Analysis of skills demand for live e-commerce talents based on China's online recruitment data

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Abstract

With the rapid development of the live e-commerce industry, the demand for professional live e-commerce talents has shown a significant growth trend. This requires higher vocational colleges to keenly capture the dynamics of market demand and accelerate the construction of a talent training system that is closely connected with the live e-commerce industry to support and promote the sustainable and healthy development of the industry. In order to accurately grasp the characteristics of talent skill requirements in the field of live e-commerce, it is proposed to use Chinese word segmentation technology and N-gram grammar model to conduct in-depth analysis of online recruitment data. Through effective identification and segmentation of keyword groups, in-depth analysis based on semantic understanding is implemented to refine and explain the core skill requirements of live e-commerce positions. In-depth exploration of the specificity of talent skill requirements for live e-commerce can effectively promote the organic connection between the education chain, talent chain, industrial chain, and innovation chain, and deliver high-quality skilled talents for the vigorous development of the live e-commerce industry.

Keywords:

Introduction

As of December 2024, the number of online live broadcast users in China reached 833 million, an increase of 17.37 million compared with December 2023, accounting for 75.2% of the total number of Internet users. This means that the development scale of live broadcast e-commerce is getting bigger and bigger. Many small and medium-sized enterprises have made live broadcast channels a marketing focus, and live broadcast talents have become more "popular". (Wang,L.,& Xue, Q.H.,2021))In particular, the Ministry of Human Resources and Social Security has added the "live broadcast salesperson" occupation under the "Internet marketing specialist" occupation, which has sent a signal that the training of live broadcast e-commerce talents has entered the fast lane, set an example for standardized and professional talent training, and had a positive impact on the sustainable development of the live broadcast industry.(Wang,A.,2020)The healthy and orderly development of live broadcast e-commerce has greatly catalyzed the training of live broadcast e-commerce talents in colleges and universities. Colleges and universities must keep up with the trend of talent demand in a timely manner, accelerate the pace of live broadcast e-commerce talent training, and serve the development of the industry. In particular, higher vocational colleges, which are responsible for cultivating skilled talents for social and economic development, must combine their own school characteristics, closely connect with the talent market demand, and work hard to cultivate talents for the development of the live broadcast e-commerce industry. Therefore, fully understanding the skill requirements of live e-commerce talents is a key factor in promoting the reform of talent training models in colleges and universities and cultivating live e-commerce talents that meet the needs of enterprises.

