New Recruitment Channels:
Exploration of College Student Employment in China

An Interactive Qualifying Project Proposal

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Abstract

As more people are gaining access to higher education, college students and recent graduates in China are having difficulties finding jobs that fit their specialization due to China's oversaturated job market. Working together with our sponsor Shanghai Youshi Talent Agency, this Interactive Qualifying Project aims to gauge the need for a platform that utilizes *guanxi* networks for job opportunities, and to assess the feasibility of career-related peer collaboration in Chinese universities. This project uses a combination of surveys, focus groups, interviews, and existing literature to explore the two topics. The results show that technologies and practices currently exist and that a new platform is not required. It was also found that peer collaboration can occur if students have a sense of peer belongingness brought out through social inclusion and empathy. The recommendation to the sponsor is not to pursue the creation of a new endorsement-based platform, but to focus on creating a platform for collaboration among weaker ties in the form of information sharing and support. Additionally, it is recommended to the sponsor that they research further into activities or events that utilize peer collaboration and foster peer belongingness.

Acknowledgements

Our team would like to thank Vincent Liu, the representative from Shanghai Youshi Talent Agency, for providing us the opportunity to explore these project ideas. We would also like to thank Professors Dr. Joseph Sarkis (Worcester Polytechnic Institute), Dr. Hansong Pu (Worcester Polytechnic Institute), and Dr. Yunhong Shen (Hangzhou Dianzi University) for advising the team on the project, and providing invaluable feedback and experience to our team as they have guided us these past eight weeks. Finally, we would like to thank the Hangzhou Dianzi University (HDU) student team for assisting us in data collection and brainstorming project ideas and solutions. It was a pleasure to work with everybody on this project, and we are grateful to our sponsor, advisors, and fellow teammates at HDU for providing us with this experience.

Executive Summary

Problem

As more students gain access to higher education, the demand for employees cannot meet the supply that is generated by this massive influx of college graduates. Hence, it becomes increasingly more difficult for college graduates from less privileged backgrounds to find job opportunities that match their skills and specializations in the oversaturated job market.

Goals

In order to address the problem of skills mismatch, the sponsor of this project—Shanghai Youshi Talent Agency—wanted to us to explore two areas:

1. People have been known to get jobs through *guanxi*, which are networks born out of trust, affection, reciprocation of favors, and image. The sponsor wanted to know whether there was a need for a new platform which could facilitate this channel of employment.
2. The sponsor also wanted to know whether career-related peer collaboration is possible to be implemented in universities as a solution to expand student employment opportunities.

Hence, the project aims to: (1) assess the need for a platform that uses *guanxi* networks; and (2) analyze the feasibility of career-related peer collaboration by looking at student willingness to help and to seek help from peers for career-related problems.

Methods

To accomplish those goals, the project uses a combination of surveys, focus groups, and interviews targeted at Chinese college students. Two surveys, a focus group, and interviews were conducted to explore the first topic, while a survey and the results from the previous methods were used to explore the second topic. We also incorporate existing literature to evaluate the consistency of our findings.

For data analysis of the first topic, we used pivot tables to determine correlations and trends for student opinions on the platform facilitating *guanxi* networks. For the data analysis of the second topic, we used factor analysis to confirm the barriers and enablers of peer collaboration, multiple linear regressions to find the factors that contribute to student willingness to seek and provide career-related help to peers, and another set of multiple linear regressions to

determine if peer collaboration can improve student career opportunities and reduce job skills mismatch.

Findings

To answer the first research question and address the first goal of the project, we found that:

- The three most common methods for student job acquisition are school recruitment, established recruitment platforms like Zhaopin and BossApp, and strong social ties such as family and close friend networks.
- Job acquisition using *guanxi* networks definitely works, however it gets increasingly harder to get jobs when using networks beyond the immediate social circle.
- Acquiring jobs through *guanxi* can result in further job skill mismatch as the connections of a social circle may not be in the same specialization as the student.
- College students are reluctant to post job search information online.

To address the second question, we found that:

- Social inclusion and empathy are the highest contributing factors to a student's willingness to seek and provide career-related help to peers. Other factors that contribute to this willingness include competition, initiative to lead, access to resources, and reciprocation of favors.
- Willingness to seek help from peers and willingness to provide help to peers both have high positive association with successful job acquisition that match the student specialization.
- Socioeconomic factors do not affect student perceived career success.

Conclusion and Recommendations

Based on the findings from our analysis, we recommend that Shanghai Youshi Talent Agency do the following:

- Do not pursue the idea of creating a new endorsement-based professional networking platform. Instead, pursue the idea of a platform for collaboration among weaker ties in the form of information sharing and support.

- Further research into the implementation of such a platform, as well as research how to create a comfortable online environment based on career-related empathy.
- Establish peer support groups in universities to improve career opportunities for students.
- Further research into how to foster career-related empathy between students, which would ultimately create an environment to support peer collaboration.

Authorship

William Hardwick, Andrew Hariyanto, Joshua Malcarne, and Dylan Phillips contributed diligently to different portions of this report. The executive summary was written by all of the noted individuals, whilst the entirety of §1 [Introduction] was written and revised by Joshua, William, and Dylan. §2 [Literature Review] was written and revised by William and Andrew, while §3 [Methodology] was written by Joshua and revised by Dylan. §4.1 [Data Analysis and Findings] was written by Dylan and revised by all individuals on the project team, and §4.2 [Data Analysis and Findings] and §4.3 [Data Analysis and Findings] were written and revised entirely by Andrew. §5.1 [Conclusions and Recommendations] was written by Joshua and revised by Andrew and Dylan, §5.2 [Conclusions and Recommendations] was written by Andrew and revised by Joshua, and §5.3 [Conclusions and Recommendations] was written by Joshua and revised by Andrew. The figures and data analyses were written and revised by all individuals, with Andrew and Dylan contributing the most in these categories. The final revision was completed by all individuals, and the artifacts noted in Appendix A through Appendix G were constructed by all team members at WPI and HDU over the course of the study. Small scale revisions were also made to each section by all individuals working on this paper. While it is difficult to track the authorship in great detail over our academic writing process, we believe this breakdown most accurately describes the different tasks each individual undertook when working to bring this report to fruition.

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Section 1. Introduction

In this section, we will provide the background to the problem this research addresses in §1.1, information about our sponsor's mission and goal in §1.2, and the structure of our approach and analysis in §1.3. Through this, we hope to inform the reader such that they have the necessary context to fully understand this paper's literature review (§2), methodology (§3), results and findings (§4), and conclusions and recommendations (§5).

1.1 Background

Since the 1990s, the Chinese economy has experienced a period of unprecedented economic growth. Coinciding with and contributing to this growth has been the expansion of the country's education sector (Mok, Wen & Dale, 2016). By increasing access to higher education, the Chinese government has supported an annual production of 7 million college graduates per year, a nearly 700% increase compared to the year 2000's graduating class of less than 1 million (Mok & Qian, 2018). However, while this massive rise in graduates has fueled the expansion and modernization of China's economy, it has also left many recent graduates with uncertain futures, especially in the case of graduates from less distinguished backgrounds (Mok, Wen & Dale, 2016).

In China's past, obtaining a university education provided a guaranteed path to employment. However, as access to higher education has expanded (massification), university graduates have found themselves competing in much larger applicant pools for the same job positions (Mok, Wen & Dale, 2016). In particular, the Chinese labor market is oversaturated with general academic degrees, while graduates with more technical degrees remain in high demand. (Mok & Qian, 2018). The effects of this oversaturation are severe. From the years 2008 to 2013, massification caused unemployment rates among college graduates to rise from 7.5% to 25.5% (Mok & Qian, 2018). Similarly, it was reported in the first quarter of 2022 that for each new college graduate, there were an average of only 0.71 new job openings on the market, the lowest ratio reported in the last four years (Xie, 2022). While this issue affects all graduates, it is especially harsh for those from less distinguished backgrounds. This situation occurs because more competitive positions often accept students from high-grade universities first, a large

portion of which come from the socio-economic elite (Wen, 2005). This inequity paired with skill-mismatch caused by the oversaturated market, has led to an increasing number of these young, estranged university graduates searching for employment in the growing urban informal sector, where wages and social protection are lower, but employment opportunities remain high (Mok & Qian, 2018). In order to help students succeed in their desired career field, there is thus a need to identify how to better facilitate student career development and professional networking in China.

1.2 Sponsor Mission and Goal

The sponsor of this project—a representative for Shanghai Youshi Talent Company—wanted to address the issue of better facilitating career development and networking in order to help college students in China. Shanghai Youshi Talent Company is a company that specializes in talent head hunting as well as human resource outsourcing in order to find appropriate applicants for companies that are hiring. While the sponsor usually works with companies that are hiring to find appropriate job applicants, this project was geared towards working with job applicants to find appropriate work. In order to achieve their goal, the sponsor wanted to us to explore two areas:

1. People have been known to get jobs through *guanxi*, which are networks born out of trust, affection, reciprocation of favors, and image. The sponsor wanted to know whether there was a need for a new platform which can get students jobs using endorsement-based professional networking to bridge *guanxi* networks.
2. The sponsor also wanted to know whether career-related peer collaboration is possible to be implemented in universities as a solution to expand a students' employment opportunities and career development.

This study will first address the possible need for and success of a new endorsement-based professional networking platform to better facilitate job hunting. Following this, our study will explore the feasibility and potential performance of peer collaboration aimed at helping college students improve with regards to professional networking and career development.

1.3 Our Approach

In accordance with the sponsor's mission, the purpose of this study is to identify how to better facilitate student career development and professional networking in China. The following research questions guided our investigation on the potential of a new platform for endorsement-based professional networking and job hunting:

(1) What tools and techniques do college students use to professionally network in China?

(2) What platform features would best facilitate college student *guanxi* networks in China?

After investigating the potential for a new endorsement-based professional networking platform, the following set of research questions guided our investigation on the feasibility and potential of peer collaboration for professional networking and career development.

(1) What channels do successful college students use to get jobs in China?

(2) Are college students in China willing to work together to get jobs?

In order to answer these research questions, our data collection and analysis will be aimed at the items discussed in §1.2: Chinese professional networking techniques, *guanxi*, the willingness of students to work together, and successful job hunting techniques. We will first conduct a literature review to identify past studies, details, and conclusions that are relevant to our study. Following this, we will utilize surveys, interviews, and focus groups to collect data for analysis, formulating conclusions, and making appropriate recommendations to our sponsor.

In this report, we explain prior work relating to our experiment, specifically pertaining to *guanxi*, established professional networking platforms, and peer collaboration in Chinese colleges in §2. In §3, we explain our methodology regarding data collection and display our methodology timeline. In §4, we explain our experimental goal and display the results of our experiments so far. §5 is a discussion of our conclusions, acknowledgements, and future work, and includes our recommendations to the sponsor of this study based on our data analysis and formulated conclusions.

Section 2. Related Work

In order to conduct our investigation, our team conducted a literature review on past studies and artifacts directly related to our methodology. In particular, this literature review covers the topics of *guanxi* in §2.1 and current Chinese recruitment platforms in §2.2, which are necessary for our analysis of the potential for a new professional networking platform. In addition, §2.3 provides information from our research on the current state of college career development centers and peer collaboration in China, which is crucial to our investigation of peer collaboration.

2.1 *Guanxi*

China's social constructs for professional networking are rooted in the customs of *guanxi*. At its most basic form, *guanxi* is a set of social customs which governs reciprocating favors for friends, family, and close acquaintances (Luo, 1997). Where American social capital is rooted in its emphasis on independent achievement (DiTomaso & Bian, 2018), *guanxi* embodies China's core collectivist values, in the sense that it promotes harmonious interconnection through industry (Buttery & Wang, 1999). The four main building blocks of guanxi are ganqing (affection and emotional bonding), renqing (reciprocal exchange of favors), xinren (interpersonal trust), and mianzi (image) (He, 2022).

Quality guanxi refers to an effort between two parties to foster a lasting, personal connection. Each party must have trust in their counterpart's honesty, reliability, and overall capability. In addition to a proven, mutual trust, there must be a sense of emotional understanding and connection affected by each party's loyalty and solidarity to the other. Finally, and perhaps the most prominent aspect to guanxi from an outsider's perspective, is its discernible exhibition of commitment through social and professional exchanges (Chen & Chen, 2004).

The U.S. counterpart to guanxi is social capital. In the simplest sense, social capital is an individual's personal connection to another individual, group, or network (DiTomaso & Bian, 2018, p. 6). These connections provide a foundation for the connected persons to achieve their goals. In the context of professional networking, this includes acquiring employment or extending their professional reach. Whether in China or the US, a potential employee's network connections make up an essential part of their overall appeal.

Despite *guanxi's* similarities to social capital, it is necessary to differentiate the two from each other. This study explores *guanxi* in-depth as an avenue for providing endorsements on a novel Chinese platform, and touches slightly upon *guanxi* when considering the feasibility of peer collaboration. In order to inform our data collection and analysis, it was thus imperative that we first lay a foundation for understanding *guanxi,* which will be referenced throughout the remainder of this report.

2.2 Content Analysis of Recruitment Platforms

China's recruitment websites can be compared to their American counterparts such as Indeed.com and LinkedIn. Some of the most popular online recruitment sites include Zhaopin.com, Zhipin.com, and 51job.com (JSC, 2022). One of the most notable differences between Zhaopin and Indeed can be seen on the Zhaopin front page (See Figure 1). Zhaopin's front page contains an assortment of featured companies and programs, which highlights Zhaopin's focus on providing a platform for these companies and services to advertise their availability to the general public. Clicking on one of these companies leads to that company's profile, where one can see all of the available job opportunities offered by the company. This information is also available on Indeed, however it is less of a focus then on Zhaopin, where company pages are available from the front page. Instead, Indeed chooses to highlight their search feature as well as individual job opportunities on their front page (Indeed, 2022).

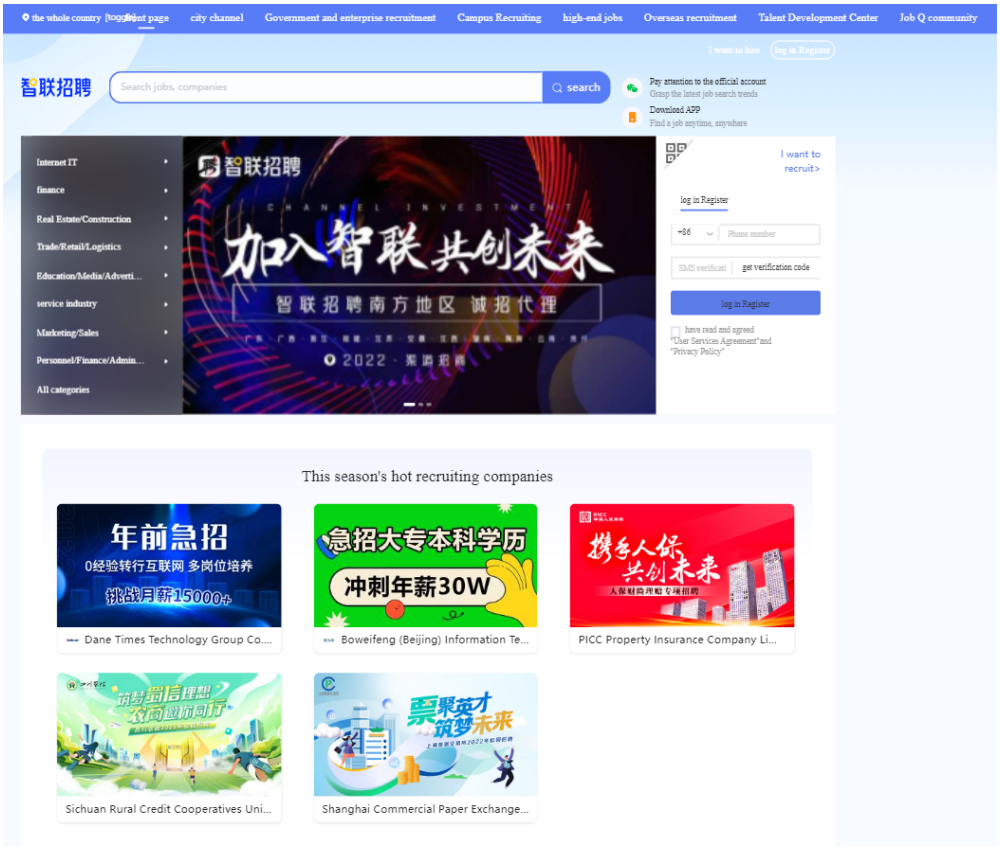

Figure 1. Zhaopin.com front page

Zhaopin offers a search feature that is very similar in design to that of Indeed, as well as other recruitment websites in both the US and China. The filters that are available on the Zhaopin Search function include, job category, company industry, location, salary requirement, academic requirement, work experience, type of job, company type, and company size. Indeed's search filters include date posted, remote, salary estimate, job type, (who is) encouraged to apply, location, company, experience level, and education. Each Zhaopin search page displays a list of job opportunities that fit with the requirements set by the user with a direct link to that job's page where an application can be submitted (See Figure 2 for an example).

