IJBSI
International Journal of Business Studies and Innovation

Article

Exploration of 51job's Online Recruitment Service Model

I-Ching Chen*, Jintong Huang

School of Economics and Management, Zhaoqing Univerisity, 526060, Zhaoqing, China; huangapril16@gmail.com
*Correspondence: jineandya@gmail.com; Tel.: +86-1321-106-0079

Abstract: Online recruitment has been widely adopted by recruiters and job seekers for its high efficiency and convenience in many countries. In consequence, many online recruitment service providers are facing one common issue: how to attract and sustain customers. Given the issue's significance, this article takes the 51job, a leading online recruitment service provider in China, as the research target to investigate various key factors of its services and characteristics by using a qualitative research method – critical incident technique (CIT). Based on the findings, this article provides concrete and feasible suggestions for online recruitment service providers which are eager to acquire and retain customers.

Keywords: Online recruitment; Optimization; Service improvement; Human resources

1. Introduction

Online recruitment is not just about transferring traditional recruitment methods to the online environment, but rather a new form of recruitment characterized by interactivity, lack of geographical constraints, and remote services. Generally speaking, the online recruitment process can be summarized as the process from starting to accept the online recruitment platform to finally meeting recruitment/job application needs. This process covers both online and offline services, with the overall trend being offline → online → offline, ultimately achieving the recruitment needs of enterprises and the job application needs of job seekers. Online recruitment is implemented according to the procedural format of online recruitment platforms, characterized by institutionalization, process orientation, and elimination. Initially, both the company and the applicant determine their respective needs. The company then publishes recruitment information through the online platform, and applicants participate based on the information obtained from the platform. The company conducts an initial online screening of collected resumes and arranges interviews for suitable and potential candidates. Those who pass the interview proceed to the next step, ultimately completing the onboarding process. This recruitment process cannot be reversed; it must be followed step by step, with cooperation between the company and the applicants. Otherwise, the intermediary role of the recruitment platform cannot be effectively carried out. For example, if an interview cannot proceed due to an applicant's absence or inability to contact the company's recruitment personnel, the recruitment process may stall or end prematurely. As a crucial intermediary among the three parties, the online recruitment platform serves as a bridge for communication between companies and applicants. Any system failures or improper notifications can lead to mismatched expectations or negative experiences, potentially causing disputes and damaging the platform's brand image.

This study initially analyzes the fundamental characteristics of the online recruitment industry and assesses the current domestic and international environmental situations. Through the application of the Critical Incident Technique research method for data acquisition, it further explores the online recruitment service model and the issues it confronts, and puts forward the coping strategies of 51job in optimizing online recruitment services. The aim is to improve the quality of platform services, ensure that the management system of the online recruitment platform can better adapt to current and future business development needs, reduce service disputes and customer churn, improve platform transaction interaction indicators, and lay a solid foundation for 51job to achieve its strategic goals.

2. Literature Review

2.1. Online Recruitment Platform

Recruitment, as a basic function of human resource management, plays an important role in attracting and selecting talent. Edward Lazear believes that the recruitment and employment process is the process by which enterprises recruit suitable job seekers at the lowest cost based on established recruitment standards and compensation policies (Edward Lazear,2006). Researchers point