Literature Review

First, scholars analyze the demand characteristics of jobs through online job postings.(F Javed et al.,2017) analyze labor market dynamics by accurately detecting skills in human capital data (e.g., resumes and job advertisements).(PG Lovaglio et al.,2018) analyze Italian online job openings crawled from several types of Italian online job portals between June and September 2015, assessing those skills that best distinguish occupation codes from other workgroups. Using statistical methods, (Li,L., & Gao,M.,2018) provide an in-depth analysis of the distribution, number and classification of jobs, as well as the characteristics of job requirements. (Li, Z.X.,2019) used a grayscale model to predict online job postings based on a study of 500,000 job postings to examine the characteristics and trends of demand in society and related industries.(SAM Nasir et al.,2020) proposed a text mining method to classify job titles from unstructured data of 465 analyst job openings and to extract job openings and skills from job descriptions. (Zheng,K., Zeng, L., Wei,T.T., &Zhang,J.T.,2022) extracted the subject words in the job requirement field and generalized three employability skills from online job postings. Further, scholars analyze the relevant talent demand for specific jobs based on the information processing of network recruitment websites. (Zhang,J.F., & Wei,R.B.,2018) constructed a recruitment dictionary for data jobs, and based on this dictionary, they analyzed the recruitment demand characteristics of domestic data jobs from five aspects such as ability requirements by performing Chinese word splitting, manually filtering words and classifying them. (Wang,Z.Y.,Xue,C.J,&Liu, Y.L.,2018)took online job postings as the research object and used the method of quickly finding the neighboring words of core keywords to mine e-commerce skills demand from two aspects, namely, comprehensive quality and professional skills. (A Verma et al.,2019)used content analysis to examine a sample of online job postings related to the occupations of Business Analyst (BA), Business Intelligence Analyst (BIA), Data Analyst (DA), and Data Scientist (DS), and found that decision making, organization, communication, and structured data management were key to all job categories. Based on the recruitment of talents in the job market, (Wang,Y.C.,2022) digs out the requirements of enterprises for data talents, providing some references for job seekers who want to work in data positions. (Ma,X.L.,2022) thinks that network recruitment information is an important data source for talent demand research, and constructs a model of talent demand structure of domestic graphic file by processing the information of recruitment website. (Xue,L.,& Yue,L.,2022) start from the analysis system of "industry-position-skill", and carry out text mining on recruitment information to analyze the core skill demand of each position in the e-commerce industry. Finally, the scholars analyze the data of online recruitment information to provide relevant talent training suggestions for practitioners, enterprises and colleges and universities. (Song,Q.M., et al.(2018) use content analysis to data mine online job postings and analyze enterprises' competency requirements for undergraduate graduates. (N Brüning, &P Mangeol,2020) analyze more than 9 million job posting samples from four states in the U.S. to help students and workers make learning and career decisions. (Liu,S.,2021) uses text mining methods to obtain relevant information management and information systems professional recruitment data to understand the overall employment situation of fusion professionals and the recognition of fusion majors by enterprises, and put forward suggestions for fusion professional talent cultivation. Based on the text mining method, (Qian,M.H., Xu,Z.X.,&Wang,Y.X., 2022) effectively identify the potential competitors of enterprises and provide reliable support for enterprise decision makers. (Li,M.,2021) builds an industry and job portrait model based on the recruitment data from Hire.com as the sample data, and provides suggestions for the adjustment of talent training programs in universities. (Ge,C.M., Shi,H.Y., Jiang,J.H.,& Xu,X.Y.,2022) determine, based on the large-scale recruitment data collected from the national recruitment websites, combined with descriptive statistics, thematic modeling and regression analysis, the 11 most needed skills for blockchain-related jobs, providing insights for blockchain practitioners. (Zhou,J.Y., Du,P., Zhao,W.,&Feng,S.C.,2022) used online job advertisements as the research object and extracted 2,609 textual data about the demand for foreign languages, which provided suggestions for the planning and teaching reform of foreign language education in China.

The above studies all mined online recruitment information and analyzed the professional skill requirements or job requirements. However, most of them only considered the talent demand characteristics at the professional level, and rarely explored the skill demand characteristics from the perspective of professional research direction. At the same time, most scholars conducted relevant job demand analysis based on undergraduate majors, and rarely conducted related research based on junior college majors. There are essential differences between undergraduates and junior college students, and they should be analyzed differently. Therefore, this paper uses Chinese word segmentation and N-gram grammar to group online recruitment information, and performs semantic analysis on meaningful phrases, analyzing the skill demand characteristics of live e-commerce talents from the perspective of higher vocational colleges.

Methodology and Procedures

3.1.Research ideas

The skill demand analysis of live e-commerce talents needs to solve three problems: data source, data analysis method and conversion of skill identification into keyword analysis.

I.Data source. Online recruitment information includes job requirements, qualifications, salary and so on. It has the characteristics of large sample size and objective truthfulness, which is conducive to accurately analyzing the skill needs of the talent market.

II.Data analysis methods. In the data set, there are both structured field data, such as salary, and unstructured text data, such as job information. There are differences between different types of data, and the analysis method needs to be judged and selected based on the analysis requirements and data distribution characteristics.

III.Skill identification converted into keyword analysis. From the perspective of machine learning, the skill identification problem is a classification or clustering problem. In text mining, keyword analysis is more accurate and more in conformity with machine learning, so the skill identification problem can be converted into a skill keyword analysis problem.

3.2.Research Framework

The research framework includes four modules: data collection, data processing, data analysis, and data application.

I.Data collection. First, select mainstream recruitment websites, analyze the presentation style of recruitment information to design information capture rules, then use keyword search technology to determine the data range, and finally use crawler technology to collect, form metadata and store it.

II.Data processing. First, analyze the content and structure of the collected data, and then clean and standardize the data. For structured field data, it is necessary to determine their appropriate value range. For example, salary needs to be divided into a reasonable range; for unstructured fields, it is necessary to divide them twice according to content and structural characteristics to facilitate semantic analysis.

III.Data analysis. The core of this module is text mining, and its main tasks are Chinese word segmentation and keyword search. With the help of the Chinese word library, nouns, verbs and other words are segmented, and with the help of core skill keywords, keywords with analysis value are screened out.