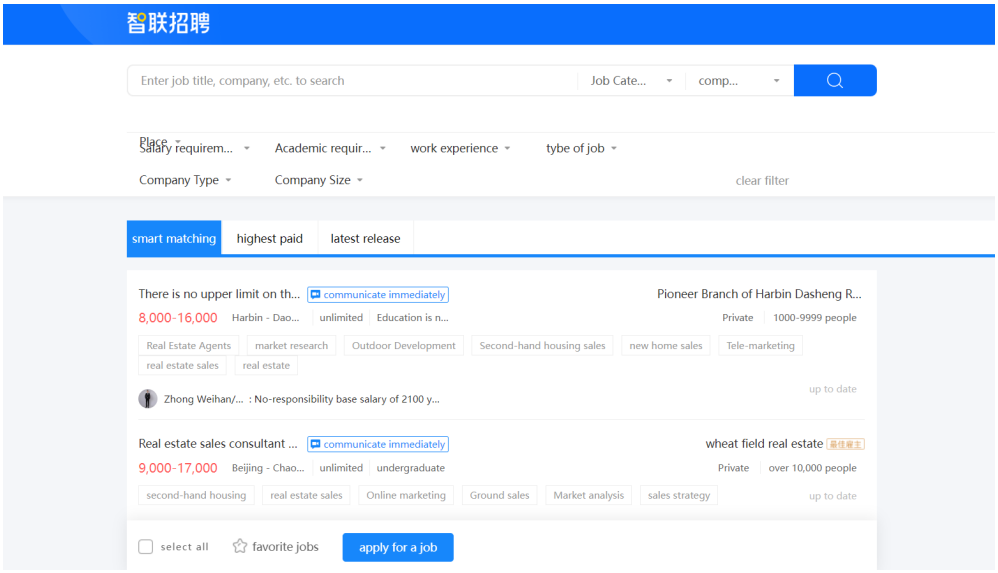

Figure 2. Zhaopin.com search page

The main difference between the Chinese job recruitment website and their American counterparts is that the Chinese platforms tend to cater towards companies looking to find suitable candidates in a manner that is similar to employment advertisements in a newspaper. Their search feature option promotes narrowing user options by company. American career service sites provide a more personal approach to refining user options. American sites filter job opportunities based on the candidate qualifications and personal needs.

One platform that exists in both China and the US in very similar states is LinkedIn. LinkedIn's services focus on professional networking rather than directly providing information on available job opportunities—although LinkedIn does provide this information. LinkedIn has less of a presence in China than in the US, where it is almost universally used to communicate within professional circles. However, LinkedIn's features could potentially be used to find jobs through user personal connections, which can support China's social practice of *guanxi*. LinkedIn allows users to connect with each other to create a record of user professional connections that could potentially be used for dissemination of information and providing links to available job opportunities. Figure 3 shows a unique feature of LinkedIn allowing users to filter their company and people search based on their degree of separation to the subject through their connections. This tool allows users to access not only their immediate networks (1st), but

the networks of the acquaintances they are connected to on LinkedIn (2nd and 3rd+). These findings inform our recommendations appearing later in this report.

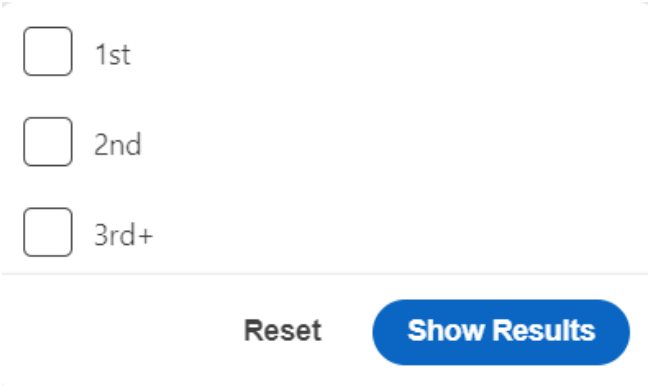

Figure 3. LinkedIn connections filter

2.3 College Career Development Centers & Peer Collaboration

A paper by Zhou, Li and Gao (2016) posits that the development of China's career counseling services, specifically focusing on the development of career services in Shanghai, is currently in its fourth stage. Career counseling in China is still in a comparatively early stage in its development (Zhang, Hu & Pope, 2002). Initially, in the Chinese socialist planned economy, the government took the responsibility of matching candidates with their professions without much consideration for the desires of candidates. This coincided with the severe lack of skilled candidates in the aftermath of the Cultural Revolution, which encouraged the government to expand this policy to attempt to mitigate the labor shortages.

China's career services during this period reflected this state planning, with the government mainly working to meet the labor demands of the Chinese economy. As the economy moved away from the planned model in the 80s and 90s, China's labor market began to take shape, and many of the features that are present in western countries began to appear. With this transition, and the ability for candidates to choose their career path, the need for career counseling on a more individual level emerged. This situation initially came in the form of vocational guidance, which mainly targeted recent college graduates to share information related to entry into the job market. This concept did turn job acquisition from a government mandate to

a personal choice, however the career services support offered was lacking in both content and scope.

To expand the scope of career counseling, services were extended to all college students instead of just graduates in the form of *career education*. This extension included career related classes, personal career guidance, and career related activities to college campuses, which allowed students greater freewill over their career paths. This growth coincided with the large increase in college enrollment that occurred during the first decade of the 21st century.

The final stage is still ongoing, and that is the introduction of career counseling not only to colleges, but to secondary schools, as well as the reform of the national college entrance examination system. A major obstacle to the expansion of career counseling services in China is the availability of career counseling professionals. As Zhou, Li and Gao put it, "A pressing problem is that the quality and quantity of existing career practitioners cannot meet the growing need for career counseling" (Zhou, Li & Gao, 2016).

A 2016 study by Wei, Akos, Jiang and Harbour examined the differences between university career services in the US and China through a case study of the University Career Services (UCS) at the University of North Carolina at Chapel Hill (UNC) and the Students Career Center (SCC) at the Wuhan University of Technology (WUT). This study shows minimal difference exists between the services provided by the two career centers. Notable differences include the relative scale of the two career centers, the resources allocated to them by the universities, as well as the level of participation by the students in the services offered.

The UCS at UNC employs a team of 20 staff members to serve the student population of 26,524, with an annual budget of $1.5 million. The SCC at WUT on the other hand, employs only 8 staff members to serve a student population twice the size, with 54,000 students, and an annual budget of $250,000. This works out to the Wuhan University of Technology spending an average of $5 per student annually on career counseling services, while the University of North Carolina at Chapel Hill spends over ten times that amount, at $57 per student annually. It is also reported that 37% of the students at UNC sign up for career counseling, while at WUT that number is only 1%. This could be explained by the fact that 67% of students at WUT take a course on career development each year, which could lower the need for students to seek extra career guidance (Wei, Akos, Jiang & Harbour, 2016). Overall, this case study example shows some of the differences in the support networks afforded to Chinese students and their American

counterparts, and may provide insight into why Chinese college students struggle to find suitable jobs.

Peer support can supplement official career services and represent a low-cost and effective method to enhance student career exploration if mediated by the student ability for career-related decision-making (Zhang & Huang, 2018, p. 494). Career exploration is also shown to achieve better person-job fit, as students can allocate enough time and resources to gauge career options (Hu et al., 2022, p. 609). Even though there is significant literature on peer support as a viable way to increase the success of student career outcomes, the barriers, enablers, and feasibility of facilitating peer support in universities—especially in China—requires further investigation.

Section 3. Methodology

This study was done in conjunction with a student team in China, at Hangzhou Dianzi University (HDU). The HDU team was representative of the study's key population—Chinese college students—and their proximity to the study's target demographic allowed them to execute methods directly. The purpose of this study is to identify how to better facilitate student career development and professional networking in China in accordance with our sponsor's mission. The following research questions guided our investigation on the potential of a new endorsement-based professional networking platform for job hunting:

(1) What tools and techniques do college students use to professionally network in China?

(2) What platform features would best facilitate college students' *guanxi* networks in China?

For the sponsor's second goal, the following set of research questions guided our investigation on the feasibility and potential of peer collaboration for professional networking and career development.

(1) Are college students in China willing to work together to get jobs?

(2) What do successful college students do to get jobs in China?

In this section, we discuss our methodology for data collection. We first describe our data collection techniques in §3.1. After, we overview the methodology for exploring a new endorsement-based professional networking platform in §3.2, followed by an overview of the methodology for exploring peer collaboration in §3.3, before closing with a discussion of the general limitations we encountered while collecting data in §3.4.

3.1 Data Collection Techniques

This study employed three primary methods for the purpose of data collection: surveys, interviews, and focus groups. Each of the methods was designed and translated jointly by the WPI and HDU teams, and all methods were delivered by the research team at HDU. This section will describe each of the data collection methods in depth, with the aim of providing an understanding of the fundamental mechanisms behind each one.

3.1.1 Surveys

This study employed surveys as a means of providing broad, blanket-level data for our analysis and conclusions. Each survey was constructed using questions from both the WPI and HDU teams. The survey instrument design and questions took into consideration recommendations from the project sponsor and advisors. Each survey was delivered on the Chinese platform “Questionnaire Star” with a side-by-side English and Chinese translation. Using this platform, survey data was collected across multiple different regions of China, from people belonging to different age groups and different levels of professional development. The survey questions

3.1.2 Focus Groups

This study employed focus groups as a means of providing narrower, more in-depth data for our analysis and conclusions. Focus group questions were designed and translated into Chinese by the WPI team, and then delivered on-site by the HDU team. These questions provided structure for the focus group whilst allowing free-form discussion between the participants. The focus groups were all performed on HDU’s campus, using students from HDU.

The HDU team recorded the focus groups using an iPhone camera and provided notes in both English and Chinese to supplement the provided video data.

3.1.3 Interviews

This study employed interviews as a means of providing data from individuals with professional experience for our analysis and conclusions. Interview questions were designed and translated into Chinese by the WPI and HDU teams, and then delivered virtually by the HDU team using WeChat. All nine interviews were performed in one-on-one format with students from different majors at HDU, and each student had professional experience in their respective field. The results of the interviews were captured textually and were translated into English by the HDU team.

3.2 Methodology - New Platform: “As Is” & “To Be”

Our initial focus when employing our data collection methods was to conceptualize a novel platform—aimed at college students—to assist in endorsement-based professional networking and job-finding. Accordingly, our framework for methods (Figure 4) included two phases: “As Is” and “To Be.” The “As Is” phase would be where we collect strategies about how college students currently network to find jobs, and the “To Be” phase would be where we conceptualize a platform—based on *guanxi* topics (see §2.1)—and present our solution to improving current networking strategies. Figure 4 provides a visual for our original methods workflow. In order to investigate the “As Is” and “To Be”, our data collection and methods delivery were thus designed in accordance with the aforementioned research questions:

(1) What tools and techniques do college students use to professionally network in China? - the “As Is” of our study

(2) What platform features would best facilitate college students’ *guanxi* networks in China? - the “To Be” of our study

After analyzing our findings for a new endorsement-based guanxi platform (§4.1), we discontinued our “As Is” and “To Be” methodology in favor of a methodology based on “Barriers” and “Enablers” (§3.3).

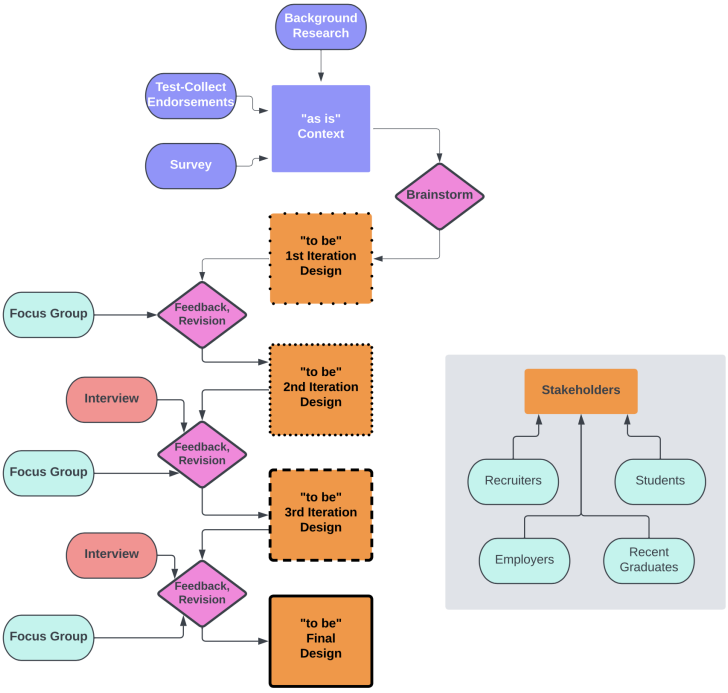

Figure 4. Original Methods Workflow

3.2.1 Surveys 1 & 2 - Broad Survey & Young Professionals Survey

The goal of Survey 1 - Broad Survey - was to collect data on current techniques for job search and giving/receiving referrals. The target group for this survey was college students and professionals early in their careers. The survey included a total of 23 questions on demographic information and current recruitment pipelines. These questions were designed in accordance with our research questions for this part of the study and provided the study with a foundation for understanding the current situation of HR and professional networking in China.

The goal of Survey 2 - Young Professionals Survey - was to collect further data on current techniques for job hunting and giving or receiving referrals. The target group for this survey was the same as Survey 1. The data collected in Survey 2 supplements the Survey 1 analysis. The survey included a total of 15 questions on demographic information and current recruiting pipelines, as well as job satisfaction. Similar to Survey 1, these questions were designed in accordance with the first part of the study. The results provide better understanding of the "As Is" of human resources and professional networking in China in addition to informing

the focus group and interview data acquisition activities. The full questions list can be found in Appendix A.1 and Appendix A.2.

3.2.2 Focus Group 1 - Student Focus Group

The goal of Focus Group 1 was to collect more detailed data on the "As Is" of human resources and professional networking in China, with the target group for this data collection being college students. In order to achieve this goal, Focus Group 1 was designed and structured to answer the following two sub-questions:

1. How do college students approach finding/getting a job?
2. How would college students use family/friends to find jobs/connect with employers?

The 30-minute structured discussion of Focus Group 1 provided the study with valuable data on the actions, techniques, and opinions of college students on job hunting and relative social conventions. The focus group structure can be seen in Appendix B and Appendix C. The full translation for the focus group notes are found in Appendix D.

3.2.3 One-On-One Interviews with College Students

The goal of the one-on-one interviews was to collect information to formulate the "To Be". The target audiences of the interviews were Chinese college students with professional experience, as well as other early-career professionals. To structure the interview, questions were based off the following three sub-questions:

1. What current recruitment strategies have participants used to find jobs?
2. What problems did participants face while trying to find jobs?
3. Can *guanxi* be utilized to better facilitate professional networking and job hunting?

The 30-minute structured interview provided the study with the data it needed to draw appropriate conclusions on the aforementioned "To Be", paired with the early literature review.

The interview structure can be found in Appendix E and Appendix F. The full interview notes are found in Appendix G.

3.3 Methodology - Peer Collaboration: “Barriers” and “Enablers”

Following our analysis of “As Is” and “To Be” for determining the potential of a new professional networking platform in China, the focus of our study shifted to our second overarching goal. This portion of our study’s data collection methods were intended to determine the feasibility and effectiveness of peer collaboration aimed at facilitating student career development and professional networking. Due to time limitations, we were only able to deliver a single overarching survey for data collection, Survey 3. Our data collection and analysis for this part of the study was guided by the following aforementioned research questions:

(1) Are college students in China willing to work together to get jobs?

(2) What do successful college students do to get jobs in China?

3.3.1 Survey 3 - Peer Collaboration Inquiry

The goal of Survey 3 - Peer Collaboration Inquiry - was to determine the willingness of students to work with peers, their confidence in knowledge related to networking and the career development process, and how self-confidence, economic background, and social status factor into group participation. This goal was accomplished by asking a series of eight questions relating to demographic information, followed by another 42 questions that asked participants to rate item statements according to a Likert-type scale. The full questions list can be found in Appendix A.3.

These statements were based on factors of student participation in peer collaboration. Each factor could either be a “barrier” or “enabler” depending on the score that the participant gives. A full list of antecedent factors (variables) and outcome factors (variables) used to design the survey are summarized in Table 1 and the more detailed question groupings can be seen in Appendix H. The statements were designed and translated by WPI in accordance with the research questions for this part of the study and delivered by HDU. The target audience of this survey was strictly college students, so respondents outside of the target age range were filtered

out of the analysis accordingly. This provided the study with sufficient data to develop a baseline understanding of the feasibility and sustainability of peer collaboration.