out that online employment activities are a series of procedures in the field of human resource management for disseminating job information, collecting job seeker data, and conducting preliminary screening (Irene Nikandrou,Eleanna Galanaki, 2016) . Nowadays, the ecosystem of online recruitment is composed of online recruitment platforms, enterprises, and job seekers, and their interactive relationships are shown in Fig. 1.
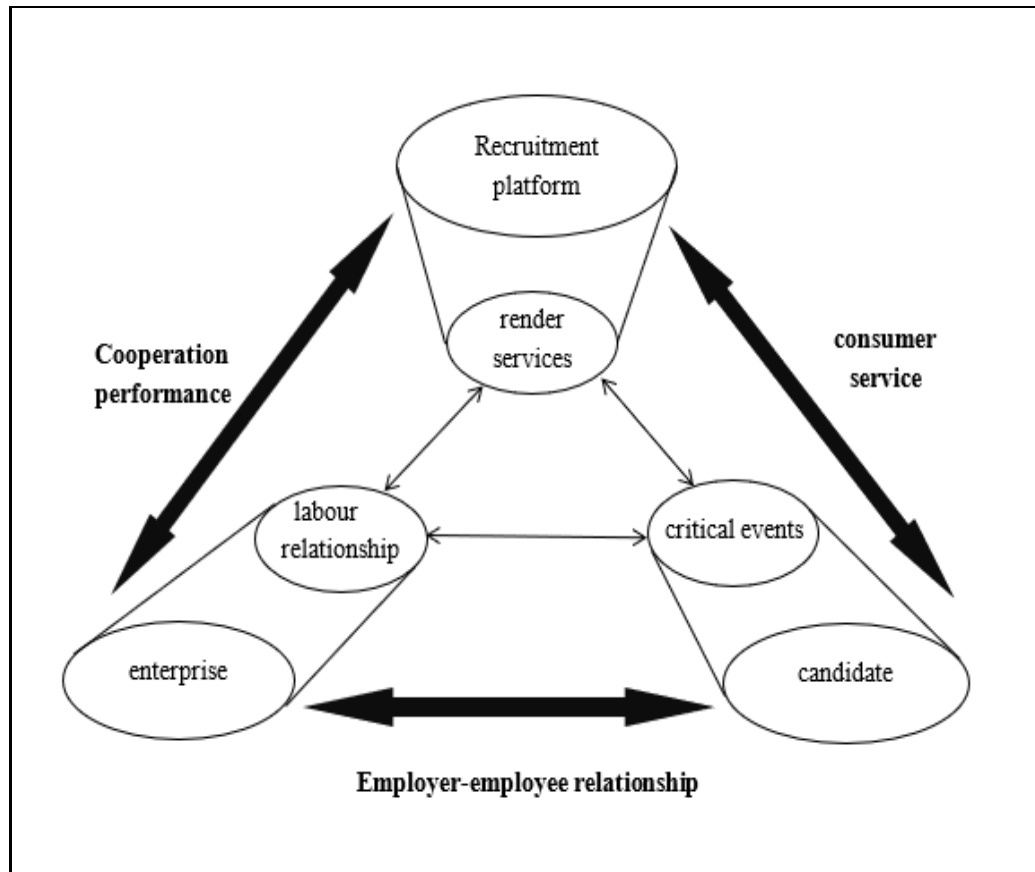

Fig. 1. Diagram of the Interactive Relationship in Online Recruitment.

The recruitment platform and the enterprise reach a service agreement. The enterprise obtains the privilege of posting job positions and membership benefits on the online recruitment platform through an annual recharge, and registers for enterprise identity certification on the platform to recruit. This forms a cooperative relationship between the enterprise and the recruitment platform.Job seekers view job postings on the recruitment platform and apply to relevant companies, initially communicating with company HR, viewing resumes, and going through interview stages on the platform. This process establishes a consumer service relationship between the job seekers and the recruitment platform. Once job seekers pass the interview and join the company, they form an employment relationship with the corresponding enterprise, concluding the entire online recruitment process.

The recruitment platform provides services throughout the online recruitment network. Job seekers generate personalized critical events while using the platform services, including satisfactory and unsatisfactory events, which form the service quality perception of the platform's users. The enterprise and job seekers form a labor relationship, signing a labor contract at the end of the recruitment process, forming an employment relationship. The recruitment platform acts as an intermediary bridge in facilitating the employment relationship between the job seekers and the enterprise.

Anna Filson and Alan Lewis (2010) in the "Business Review Network" pointed out that employees' identification with company culture is more important than their capabilities and experience. Recruiting employees who match the corporate culture is crucial for enhancing employee retention and work engagement, which is essential for ensuring the company's long-term stable development. To improve hiring efficiency, scholars are continually exploring new recruitment models, which are reshaping the recruitment field. Mcrobert C J,Hill J C,Tim S,et al (2018) analyzed the characteristics of recruitment, selection, retention, and other human resource management features of enterprises, discussing major issues faced by enterprises, focusing on specificities and hiring crises. Nowadays, online recruitment platforms still lack significant AI precision in person-job matching. How to invest in

employees' abilities in terms of retention rates and work engagement, and recruit special talents suitable for the enterprise are important personnel planning issues that enterprises should focus on.

