

WIP: A Mixed-Method Study of International Students' Career Support Networks: Barriers and Opportunities

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This work-in-progress research paper investigated where and how international students seek career support and perceived barriers. Existing literature has examined career readiness and preparation, particularly focused on international students' diaspora patterns and cultural adjustment, but lacks holistic insights into their career decision-forming and support systems from a mixed-method social network perspective. We employed a mixed-method research approach and leveraged data collected from the international undergraduate student body at a U.S. Midwestern university via interviews and surveys sequentially. This WIP paper primarily focused on the qualitative section of this project based on the data from the nine interview transcripts. The data were analyzed by both egocentric social network and thematic analysis. Our preliminary findings identified the most common source of support for international students. We also recognized barriers existing in multiple forms and dimensions and a lack of support in three major areas for international students, particularly access, human connection, and clarity. Our unique contribution in this study highlighted the interconnection among students' perceived (or lack of) career support and barriers from a social network perspective. Based on our preliminary findings, we offer suggestions to inform practices and policy change congruent to the actual needs of international students from multiple stakeholders, including, but not limited to, home institutions, faculty, and staff members.

Keywords— social network analysis, international students, career support

I. INTRODUCTION AND LITERATURE REVIEW

According to the 2023 Institute of International Education Open Doors report, international students make up 5.6% of the total student population in higher education institutions (HEIs), and this population grows increasingly each year [1]. In some universities, the international student population alone represents up to 33% of the total student population and at least 11% at many big-name institutions [2].

Despite significantly high enrollment, international students often face 'Othering' experiences, where their presence is acknowledged but not fully understood [3]. While dedicated offices offer support, the segmented nature of U.S. university campuses can lead to gaps in knowledge transfer and holistic resources for international students. Faculty and staff may not

fully grasp the hidden curriculum crucial for international students' personal and professional development, particularly in areas like career development, which is essential for educational attainment. Students pursue higher education to gain skills for career readiness, and employers increasingly expect HEIs to provide students with opportunities to develop world-readiness competencies [4]. Thus, HEIs are charged with providing career readiness opportunities for all students, catering to the diverse needs of the many different demographics of students present on campus. Career readiness entails skill-building, resource access, and networking opportunities [5].

An individual's competencies and academic and professional backgrounds play a role in career readiness. One influential factor in the job search is social capital in the form of one's connections to others. Most job postings and information is transmitted and secured through connections [6]. For international students seeking jobs in the host country post-graduation, access to connections is more likely limited than their domestic student peers. Other factors, including cultural adjustment and familiarity with navigating the cultural nuances of higher education, job search strategies within the host country, and immigration regulations, among others, significantly impact their career decision-making process [7].

Career-oriented social network studies typically look at the career advancement of domestic students or how race, gender, and other identities and demographics impact career advancement [8], [9]. If centered on international students, prior work emphasized studying the role of social support in career decision-making, transition-to-work, or job search strategies [7]. Research with international student populations also examined student mobility, cultural adaptation, and overall student engagement and relationship formation on university campuses [10]-[12]. However, to the best of our understanding, the career support network formation process leading to students' final outcomes is not clear yet.

Research has shown that while U.S. campuses try to customize support to meet the needs of a vast array of student backgrounds and demographics, support for international students has historically been provided in more general and less

specific ways with limited access to alumni of similar backgrounds and relevant networking opportunities. Furthermore, support office capacity, expertise, and time constraints bear students' accessibility to thorough and personalized support [13]. Particularly, international students are usually characterized as a monolithic population, notwithstanding the huge within-group diversity and differences within them, leading to less customized support for individual students' particular needs [3].

To dive into how to better support international students' career development and search, we adopted a social network approach. This approach is useful for describing the individuals and organizations where international students receive career-related support, how referrals occur, and how information is disseminated within their social network. For the purposes of our study, we selected an ego-centered network approach, which examines an individual (ego) and nodes (alter, other surrounding entities), as well as the characteristics of ties connecting them. In particular, an ego-centered approach allowed us to identify each international student as the central individual (ego) in their career network, much like the hub on a wheel, and then map the key individuals who support them in their career as nodes (alters), which could be mapped along the rim of a wheel, with connections (ties) to the ego, visualized much like spokes connected to the hub. Tie characteristics typically examined in studies include the strength of ties (e.g., communication frequency, helpfulness rating in terms of career support, etc.), the types of relationships (e.g., friend, family member, faculty advisor), and homogeneity (e.g., similarity on a given attribute such as gender or nationality) between ego and alters.

Social network theory posits that the structural configuration of social ties is important for resources such as social support. Many career-oriented studies have utilized social network analysis, drawing on Granovetter's study in 1973, which revealed the strength of weak ties in relaying job information and opportunities [5]. Granovetter suggested that jobs were often found through weak ties or contacts with whom people did not frequently spend time and who were not in the inner circle of contacts. Strong ties, by contrast, were individuals with whom people were tightly connected or interacted more often [5]. The present study provides a unique context within which this theory may be applied and critiqued. Further nuance in the form of new data, from both a demographic and methodological perspective, can contribute uniquely to the field.