Factors	**Outcome Variables**
Access to resources Affection Competition with peers Empathy Initiative to lead collaborations Professional image Professional knowledge Reciprocation Social Inclusion Socioeconomic status Trust in peers Usefulness of collaboration	Willingness to get help Willingness to help Finding jobs quickly Finding jobs that fit student's specialization

Table 1. Factors and outcome variables for peer collaboration

3.4 Methods Limitations

Throughout the study, our team encountered several limitations related to complete the methods. These limitations include the Chinese-English language barrier, the WPI team not having direct access to the "Questionnaire Star" survey site, and the limited time our teams had to explore our topics of study (seven weeks). The Chinese-English language barrier was the most limiting factor, as translations were limited in scope and lost some important nuances. This was true of both translating survey, focus group, and interview questions into Chinese, as well as translating collected data into English. The language barrier also complicated communication between WPI and HDU to a certain extent. Time was the second most limiting factor with regards to methodology and data collection. In particular, our teams were shortest on time when focusing on the second topic of study, the potential of peer collaboration.

The WPI team was also unable to travel to the Hangzhou, China project center, and conducted the study remotely from Honolulu, HI. The remote WPI and on-site HDU teams worked diligently to overcome these limitations, meeting a total of 24 times (Appendix I) over the project proposal period and seven-week period of study to formulate methodology and questionnaires, translate data and deliveries, and work to overcome the short period of time with which we had to explore our research topics. Although we were able to mitigate these encountered limitations, they should be taken into consideration when viewing or using the data and analyses of this study.

Section 4. Results & Discussions

This section will cover our data analysis and findings for the methodologies described in §3. §4.1 is our discussion of the need for a novel *guanxi* platform, explored using the "As Is" and "To Be" methodology from §3.2. Following this, §4.2 is our discussion of the feasibility of peer collaboration, explored using the "Barriers" and "Enablers" methodology from §3.3. Each of these sections will include a deep analysis of the data and statistics collected via each survey, focus group, and interview delivered over the course of this study, including Survey 1 - Broad Survey (§4.1.1), Survey 2 - Young Professionals Survey (§4.1.2), Student Focus Group (§4.1.3), One-on-One Interviews with College Students (§4.1.4), and Survey 3 - Peer Collaboration Inquiry (§4.2). The demographic and descriptive statistics for the surveys are found in Appendix J.

4.1 Is there a Need for a Novel *Guanxi* Platform?

The first discussion we uncovered with our methods was whether or not college students had need for a novel endorsement-based professional networking platform using *guanxi*. Our proposition was that—after designing a conceptual platform and presenting it to students to refine through focus groups—students would find the platform to be a beneficial tool for their job-search. In order to prove the feasibility of such a platform, we needed to show two things: (1) That students would be willing and able to get jobs through acquaintances; and (2) That students would be willing to reciprocate and help their acquaintances get jobs. In this section, we discuss each data point which brought us to our final conclusion of the need for a novel *guanxi* platform.

4.1.1 Broad Survey

Our first survey occurred during the initial design phase for our platform. The broad survey polled Chinese residents from all different backgrounds and locations. Our analysis focuses on the different responses between the following age groups: 18–24 (college students), 25–35 (young professionals), and 35–60 (older professionals). As described in §3, the questions were primarily designed to understand current job-finding strategies, but a handful of questions were related to the *guanxi* practice of connecting to jobs through peers. Questions from the first survey used in our analysis for addressing the question guanxi and need for a platform appear in Table 2:

Q6	Which channels would you prioritize to find a job?
Q8	How have you found jobs in the past?
Q16	Would you share job opportunities with your peers?
Q17	Would you help a friend of a friend get a job?

Table 2. Broad Survey Relevant Questions to Novel *Guanxi* Platform Discussion

4.1.1.1 Preferred Channels

Tables 3 and 4 summarize average rankings of channels and are separated by age. We can see that school recruitment is the top priority recruitment channel for all age groups. However, 18–24 year-old respondents (who are still in college) are the only group with current full access to this resource. Other age groups have limited access through alumni channels and past teachers and connections—these results may also indicate previous access to these channels. There does exist significant data for respondents ages 18-24. On average, college-aged individuals prioritize getting job connections from acquaintances (average ranking of 3.03) second only to school recruitment (average ranking 2.35). This result supports the first requirement of our platform—students are interested in using their friend and family connections to help them get jobs.

Age	18-24	25-35	35-60	Grand Total
School Recruitment	2.35	2.67	2.70	2.57
ZhaoPin	3.72	2.95	3.39	3.34
Boss App	3.10	3.07	3.29	3.15
Company's Official Website	3.08	3.09	3.45	3.20
Social Media	4.36	4.04	4.05	4.15
WeChat	4.17	4.09	3.73	4.00
Acquaintance Introduce	3.03	3.91	2.86	3.31

Table 3. Average Rank Per Option, Separated by Age Group

Which job-search channel would you prioritize? Ranked by each Age Group

	18-24
1	School Recruitment
2	Acquaintance Introduce
3	Company's Official Website
4	Recruitment Apps
5	WeChat
6	Social Media

	25-35
1	School Recruitment
2	Recruitment Apps
3	Company's Official Website
4	Acquaintance Introduce
5	Social Media
6	WeChat

	35-60
1	School Recruitment
2	Acquaintance Introduce
3	Recruitment Apps
4	Company's Official Website
5	WeChat
6	Social Media

Table 4. College students and older respondents prioritize the acquaintance introduction strategy

Another interesting outcome of this analysis was how the acquaintance introduction strategy takes a generational gap with it ranking lower for 25–35 year-olds (see Table 4). Both college students and old professionals rank it as their second job-search priority, but young professionals (ages 25-35) rank it below both recruitment apps and applying on the company's official website. It should be noted that Table 4 only provides limited significance of results (essentially the differences of groups are not very statistically significant); these findings are further explored in a future methodology.

One limitation for this question—which channels would you prioritize to find a job—was caused by its format on the survey software. The options were presented to be ranked by priority, 1 being the highest priority and 8 being the lowest; however, not all options had to be given a rank. That means a data point could include, for example, four options ranked 1 through 4, with the remaining options left without a rank. Because we needed to create an average rank for each option, we needed to fill in all blanks with numbers. Table 5 shows three individual data points. The yellow cells represent the respondent's provided ranks for the listed option, and the red cells

indicate blanks which were filled in with the next highest number. We could not leave a blank square to represent a zero, because for our end metric—the average rank for each option—zero would translate to a higher priority than one. This strategy, while better than leaving it blank, still may have skewed our data, and that is something we recommend future studies to address. In addition, it should be noted that WeChat and Social Media may have been considered interchangeable, hence their similar rankings among all three age groups. This was an oversight in the survey design and should be considered in any future research.

School Recruitment	ZhaoPin	Company's Official Website	Boss App	Social Media	WeChat	Acquaintance Introduce	Other
1	5	2	5	5	3	4	5
4	4	1	4	4	2	3	4
1	4	2	4	4	4	3	4

Table 5. Blank Ranks Converted to Next Highest Number (in Red)

For question 8—pertaining to previously used job-search strategies—respondents had the same set of options as question 6, except now the format was to check all that apply. That means that for each option, we could simply convert selected cells to ones, leave unselected cells as zeros, then average the values for each option to find the percent of respondents who selected each. Again, we found the best mode of analysis was by age, this time understanding how job-search strategies differ between today's old professionals and college students. Table 6 displays those differences[1].

Q8	*How did you find your job?*						
Age	#	School Recruiting	Recruitment Apps	Company's Official Website	Social Media	WeChat	Acquaintance Introduce
18-24	100	0.25	0.27	0.18	0.07	0.10	0.32
25-35	84	0.35	0.55	0.36	0.19	0.14	0.29
35-60	66	0.35	0.32	0.18	0.06	0.15	0.38
Grand Total	**250**	**0.308**	**0.376**	**0.24**	**0.108**	**0.128**	**0.324**

Table 6. Many respondents use acquaintance introduction

[1] The "#" column displays the count of respondents for each age group

Looking first at the grand total row, we can see that 32.4% of all respondents have previously gotten a job from acquaintance introduction. Because the concepts of *guanxi* are considered traditional practice, better understood by older generations, it is not surprising to see that within the acquaintance introduction column, old professionals (ages 35–60) represent a relatively larger proportion, with 38% having gotten a job from acquaintance introduction. This result should be expected—older professionals have searched for jobs longer than the younger age groups. Older professionals have had more time to get introduced by an acquaintance in their career.

We could expect college students to have the least amount of time to get an acquaintance introduction. However, our college student respondents (18–24) have had slightly larger value with acquaintance recommendations than young professionals (25–35), represented by their 32% compared to the young professionals 29%. A one-tailed Z-test showed no statistical difference with a p-value of 0.3336. Thus, any proposition that we had of college students using acquaintance recommendations to be lower due to their shorter or non-existent job-search history, is not supported—given no statistically significant difference between the groups. This discrepancy could be due to peer-to-peer introduction, or a generational difference in how acquaintance introduction is understood. This lack of difference in acquaintance introduction between college students and young professionals is something that requires further study before a conclusion can be reached. It could provide insights into a lack of *guanxi* practices by today's young professionals—which is similar to the current students.

When asking about how individuals have gotten jobs in the past, the *guanxi* practice of acquaintance recommendation was the most commonly selected option. This result true for college students and older professionals as well. Combining these results with those from question 6, we understand that both college students and old professionals would prioritize the *guanxi* mechanism to find a job, and they have had experience with it in the past. Both of these conclusions would support the first part of this discussion's supposition, which is that students are interested in getting jobs through acquaintances.

4.1.1.2 Willingness to Share Job Connections

Question 16 relates to part two of our proposition, which asks if students are willing to provide job connections. The format for respondents to answer this question was a slider

response where the survey slide ranged from 0 to 100—100 is a resounding *yes*, and 0 was a resounding *no*. In Table 7, we can see the average slider response from each age group.

Age	#	Would you share job opportunities with peers? (no 0 to 100 yes)	Std Dev	Z-Score	p-value
18-24	72	75	20.10	1.26	0.90
25-35	81	72	22.03	1.01	0.84
35-60	66	82	19.08	1.66	0.95
Grand Total	**219**	**76**	**20.82**	**1.25**	**0.89**

Table 7. The results for the willingness to share job opportunities with peers question.

The average rating from each age group was quite high; however, given the high variability from respondent to respondent, the significance of these results is quite low—essentially we can assume that no significant difference exists between the groups on the response to this question. Table 8 shows a sample section of responses and the relative variability. There is significant randomness in this data to show that no significant pattern exists across groups.

ID	Would you share job opportunities with your peers? (no 0 to 100 yes)
115	100
117	85
139	100
142	75
144	35
160	100
165	20
175	84
176	50
177	74
180	72
184	52

Table 8. Large variance example of responses to question on sharing job opportunities

To get the p-values in Table 9, we used a null hypothesis for each group that the population mean score was less than or equal to 50—a neutral response or disagreement to the question. Then, the alternate hypothesis would be that the population mean is greater than

50—an agreement to the question. Because our standard deviations and resulting p-values are so high, we cannot confidently prove the alternate hypothesis, that for any age group, they would answer a resounding yes to this question, and share job opportunities with peers—it also shows that no differences exist across groups.

At first glance, the average rating for this question seems to show a resounding positive response and seems to support the idea that students would be willing to share job opportunities with their peers. However, the high p-value (> 0.5) from our linear regression suggests that our data does not provide significant results. We advise that further studies reformat the question to adhere to the Likert scale (i.e., ranking statements 1 through 5), and ideally, that they get more responses as well.

The final question pertaining to student's desire to use and reciprocate *guanxi* practices for professional networking was question 17. It had a question and a 0-to-100 slider response, where a higher the number meant a more positive response to the question. Table 9 shows the resulting averages for each age group.

Age	COUNT	Would you introduce a friend of a friend to a job? (no 0 to 100 yes)	Std Dev	Z-Score	p-value
18-24	72	57	24.25	0.27	0.61
25-35	81	63	21.21	0.62	0.73
35-60	66	72	18.83	1.18	0.88
Grand Total	**219**	**64**	**22.39**	**0.61**	**0.73**

Table 9. Insignificant, but positive correlation (higher average) between age and willingness to help.

Similar to question 16, the slider format provided high variability and insignificant results, as indicated by the extremely high p-values. While we were not able to form conclusions about whether or not an individual group agrees with the statement, we were able to see that there is a positive trend across age groups in their response to this question.

By creating a new column, called average age—shown in Table 10—we use a Pearson Product Moment Correlation Coefficient between the numeric age column and the question 17 response column. That correlation coefficient comes out to be 0.277, with a significance of 0.73.

ID	Age Group	Approx. Age	Would you introduce a friend of a friend to a job? (no 0 to 100 yes)
2	18-24	21	21
3	18-24	21	29
4	18-24	21	68
8	18-24	21	80
9	25-35	30	66
10	18-24	21	62
11	18-24	21	90
12	18-24	21	39
13	18-24	21	50

Table 10. Large variance due to 0-to-100 slider scale

Therefore, while the question did not provide significant results to support the notion that students would be willing to provide connections for friends of their friends—which would be crucial to a platform—we do see a pattern in results between age groups which suggests younger respondents are less willing than older respondents to practice the *guanxi* concept of reciprocation. That outcome is one point of analysis which was detrimental to our motivation for designing a platform.

This data does not provide significant results to answer whether or not students would be willing to provide job connections to their peers; we suggest further studies perform similar methods using the Likert-type scale survey to mitigate variance and complete a more rigorous statistical analysis.

4.1.1.3 Summary

In relation to answering whether or not there is a need for a novel *guanxi* platform, analysis of our first survey supports the following outcomes: (1) That students are willing to seek connections from their peers as a job-search strategy, but (2) it is unclear whether or not they are willing to provide others with connections.

This first method did, however, demonstrate the effectiveness of surveys. The large sample size, as well as their apparent thoughtfulness led us to believe that we could glean significant results from future surveys delivered via China's "Questionnaire Star" platform.

4.1.2 Young Professionals Survey

After witnessing the effectiveness of the broad survey, our WPI team worked closely with HDU to deliver a second survey, this time with questions more focused towards *guanxi* practices, and also more inclusive to young professionals. We opened the questions up to younger professionals—individuals from age 25 to 35—because we believed they were the group most capable of providing job connections for college students, since they are closest in age while still having the leverage to make such connections. This second survey ended up getting 565 responses, with respondents from 82 Chinese cities and more than 9 unique majors (Figures 11 and 12). Out of those 565 respondents, 103 were between 18 and 24 years old, 358 were between 25 and 35 years old, and 104 were between 36 and 39 years old (Figure 13). Their responses to the questions in Table 11 provided our analysis.

Q4	Which channels would you prefer to use when finding a job?
Q6	How many friends do you have that you think can help connect you to a job?
Q7	Who would you ask to help you find a job?
Q8	Select who you would be willing to write a letter of recommendation for?
Q9	Are you willing to publish a job search profile and let friends share it?

Table 11. Young Professionals Survey Relevant Questions to Novel Platform Discussion

4.1.2.1 Preferred Channels

Question 4 asked respondents which channels they would prefer to use when looking for a job. The format was to check all that apply. The mode of analysis we chose for this question is to compare it to results from the first survey, when respondents were asked which channels they have used before—slightly different from which they would prefer. Table 12 contains both sets of data for each age group.

	Age Group	# of Responses	School Recruitment	Recruitment Apps	Company's Official Website	WeChat	Acquaintance Introduction	Social Media
Which do you prefer?	18-24	103	57.28%	65.05%	46.60%	30.10%	55.34%	41.75%
	25-35	358	52.79%	50.56%	41.06%	50.28%	40.22%	61.17%
	36-39	104	53.85%	50.96%	36.54%	52.88%	45.19%	61.54%
	Grand Total	**565**	**53.81%**	**53.27%**	**41.24%**	**47.08%**	**43.89%**	**57.70%**
Which Have you used?	18-24	100	25.00%	27.00%	18.00%	10.00%	32.00%	7.00%
	25-35	84	34.52%	54.76%	35.71%	14.29%	28.57%	19.05%
	35-60	66	34.85%	31.82%	18.18%	15.15%	37.88%	6.06%
	Grand Total	**250**	**30.80%**	**37.60%**	**24.00%**	**12.80%**	**32.40%**	**10.80%**
Difference in proportions		**Z-Score**	6.0687	4.1357	4.7196	9.3752	3.0857	12.4605
		P-Val	<.00001	<.00001	<.00001	<.00001	0.002	<.00001

Table 12. Acquaintance introduction relatively less preference after more experience

Across the board, individuals think they would prefer each strategy more than they actually have used each strategy. We can see that acquaintance introduction actually ranks lower than all preferred options, except for using the company's official website. Additionally, when checking the significance of each difference in proportions, we can see that the highlighted cells at the bottom indicate the *guanxi* strategy of acquaintance introduction to show the least significant difference between preferred and used when looking at the grand totals across all age groups. Out of all the strategies, acquaintance introduction has the lowest ratio of preference to experience. In isolation, 43.9% preference and 32.4% experience is not entirely damaging to the acquaintance introduction strategy, but when comparing it with the same percentages for other strategies, acquaintance introduction is most indicative of the statement that respondents have used it and do not want to use it again.