2.2. Service Quality

The survival and development of enterprises rely on sufficient human resources, so they need to publish recruitment information through diversified channels and adopt appropriate talent selection methods. The effectiveness of online recruitment has garnered considerable attention from researchers. In recruitment decisions, traditional factors such as cost, time, coverage, effective applicants, and corporate image need to be considered (Irene Nikandrou,Eleanna Galanaki, 2016). Research also found that the biggest problem job seekers face when looking for jobs online is the lack of feedback and tracking (Tai Xiujun,Li shuzhuo, Marcus W. Feldman,2012). As an established company, 51job has long occupied the largest market share in China's recruitment industry. However, emerging internet vertical recruitment players like Boss Zhipin and Shixi Sheng are continually rising, posing a crisis to 51job's market share. Currently, China's online recruitment market covers four major recruitment platforms: 58.com, Zhaocaimao, Ganji.com, and ChinaHR.com, which have significantly impacted the mid-to-low-end recruitment market. 51job is facing the risk of market share erosion. Hence, 51job's platform is facing immense challenges of the era, and how to optimize its service quality to promote platform interaction is an urgent issue.

3. Critical Incident Technique

This study uses the Critical Incident Technique (CIT), a method for systematically collecting, classifying, and analyzing data to study human behavior. The Critical Incident Technique has facilitated the exploration of significant events as perceived by respondents, aiming to obtain individuals' perspectives on these events, including cognition, emotions, and behavior.Gremler (2004) pointed out that CIT usually requires respondents to narrate their experience stories. This technique was proposed by psychologist Flanagan and his students in the late 20th century. Initially used for Air Force research, it was employed to collect human behavior data and explore cognitive activities of pilots during flight operations, as well as to develop training programs. Flanagan detailed this technique in his 1949 book "A New Approach to Personnel Assessment." CIT is widely used in education, management, retail, and service contacts, with its reliability and validity fully validated (Flanagan, 1954). Initially, CIT was mainly applied to non-service fields, but since 1990, subsequent research has also applied CIT to corporate economics, human resources, and marketing management. Scholars such as Sá Elisabete, Farhangmehr Minoo, Pinho José Carlos, and Dibb Sally(2022)have used this technique to reveal unique marketing combinations in entrepreneurial decision processes, providing a four-stage foundation for the enterprise marketing framework. For example, Kim Janssens and colleagues(2023) investigated market buyer-supplier satisfaction, using the critical incident method to describe 29 critical incidents and extract first-hand information; Lee Jieon et al.(2022)conducted a subjective survey on user experiences of public home shopping platforms in Korea, analyzing how shopping experiences change with customer loyalty ; Coetzer Alan(2012)used the critical incident technique to explore the management decisions of staff training and development in medium-sized enterprises. Currently, the application range of this technique has expanded to management, human resources, hospitality, and education fields(Flanagan,1954). When researching perceived service quality, CIT has unique advantages compared to traditional service attribute evaluation methods. CIT collects deep-seated events narrated by subjects, incorporating subjective cognition, emotion, and behavior into qualitative analysis, helping researchers categorize events and analyze them in-depth to identify causes of customer dissatisfaction. Therefore, this study uses this method to analyze service failure incidents, determine directions for improving service quality, and provide targeted suggestions for the 51job platform.