IV.Data application. This module is the process of applying mining results to solve real problems. This stage will realize the practical value of text mining and require the use of algorithms such as statistical analysis and n-grams .

Results and Discussion

4.1.Data Collection

There are two main channels for publishing online recruitment information: one is the official website created by the recruiting unit, and the other is third-party recruitment websites and other online media. Among the two channels, third-party recruitment websites are often regarded as the preferred channel for data sources due to their comprehensive information, standardized format, and powerful search and query functions. (Sun, P.G.,Yan,W.W.,Sui,Y.B,,& Zhang Y.,2023)The text analysis method of online recruitment information can effectively depict the current social demand for higher vocational accounting talents. As the leading third-party recruitment website in China, 51Job publishes about 10 million recruitment information every year. Therefore, the recruitment information of 51Job is selected as the data source.

Collection tool: Octopus 8 software; Collection keywords: live e-commerce, live streamer operation; Search scope: 8 areas with relatively concentrated live e-commerce recruitment information, including Beijing, Shanghai, Guangzhou, Shenzhen, Wuhan, Nanjing, Suzhou, and Hangzhou; A total of 3,052 valid data records were collected, each of which included 16 fields including recruitment positions, salary, work experience, education, professional requirements, and job information. Except for the job information which is unstructured text, the other fields are mainly structured data.

4.2.Job Characteristics Analysis

The main positions in live e-commerce include live streamer, operation staff, field control personnel, assistant, Merchants staff and planning. The specific job responsibilities are as follows.

I.Live streamer job responsibilities

Before the live broadcast, the live streamer must have the greatest understanding and familiarity with the live broadcast process, script, product features and benefits. During the live broadcast, the live streamer must be able to smoothly introduce the product, interact with users, and liven up the atmosphere in the live broadcast room, thereby increasing sales in the live broadcast room. After the live broadcast, the live streamer must cooperate with the operator to review the live broadcast, while ensuring a certain degree of personal exposure and strengthening the IP image.

II.Live broadcast assistant job responsibilities

The position of live broadcast assistant is more auxiliary. Before the broadcast, the assistant needs to confirm whether the goods, samples, and related props and equipment are ready, and be familiar with the live broadcast process and personal responsibilities. During the broadcast, the assistant needs to cooperate with the field control to coordinate with the live streamer, assist the live streamer in product explanation, trial demonstration, interactive Q&A and product sorting.

III. Operation job responsibilities

Operation staff is responsible for planning, organizing live broadcast activities, optimizing live broadcast content and interactive experience and determining live broadcast themes. He or she also should manage the accounts and backend of the live broadcast platform to ensure the normal use of the platform functions. In addition, the operation staff need to monitor and analyze live broadcast data, evaluate program effects and formulate improvement strategies.

IV. Field control position responsibilities

Field control personnel is responsible for managing and maintaining live broadcast equipment, ensuring normal operation of the equipment and handling equipment failures. After the broadcast starts, He or she he needs to be responsible for the backstage operations related to the central console, such as screen switching, sound effect adjustment, product listing and delisting, coupon red envelope distribution and so on. In addition, field control personnel need to be responsible for data monitoring including real-time online user peak, product click-through rate, and so on. At the same time, he or she needs to promptly report abnormal situations to the live broadcast operator.

V. Merchants job responsibilities

Merchants are responsible for finding and contacting potential advertisers and brand partners to develop business opportunities, negotiating cooperation details with advertisers or partners and signing contracts, maintaining long-term cooperative relationships with customers and handling customer needs and problems. In addition, Merchants should vestigate, analyze and evaluate target markets and develop procurement channels in the same time.

VI. Planning job responsibilities

Planners are responsible for formulating the overall planning scheme of the live broadcast program, including content creativity, program flow and so no. He or she he also needs to design and conceive the creative elements of the live broadcast program, such as game sessions, interactive sessions and so on. In addition, planners should arrange the program content to ensure the continuity and attractiveness of the live broadcast program.