4.1.2.2 Feasibility of Job Connections

Question 6 of the second survey asked survey-takers to select their best estimation for how many friends they have that would be able to connect them to a job. Table 13 shows the results from each age group, with higher proportions represented by darker shades of green:

Q6	*How many friends do you have that you think can help connect you to a job?*					
Age	Responses	10-20	20-30	30-40	40-50	50+
18-24	103	0.50	0.28	0.14	0.07	0.02
25-35	358	0.23	0.41	0.19	0.12	0.05
36-39	104	0.24	0.38	0.14	0.16	0.08
Grand Total	**565**	**0.28**	**0.38**	**0.17**	**0.12**	**0.05**

Table 13. Younger respondents have smaller connection network

The color pattern indicates a positive correlation between age and the number of friends who can provide job connections. This is backed up by a Pearson product-moment correlation coefficient of 0.154, indicating a small, positive linear correlation between the data. When considering that an individual expands their network throughout their career, this pattern is not shocking; however, it is important to consider the feasibility of our platform. 49.5% of respondents aged 18 to 24 only had 10 to 20 friends who could provide job connections. One solution for 18-to-24 year-olds to increase their outreach is to connect to young professionals, since 25-to-35 year old respondents represent the largest proportion for having between 20 and 30 friend connections.

A key limitation of this question was that there was no 0-10 option. This option would have been most important, as it would allow respondents to indicate if they have adequate resources in help from their friends. Based on this data's outcome of a negative correlation between age and usefulness of friend networks towards job-finding, we suggest further study be done to understand if college students today are willing to help each other connect to jobs.

4.1.2.3 Seeking vs. Providing Help

The feasibility of a novel peer-to-peer endorsement-based professional networking platform for students depends on the following questions: (1) who would students ask for help and (2) who would students be willing to help? Tables 14 and 15 display analysis of responses to those questions to related questions from the second survey. Each cell in the tables represents what proportion of respondents of that age range selected the above response. Darker green indicates higher proportions.

Q7	*Who would you ask to help you find a job?*								
Age	# of Responses	Family	Friends	Teachers	Friends of Friends	Classmates	Acquaintances	Strangers	Others
18-24	103	0.64	0.76	0.48	0.41	0.38	0.44	0.17	0.08
25-35	358	0.48	0.74	0.38	0.50	0.39	0.31	0.35	0.11
36-39	104	0.38	0.71	0.36	0.48	0.31	0.28	0.37	0.07
Grand Total	**565**	**0.49**	**0.74**	**0.39**	**0.48**	**0.37**	**0.33**	**0.32**	**0.10**

Table 14. Sample responses to groups of people who students would seek help for finding a job.

Q8	*Who would you be willing to write a letter of recommendation for?*							
Age	# of Responses	Family	Friends	Friends of Friends	Classmates	Acquaintances	Strangers	Others
18-24	103	0.82	0.80	0.09	0.37	0.39	0.01	0.01
25-35	358	0.70	0.77	0.04	0.32	0.30	0.00	0.00
36-39	104	0.75	0.72	0.05	0.23	0.34	0.00	0.00
Grand Total	**565**	**0.73**	**0.77**	**0.05**	**0.31**	**0.32**	**0.00**	**0.00**

Table 15. Sample responses to who the respondent would help with a letter of recommendation for a job.

Students—and all age ranges for that matter—were most likely to ask their friends for help when it comes to finding a job—even more likely than they were to ask their family. While it is lower than the proportion who would ask their immediate friends, 48% of respondents would still be willing to ask friends of friends for help. Conversely, from the second survey, only 5% of respondents selected that they would be willing to write a letter of recommendation for friends of friends. While students are willing to ask their friends or friends for help, they are not willing to reciprocate and provide help to friends of friends.

One limitation might have been the wording of the question, because the actual prompt was lengthy and specific[2], asking the respondent if they would be willing to write a letter of recommendation. The effort of writing a letter may have appeared less enticing, and in retrospect, we would have made the question just to isolate the respondent's willingness to help. We believe this mistake in wording caused the average response to be lower.

4.1.2.4 Willingness to Post Personal Profile

Question 9 from survey 2 covers both the *guanxi* concepts of image and reciprocation. Participants responded to the question with a slider, providing their rating for how much they

[2]Question 8 asked, "If someone applied to a job and asked for your endorsement, who would you be willing to write a letter of recommendation for?"

agree with the statement. As shown in Table 16, the overall standard deviation was 18.99, and the lowest p-value was 0.236. Because none of the results were close to the 0.05 or even 0.1 significance threshold, the outcomes of this method should be weighed lightly.

Age	# of Responses	9. Are you willing to publish your job search information in the circle of friends and let friends transmit?	Std Dev	Z-Score	P-Val
18-24	103	33.02	23.58	-0.720	0.236
25-35	358	42.88	16.99	-0.419	0.338
36-39	104	44.43	18.32	-0.304	0.381
Grand Total	**565**	**41.37**	**18.99**	**-0.455**	**0.325**

Table 16. College students less willing to post job search information

33% of 18-to-24 year-old respondents said they are willing to publish and share their job search information. Willingness to share and transmit your personal information is a key design feature of our professional networking platform because it combines the *guanxi* concepts of image and reciprocation. In addition to the fact that 33% of college-age students showed willingness to share, results from young professionals and old professionals were higher, at 42.9% and 44.4%. This shows potential for job information sharing on an online platform, despite results suggesting endorsement-based features would not perform as well.

4.1.2.5 Summary

From the second survey—which gathered most of its responses from young professionals—we learned that, when asked about job-search strategies, respondents have the weakest preference to experience ratio for acquaintance introduction, meaning the amount that respondents have used the strategy did not equate to them wanting to use it more, relative to other strategies. The troubling connection to that outcome is in the fact that respondents overall are also not willing to help friends of friends connect to jobs. Willingness to connect with friends of friends is the entire point of our platform—it is the ability to not only use your family and friends to provide job connections, but to expand your network and opportunities. Combine that with the fact that most 18-to-24 year-old respondents said they only had 10-20 friends to provide them job connections, and that they are less willing to share their professional profiles, and these

results all suggest that a novel endorsement-based platform would not be supported. However, while our findings suggest this, it should be noted that it was never directly asked whether a novel endorsement-based platform would be wanted or supported. This was a flaw in the survey design, and further study on this topic should ask such questions explicitly.

4.1.3 Student Focus Group

The focus group portion of this study was focused on recording the participant experiences and attitudes toward finding jobs through their personal connections. There were six participants between the ages of 20 and 22. All participants had work experience, including part-time work in the service industry and professional internships. Three of the six participants said that they had found a job through the use of a personal connection. This focus group was conducted through our team at Hangzhou Dianzi University with their notes on the discussion provided by them (See Appendix D).

A recurring point throughout the discussion was the feeling that using connections to facilitate recruitment has its drawbacks. The most notable of these that was brought up is the issue of finding a suitable job that matches the candidate's desired field and position, as one's connections may not be within a compatible field. It was also agreed that using interpersonal relationships to find jobs may have a negative effect on these relationships—especially if the job is unsatisfactory. Alternatively, one may feel pressured to accept an unsatisfactory job due to a personal relationship. There also exists the risk of harm to the recommender if the candidate is found to be unsatisfactory to the employer, as such a recommendation may tarnish the image of the recommender.

The opinion that finding jobs through personal connections was not the ideal channel to find a job, and should not be prioritized, was shared among all six of the participants. The participants felt that more efficient recruitment channels were available, and that working on one's individual skills and applying directly to desired positions without an intermediary is a more effective way to acquire more fitting job matches.

4.1.4 One-on-One Interviews with College Students

Our one-on-one interviews focused on recording participant opinions and experiences in acquiring professional employment, and the potential role of *guanxi* for employment acquisition.

There were nine one-on-one surveys total, all between the ages of 21 and 23. When asked how the participants went about finding employment, six stated that they utilized school resources, five stated that they had applied online through recruiting apps or the company's website, and three used referrals from close friends and family. All participants had professional work experience, including internships and co-ops in their respective industries. These interviews were conducted by the HDU team, with translations of the discussion provided by them (See Appendix G).

The opinion that *guanxi* is an acceptable form of finding a job so long as it is not excessive (such as placing an individual in a position far beyond their capabilities) was consistent across the interviews. However, while seven of the nine participants said they would be fine either giving or receiving *guanxi*, it was universally agreed that *guanxi* was to be shared between family, close friends, and teachers. Three participants also cited that the job would need to be a suitable fit to the *guanxi* recipient.

The conclusion that can be drawn from this data is that finding jobs through personal connections (using *guanxi*) is not the ideal channel to find a job, and more efficient channels are available. The participants felt that finding jobs using *guanxi* was to be only between family and close connections. *Guanxi* also had the potential to lead to a skill mismatch if not handled carefully. While this data should be considered carefully due to the small sample size of interviews, analysis of our surveys, focus groups, and literature review further supports finding jobs through personal connections (using *guanxi*) is not ideal.

4.2 Results Concerning Career-Related Peer Collaboration

To answer the research question regarding peer collaboration, we utilize the results from the third survey. This section will evaluate the barriers and enablers for peer collaboration and analyze their effects on student willingness to collaborate with other peers in career-related activities. It will then also determine whether the willingness to collaborate—both in supporting and being supported in job searches—leads to success in job acquisition. We detail the results in the following subsections which include conducting confirmatory factor analysis on results of survey 3, analyzing factors that make career-related peer collaboration possible, and finding factors that could also result in successful job hunting.

4.2.1 Factor Analysis Results

Before conducting the survey, we created questions (items) for factors that we determined from our previous methods and existing literature as could be seen in Appendix H. Most factors had 2 to 4 questions (items). The only factor with more items was 'Willingness to Get Help" with eight items. We conducted a factor analysis in order to confirm whether the questions we asked actually fit each factor (see Appendix K for full factor analysis). The results show that each of the questions we asked were correctly categorized, and each category's reliability score, measured by Cronbach's alpha statistics, is shown in Table 17.

Factor	**Cronbach's Alpha**
Access to resources	0.834
Affection	0.782
Competition	N/A
Empathy	0.799
Professional image	0.762
Social Inclusion	0.799
Initiative to lead	0.824
Professional knowledge	0.677
Reciprocation	0.700
Socioeconomic status	0.769
Trust peers	0.722
Usefulness	N/A
Willingness to get help	0.900
Willingness to help	0.765
Found Job Quickly	N/A
Found Fitting Job	N/A

Table 17. Cronbach's Alpha score for reliability of each factor

An acceptable Cronbach's alpha can be as low >0.6 (Taber, 2018), and a higher score suggests that the questions within each factor have a higher internal consistency (note that some references recommend greater than 0.7). The only factors that do not have a Cronbach's alpha score are "competition", "usefulness", "found job quickly", and "found fitting job". The reason is these factors consist of only one question (item), whereas Cronbach's alpha scores are only applicable to factors with at least two questions. Each of the factors do not require multiple questions as their question was phrased in a direct and complete way.

From the factor analysis and Cronbach's alpha scores, we can confirm that the questions we created fit their respective factors. The dependent variables to measure the viability of peer-to-peer support consist of the factors "willingness to get help" and "willingness to help", while the dependent variables to measure success in job acquisitions are "found job quickly" and "found fitting job". The other factors and demographic data will be used as independent variables.

4.2.2 Factors in Career-Related Peer Collaboration

Once factor analysis validated the categories, we assessed the correlation between each category with the dependent variables "willingness to get help" and "willingness to help" for career-related peer support. We used a multiple linear regression to assess each antecedent factor.

In Table 18 we see the factors that affect a student's willingness to seek career-related help from peers are social inclusion, empathy, competition, initiative to lead, reciprocation, and access to resources at a < 0.05 significance level. All factors have a positive relationship with one's willingness to seek help from peers.

The result of this finding suggests that the relationship among peers influences their willingness to seek career-related help from each other. These two factors have the highest standardized beta coefficients, which shows that they have the most impact on willingness to seek career-related help. The factors social inclusion and empathy are two measures for the strength of relationships among peers. Peers that are in similar circumstances and have empathy for each other have a higher sense of peer belongingness, and thus increase their willingness to seek career help from one another. This inference is consistent with a study conducted in an American cultural context, where peer belongingness helps with one's career decision-making as there is support from peers (Slaten & Baskin, 2014, p. 70).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	1.058	.171		6.200	<.001	.722	1.394
	AccessToResources	.097	.047	.139	2.078	.039	.005	.190
	Affection	.083	.046	.113	1.815	.071	-.007	.173
	Competition	.052	.023	.091	2.238	.026	.006	.097
	Empathy	.095	.041	.140	2.340	.020	.015	.175
	InitiativeToLead	.087	.040	.133	2.177	.030	.008	.166
	ProfessionalImage	.004	.035	.006	.108	.914	-.065	.072
	ProfessionalKnowledge	-.048	.033	-.041	-1.462	.145	-.114	.017
	Reciprocation	.071	.034	.106	2.115	.035	.005	.137
	SocialInclusion	.131	.043	.192	3.047	.003	.046	.215
	SocioeconomicStatus	-.005	.036	-.008	-.131	.896	-.075	.065
	TrustPeers	.032	.045	.041	.722	.471	-.056	.121
	Usefulness	.035	.024	.056	1.422	.156	-.013	.083
	ParentsHighestEducationalStatus	.014	.022	.017	.629	.530	-.030	.058
	AnnualHouseholdIncomeLevel	.026	.030	.024	.867	.387	-.033	.085
	Male	.010	.038	.007	.264	.792	-.065	.085
	BusEcon	-.007	.051	-.005	-.136	.892	-.108	.094
	STEM	.087	.061	.047	1.411	.159	-.034	.208
	HumArts	-.057	.052	-.038	-1.092	.276	-.159	.046

a. Dependent Variable: WillingnessToGetHelp

Table 18. Multiple linear regression of factors contributing to student's willingness to get career-related help from peers

Another interesting result is that more competition leads to more willingness to get help, which is consistent with existing literature as students have to gain as many advantages as possible to compete in a saturated job market (Mok, 2016, p. 64). However, the standardized beta coefficient for competition is relatively low when compared to other factors. The relationship between competition and willingness to get help is complemented by the relationship between one initiative to lead career-related events with student willingness to seek help. Initiative to lead pertains to motivation to start career-related events either for their own benefits or to help others. Hence, students with a high motivation to lead career-related events also show motivation to gain competitive advantages, which is suggested by the positive correlation between one's initiative to lead and willingness to seek peer help. The standardized beta score is also relatively high for initiative, which shows that it has a high relative impact on willingness to seek help.

Reciprocation is suggested to have a positive relationship with willingness to seek help, which is expected since reciprocation is a core component of *guanxi*. Another interesting finding

is that the other three components of *guanxi* (trust, affection, and image) do not have a significant correlation with willingness to seek career-related help.

Lastly, access to resources leads to an increase in willingness to seek help. The standardized beta coefficient for access to resources is relatively high, which means that it affects willingness to seek help relatively more than other factors. Current literature supports this suggestion as students with less resources like time and exposure to job opportunities will spend less time participating in career-related activities (Hu et al., 2022, p. 609).

From Table 19, empathy seems to be the most significant factor with a significance level of < 0.001. Initiative to lead, social inclusion, and competition are other factors that are significant to the < 0.05 level. These factors all have a positive correlation with a student's willingness to give career-related help.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.165	.246		.673	.502	-.318	.649
	AccessToResources	.091	.067	.092	1.352	.177	-.042	.224
	Affection	.029	.066	.028	.448	.655	-.100	.159
	Competition	.072	.033	.089	2.153	.032	.006	.137
	Empathy	.197	.058	.206	3.373	<.001	.082	.312
	InitiativeToLead	.157	.058	.170	2.724	.007	.044	.271
	ProfessionalImage	.056	.050	.063	1.114	.266	-.043	.154
	ProfessionalKnowledge	-.017	.048	-.010	-.359	.720	-.111	.077
	Reciprocation	.049	.048	.051	1.006	.315	-.047	.144
	SocialInclusion	.137	.062	.142	2.218	.027	.015	.258
	SocioeconomicStatus	.031	.051	.036	.607	.544	-.070	.132
	TrustPeers	.083	.065	.074	1.293	.197	-.044	.211
	Usefulness	.046	.035	.052	1.305	.193	-.023	.115
	ParentsHighestEducationalStatus	-.001	.032	-.001	-.018	.986	-.064	.063
	AnnualHouseholdIncomeLevel	.025	.043	.017	.591	.555	-.059	.110
	Male	.035	.055	.018	.638	.524	-.073	.142
	BusEcon	-.025	.074	-.012	-.339	.735	-.171	.120
	STEM	-.061	.088	-.023	-.694	.488	-.236	.113
	HumArts	-.077	.075	-.037	-1.032	.303	-.224	.070

a. Dependent Variable: WillingnessToHelp

Table 19. Multiple linear regression of factors contributing to student's willingness to give career-related help to peers

Like the results for willingness to seek help as the dependent variable, empathy and social inclusion both have significant effects on a student's willingness to help their peers. These

two factors also have stronger standardized beta coefficients compared to the other factors. Since peer support as a result of empathy and social inclusion seem to have a relationship with both willingness to seek help and willingness to get help, the analysis might suggest that there might be a reciprocation of favors in the form of career help for social groups with a high degree of inclusion and empathy.