3.1. Research Method

This study simultaneously uses interviews and questionnaires to collect samples. Firstly, through questionnaires and interviews, users' views on the 51job platform's job search services are obtained, then identifying which data can be considered "critical incidents," and finally analyzing and summarizing these critical incidents(S.J.Grove & Raymond P. Fisk,1997). In this process, Flanagan pointed out that when the research subjects provide detailed information, their memory can be considered reliable; conversely, if respondents only provide vague descriptions, the information may be inaccurate(Flanagan,1954). Therefore, the survey questionnaire aims to gain insights into users' perspectives and understand their subjective opinions on the service management of the 51job recruitment platform. The questionnaire is divided into two parts: the first part gathers the interviewees' overall evaluations of the 51job platform's services during their job search process, and the second part collects basic information about the interviewees, such as gender, age, and monthly income. The questionnaire contains a total of 11 questions, all of which are subjective choices. The specific design content of the questionnaire is as follows: Questions 1-2 pertain to user satisfaction,

Questions 3-4 pertain to user expectations, and Questions 5-11 pertain to basic information. To have an intuitive understanding of the sample data of the respondents, the subjective questions cover the following aspects:

Q1: During the job search process using the 51job app, what was the most impressive and satisfactory critical incident? This question mainly analyzes the user from a psychological perspective to understand what kind of events make users "satisfied," requiring users to explain the specific process of the event.

Q2: During the job search process using the 51job app, what was the most impressive and unsatisfactory critical incident? This question mainly analyzes the user from a psychological perspective to understand what kind of events make users "unsatisfied," requiring users to explain the specific process of the event.

Q3: Regarding the aforementioned most unsatisfactory critical incident, how do you hope the 51job platform handles it to give you a satisfactory response? This question aims to understand users' expectations for the resolution of unsatisfactory incidents experienced on the 51job platform.

Q4: What other areas do you think the 51job platform needs to improve? How should these improvements be made?

3.2. Data Collection

This survey questionnaire was collected through a qualitative research method. The survey targets job seekers who have current job-seeking needs or have used online job recruitment services in the past. The data collection period was from May 9th to May 16th, 2024, lasting for 8 days. The design content of the survey targeted customer satisfaction with the 51job app's services, adhering to the principle of randomness and promptly collecting the questionnaire responses. Subsequently, the author organized the collected data from the questionnaires and classified the content into satisfactory and unsatisfactory critical incidents. The data was then given to three classifiers for categorization, and after one month, the same three classifiers re-categorized the data. Finally, the reliability and validity among the three classifiers were statistically analyzed to evaluate the service quality of the 51job recruitment platform and propose measures to optimize service quality.

4. Data Analysis

4.1. Basic Information

By organizing and analyzing the collected data, we conducted descriptive statistical analysis in five aspects: gender, age, highest education level, occupation, and monthly income. In terms of gender distribution, there were 60 males, accounting for 33.71% of the total, and 118 females, accounting for 66.29%, showing a significant gender difference. Regarding age, the age distribution of the survey subjects is uneven, with most respondents being between 26 and 35 years old, indicating a younger demographic. There are 131 undergraduates (73.6%), 13 master's degree holders (7.3%), and 1 Ph.D. holder (0.56%). It can be observed that over 80% of the respondents are undergraduates or have a master's degree, indicating a high overall cultural quality of this group.

Regarding job categories, the data shows that the job search demand on the 51job platform is relatively strong, with a strong job-seeking intention among various personnel. A larger number of students use the 51job app for job searching, indicating a general need for the 51job platform among the student population.

4.2. Reliability and Validity Testing

This study adopted the average interjudge agreement, a widely used method for testing the consistency of categorical data among coders internationally. The coefficient ranges from 0.00 to 1.00, with scores between 0.41 and 0.60 indicating moderate reliability, 0.61 to 0.80 considered basically acceptable, and 0.80 and above indicating high reliability.

According to the principle of classification, when categorizing, the meanings within a group should be as similar as possible, while the meanings between different groups should be as distinct as possible. Finally, after organizing and analyzing, the number of key events in which Classifier 1 and Classifier 2 completely agree is 132, the number of key events in which Classifier 1 and Classifier 3 completely agree is 147, and the number of key events in which Classifier 2 and Classifier 3 completely agree is 139, as shown in Table 1. In the case of dissatisfied events, the number of key events in which Classifier 1 and Classifier 2 completely agree is 117, the number of key events in which Classifier 1 and Classifier 3 completely agree is 122, and the number of key events in which Classifier 2 and Classifier 3 completely agree is 129, as shown in Table 2.

Table 1. Intercoder Consistency – Satisfactory Incidents.