According to the job description, the 3052 collected positions were counted and classified. The results are shown in Figure 1, where "none" means that 6 companies' recruitment information did not provide any job information .
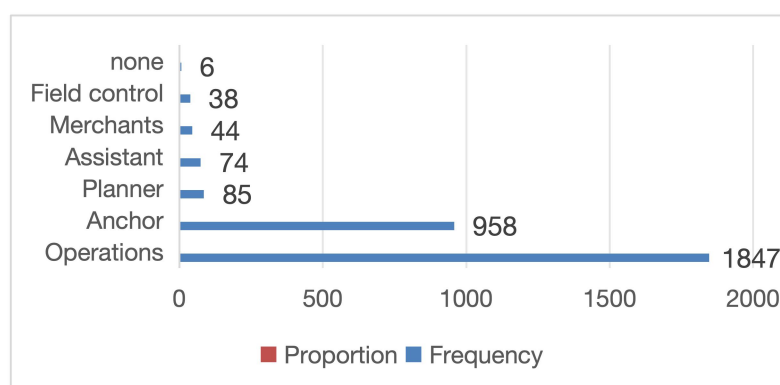

Figure 1 Job classification

Among the six major positions, the operation position ranks first in terms of talent demand, accounting for 60.52%; the live streamer position ranks second, accounting for 31.39%; the other four positions have less talent demand, accounting for only 7.90%. The data shows that in the live broadcast team, the operation and live streamer positions have the highest demand for talents and the most development opportunities, and are highly concerned by job seekers and companies. As the behind-the-scenes operators of live broadcasts, operation talents are the key to the smooth progress of live broadcasts and the achievement of performance goals. With the refined operation of enterprises, this type of talent will receive more and more attention; as one of the core of live

broadcasts, live streamers also have considerable development opportunities today when the professionalization trend of live streamers has become、

4.2.1.Educational requirements for the position

Different positions have different educational requirements. Table 1 shows the results of the cross-analysis of positions and educational requirements.

Table 1 Cross-analysis table of positions and academic qualifications

post	no request	Undergraduate	College	high school	Technical secondary school	total
operations	156	377	1209	53	52	1847
live streamer	97	161	593	44	63	958
planner	12	17	51	3	2	85
assistant	10	9	41	7	7	74
merchants	2	10	31	1	0	44
field control	11	4	19	2	2	38
none	6	0	0	0	0	6
total	294	578	1944	110	126	3052

In general, the educational requirements for positions are mainly college graduates, accounting for 63.7% of the total; followed by undergraduates, accounting for 18.94% of the total; other educational requirements are less, accounting for 17.36% of the total. The data shows that the educational requirements for live e-commerce positions are relatively low, which means that the threshold for live e-commerce is relatively low and the industry competition is fierce. However, with the standardized development of the live e-commerce industry, live streaming with high education will gradually form a scale, and live streaming will inevitably move towards specialization.

From the perspective of positions, operations and live streamer positions have the highest demand for college graduates, accounting for 65.46% and 61.90% of their respective positions. This shows that the skill requirements of operations and live streamer positions are highly consistent with the abilities of college graduates. College graduates have the characteristics of being able to endure hardships, strong learning ability, and strong professionalism, which are exactly what these two positions urgently need. In addition, this also reflects to a certain extent that in the field of live e-commerce, college graduates have broad employment prospects and good development opportunities, which also provides good conditions for the development of related majors in higher vocational colleges.

4.2.2.Work experience requirements for the position

Different positions have different educational requirements and work experience requirements. Table 2 shows the results of the cross-analysis of positions and work experience.

Table 2 Cross-tabulation of positions and work experience

post	no request	1 year experience	2 years of experience	3-4 years of experience	5+ years	total
operations	173	770	473	371	60	1847
live streamer	145	397	225	148	43	958
planner	16	24	15	28	2	85
assistant	28	41	3	2	0	74
merchants	3	8	5	12	16	44
field control	4	26	3	5	0	38
none	6	0	0	0	0	6
total	375	1266	724	566	121	3052

In general, the work experience required for the positions is mainly less than 2 years (including 1 year experience and 2 years experience) , of which 1 year experience accounts for 41.48%, 2 years experience accounts for 23.72%, and the two account for 65.2% in total. The explicit requirement of more than 3 years

(including 3-4 years experience and more than 5 years experience) accounts for 22.51% of the total sample. This shows that having a certain amount of work experience is an essential experience for fresh graduates to find a job, which means that graduates should make full use of various internships and training activities arranged by the school, actively hone themselves, and accumulate a certain amount of work experience.