A positive relationship between competition and willingness to help peers was a surprising result as existing literature shows that there are high levels of competition in the job market (Mok, 2016, p. 64). This might be attributed to the reciprocation as those that get help return the favor and help others. However, the standardized beta coefficient is weak compared to other significant factors, which means that it does not have that strong of an effect as other factors. Lastly, initiative to lead career-related events positively correlates with willingness to help with the second highest standardized beta score, which is understandable because an initiative to lead is in a way being willing to help. Both the significance and the standardized beta coefficient of this initiative is stronger for willingness to help rather than willingness to seek help possibly because those that can lead these activities have more confidence in providing help to others.

4.3 Factors Relating to Success in Job Search

The last discussion in this study is what college students do to find success in acquiring jobs. This study measures successful job acquisition through student perceived success in acquiring fitting jobs relatively quickly. Using data from surveys and focus groups, we will attempt to uncover the enablers of success to find jobs quickly that also match one's specialization.

4.3.1 Willingness to Collaborate with Peers

To further explore what factors affect job acquisition success, we used the data from the survey and multiple linear regressions from §4.2. Tables 20 and 21 provide multiple linear regression results for job search success dependent variables in relation to socioeconomic factors (which are deemed controls in this model) as well as willingness to collaborate with peers (independent factors/variables for this study).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.036	.347		.105	.917	-.647	.720
	WillingnessToGetHelp	.640	.122	.370	5.268	<.001	.401	.880
	WillingnessToHelp	.475	.086	.388	5.516	<.001	.305	.644
	ParentsHighestEducationalStatus	.019	.056	.014	.340	.734	-.092	.130
	AnnualHouseholdIncomeLevel	-.093	.074	-.051	-1.255	.211	-.240	.053
	Male	.148	.096	.063	1.540	.125	-.041	.337
	BusEcon	-.235	.127	-.093	-1.845	.066	-.485	.016
	STEM	.171	.153	.053	1.120	.264	-.130	.472
	HumArts	-.087	.130	-.034	-.670	.503	-.342	.168

a. Dependent Variable: FoundFittingJob

Table 20. Socioeconomic factors and willingness to collaborate with peers in relation to finding jobs that match skills

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-.360	.374		-.962	.337	-1.095	.376
	WillingnessToGetHelp	.827	.131	.447	6.323	<.001	.570	1.085
	WillingnessToHelp	.429	.093	.328	4.632	<.001	.247	.611
	ParentsHighestEducationalStatus	-.040	.061	-.027	-.655	.513	-.159	.080
	AnnualHouseholdIncomeLevel	-.077	.080	-.039	-.963	.336	-.235	.081
	Male	.021	.103	.008	.204	.838	-.182	.224
	BusEcon	-.112	.137	-.041	-.816	.415	-.382	.158
	STEM	.044	.165	.013	.267	.790	-.280	.368
	HumArts	-.074	.140	-.027	-.532	.595	-.349	.200

a. Dependent Variable: FoundJobQuickly

Table 21. Socioeconomic factors and willingness to collaborate with peers in relation to finding jobs quickly

In both Table 20 and Table 21, the factors with a < 0.001 significance are willingness to help and willingness to get help. The standard beta coefficients also show that there is a very strong positive relationship between finding jobs that match one's skills and their willingness to collaborate with other peers in career-related activities compared to the other factors. Furthermore, existing literature shows that peer support increases the effectiveness of career exploration (Zhang & Huang, 2018, p. 494), which enhances perceived job-fit in students' careers (Hu et al., 2022, p. 609). Hence, having willingness to collaborate with peers will lead to

better career exploration and success mediated by peer support and collaboration. Figure 5 below provides a model based on our findings for achieving success in job acquisition. The results combine the survey and existing literature findings.

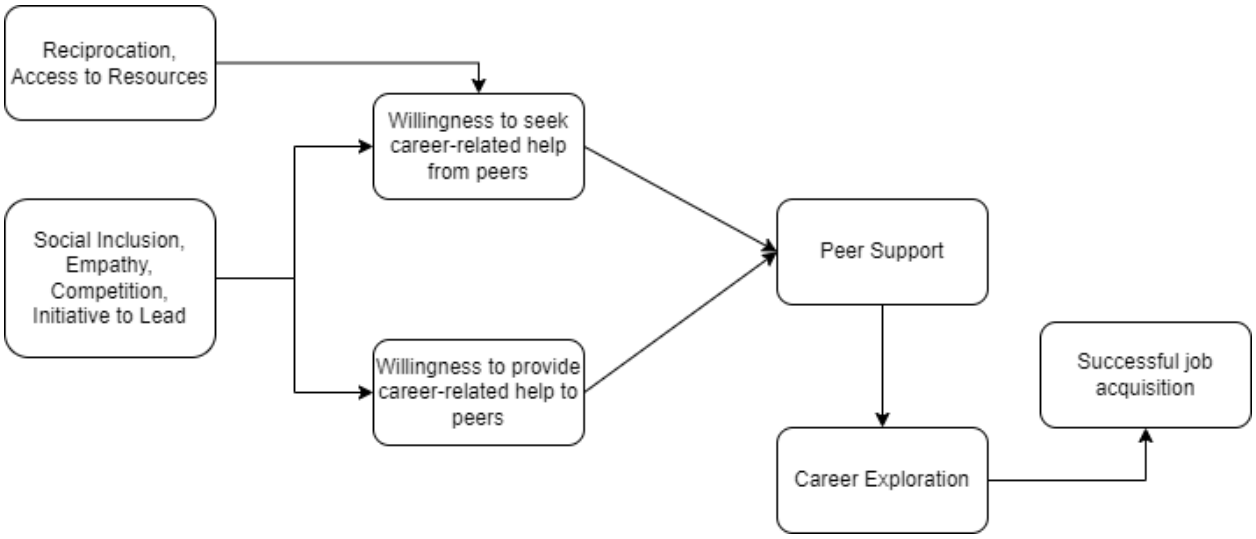

Figure 5. Model for achieving success in job acquisition

4.3.2 Socioeconomic Factors in Career Success

Based on the third survey results in Tables 20 and 21, a surprising result was that none of the socioeconomic factors such as parent's highest educational status, annual household income, or gender have a strong significance with relation to finding fitting jobs quickly. This is likely due to the idea of meritocracy being highly prevalent in China, and that there was little association between meritocratic beliefs and socioeconomic factors (Hu et al., 2020, p. 9). Meritocratic beliefs are also present in our focus group and interview results as the participants kept referring to personal competency as the driving factor for their success, which may affect their perception of potential obstacles due to their socioeconomic situations. However, other literature shows that socioeconomic factors can still affect students' career outcomes, even though the student may not realize it due to their meritocratic beliefs (Hu et al., 2022, p. 609). Hence, prevalent meritocratic beliefs might explain why there does not seem to be any significance between socioeconomic factors and perceived student career success. Clearly, more examination on this issue is required and whether college education puts respondents on relatively equal socio-economic levels.

Section 5. Conclusions and Recommendations

In this section, we discuss our summarized findings, conclusions, and recommendations for the sponsor based on our data analysis and literature review. We begin with a summary of our findings for each of the methodologies and corresponding research questions: the potential of a new networking platform using the "As Is" and "To Be" methodology in §5.1 and the feasibility of peer collaboration using the "Barriers" and "Enablers" methodology in §5.2. Following this, we give our team's recommendations to the sponsor in §5.3 before concluding the paper with §5.4.

5.1 Potential of a New Professional Networking Platform

Through our analysis of data collected using this study's "As Is" and "To Be" methodology, we aimed to answer the following research questions in order to assess the need and possibility for a new endorsement-based professional networking platform:

(1) What tools and techniques do college students use to professionally network in China?

(2) What platform features would best facilitate college students' *guanxi* networks in China?

Based on our findings, the creation and establishment of a new endorsement-based professional networking platform has its limitations. When exploring the possibility of creating a networking platform based upon the premise of giving and receiving *guanxi*, our analysis supports that students are not comfortable with using such a platform for the following reasons:

1. Students are not comfortable posting information about their job search and opportunities to public spaces
2. Students find personal channels as a more comfortable means of giving and receiving *guanxi*, as connections beyond their immediate circle as much more difficult
3. Students worry that asking for job connections could hurt their relationships with whomever they are asking
4. Students believe that improving technical skills is more important than networking

This analysis is further backed by previous studies. According to our literature review, the use of *guanxi* to acquire jobs does work, however the complex mechanics behind it drive the outcome of job acquisition. Strong ties like immediate family are more effective in getting jobs quickly, though this limits *guanxi* to an individual's immediate social circle and might contribute to skill mismatch if the job does not match one's specialization (Bian, 1997, p. 366).

In contrast, weaker ties like peers and friends of friends do not have the same level of guarantee as strong ties in job acquisition, but job information gathering through weaker ties is more effective, which acts as a resource for job applicants to find jobs that match their skills (Wang and Seifert, 2017, p. 514). Because the difficulty in securing a job through *guanxi* after the immediate social circle becomes too difficult, the platform we envisioned should not work as an endorsement platform, but rather it should act as a platform for collaboration among weaker ties. This would harness the aforementioned benefit of weaker ties in the form of collaboration and information sharing. In this regard, our platform could still theoretically work if the students are comfortable with such an environment.

Addressing the first research question, when determining what tools and techniques college students use to professionally network in China, our data suggested that the most common methods are via school recruitment and resources, established recruiter and networking websites, and through close social ties such as family, friends, and teachers. This finding has remained consistent throughout our analysis of the potential of a new professional networking platform. However, while valuable to understanding the state of professional networking and recruiting in China, this conclusion did not have a significant impact on our conclusion regarding a new platform. Because of our conclusions regarding the limitations of a new platform, at the request of our sponsor we shifted our research to the second focus of this study: the feasibility of peer collaboration for facilitating students' professional networking and career development.

5.2 Feasibility of Peer Collaboration

Through our analysis of data collected using this study's "Barriers" and "Enablers" methodology, we aimed to answer the following research questions in order to assess the feasibility of peer collaboration for facilitating professional networking and career development:

(1) Are college students in China willing to work together to get jobs?

(2) What do successful college students do to get jobs in China?

Based on our findings, peer collaboration to facilitate student networking and career development is feasible given the correct social conditions. In accordance with this, we present a model (see Figure 5) where the motivations behind willingness for peer collaboration can affect the career outcomes for students. For willingness to seek career-related help, students require a comfortable environment where peer belongingness can thrive, which is fostered through social inclusion and empathy.

This environment could also be the result of healthy competition facilitated by reciprocation of career-related favors like exchanging job information and opportunities. For willingness to provide career-related help, the same factors of peer belongingness and initiative are needed. This peer collaboration might also be the result of reciprocating favors where the ones who help have been helped before.

More research is needed in this area, however, as it is an inference. Hence, the factors of social inclusion, empathy, competition, initiative, reciprocation, and access to resources are needed for students to willingly collaborate with each other. Therefore, we recommend that universities create opportunities for students to improve career-related empathy for one another, which will create an environment necessary for peer support.

Previous literature shows that peer support increases a students' career exploration, which is shown to improve one's ability to find jobs that match their specialization (Hu et al., 2022, p. 609). Hence, this supports the idea that having the willingness to collaborate with others leads to peer support, which then leads to success in students' careers. While our findings show that socioeconomic factors do not significantly influence the perceived success of students' career outcomes, evidence from other literature shows that prevalent meritocratic beliefs may influence how students view their socioeconomic situations (Hu et al., 2022, p. 609; Hu et al., 2020, p. 9). Hence, further research must be done in this area to see the effect of socioeconomic factors on students' career outcomes using different measures for success. Regardless, our findings show that students who are willing to collaborate with peers gain a higher chance of success in career outcomes, answering the last research question.

5.3 Sponsor Recommendations and Future Work

Based on the findings and analyses of this study, **our team recommends** that the sponsor does not pursue the idea of developing an endorsement-based professional networking platform

based on *guanxi*. Instead, we recommend that the sponsor pursues the idea of a platform for collaboration among weaker ties in the form of information sharing and support.

The behaviors of survey participants in the second survey support this conclusion, as many would like to share information, but very few want to give endorsements for people outside of their immediate social circle. The potential for such a platform is further supported by our team's study of peer support, which shows that students are willing to support their peers in a comfortable environment where career-related empathy has been fostered. Future work in this area could include the implementation of such a platform, as well as further research into how to create a comfortable online environment based on career-related empathy.

In addition to this platform**, our team recommends** that the sponsor continue to explore the potential of peer collaboration to facilitate student networking and career development. Establishing peer collaboration systems such as peer support groups or junior-senior career development pairings, for example, is both feasible and likely to have beneficial returns given the right environment.

Future work in this area could include the experimental implementation and study of such groups, as well as further research into how to foster career-related empathy between students, which would ultimately create an environment necessary for peer collaboration. We believe that these two directives would be the most effective use of our sponsor’s time and efforts.

5.4 Conclusion

In order to explore ways of helping Chinese college students find jobs that match their specialization, the team (1) examined the prospect of utilizing the prevalent concept of *guanxi* in an endorsement-based professional networking platform and (2) explored the barriers and enablers of career-related peer collaboration. Using surveys, interviews, and a focus group, we determined two general findings which are (1) students do not find the idea of an endorsement-based networking platform comfortable to use and (2) students will be comfortable participating in peer collaboration if they have a sense of peer belongingness brought about by empathy and social inclusion.