Number	Classifier 1	Classifier 2	Classifier 3
Classifier 1	158	--	--

Number	Classifier 1	Classifier 2	Classifier 3
Classifier 2	132	155	--
Classifier 3	147	139	144

Table 2. Intercoder Consistency – Unsatisfactory Incidents.

Number	Classifier 1	Classifier 2	Classifier 3
Classifier 1	148	--	--
Classifier 2	117	146	--
Classifier 3	122	129	153

The classification was carried out according to the principle of "maximizing the similarity of meanings within groups and maximizing the differences between groups." After organizing and summarizing, the number of critical incidents with complete agreement among Classifier 1, Classifier 2, and Classifier 3 for satisfactory incidents can be seen in Table 1, and for unsatisfactory critical incidents in Table 2. The average interjudge agreement and reliability can be calculated using Formulas (1) and (2). The average interjudge agreement for satisfactory critical incidents, A, was approximately 0.78, and for unsatisfactory critical incidents, A was 0.69. Both in the range of 0.61 to 0.8, indicating basically acceptable interjudge agreement. The classification reliability for satisfactory critical incidents, R, was 0.91, and for unsatisfactory critical incidents, R was 0.87, making the classification results valid, as shown in Table 3.

$$A = \frac{\frac{2M_{12}}{n_1 + n_2} + \frac{2M_{23}}{n_2 + n_3} + \frac{2M_{13}}{n_1 + n_3}}{N} \tag{1}$$

$$R = \frac{(N \times A)}{1 + [(N - 1) \times A]} \tag{2}$$

Table 3. Critical Incident Classification Statistics.

Critical Incident	Average Interjudge Agreement (A)	Reliability (R)
Satisfactory	0.78	0.91
Unsatisfactory	0.69	0.87

The scale used in this study shows good content validity. According to the data in Table 3, Among them, A represents the degree of mutual consistency in the classification of key events; R represents the reliability of the classification of key events; n represents the number of samples in which each classifier makes a classification judgment; M represents the number of events where both classifiers have the same classification; N represents the number of classifiers. The average interjudge agreement for satisfactory critical incidents among the three coders is 0.78, with a reliability of 0.91; for unsatisfactory critical incidents, the average interjudge agreement is 0.69, with a reliability of 0.87. Both reliabilities exceed the standard of 0.80. The coding results of the three researchers were consolidated to form the final results.

5. Results

In content analysis, data can be systematically categorized into different groups(Fridlund B,2017). Through an in-depth survey of 178 respondents, we identified 356 critical incidents affecting the service satisfaction of the 51job platform. This study utilized the CIT to design the questionnaire. Examples of the classification of satisfactory and unsatisfactory critical incidents are shown in Tables 4 and 5.

Table 4. Examples of Satisfactory Critical Incidents in the Survey Questionnaire (Partial).

Satisfactory Critical Incidents	
Classification words	**Examples(Partial)**
Automated Functionality	"Provides resume creation and editing features, allowing job seekers to modify and update their resumes as needed, ensuring they are always in the best condition. The app also offers guidance on interview skills and career planning, helping me better handle various challenges in the job search process."
Information Matching Degree	"Finding positions by criteria is very precise, recommending suitable positions based on my job search needs, greatly improving my job search efficiency."
Information Quality Density	"There is a lot of information, allowing you to quickly receive responses after submitting applications. There are many campus recruitment internship positions, making it a good choice for university students looking to enrich their resumes with internship experience."
Perceived Service Value	"HR responded to me quickly; the online rate is relatively high, and many companies actively reach out to invite resume submissions."

According to the classification results of the aforementioned critical incidents, in the category of satisfactory critical incidents, "perceived service value" accounts for the highest proportion, with a total of 57 critical incidents, making up 32.02% of the total. The next largest proportions are "information quality density," "information matching degree," and "function automation," accounting for 29.21%, 15.17%, and 14.60%, respectively. Users mainly highlight the fulfillment of subjective perception dimensions in satisfactory critical incidents, such as positive perceptions of the system interface, recruitment information push, automatic resume filling, and good HR response attitudes, resulting in a good experience. The raw data collected in this study includes critical incidents, some describing complete events and others independent behaviors. To better reflect the characteristics of critical incidents, one critical incident may include multiple key behaviors, so critical incidents are broken down into specific key behaviors, with each key behavior serving as a basic coding unit. The service quality experience in an individual's subjective impression is constantly refreshed and updated. 51job should accelerate the application of improved and optimized services to replace the original negative impressions among users, shape a high-quality image of the 51job platform, and enhance its competitiveness among online recruitment platforms in China.