From the perspective of positions, the requirements for operation and live streamer positions are mainly 1-2 years of work experience, the requirements for field control positions are mainly 1 year of experience, the requirements for planning positions are mainly 3-4 years of work experience , the requirements for Merchants positions are mainly more than 3 years of work experience, and the requirements for assistant positions are mainly less than 1 year of work experience. The work experience requirements for each position are related to the job responsibilities. The data shows that the assistant position has the lowest work experience requirements. As a fresh graduate, you should start as an assistant and accumulate certain work experience and skills before being promoted.

4.2.3.Salary distribution of positions

Salary reflects the importance of a position and is also a recognition of work ability. Table 3 shows the results of the cross-analysis of position and salary.

Table 3 Results of cross analysis of positions and salaries

post	Below 10000	10000-20000	20000-30000	30000-40000	40000-50000	50000 and above	total
operations	1047	683	83	twenty two	6	6	1847
live streamer	561	340	32	17	3	5	958
plan	47	34	3		1		85
assistant	70	4					74
merchants	26	13	5				44
field control	29	9					38
none	6						6
total	1786	1083	123	39	10	11	3052

In general, the salary range of positions is mainly concentrated below 20,000 yuan, which matches the actual income of most positions in the live broadcast industry. For example, among live streamer positions, except for the top live streamers, most salaries are below 20,000 yuan. According to the average value calculation method of data grouping, the average salary of the six major positions is 12,739.3 yuan. The average salary of Shanghai citizens in 2023 is 12,696 yuan, the highest among the eight cities, which fully shows that the salary and benefits of live broadcast e-commerce are very superior, which is very good news for fresh graduates looking for jobs.

In terms of positions, operation staff and live streamer positions generally have higher salaries, and the number of people with a monthly salary of more than 20,000 is far higher than other positions. Live streamers are people who directly face consumers and are the most critical personnel for marketing effects, while operation staffs are the managers and planners of the entire live broadcast event, so these two types of positions have relatively generous salaries.

4.3.Skills Demand Analysis

To transform the skill identification problem into a keyword analysis problem, the first task is to segment the Chinese words of the unstructured recruitment information, screen out the core keywords, and then conduct relevant analysis work based on this. After observation, job information mainly uses the language patterns of attributive structure and verb-object structure to describe the abilities or qualifications that job seekers should have. The central word of the attributive structure is usually a noun, expressing the quality requirements reflected in completing a goal or task, and the language pattern is modifier + noun; the central word of the verb-object structure is usually a verb, expressing the skill requirements of thoroughly understanding and being able to master a certain technology proficiently, and the language pattern is verb + object word. By analyzing the central word, the company's needs for talent skills and qualities can be quickly located. This study uses stuttering participles to obtain high-frequency verbs and nouns. After manual screening and merging, the attributive structure selects "ability" as the central word, and the verb-object structure selects "familiar" and "proficient" as the central word.

4.3.1.Analysis of the phrase "ability"

"Ability" is often combined with other words to form a modifier phrase to express the ability requirements in a certain aspect, such as communication ability, learning ability and so on. Using the 2-gram grammar, we get 1610 2-gram phrases containing "ability", of which 560 are in the form of "A/ability", as shown in Figure 2.
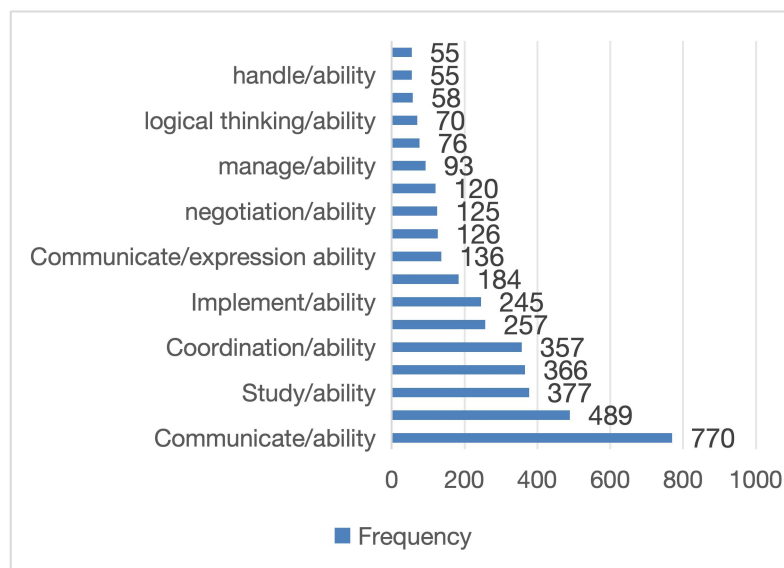