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Appendix A: Survey Questions

A.1: Broad Survey

Survey #1: Broad Survey			
#	Question	Format	Options
1	What is your gender?	Select one	Male, Female
2	What is your age?	Select one	18-24, 25-35, 36-60
3	What is your current employment status?	Select one	Unemployed (not a Student), Student (no work experience), Part-Time Employee, Intern, Full-Time Employee, More than 10 years of work experience, Other
4	How difficult do you think it is to find a suitable job right now?	Slider	0 to 100
5	Do you know of any channels to find a job right now?	Check all that apply	School Recruitment, Recruitment Apps, Company's Official Website, WeChat, Acquaintance Introduction, Social Media, Other
6	Which channel would you prioritize to find a job?	Rank	School Recruitment, Recruitment Apps, Company's Official Website, WeChat, Acquaintance Introduction, Social Media, Other
7	How long do you expect it to take you to find a job?	Select one	Within three days, About a week, About two weeks, Within a month, About one to two months, More than two months, N/A
8	How did you find your job?	Check all that apply	School Recruitment, Recruitment Apps, Company's Official Website, WeChat, Acquaintance Introduction, Social Media, Other
9	Why is school recruitment a good strategy?	Check all that apply	More targeted, Little competitive pressure, Self-interest and safety are more secure, Other considerations when choosing school recruitment
10	Why are recruitment apps a good strategy	Check all that apply	Search for information quickly, Able to communicate with HR online, More time-saving and labor-saving online, See the intuitive evaluation of the enterprise, Other
11	Why is applying through the company website a good strategy?	Check all that apply	Fast speed, High efficiency, Choose a company you already have in mind, Better understanding the job needs of the enterprise, Other
12	Why is using social media apps a good strategy?	Check all that apply	Increase the connection between people, Provide a larger communication platform, Open up your social circle, Other
13	Why is WeChat a good strategy?	Check all that apply	Job ads on wechat are more trustworthy, WeChat communication is more convenient, There is no need to download other recruitment apps, It's easier to notice message notifications, Other
14	Why is acquaintance introduction a good strategy?	Check all that apply	The information of acquaintances is more reliable, Acquaintances are rich in network resources, It is easier and more convenient to find a job, Other
15	Would you like to accept the job introduced by acquaintances (family, friends, teachers, etc.)?	Slider	0 to 100
16	If you know where there is a suitable job opportunity, would you like to introduce it to the people around you?	Slider	0 to 100
17	Would you be willing to connect a friend of a friend to a job?	Slider	0 to 100
18	If you find a job with the help of others, are you willing to pay them?	Check all that apply	Don't want to pay, Payment of monetary compensation (cash, transfer), Pay for gifts, Verbal thank you, Remember this kindness in your mind
19	What do you think are the advantages and disadvantages of helping others get jobs?	Free response	Text response
20	Do you like the PDD model?	Slider	0 to 100
21	Have you known or used before?	Select one	Yes, No
22	What's your opinion on 水滴筹 that is open to the whole social?	Slider	0 to 100
23	Do you have any suggestions to improve the operation mode of 水滴筹?	Free response	Text response

A.2: Young Professionals Survey

Survey #2: Young Professionals Survey			
#	Question	Response Style	Options
1	What is your gender?	Select one	Male, Female
2	What is your age?	Slider	0 to 100
3	What is your major?	Select one	Economic Management, Medical, Literature and History, Political Science / Law, Other, Education, STEM, Foreign Language, Agriculture
4	Which channels would you use to find a job?	Check all that apply	School Recruitment, Recruitment Apps, Company's Official Website, WeChat, Acquaintance Introduction, Social Media, Other
5	Why online recruiting platforms?	Check all that apply	Family, Friends, Teachers, Friends of Friends, Classmates, Acquaintances, Strangers, Other
6	How many friends do you have that you think can help connect you to a job?	Select one	10-20, 20-30, 30-40, 40-50, 50+
7	Who would you ask to help you find a job?	Check all that apply	Family, Friends, Teachers, Friends of Friends, Classmates, Acquaintances, Strangers, Other
8	Select who you would be willing to write a letter of recommendation for?	Check all that apply	Family, Friends, Teachers, Friends of Friends, Classmates, Acquaintances, Strangers, Other
9	Are you willing to publish a job search profile and let friends share it?	Slider	0 to 100
10	What are your concerns if your job search information is posted publicly through social media?	Check all that apply	Loss of privacy, People gossiping about you, Reliability of recruitment, Jobs don't match your needs, Other
11	If you see your friends' online job portfolio, how interested would you be to read it?	Slider	0 to 100
12	Are you willing to transmit others' job search information through social media?	Slider	0 to 100
13	What kind of favor would you like to receive for helping a friend get a job?	Check all that apply	Money, A gift, A thank-you note, Treat with dinner, Owe me a favor in return, Nothing in return, Other
14	What are you willing to do to find a good job?	Check all that apply	A certain amount of money, Ask around for help, Post job search information through various channels, Seek out job match-makers, Owe the debt of gratitude
15	If you're a recruiter or someone with a job Posting, under what circumstances would you be willing to help someone you don't know?	Free response	Text response

A.3: Peer Collaboration Inquiry (Survey)

Survey #3: Peer Collaboration Inquiry			
#	Question	Format	Options
i	What is your age?	Slider	0 to 100
ii	What is your gender?	Select one	Male, Female
iii	What is your employment status?	Select one	Unemployed, Part-time employee, Intern, Full-time employee, Other
iv	What is your educational background?	Select one	High school graduate, Current college student, Bachelor's degree, Master's degree, Graduate student, Doctorate
v	What is your professional area of expertise?	Select one	Business and economics, Humanities and arts, STEM, Other
vi	What is your parents' highest educational status?	Select one	Primary school graduate, Junior school graduate, High school graduate, Bachelor's degree, Doctorate, Other
vii	What is your family's annual household income?	Select one	0-36K, 36-144K, 144-300K, 300-420K, 420-660K, 660-960K, >960K
1	I am highly competitive with other students, especially when they are seeking the same job as me.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
2	I am willing to help other students apply for a job that I also apply to.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
3	I would be able to organize in-person student led job-related events.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
4	I would be able to organize online student-led job-related events.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
5	I do not have time to help other students find jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
6	I feel like attending student events to help in getting jobs takes too much effort.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
7	I know where to find information on the job search process.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
8	I would be motivated to organize student-led job-related events.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
9	I find it hard to network with other students when it comes to finding jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
10	I am willing to network with other students to get more information about job opportunities.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
11	I am willing to network with other students to get a recommendation for a job opportunity.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
12	I am willing to network with other students to form long-term deeper relationships.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
13	I feel socially included among my peers.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
14	I have many friends who can help me with a job search.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
15	I trust my peers to help me find a job.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
16	I trust my peers to protect my private information.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
17	My trust in my friends' friends is not very large.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
18	I don't think my friends' friends trust me.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
19	I do not have a long-term friendship with many of my peers.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
20	I could learn a lot from my peers about how to get jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)

Survey #3: Peer Collaboration Inquiry			
#	Question	Format	Options
21	If I already had a job, I would help my peers find jobs through career-related events.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
22	I still want to learn more from my peers about career-related topics.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
23	My family gives me easy access to sufficient resources and opportunities for jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
24	My family has limited knowledge of jobs in my area of interest.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
25	I have peers who I would be comfortable asking for job advice.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
26	I have peers who know me well enough to give me advice suitable to my personal experience.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
27	I think many other students struggle to find jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
28	I know students in my area of study who can help me with job search.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
29	I know very few people who are doing well in finding jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
30	My friends find jobs quicker and easier than I can.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
31	I expect some form of reward for helping other students get a job.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
32	My friends expect some kind of gift from me when they help me find a job.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
33	I am comfortable meeting new people in a business setting.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
34	I need to learn the details of business etiquette.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
35	I seek out help from friends on how to network for jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
36	The school career development center provides adequate resources to learn how to get jobs.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
37	I think that job-related student events will increase my resources and network to find a job.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
38	My resume is impressive when compared to my peers.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
39	My social media presents a positive image of me.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
40	I would appreciate the opportunity to learn how to improve my resume.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
41	I can't get help in finding a job.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
42	I consider myself successful in getting jobs quickly.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
43	I consider myself successful in getting jobs that match my specialization.	Likert scale (select one)	1 (strongly disagree) to 5 (strongly agree)
viii	What student-led events would you like to see to help you find jobs?	Free response	Text response
ix	What advice would you give to students for finding jobs?	Free response	Text response
x	How can students help each other find jobs?	Free response	Text response

Appendix B: Focus Group Preamble

We Media Recruitment Preamble

We are a team of students across two schools—Worcester Polytechnic Institute in Massachusetts and Hangzhou Dianzi University in Hangzhou, China—and we are working to

develop a platform to help Chinese college students obtain jobs. We are conducting a series of surveys, interviews, and focus groups to better understand the state of professional networking among Chinese college students and to gain insights for the design of our platform.

Your participation in this study is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear in any of the project reports or publications. This information will be used to design a platform that will help students obtain employment.

This focus group will last around 30 minutes and will be recorded into a video. This video will be used for data collection and what you say may be anonymously quoted directly or indirectly in our paper. We will not distribute this video to anyone.

If interested, a copy of our results can be provided through an internet link at the conclusion of the study. Your participation is greatly appreciated.

By accepting this invitation, you agree to the above terms.

Appendix C: Focus Group Guided Procedure

PROCEDURE

[Preamble]

I. Warm-Up, background info
   1. Self introductions
      a. Age
      b. Educational status
         i. Area of expertise
      c. Employment status

II. Current strategies for finding/getting a job
   1. For those who have a job or have had a job in the past :
      a. How did you get your job?
         i. Where did you find the job?
         ii. How did you reach out to the company?
   2. For those who don't currently have a job:

   a. Have you had a job in the past?
   b. Are you currently looking for a job?
      i. What methods are you using?
3. How do you make yourself stand out to recruiters?
   a. How do you present yourself online?
   b. What do you put on your resumé?

III. Networking through family and friends

1. Have any of you got jobs through friends or family?
2. For those who have gotten a job through friends or family:
   a. Who gave you that connection?
   b. Ask them to explain the step-by-step process to how they got their job.
   c. Did you think the job was a good match?
   d. What is the process of getting a job through acquaintances?
      i. Did you use your connections to help you find employment opportunities?
      ii. After finding the job, did you ask people you know to connect you to the company?

Appendix D: Focus Group Notes

The following are HDU's notes from the focus group, which they translated to English:

The first interviewer is 20 years old and majored in business administration. Work experience is usually a part-time job. The first work is in the teacher's office to do some easy work. The second part-time job is in the summer holiday. The first time he looked for a job, he was introduced by his counselor, and the second time he asked for help from his relatives. He thinks it may be more stable if can find a job through a parental link, but it may not be what he want to do. Reaching out through friends or peers may offer limited help. Consider this situation sub-professional,like lawyer or accountant. Or computer which has more technical professional that teacher may help them. Only the job seeker has some strength. A lot of internship experience would be helpful. Personal ability and self-selection are more important for work. (getting

yourself out there) Depending on the degree of humanity,depending on the ability. He personally felt that the project was not very reasonable. It's not in line with social reality and it's unnecessary.

The second interviewer is 20 years old and majored in business administration. He has worked for some time before. He have three part-time jobs, one long-term, one short-term and one summer internship. He got his first permanent job at Starbucks through a self-introduction video posted on the company's website. The second short-term control is on the spot, which is introduced by his senior sister. It is about 100rmb a day. He got his summer internship through his friend's relationship, and he worked in his friend's company for live streaming operation. He believes that the way to find a job through the network of family and friends has its defects. If you are not satisfied with the job or encounter something unsatisfactory in the work, it is difficult to judge and express because of the relationship with friends. Even if expressed, it may affect the subsequent interpersonal relationship. Finally, as for the host's opinion on the way of using network to help ordinary college students find a job, he thinks that finding a job through relationship is not the main way, more important is personal willingness and ability.

The third interviewee, 21 years old, is the only female interviewee today. Majoring in human resources, she has three months of internship experience (now is in the autumn recruitment). Directly hired through BOSS APP. Opinions on finding jobs through relationships: At present, the internal push is more popular and efficient. (Views on finding a job through relationships: Internal referrals are highly recommended by everyone, thinking that finding a job through acquaintances will be more popular and more efficient) She has added a lot of HR, and HR will post many recruitment demands in the circle of friends. But she thinks the circle of family members is not consistent with the circle we need in reality. The network may not be so effective.

HR members will be in the circle of friends. The circle of family members does not quite match the work we actually need. She thinks that even the teacher will not recommend to ordinary students, let alone other people who are more irrelevant. And being pushed in may not be all inclusive, but she still needs to have an face to face interview, and the recommendation still needs to go through the test of the company and will not damage the reputation of the recommender. If she is not a very ordinary person, the best way is to send more resumes and job information to pursue more opportunities. She is also not very optimistic about our project. She

thinks that there are too few people with resources, and the existing relationship will become weaker and the same situation after online transmission.

The fourth interviewee, 22 years old, majored in management information system, worked as an intern in Talon Bank last year, and had two other internship experience. He is still looking for a job now. His first internship benefited from the cooperation between the college and the bank, and he could obtain a scholarship through the internship, contacting the company through the college to find a job. He thinks that deliver the resume on the boss APP widely is a good way to find job, some companies will respond timely and effective. Then you can check the company's official website and submit your resume, which will usually get a better response. For this project, he believes that the family background is limited, the resources to rely on family and relatives to find work are very limited, and the relevance of the work found in the field of personal expertise is not high. Major is an important reference for career planning. He has a positive attitude towards recommending talents through the internal channels of senior students.

The fifth interviewee, 20 years old, majored in finance of Economics, is a senior undergraduate, and has two part-time/internship experiences. For the first time, he took a part-time job in the assembly line, which was introduced by his mother, because his mother worked in a related industry. Now she has a part-time job in NetEase about two or three days a month. This part-time job is obtained through the school association. His association belongs to NetEase. The seniors of the association will share NetEase's recruitment needs, and then he will find the part-time job through this channel. He believed that it would cost to rely on his family's contacts to find a job, which would be the last consideration. He believes that the way of seniors and seniors' internal promotion can promote the understanding of job seekers and enterprises more than relying on personal resumes to find jobs.

The sixth interviewee, 21 years old, majored in computer science, was a senior in college. He had been working part-time before. He found jobs on the Internet. He thought it was not feasible to rely on his parents and relatives to find jobs. But if he returned to work in his hometown, his parents and relatives might introduce him because they are familiar with the local area and had more contacts.

Appendix E: Interview Preamble

We Media Recruitment Preamble

We are a team of students across two schools—Worcester Polytechnic Institute in Massachusetts and Hangzhou Dianzi University in Hangzhou, China—and we are working to develop a platform to help Chinese college students obtain jobs. We are conducting a series of surveys, interviews, and focus groups to better understand the state of professional networking among Chinese college students and to gain insights for the design of our platform.

Your participation in this study is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear in any of the project reports or publications. This information will be used to design a platform that will help students obtain employment.

This focus group will last around 30 minutes and will be recorded into an audio recording. This recording will be used for data collection and what you say may be anonymously quoted directly or indirectly in our paper. We will not distribute this recording to anyone.

If interested, a copy of our results can be provided through an internet link at the conclusion of the study. Your participation is greatly appreciated.

By accepting this invitation, you agree to the above terms.

Appendix F: Interview Guided Procedure

PROCEDURE

[Preamble]

I. Warm-Up, background info,
   1. Ask introductory questions
      a. Occupation
         i. Prior work experience (if applicable)
         ii. Mainly, what do you do?
      b. Years of work
   2. Describe recording strategy: iPhone audio recording

II. Current strategies for finding/getting a job

1. What is the normal process that students go through to get a job?
    a. How do you help students through this process?
    b. What strategies did you find helpful and successful for students?
2. Are there common misconceptions that students have about finding jobs?
3. How can you make yourself stand out to recruiters?
    a. How should you present yourself online?
    b. What should you put on your resumé?
4. We are trying to help students utilize their connections. How successful is finding jobs through friends and family?
5. What is the biggest factor to a college graduate's success in finding a job?
    a. What is the most overrated/ineffective strategy that students use to present themselves to companies?

III. Understanding the problem

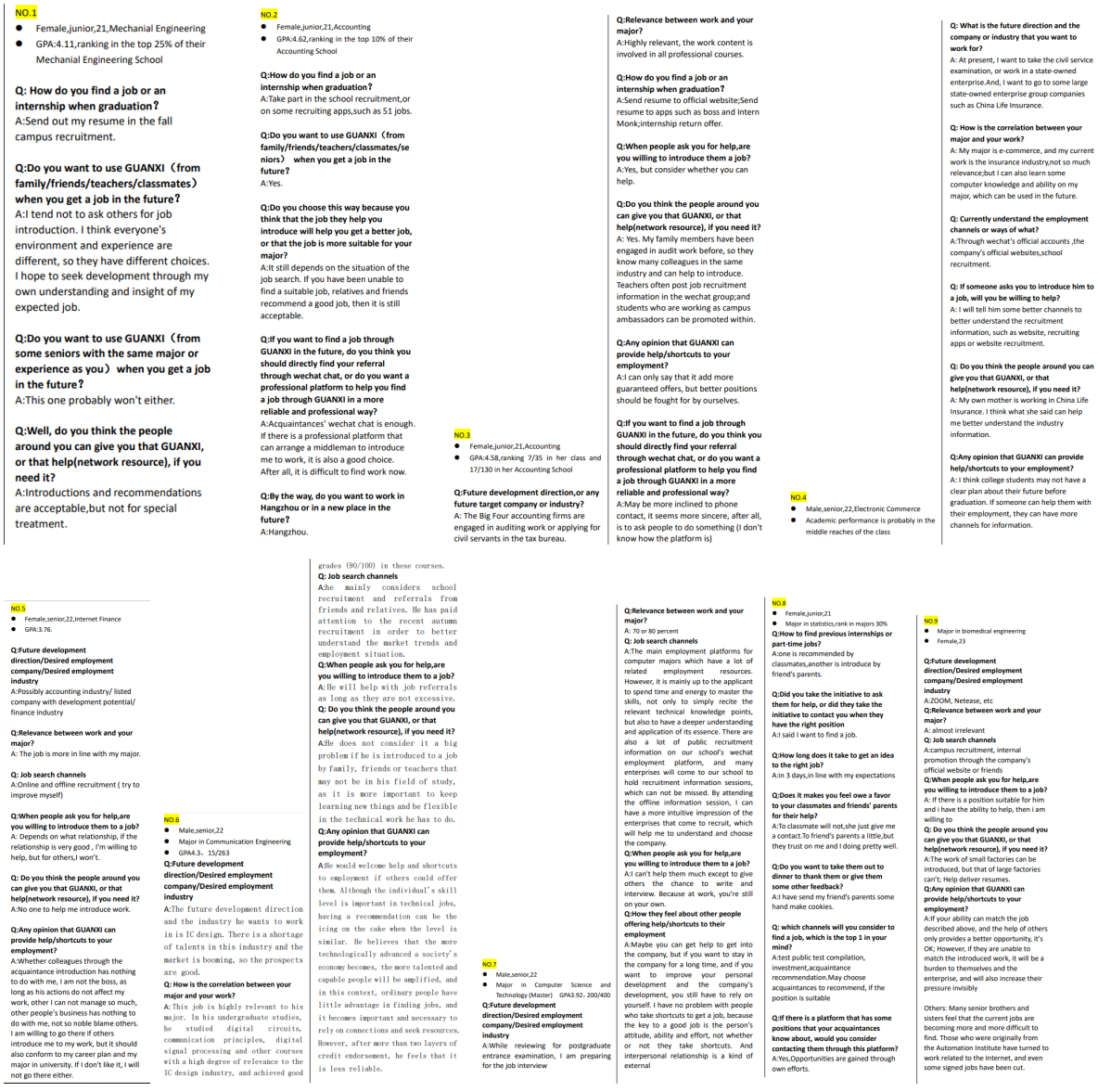
1. Could you describe the difficulty of getting a job out of college today?
    a. Which majors have a harder time?
    b. Which majors have an easier time?
    c. Is it easier for men or women to find jobs?
2. Could you describe the difficulty for companies to find suitable employees? If so…
    a. What information could companies use to distinguish applicants?
3. Has job match-making become easier or more difficult in recent years?
    a. What specific trends have you noticed with matching students with jobs?
    b. Were there any technologies that significantly impacted the recruiting process?
    c. Were there any events that significantly impacted the recruiting process?