Table 5. Examples of Unsatisfactory Critical Incidents in the Survey Questionnaire (Partial).

Unsatisfactory Critical Incidents	
Classification words	**Examples(Partial)**
System Stability	"The app lags and is not smooth to operate. It occasionally crashes, which greatly affects my mood and service experience."
Perceived Service Value	"For the Java Development Engineer positions I am applying for, 99% are "zombie positions." After submitting, the system shows it has been delivered, but there are no responses for days, weeks, or even ever."
Insufficient Information Regulation	"I was quite dissatisfied when I saw a position just posted, immediately submitted my resume, but received no feedback for a long time. Later, I found out that the position was continuously listed but there seemed to be no actual recruitment progress, making me feel my time and effort were wasted."
Irrelevant Information Interference	"There are many ads, the platform is declining, and updated resumes are hardly viewed by companies. Fewer companies are using it, and occasionally, the calls I receive are almost always trying to sell insurance."
Confusion in Job Push	"The recruitment positions are too homogeneous, mostly from small and medium-sized companies, though there are differences in positions, possibly involving managerial positions. Large companies also post positions, but they are hard to find."

In the classification of unsatisfactory critical incidents, the category "perceived service value" also has the highest proportion, with a total of 68 incidents, accounting for 38.20%. The category with the lowest proportion is "confusion in job push," with a total of 8 incidents, accounting for 4.49%. The middle categories in order are "insufficient information regulation," "system stability," and "irrelevant information interference," accounting for 32.58%, 11.24%, and 9.55%, respectively. "Perceived service value" is not only the largest category of satisfactory critical incidents but also the most common in unsatisfactory critical incidents. Users' critical incidents of dissatisfaction with the 51job platform in this category include untimely responses from HR and poor communication attitudes. Additionally, issues such as inaccurate big data push, system crashes, homogenized recruitment information, privacy information leaks, and excessive spam ads cause dissatisfaction in users' service experiences.

This study found that 16.85% of respondents believe that the 51job app experiences program issues such as lagging and crashing, while 11.24% of respondents find its system interface not concise and inconvenient to use. It is evident that the stability of the 51job platform still needs improvement and currently does not fully meet user needs. In terms of the app interface, the background color is gray-white, with warm orange as the main color, giving a positive and vibrant impression. The homepage is divided into four sections: "Positions," "Find Employers," "Messages," and "My Profile." Overall, the layout appears compact and business-like. However, the "Messages" section is cluttered, with only three entry points for new users, making it feel somewhat empty. The screen efficiency of the app's operational area accounts for 50%, significantly impacting the display of core content. Additionally, there are two banner spaces in the operational area, leading to a chaotic appearance for users upon entering the homepage.

During this survey, some respondents mentioned concerns about "information leakage" and "privacy infringement." In terms of consulting services, this mainly relates to the attitude of customer service and job search progress. High-quality job search services not only enhance user experience but also increase user motivation. Many respondents expressed dissatisfaction with "unfriendly recruitment personnel," "HR not responding to messages," and "long delays in feedback after submitting resumes, with companies being unresponsive or dismissive." Furthermore, in terms of personalized services, the platform should offer customized resumes and personalized job recommendations. Some respondents mentioned issues with "limited resume templates," "tedious resume updates," and "insufficient intelligence." Overall, 51job has yet to fully meet user expectations in terms of user experience. The research results indicate that users are particularly concerned about the authenticity and completeness of job information. The quality of job postings varies, and job seekers need to discern for themselves. Additionally, the information is not updated promptly, and outdated job postings are still visible. Survey data shows that 24.16% of respondents believe there are too few suitable positions, and 17.98% express dissatisfaction with the accuracy of recommended positions. This suggests that Zhaopin has not effectively met the demand for job matching in terms of quantity and quality.