Drawing from a social network perspective, this study examines various aspects of individual international student career support networks, as well as the challenges and barriers encountered in the job search. To reduce the research gap of lacking understanding of the career support formation and preparation experiences at HEIs for international students, we constructed two overarching research questions:

- Where do international students seek career support?
- How might the structure of the support networks revealed in our study inform information session topic choices, outreach, and communication dissemination efforts to serve students better?

These overarching research questions then inform more specific research questions pertaining to characteristics of the supportive organizations and individuals identified by international students in their career support networks, as well as how international students are introduced and referred to these support resources, their overall helpfulness, challenges within the job search, and any missing support.

Identifying where international students seek career support helps us identify the offices and/or individuals they perceive as helpful, which may give insight into how potentially underutilized offices might consider their service and communication approaches, as well as any necessary adjustments. Applying the potential contributions of this study to the broader education context, career support has implications not only for the co-curricular campus spaces but also for the curricular and extra-curricular spaces on campuses across the world as international students continue to make up a significant and important part of the HEI student population.

To our knowledge, no previous study has mapped the individual career networks of international students in addition to utilizing a mixed-methods approach. We hope that this study sheds important, insightful, and unique light on the information- and support-seeking behaviors of international students toward a more holistic approach to strategizing and implementing more effective on-campus international student career services. Since a key outcome of completing a higher education degree is securing a job, universities are tasked with preparing all students for the workforce, and a majority of jobs are obtained through social connections, a social network approach has a strong potential to contribute significantly to efforts to improve international student support services.

II. METHODS

We used a sequential mixed methods design in order to tell a more holistic story of individual international students' career networks. We collected data to both describe participants' career networks and to identify patterns and potential spaces for increased and/or improved support [14]. Mixed methods also allowed for identifying and including a wide range of backgrounds and diverse needs of international students [3], [14]-[15]. We also tried to maintain research quality with data triangulation by collecting data concurrently in interviews and surveys to integrate and synthesize both data sources to answer our broad research questions [16], [17].

We used quantitative methods of descriptive statistics and social network analysis as well as visualizations and thematic analysis to analyze both the survey and interview data. Egocentric social network visualizations allowed us to portray students as unique individuals, following a call for increasing research advocacy for international students whose identity label creates a false narrative of within-group sameness, while in reality, a significant amount of diversity is present within this university-created label [3].

A. Data Collection

Our semi-structured interviews were conducted with 9 international undergraduate engineering students of junior and senior status (female = 3, male = 6), and at least 18 years of age

at a Midwestern University. In addition to basic demographic, academic, and extra-curricular information, interview participants were asked to identify up to 10 individuals or organizations who supported them in preparing for their career post-graduation. We examined two main forms of support: emotional (e.g., career encouragement, listening support concerning career-related issues) and instrumental (e.g., interview preparation assistance, resume editing, etc.). For each individual or organization, they were asked to share their relationship (e.g., friend, faculty advisor, etc.), how they were connected or referred (e.g., through a family friend, through your department), length of relationship, communication frequency, and nationality and/or current location. Participants were asked to rate the helpfulness of career-related support on a Likert scale of 1-5 (1 being minimally helpful and 5 being maximally helpful). Participants were also invited to indicate who (if anyone) in their network was connected to one another to visualize the overall interconnectedness of the network. Lastly, participants were asked to share additional qualitative information about the specific support they received, barriers and experience seeking a job post-graduation, and any missing support, if applicable.

Our survey respondents ($n = 31$, female = 16, male = 13, no response = 2) were international undergraduate students of any major, junior or senior status and at least 18 years of age. The surveys included the same questions as the interviews, with several additional questions, including suggestions for improving their support at the university and to what extent they share about their experiences with both international and domestic American peers.

III. DISCUSSION AND CONCLUSIONS

A. Social Network Visualizations

Egocentric social network visualizations were generated for each respondent based on their interview data utilizing Social Network Visualizer (SocNetV) [18]. A participant was represented by a green center circle in the center of the network connected to each individual and/or organization (alters) they identified in their career network, represented by surrounding red circles. Additional ties were visualized to show relations between individuals and/or organizations in the network to examine connectedness of the network as a whole. Descriptive data was included next to each red circle, indicating role, emotional and instrumental helpfulness ratings, communication frequency, nationality and location, and referral status (if applicable).

Figure 1 below demonstrates an example of an egocentric social network visualization. All ten individuals identified in this participant's career network are personal contacts (e.g., family members or friends/classmates they were introduced to via a family member). Thus, all connections are connected to one another, and this is considered a tightly connected network. The participant associated with Figure 1 described their network, such as: "I have family in the US who have been very helpful in terms of my career. Cultural differences do play a huge role in my career journey because my culture and the American culture are very different."

