again and increase the division interval of microblog text to make the research results come in line with the current situation, which is more conducive to helping post-00s career development planning.
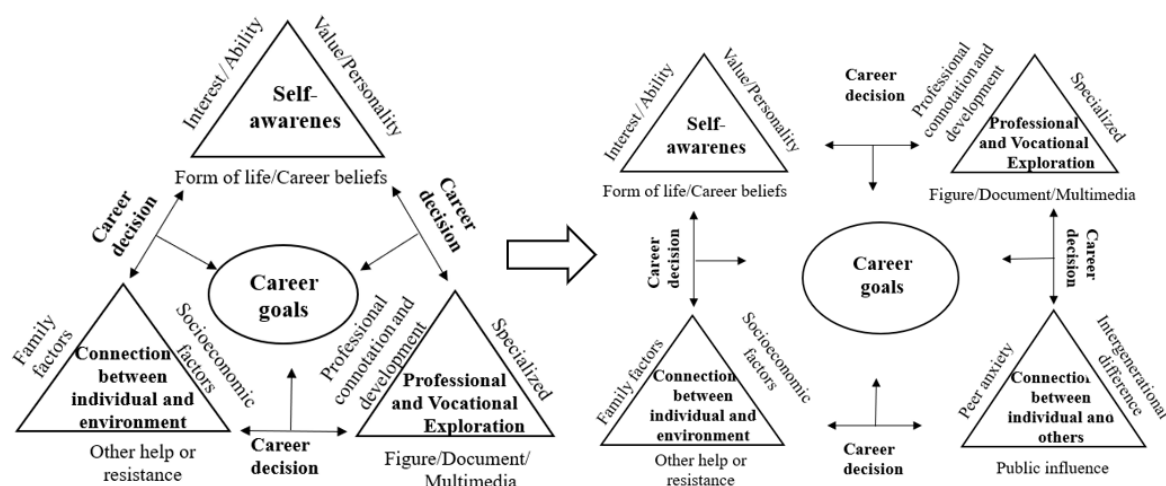
Figure 4. Broadening golden triangle theory.

6. Conclusions

In this paper, we used DTM to describe and analyze the original ecological data on social media about post-00s career development. We discovered the characteristics of post-00s in self-awareness, the connection between individual and environment, and professional and vocational exploration, which can be well associated with the golden triangle theory. In addition, we also found that the post-00′ career development was also affected by the connection between individuals and others, which not only shows the new characteristics of post-00s career development but also adds a supplement to the theory. This study helps us to better understand post-00s career development characteristics and provides guidance for post-00 career development. In addition, this study creatively applied DTM to career research, providing a new reference method for this field.

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Data Availability Statement: The data that support the findings of this study are available from the corresponding author. Requests to access the datasets should be directed to the corresponding author.

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