Figure 2 "A/ability" phrase

A semantic analysis of the phrase "A/ability" reveals that companies attach particular importance to employees' communication skills, stress resistance, learning ability, data analysis ability, and operational management ability.

I. Communication skills are the most important. Keywords such as "communication", " expression", "interaction", "interpersonal communication" and "negotiation" indicate that communication skills are extremely important in live e-commerce positions. To achieve the live broadcast goal and obtain better live broadcast results, the live streamer must master good language expression skills, interact more with fans, accurately and clearly convey his or her views to fans, and narrow the distance between the fans. From the perspective of the live broadcast process, live broadcast planning, live broadcast sales, live broadcast promotion, and live broadcast effect evaluation and optimization are all inseparable from communication. For example, the preparation of live broadcast materials requires cross-departmental communication skills. Live broadcast interaction, live broadcast order processing and customer maintenance require online communication and expression skills. Live broadcast script planning requires good written expression skills. Oral broadcast sales require good product explanation ability and Infectiousness.

II. II.Psychological quality is crucial. Keywords such as "stress resistance", "logical thinking" and "adaptability" indicate that companies require employees to "have strong stress resistance", "be able to respond flexibly to emergencies" and "have strong tolerance for difficulties". Among them, stress resistance has become a common requirement of employees. From the perspective of the company, employees'stress resistance is linked to job stability. Stress resistance is also an essential skill for employees entering the workplace. Specifically, it means not giving up when encountering problems and facing challenges head-o, which can transform "pressure" into "motivation". If employees have a good stress resistance, they can withstand pressure, steadily exert strength and do a good job without being affected especially when encountering sudden work tasks or promotion periods for time is tight, tasks are heavy and work intensity is high.

III.Learning ability is indispensable. Keywords such as "learning", "logical thinking", " problem solving" and "thinking" indicate that employees must have the ability to learn new things and new knowledge, especially in the live e-commerce industry. If you want to achieve results, you must maintain a learning attitude. The update and iteration speed of live e-commerce is very fast. On the one hand, the live broadcast platform often adjusts the algorithm and weight indicators. On the other hand, the playing methods of peers or competitors are constantly upgrading and iterating, and consumers' consumption psychology and concepts are also constantly changing. The content, scenes and modes of live broadcasts need to be constantly innovated, which requires practitioners to calm down and study themselves and their competitors, maintain a strong desire for knowledge, keep pace with the times, and constantly learn more new knowledge to cope with new changes.

IV.Data analysis is becoming increasingly important. Keywords such as "data analysis", "analysis", and "statistical analysis" indicate that data analysis is becoming more and more popular in live e-commerce. Live e-commerce is a front-end industry for digital marketing. Every live broadcast presents a lot of data and it is crucial to be able to find problems in the live broadcast room through changes in data. Specifically, you can

analyze the attractiveness of live broadcast content based on data such as the number of viewers, number of views, and average viewing time per person. You can analyze the user activity of live broadcasts based on data such as the number of fans, likes, and comments. You can also analyze the conversion effect of live broadcasts based on data such as product views, number of customer items, number of orders, and sales. Meanwhile, based on the analysis results, you can review the live broadcast process, identify problems, and make suggestions for improvement.

V.Operation management cannot be ignored. Keywords such as "coordination", "execution", "management" and "organization" indicate that traffic,operation and management are crucial to live e-commerce. Solving problems such as live streamers not being able to sell goods, insufficient number of viewers in the live broadcast room, slow growth in the number of real-time online users, lack of interaction among fans in the live broadcast room, and high fan churn rate all require operation and management, because the Internet relies on multiple operational management methods to achieve continuous benefits in the business system. From the perspective of the live broadcast process, to improve the three elements of "people", "goods" and "venues" in the live broadcast room, it is necessary to manage the team and the execution of the work. The time and order of putting products on and off the shelves during the live broadcast also need to be optimized. The post-live broadcast review and optimization of live broadcast promotion require the improvement of the organization and coordination capabilities of relevant team members.