Regarding user privacy protection, 51job opens its entire resume database to employers. With the job seeker's consent, the platform displays their career summary and work experience. However, some respondents in the survey mentioned receiving numerous annoying phone calls during job searches and encountering excessive spam advertisements, indicating shortcomings in privacy protection. It is also essential to address any inadvertent leakage of job seeker privacy by HR professionals, despite the system's privacy features.

For job seekers, the big data algorithms are not precise enough. Many respondents mentioned receiving irrelevant job recommendations or mismatched job postings via email. Zhaopin needs to stay abreast of digital trends and potential breakthroughs in systems and programs in this digital age. The platform must be agile in responding to technological advancements and seizing opportunities.

6. Conclusions

6.1. Enhance System Compatibility and Optimize User Interface Design

Interactivity is the core feature of online recruitment apps, allowing real-time communication between users, recruiting companies, and the platform, making recruitment more effective. To improve user experience, online recruitment companies should optimize app page design according to user habits and basic needs, upgrade servers, and enhance system compatibility. Furthermore, online recruitment apps should focus on user experience, improving backend program management to reduce lagging and crashing issues, ensuring program stability.

Additionally, the 51job app should continuously improve user experience to better capture users' emotional states and color symbols, creating a pleasant recruiting atmosphere and reducing operational errors. The UI (User Interface) design should feature a warm, stable, and reliable corporate theme color to guide users in correctly identifying job information. Elements should be optimized and interactive animations simplified to make it easier for users to find and operate the needed functions. Experiencing convenient interactions with the 51job app will provide users with significant convenience and comfort, better meeting their needs and increasing their willingness to continue using the app.

6.2. Improve Interaction Effectiveness

HR departments often struggle to process and respond to the large volume of information from recruitment websites, leading to doubts about the authenticity and seriousness of job information on the 51job platform, thus reducing service satisfaction and damaging the brand image. Therefore, 51job should enhance the transparency of job information at the technical level and establish convenient communication mechanisms to improve overall service quality. For example, setting up a reminder function to prompt

HR to respond to applicants' messages timely and providing a self-service reply function for viewed resumes. For candidates not interviewed, batch-sending reply emails with reasons for not being interviewed is suggested.

Strict norms and entry mechanisms should be established for staff service levels and professionalism. Staff members failing to address issues timely or providing poor service should be replaced, and warning labels set on their profiles to enhance norms. Moreover, 51job can develop a section for direct communication between job seekers and recruiters, adding waiting times for responses, or prioritizing displaying companies that promptly process information, thus supervising timely feedback on job applications. An AI reply system could be used to set keywords for official responses, providing timely feedback and effectively improving keyword recognition and problem matching, solving the issue of quick responses during working hours.

6.3. Strengthen Review and Supervision of Platform Information

When job hunting on 51job, users might be overwhelmed by the vast amount of job information, making correct decisions difficult and affecting recruitment results. To improve the authenticity and safety of job information, all related materials should be strictly reviewed. The timeliness of job information should be enhanced, with the publication date and resume submission deadline prominently marked in distinctive colors to help job seekers obtain needed job information timely and accurately, preventing inconveniences due to missed submission opportunities. Moreover, 51job should enrich job categories based on user profiles, reduce user aversion to training and promotional information, and strictly combat illegal and fraudulent activities.

Most importantly, the platform should prioritize job seekers' interests by establishing a complete accountability and traceability system. If user privacy is compromised, ensure affected users can legally hold the responsible parties accountable. 51job should build a comprehensive personal information security protection mechanism, starting from enterprise recruitment and headhunter management, optimizing, and upgrading the entire recruitment ecosystem. During the recruitment process, job seekers typically need to provide complete resumes to recruiters, which poses a risk of information leakage. Therefore, 51job needs to optimize and upgrade a standardized and scientific customer privacy protection mechanism based on the existing protection mechanisms.