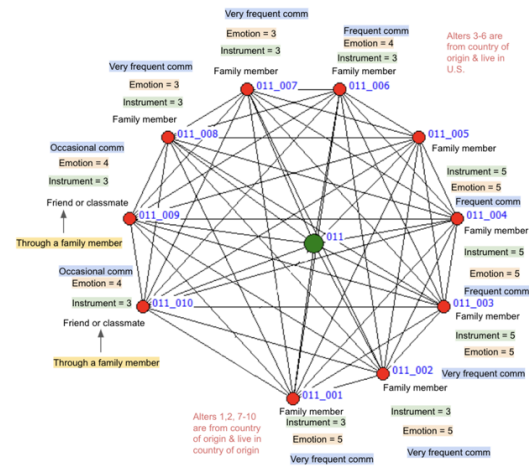


Figure 1: SocNetV International Student Career Support Network Visualization Example.

B. Quantitative Descriptive Statistics Results

a) Alter role

Out of all the individuals and organizations mentioned in participants' career-related networks, the most frequently reported roles were family member (25% of all alters indicated), then friends or classmates (23% of all alters indicated), then university organization offices (16% of all alters indicated).

b) Referral method

Aside from family members who did not require referrals, the most common referral method to a connection was "through a friend or classmate."

c) Instrumental and emotional career-related support helpfulness ratings

Preliminary results indicated that friends or classmates, family members, and faculty advisors were more frequently reported as helpful for instrumental career-related support. Friends or classmates, campus office staff, and professors/instructors were more frequently reported as helpful for emotional career-related support.

d) Communication frequency

Communication frequency of international students with identified supportive individuals or organizations was most frequently "very frequently" (27%), "frequently" (27%), and "occasionally" (27%).

e) Homophily (Shared Similarity)

Nationality: 49% of alters (individuals or organizations offering career-related support) were U.S. Americans, 45% of alters had a shared nationality, and 6% did not share the participant's nationality, nor were they U.S. Americans. **Location:** Location homophily measurements were adapted from [19] examining migrants' transnational ties. In our study, 64% of alters shared a location with alters in the U.S., 25% of alters were located in the participants' country of origin, and 11% were outside both the U.S. and the participants' country of origin.

C. Thematic Analysis

Thematic analysis was used to analyze qualitative interviews to identify themes and practical suggestions for university support services, specifically in accordance with the following questions:

- What are some of the barriers/challenges you have experienced as related to finding a job post-graduation?
- How would you describe your experience networking and seeking career advice in the U.S.? What role do cultural differences and similarities play in your career journey, and how do you seek support?
- Please describe any support you felt was/is missing from your support network that you wish you would have received from your up-to-10-person career support network.

Braun and Clark's [20] thematic analysis involves a multi-step process of data familiarization, identifying preliminary codes, looking for, checking, and finalizing themes, and finally generating a research write-up. Following these procedures, our preliminary thematic analysis results related to challenges and barriers indicated the following themes: 1) Legal/nationality, 2) Accessibility, 3) Economic/financial, 4) Academic, 5) Linguistic/cultural, 6) Transnational identity, and 7) Information clarity.

Preliminary results on missing support indicated the following themes: 1) Access, 2) Human/identity connection, and 3) Clarity. We are still working on further refining the themes with operationalized meanings and hope to fully present the results in future publications succeeding this work-in-progress work.

IV. DISCUSSION AND LIMITATIONS

This project aims to provide a unique and holistic portrayal of international students' career support experiences at a U.S. higher education institution from a theoretical and methodological paradigm of social network analysis. Based on preliminary data analysis, current recommendations for increased support include careful consideration of provided service content with regard to cultural, disciplinary, and other identity-related relevance and dissemination efforts concerning where such support is housed and sent out (e.g., cultural centers, department offices), and who is equipped with information, taking into account the majority of alter roles in international students' career support. As family members, friends or classmates, and university organization offices are most commonly listed as key career support providers, universities should consider how these individuals, as well as other key university student-facing leaders, are equipped with awareness and information and if they are sufficiently informed to support students best. It is also worth attempting to centralize information and resources across a spectrum of university-related stakeholders for a more comprehensive and accessible career support service to all students, particularly those with international status. Further, universities are encouraged to consider leveraging the structure and flow of information, centered personnel within the structure, and other impactful key entities to adjust the ongoing career support service. Other

recommendations include creating more opportunities for peers to connect and take leadership roles in support groups and communities of practice to share resources. Lastly, universities are encouraged to consider enhancements to current training programs to increase student self-efficacy using tools and resources provided on campuses [13]. We will continue to analyze the data and provide an update in the future.

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