4.3.2.Analysis of the phrases "familiar" and "proficient"

"Familiar" and "proficient" are often paired with other words to form a subject-object structure to express that one should master or possess a certain technical skill, such as being familiar with live broadcast rules and being proficient in direct access. Using 3-gram grammar segmentation, we found a total of 8123 3-gram phrases containing "familiar", of which 2736 were 3-gram phrases of the form "familiar/A/B", as shown in Figure 3.
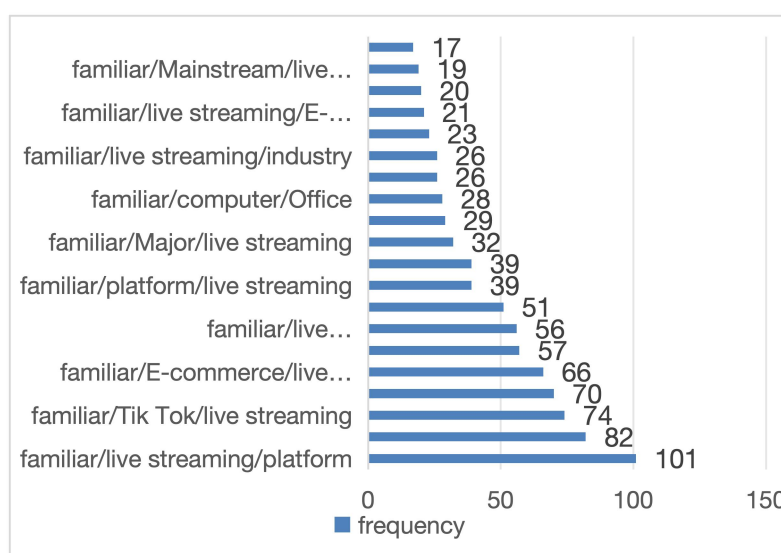

Figure 3 "Familiar/A/B" phrase

A semantic analysis of the phrase "familiar/A/B" shows that companies are particularly concerned about whether their employees have the technical skills to set up a live broadcast room and sell goods through live broadcasts.

I.Live broadcast room construction

Keywords such as "Taobao", "Tik Tok", "Kuaishou", "platform", "process", and "industry" indicate that Taobao, Tik Tok and Kuaishou have become the three most popular live broadcast platforms for users. It is necessary to master the live broadcast room construction process of various live broadcast platforms. Specifically, according to the live broadcast theme, product category, activity type and venue size, you can divide the live broadcast area, product preparation area, equipment placement area, arrange the live broadcast background, adjust the ambient lighting, and complete the construction of the offline live broadcast room. You can be familiar with the opening process of the live broadcast platform, register and authenticate the account on the mainstream live broadcast platform, set the title, cover, personal homepage and other content, and complete the decoration of the online live broadcast room. According to the live broadcast requirements, you can check the network signal and streaming software, debug the sound card, microphone, camera and other audio and video equipment to ensure a smooth live broadcast process.

II. Live streaming with goods

Keywords such as "operation", "selling goods" and "e-commerce" indicate that companies are in urgent need of talents with live streaming skills. Live streaming with goods is the process of combining "live streaming" and "selling goods" into one, which is a process of selling or promoting goods during the live streaming process to increase sales. Specifically, it can create an atmosphere and recommend goods through contagious words based on product information and single product scripts. It can use props or models to demonstrate the use and effects of goods on site to create a sense of reality and enhance users' trust in the goods. Also, it can match user pain points with product functions by describing usage scenarios, emphasize selling points and stimulate demand. Moreover, it can use price live streamers and promotional discounts to create a high cost-effectiveness of products and promote conversions.

Similarly, the words that are frequently paired with "proficient" are "Taobao Direct Access", "PS", "data analysis", etc. These keywords represent the professional skill requirements of live streaming e-commerce talents to a certain extent, requiring applicants to master technical skills such as live streaming promotion, data analysis and art design.

I.Taobao Direct Access. The "Taobao Direct Access" in live broadcast promotion is a new promotion method. It can not only attract traffic to the live broadcast room during the live broadcast, but also provide exposure for the playback clips after the live broadcast, thereby extending the life cycle of the live broadcast. It can be seen that being proficient in live broadcast promotion is a huge advantage for job seekers.