IV. Hypothesizing solutions

1. What career development events does HDU host?
    a. Are there career fairs? (i.e. face-to-face recruiting events)
        i. About what percentage of students attend the career fairs
2. Do students use job posting platforms?

   a. Which ones?
   b. Does it include a messaging service with recruiters?
3. Do students often use family and friends to get jobs?
   a. If so, what is the process they go through, if you know about it?
4. How does HDU motivate students to use career development services?
   a. What have been the most and least successful strategies for this?

Appendix G: Interview Notes



NO.1

- Female,junior,21,Mechanial Engineering
- GPA:4.11,ranking in the top 25% of their Mechanial Engineering School

Q: How do you find a job or an internship when graduation?
A:Send out my resume in the fall campus recruitment.

Q:Do you want to use GUANXI（from family/friends/teachers/classmates）when you get a job in the future?
A:I tend not to ask others for job introduction. I think everyone's environment and experience are different, so they have different choices. I hope to seek development through my own understanding and insight of my expected job.

Q:Do you want to use GUANXI（from some seniors with the same major or experience as you）when you get a job in the future?
A:This one probably won't either.

Q:Well, do you think the people around you can give you that GUANXI, or that help(network resource), if you need it?
A:Introductions and recommendations are acceptable,but not for special treatment.

NO.2

- Female,junior,21,Accounting
- GPA:4.62,ranking in the top 10% of their Accounting School

Q:How do you find a job or an internship when graduation?
A:Take part in the school recruitment,or on some recruiting apps,such as 51 jobs.

Q:Do you want to use GUANXI（from family/friends/teachers/classmates/seniors） when you get a job in the future?
A:Yes.

Q:Do you choose this way because you think that the job they help you introduce will help you get a better job, or that the job is more suitable for your major?
A:It still depends on the situation of the job search. If you have been unable to find a suitable job, relatives and friends recommend a good job, then it is still acceptable.

Q:If you want to find a job through GUANXI in the future, do you think you should directly find your referral through wechat chat, or do you want a professional platform to help you find a job through GUANXI in a more reliable and professional way?
A:Acquaintances' wechat chat is enough. If there is a professional platform that can arrange a middleman to introduce me to work, it is also a good choice. After all, it is difficult to find work now.

Q:By the way, do you want to work in Hangzhou or in a new place in the future?
A:Hangzhou.

NO.3

- Female,junior,21,Accounting
- GPA:4.58,ranking 7/35 in her class and 17/130 in her Accounting School

Q:Future development direction,or any future target company or industry?
A: The Big Four accounting firms are engaged in auditing work or applying for civil servants in the tax bureau.

Q:Relevance between work and your major?
A:Highly relevant, the work content is involved in all professional courses.

Q:How do you find a job or an internship when graduation?
A:Send resume to official website;Send resume to apps such as boss and Intern Monk;internship return offer.

Q:When people ask you for help,are you willing to introduce them a job?
A:Yes, but consider whether you can help.

Q:Do you think the people around you can give you that GUANXI, or that help(network resource), if you need it?
A: Yes. My family members have been engaged in audit work before, so they know many colleagues in the same industry and can help to introduce. Teachers often post job recruitment information in the wechat group,and students who are working as campus ambassadors can be promoted within.

Q:Any opinion that GUANXI can provide help/shortcuts to your employment?
A:I can only say that it add more guaranteed offers, but better positions should be fought for by ourselves.

Q:If you want to find a job through GUANXI in the future, do you think you should directly find your referral through wechat chat, or do you want a professional platform to help you find a job through GUANXI in a more reliable and professional way?
A:May be more inclined to phone contact, it seems more sincere, after all, is to ask people to do something (I don't know how the platform is)

NO.4

- Male,senior,22,Electronic Commerce
- Academic performance is probably in the middle reaches of the class

Q: What is the future direction and the company or industry that you want to work for?
A: At present, I want to take the civil service examination, or work in a state-owned enterprise.And, I want to go to some large state-owned enterprise group companies such as China Life Insurance.

Q: How is the correlation between your major and your work?
A: My major is e-commerce, and my current work is the insurance industry,not so much relevance;but I can also learn some computer knowledge and ability on my major, which can be used in the future.

Q: Currently understand the employment channels or ways of what?
A:Through wechat's official accounts ,the company's official websites,school recruitment.

Q: If someone asks you to introduce him to a job, will you be willing to help?
A: I will tell him some better channels to better understand the recruitment information, such as website, recruiting apps or website recruitment.

Q: Do you think the people around you can give you that GUANXI, or that help(network resource), if you need it?
A: My own mother is working in China Life Insurance. I think what she said can help me better understand the industry information.

Q:Any opinion that GUANXI can provide help/shortcuts to your employment?
A: I think college students may not have a clear plan about their future before graduation. If someone can help them with their employment, they can have more channels for information.

NO.5

- Female,senior,22,Internet Finance
- GPA:3.76.

Q:Future development direction/Desired employment company/Desired employment industry
A:Possibly accounting industry/ listed company with development potential/ finance industry

Q:Relevance between work and your major?
A: The job is more in line with my major.

Q: Job search channels
A:Online and offline recruitment (try to improve myself)

Q:When people ask you for help,are you willing to introduce them to a job?
A: Depends on what relationship, if the relationship is very good , I'm willing to help, but for others,I won't.

Q: Do you think the people around you can give you that GUANXI, or that help(network resource), if you need it?
A:No one to help me introduce work.

Q:Any opinion that GUANXI can provide help/shortcuts to your employment?
A:Whether colleagues through the acquaintance introduction has nothing to do with me, I am not the boss, as long as his actions do not affect my work, other I can not manage so much, other people's business has nothing to do with me, not so noble blame others. I am willing to go there if others introduce me to my work, but it should also conform to my career plan and my major in university. If I don't like it, I will not go there either.

NO.6

- Male,senior,22
- Major in Communication Engineering
- GPA4.3，15/263

Q:Future development direction/Desired employment company/Desired employment industry
A:The future development direction and the industry he wants to work in is IC design. There is a shortage of talents in this industry and the market is booming, so the prospects are good.

Q: How is the correlation between your major and your work?
A: This job is highly relevant to his major. In his undergraduate studies, he studied digital circuits, communication principles, digital signal processing and other courses with a high degree of relevance to the IC design industry, and achieved good grades (90/100) in these courses.

Q: Job search channels
A:he mainly considers school recruitment and referrals from friends and relatives. He has paid attention to the recent autumn recruitment in order to better understand the market trends and employment situation.

Q:When people ask you for help,are you willing to introduce them to a job?
A: He will help with job referrals as long as they are not excessive.

Q: Do you think the people around you can give you that GUANXI, or that help(network resource), if you need it?
A:He does not consider it a big problem if he is introduced to a job by family, friends or teachers that may not be in his field of study, as it is more important to keep learning new things and be flexible in the technical work he has to do.

Q:Any opinion that GUANXI can provide help/shortcuts to your employment?
A:He would welcome help and shortcuts to employment if others could offer them. Although the individual's skill level is important in technical jobs, having a recommendation can be the icing on the cake when the level is similar. He believes that the more technologically advanced a society's economy becomes, the more talented and capable people will be amplified, and in this context, ordinary people have little advantage in finding jobs, and it becomes important and necessary to rely on connections and seek resources. However, after more than two layers of credit endorsement, he feels that it is less reliable.

NO.7

- Male,senior,22
- Major in Computer Science and Technology (Master) GPA3.92，200/400

Q:Future development direction/Desired employment company/Desired employment industry
A:While reviewing for postgraduate entrance examination, I am preparing for the job interview

Q:Relevance between work and your major?
A: 70 or 80 percent

Q: Job search channels
A:The main employment platforms for computer majors which have a lot of related employment resources. However, it is mainly up to the applicant to spend time and energy to master the skills, not only to simply recite the relevant technical knowledge points, but also to have a deeper understanding and application of its essence. There are also a lot of public recruitment information on our school's wechat employment platform, and many enterprises will come to our school to hold recruitment information sessions, which can not be missed. By attending the offline information session, I can have a more intuitive impression of the enterprises that come to recruit, which will help me to understand and choose the company.

Q:When people ask you for help,are you willing to introduce them to a job?
A:I can't help them much except to give others the chance to write and interview. Because at work, you're still on your own.

Q:How they feel about other people offering help/shortcuts to their employment
A:Maybe you can get help to get into the company, but if you want to stay in the company for a long time, and if you want to improve your personal development and the company's development, you still have to rely on yourself. I have no problem with people who take shortcuts to get a job, because the key to a good job is the person's attitude, ability and effort, not whether or not they take shortcuts. And interpersonal relationship is a kind of external

NO.8

- Female,junior,21
- Major in statistics,rank in majors 30%

Q:How to find previous internships or part-time jobs?
A:one is recommended by classmates,another is introduce by friend's parents.

Q:Did you take the initiative to ask them for help, or did they take the initiative to contact you when they have the right position
A:I said I want to find a job.

Q:How long does it take to get an idea to the right job?
A:in 3 days,in line with my expectations

Q:Does it makes you feel owe a favor to your classmates and friends' parents for their help?
A:To classmate will not,she just give me a contact.To friend's parents a little,but they trust on me and I doing pretty well.

Q:Do you want to take them out to dinner to thank them or give them some other feedback?
A:I have send my friend's parents some hand make cookies.

Q: which channels will you consider to find a job, which is the top 1 in your mind?
A:test public test compilation, investment,acquaintance recommendation.May choose acquaintances to recommend, if the position is suitable

Q:If there is a platform that has some positions that your acquaintances know about, would you consider contacting them through this platform?
A:Yes,Opportunities are gained through own efforts.

NO.9

- Major in biomedical engineering
- Female,23

Q:Future development direction/Desired employment company/Desired employment industry
A:ZOOM, Netease, etc

Q:Relevance between work and your major?
A: almost irrelevant

Q: Job search channels
A:campus recruitment, internal promotion through the company's official website or friends

Q:When people ask you for help,are you willing to introduce them to a job?
A: If there is a position suitable for him and i have the ability to help, then i am willing to

Q: Do you think the people around you can give you that GUANXI, or that help(network resource), if you need it?
A:The work of small factories can be introduced, but that of large factories can't; Help deliver resumes.

Q:Any opinion that GUANXI can provide help/shortcuts to your employment?
A:If your ability can match the job described above, and the help of others only provides a better opportunity, it's OK; However, if they are unable to match the introduced work, it will be a burden to themselves and the enterprise, and will also increase their pressure invisibly

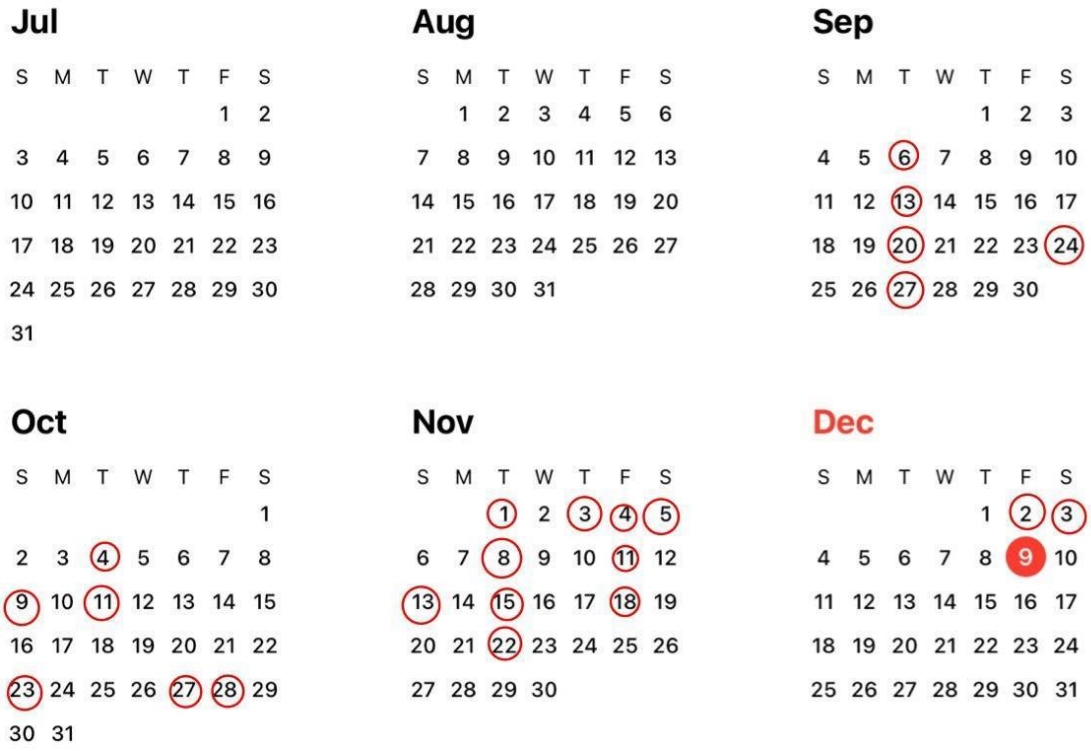
Others: Many senior brothers and sisters feel that the current jobs are becoming more and more difficult to find. Those who were originally from the Automation Institute have turned to work related to the Internet, and even some signed jobs have been cut.

Appendix H: Survey 3 Categories

Survey #3: Peer Collaboration Inquiry		
#	Question	Category
i	What is your age?	Demographics
ii	What is your gender?	Demographics
iii	What is your employment status?	Demographics
iv	What is your educational background?	Demographics
v	What is your professional area of expertise?	Demographics
vi	What is your parents' highest educational status?	Demographics
vii	What is your family's annual household income?	Demographics
7	I know where to find information on the job search process.	Access to Resources
28	I know students in my area of study who can help me with job search.	Access to Resources
36	The school career development center provides adequate resources to learn how to get jobs.	Access to Resources
41	I can't get help in finding a job.	Access to Resources
19	I do not have a long-term friendship with many of my peers.	Affection
25	I have peers who I would be comfortable asking for job advice.	Affection
26	I have peers who know me well enough to give me advice suitable to my personal experience.	Affection
1	I am highly competitive with other students, especially when they are seeking the same job as me.	Competition
27	I think many other students struggle to find jobs.	Empathy
29	I know very few people who are doing well in finding jobs.	Empathy
30	My friends find jobs quicker and easier than I can.	Empathy
3	I would be able to organize in-person student led job-related events.	Initiative to Lead
4	I would be able to organize online student-led job-related events.	Initiative to Lead
8	I would be motivated to organize student-led job-related events.	Initiative to Lead
42	I consider myself successful in getting jobs quickly.	Percevied Success
43	I consider myself successful in getting jobs that match my specialization.	Percevied Success
38	My resume is impressive when compared to my peers.	Professional Image
39	My social media presents a positive image of me.	Professional Image
33	I am comfortable meeting new people in a business setting.	Professional Knowledge
34	I need to learn the details of business etiquette.	Professional Knowledge

Survey #3: Peer Collaboration Inquiry		
#	Question	Category
31	I expect some form of reward for helping other students get a job.	Reciprocation
32	My friends expect some kind of gift from me when they help me find a job.	Reciprocation
9	I find it hard to network with other students when it comes to finding jobs.	Social Inclusion
13	I feel socially included among my peers.	Social Inclusion
14	I have many friends who can help me with a job search.	Social Inclusion
23	My family gives me easy access to sufficient resources and opportunities for jobs.	Socioeconomic Status
24	My family has limited knowledge of jobs in my area of interest.	Socioeconomic Status
15	I trust my peers to help me find a job.	Trust Peers
16	I trust my peers to protect my private information.	Trust Peers
17	My trust in my friends' friends is not very large.	Trust Peers
18	I don't think my friends' friends trust me.	Trust Peers
37	I think that job-related student events will increase my resources and network to find a job.	Usefulness
2	I am willing to help other students apply for a job that I also apply to.	Willingness to Help
5	I do not have time to help other students find jobs.	Willingness to Help
21	If I already had a job, I would help my peers find jobs through career-related events.	Willingness to Help
6	I feel like attending student events to help in getting jobs takes too much effort.	Willingness to Seek Help
10	I am willing to network with other students to get more information about job opportunities.	Willingness to Seek Help
11	I am willing to network with other students to get a recommendation for a job opportunity.	Willingness to Seek Help
12	I am willing to network with other students to form long-term deeper relationships.	Willingness to Seek Help
20	I could learn a lot from my peers about how to get jobs.	Willingness to Seek Help
22	I still want to learn more from my peers about career-related topics.	Willingness to Seek Help
35	I seek out help from friends on how to network for jobs.	Willingness to Seek Help
40	I would appreciate the opportunity to learn how to improve my resume.	Willingness to Seek Help

Appendix I: WPI & HDU Meeting Schedule



Appendix J: Demographic and Descriptive Statistics for all Surveys

J.1 Broad Survey

The broad survey—delivered by HDU—received 250 responses. Figure Appendix 1 and Figure Appendix 2 show diverse representation between both age and employment status. There were 100 respondents in the 18-to-24 age range, 84 respondents from the 25-to-35 age range, and 66 respondents in the 36-to-60 age range. 59.6% of respondents have full-time work experience, with 20.4% of all respondents having more than 10 years of work experience.