6.4. Enhance AI Adaptability and Provide Refined and Differentiated Services

To increase job seekers' engagement, 51job should continuously optimize platform functions, helping job seekers quickly and accurately match suitable positions. When users obtain job-related information beneficial to their career development, they will participate more actively, enhancing user retention. In the recruitment field, 51job should leverage big data feedback on user browsing and candidate information to achieve fast and effective matching.

The overall optimization approach should aim for user growth, promoting supply-demand matching, and enhancing weak social interactions among users. Social network recruitment platforms should reflect distinct personalized features in their services, setting corresponding personalized functions to provide refined services according to different user needs. For example, enhancing search navigation functions, which are crucial for obtaining job information, directly affecting the efficiency and quality of information acquisition. Additionally, setting up intelligent push services. 51job should develop information push services, reducing information overload and achieving precise pushes.By setting up user account information, data mining technology can push required information to users based on their interests, search behavior, and information filtering, helping them efficiently obtain valuable information. In smart SMS reminders, users can set reminder times and contacts according to their needs, and job information will be sent through the app at specified times, helping to solve the optimal timing for graduates to submit resumes.

Data Availability Statement: The data that support the findings of this study is available from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Filson, A., & Lewis, A. (2010). Cultural issues in implementing changes to new product development process in a small to medium sized enterprise (SME). *Journal of Engineering Design, 11*(2), 171–187. https://doi.org/10.1080/09544820010000948
2. Flanagan, J. C. (1954). The incident technique. *Psychological Bulletin, 51*(4), 327–358. https://doi.org/10.1037/h0061470
3. Fridlund, B., Henricson, M., & Mårtensson, J. (2017). Critical incident technique applied in nursing and healthcare sciences. *SOJ Nursing & Health Care, 3*(1), 1–5. https://doi.org/10.15226/2471-6529/3/1/00130

4. Gremler, D. D. (2004). The critical incident technique in service research. *Journal of Service Research, 7*(1), 65–89. https://doi.org/10.1177/1094670504266138

5. Grove, S. J., & Fisk, R. P. (1997). The impact of other customers on service experiences: A critical incident examination of "getting along". *Journal of Retailing, 73*(1), 63–85. https://doi.org/10.1016/S0022-4359(97)90015-4

6. Janssens, K., Gelderman, C. J., & Petersen, J. (2023). Critical incidents and supplier satisfaction-investigating tipping points in a seller's market. *The Journal of Business & Industrial Marketing, 38*(13), 154–165. https://doi.org/10.1108/JBIM-01-2022-0035

7. Lazear, E. P. (2006). Productivity and wages. *Business Economics, 41*(4), 23–31. https://doi.org/10.2145/20060403

8. Lee, J., Won, J. H., Lee, D., & Kwak, K. T. (2022). Customer shopping experience in a South Korea's government-run home shopping channel for small and medium enterprises based on critical incident technique and unsupervised machine learning analysis. *Telematics and Informatics, 68*, 101777. https://doi.org/10.1016/j.tele.2021.101777

9. McRobert, C. J., Hill, J. C., Tim, S., et al. (2018). A multi-modal recruitment strategy internet-mediated using multidisciplinary, international sample of clinicians to an online research study. *PLOS ONE, 13*(7), e0200184–e0200235. https://doi.org/10.1371/journal.pone.0200184

10. Nikandrou, I., & Galanaki, E. (2016). Boundaryless career and career outcomes: The mediating role of individual career management behaviours. *Zagreb International Review of Economics and Business, 19*(s1), 1–15. https://doi.org/10.1515/zireb-2016-0001

11. Sá, E., Farhangmehr, M., Pinho, J. C., & Dibb, S. (2022). Marketing decisions and implementation process for entrepreneurial and managerial practices: A critical incident technique approach. *Journal of Research in Marketing and Entrepreneurship, 24*(2), 221–241. https://doi.org/10.1108/JRME-02-2021-0022

12. Tai, X., Li, S., & Feldman, M. W. (2012). Can labor out-migration reduce firewood consumption by rural households in western mountainous China. *Chinese Journal of Population, Resources and Environment, 10*(2), 110–119. https://doi.org/10.1080/10042857.2012.10685072