II.Data analysis. Data analysis is the core of evaluating and optimizing the effects of live streaming. It is not only the basis for the rapid development of live streaming e-commerce, but also plays an indispensable role in formulating accurate development strategies.

III.Photoshop. Photoshop is the core tool for producing live broadcast materials. Now, all major live broadcast platforms require relevant staff to have certain art design skills in order to produce live broadcast previews and conduct post-promotion.

Conclusion and Suggestion

This paper uses the recruitment information of live e-commerce positions in 8 cities on the Qianchengwuyou website as a sample, and uses text mining to explore the skill requirements of live e-commerce from unstructured online recruitment information. The study found that: ① Enterprises are in urgent need of employees with strong communication skills and stress resistance; ② Enterprises are very eager for talents who are proficient in Taobao Direct Accesss, data analysis and art design; ③ Live e-commerce positions have low educational requirements and generous treatment. College graduates with less than two years of work experience have obvious advantages when applying for jobs; ④ Operation positions and live streamer positions are the most in-demand positions in live e-commerce, and Vocational colleges should pay attention to the training of talents related to these two positions.

When cultivating live streaming e-commerce talents, higher vocational colleges can consider carrying out relevant work in terms of comprehensive quality cultivation, professional skills improvement, work experience accumulation and talent training models.

I.We should build a competition and training platform to improve students' comprehensive quality. When training students, higher vocational colleges should not only focus on skill training, but also give priority to improving students' sustainable development capabilities. We shall encourage students to participate in live e-commerce competitions, such as e-commerce skill competitions, e-commerce competitions, and Internet marketing competitions, to help them experience real live broadcast scenes and job requirements, stimulate learning enthusiasm, and improve students' communication skills and stress resistance. (Wei, L.Q.,2024.)Based on skill competitions, higher vocational colleges can optimize the training programs and plans for live e-commerce talents, and improve the talent training model by changing teaching thinking and updating teaching concepts in line with the times, and ultimately achieve "promoting learning through competition" .

II.We should optimize the curriculum system and improve professional skills. Higher vocational colleges should work with enterprises to optimize the curriculum system of live e-commerce and integrate the job requirements of live e-commerce. According to the professional skill level standards of live e-commerce, colleges shall develop courses that combine theory and practice around "live e-commerce operation", "graphic design", "data analysis" and so on. To meet the needs of operation positions, Higher vocational colleges should add courses such as new media marketing, short video production and data-based operation.(He,K.,2022)To meet the needs of live streamer positions, we shall add courses such as speech and eloquence, and live literacy. The course content should not only meet the skill level standards, but also include the latest live knowledge and closely meet the needs of the live talent market.

III.We should build in-depth cooperation with enterprises, strengthen internship and practical training. (Zhang,C.Y, Qin,Q.H., & Yi,T.,2024)With regional economic development as the background and the training of local e-commerce live broadcast talents as the goal, higher vocational colleges should build e-commerce live broadcast training base. Live broadcasting is very practical, and more attention should be paid to and strengthened in the training of talents. In addition to introducing simulation software suitable for student training, colleges and universities should leverage corporate resources to carry out job skills training. Through real 'live

streamer job practice, students can not only recognize and improve their shortcomings in the combination of theory and practice, but also accumulate work experience. This has a huge role in promoting the improvement of students' ability to sell goods through live broadcasting and can also improve their employment literacy.

IV.We should encourage live broadcast employment and entrepreneurship with diversified joint training. Higher vocational colleges cannot work alone in the training of live-streaming e-commerce talents. They must work with society, enterprises and the government to jointly formulate talent training programs. (Rao,Z.P.,2021)Through a diversified joint training model, schools must leverage the power of society and introduce social resources such as live-streaming operating companies, live broadcast talent incubation bases and live broadcast e-commerce entrepreneurship incubation bases in the form of industrial colleges and school-enterprise dual-teacher studios, build live broadcast sales bases, and carry out "order-based" talent training. At the same time, we shall encourage and support students' entrepreneurial behavior in terms of venues, teaching, policies, etc., especially actively guide entrepreneurship in live-streaming sales, and promote the development of more innovative and entrepreneurial projects.

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The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

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Author Contributions

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