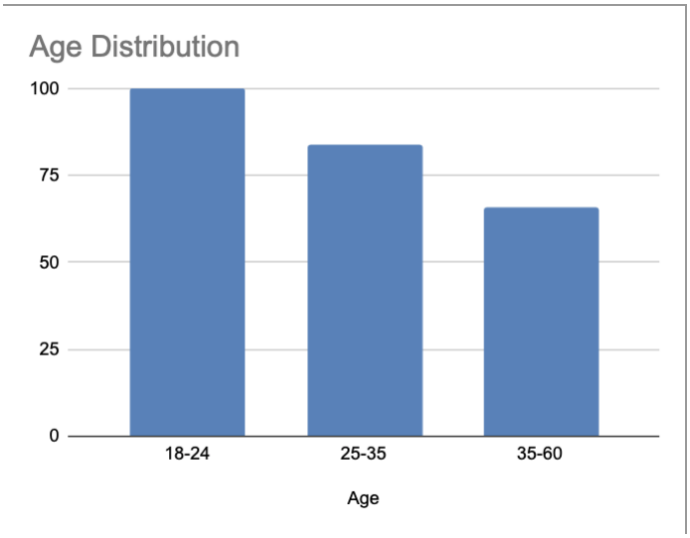


Figure Appendix 1. Many college-age respondents

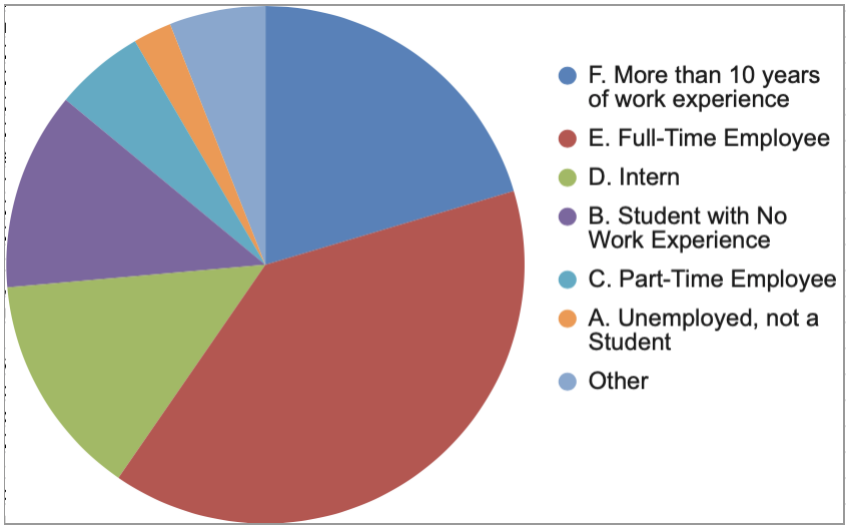


Figure Appendix 2. Many full-time employees

J.2 Young Professionals Survey

The young professionals survey, created by WPI and HDU, and delivered by HDU, received 565 responses. As you can see from Figure Appendix 3, Figure Appendix 4, and Figure Appendix 5, our survey data is evenly distributed across location, major, and age. There is not much analysis to do on these sample statistics, other than to say these all support that the survey is not affected by any bias across these. One blemish is in the age distribution, where we can see the 18-to-24 age range is primarily made up of 21 and 22 year-olds. This is not an issue, because 21 and 22 are the typical ages for college juniors and seniors, respectively, which are the primary

groups we are interested in helping, since they are closest to entering the job force. We can also see that location is dispersed widely across the eastern parts of China. The pattern presented by location distribution is not unexpected, as it shows increased responses from highly-populated provinces. For example, Anhui and Jiangsu are represented by the dark blue sections, to indicate the highest response rate. According to China's National Bureau of Statistics, Anhui and Jiangsu's 2020 populations were 61.0 and 84.7 million, respectively.

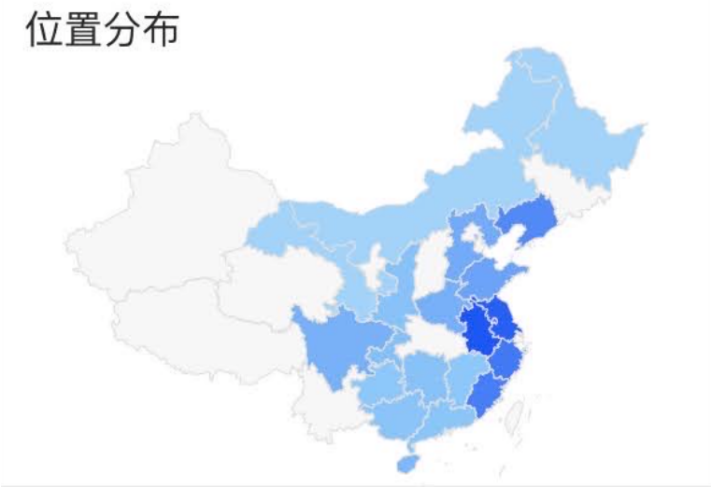


Figure Appendix 3. Location distribution across most populous areas in China

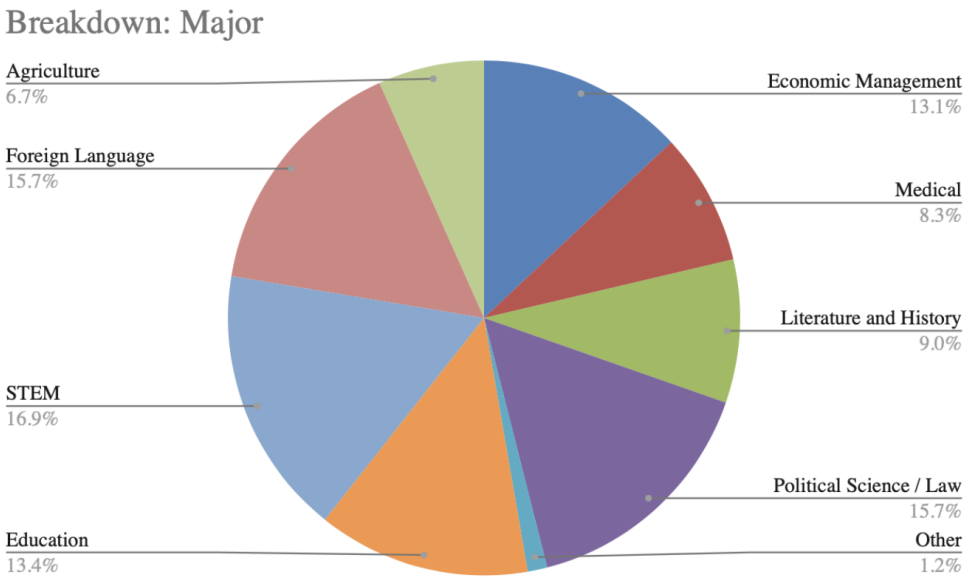


Figure Appendix 4. Even distribution of majors

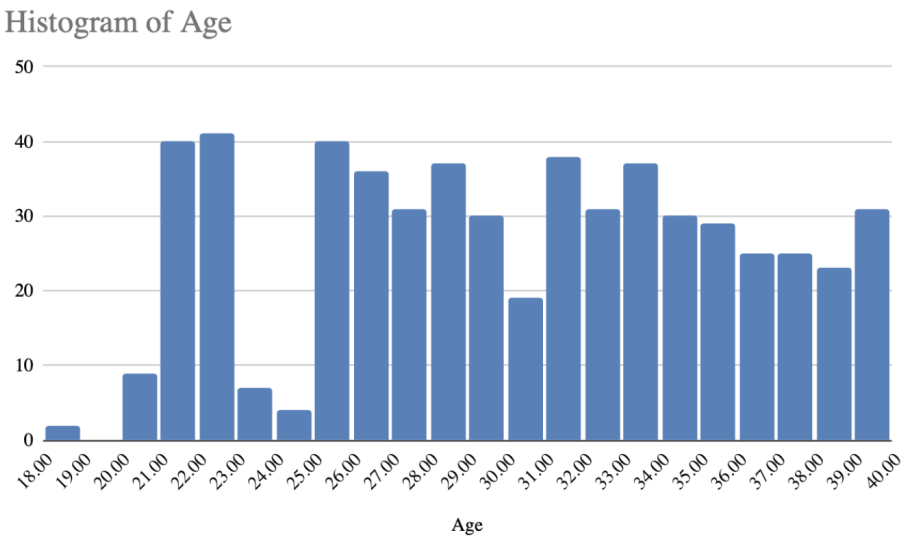


Figure Appendix 5. Age is evenly distributed

J.3 Peer Collaboration Inquiry

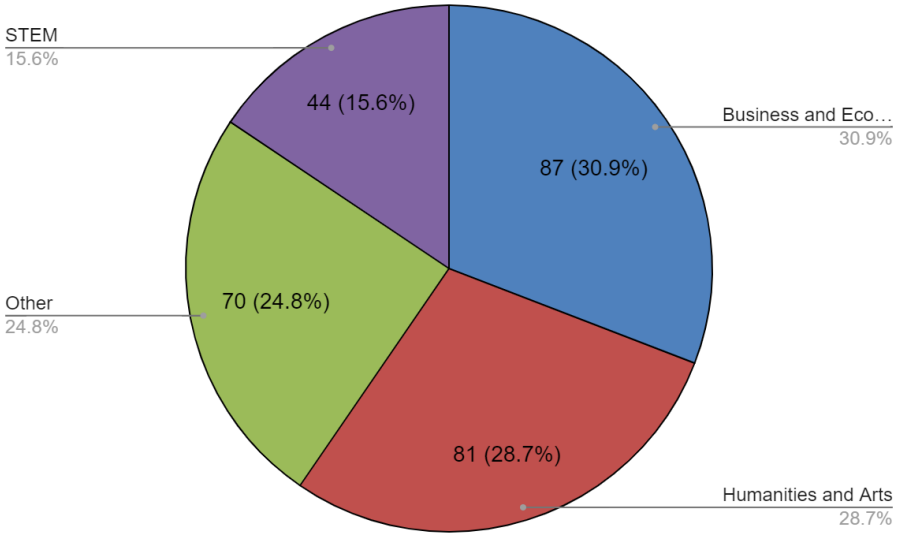


Figure Appendix 6. Distribution of majors

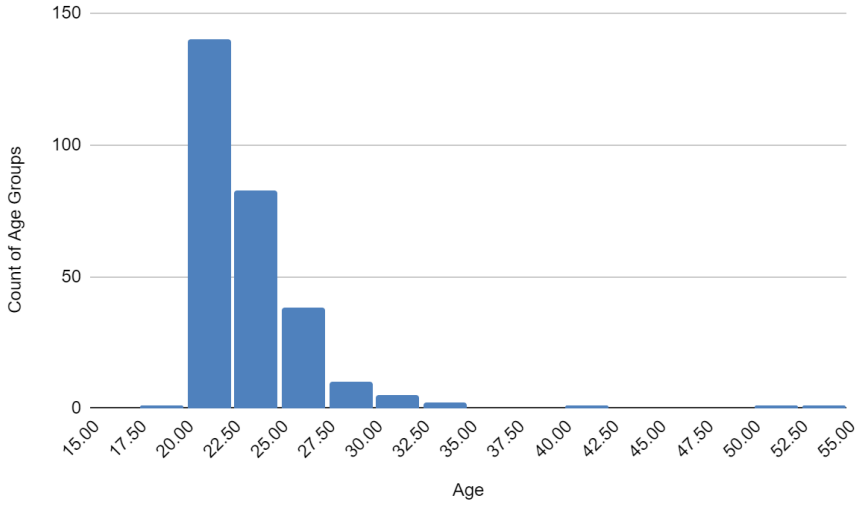


Figure Appendix 7. Distribution of ages

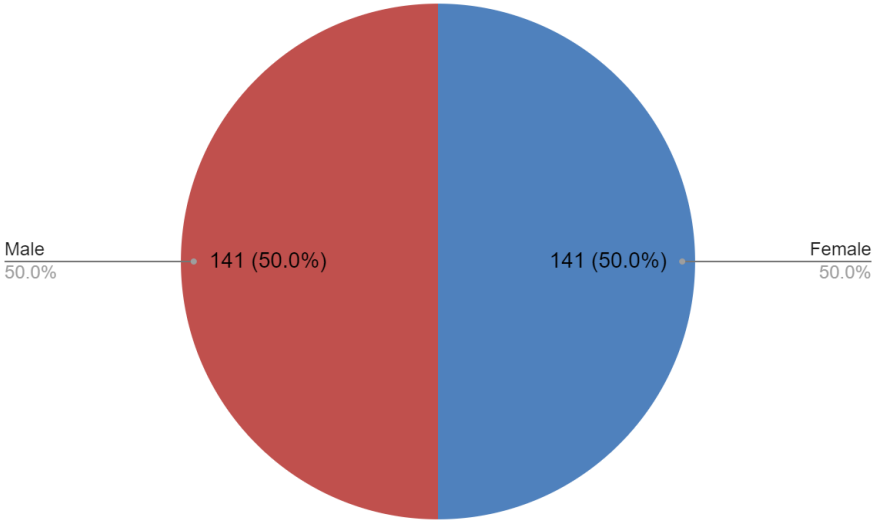


Figure Appendix 8. Distribution of genders

Figure Appendix 6, Figure Appendix 7, and Figure Appendix 8 show the demographics of the participants in the survey. The distribution of participants' majors are somewhat evenly distributed for business and economics, humanities and arts, and other majors. However, the count of STEM participants is significantly less than the other majors. For the age distribution, most of the responses are from ages 20-27, which are representative of juniors, seniors, and graduate level students. This age range is also our primary audience. The gender distribution is also even, which ensures we have enough responses from both male and female students.

Appendix K: Factor Analysis

Component Matrix[a]

	Component 1
Q7	.800
Q36	.854
Q41Reversed	.817
Q28	.796

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Access

Component Matrix[a]

	Component 1
Q19Reversed	.827
Q25	.835
Q26	.844

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Affection

Component Matrix[a]

	Component 1
Q27	.871
Q29	.814
Q30Reversed	.851

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Empathy

Component Matrix[a]

	Component 1
Q38	.900
Q39	.900

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Image

Component Matrix[a]

	Component 1
Q9	-.843
Q13	.856
Q14	.837

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Social Inclusion

Component Matrix[a]

	Component 1
Q3	.877
Q4	.869
Q8	.835

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Initiative to Lead

Component Matrix[a]

	Component 1
Q33	.869
Q34	.869

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Pro Knowledge

Component Matrix[a]

	Component 1
Q31	.878
Q32	.878

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Reciprocation

Component Matrix[a]

	Component 1
Q23	.902
Q24Reversed	.902

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Socioeconomic Status

Component Matrix[a]

	Component 1
Q15	.864
Q16	.818
Q17	-.260
Q18	-.863

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Trust in Peers

Component Matrix[a]

	Component 1
Q6	.789
Q10	.761
Q11	.806
Q12	.781
Q20	.767
Q22	.755
Q35	.739
Q40	.744

Willingness to Get Help

Component Matrix[a]

	Component 1
Q2	.810
Q5	-.844
Q21	.820

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Willingness to Help