

Examining US business undergraduates' use of career information sources during career exploration

Use of career
information
sources

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Abstract

Purpose – Campus career services are increasingly scrutinized as the primary career development resource for undergraduates. The purpose of this paper is to use Career Construction Theory to examine all sources of career information used by undergraduate business students and their contributions toward career exploration and development.

Design/methodology/approach – Using a mixed-methods design, a survey was first administered to 372 university students enrolled in an undergraduate business school in the USA. Focus group interviews were conducted with 35 students from the survey sample. Descriptive statistics are reported, and inductive themes and causal networks were derived from qualitative data.

Findings – In order of prominence, students endorsed using sociocultural (e.g. family) and institutional (e.g. career services center) resources, and exploratory activities (e.g. work experience) as career information sources. These sources contributed toward students' vocational development by enhancing their psychological readiness for work, building social capital and facilitating decisions.

Research limitations/implications – Participants were sampled from one undergraduate business school in the USA and were self-selected into the study.

Practical implications – Career services and higher education professionals should think of the career-related information sources available to students as a complex ecosystem of advice instead of singular resources that exist in isolation. Professionals should also attend to students existing sources of career information and consider ways to support students' development of social and professional networks and opportunities. Furthermore, universities should consider the potential for integrating career exploration into course curricula as opposed to tasking career services offices to be fully responsible for students' career-related outcomes.

Originality/value – This study is the first to examine undergraduate business students' sources of career information and their contributions to career development. Its insights offer evidence for ways to tailor interventions to support students' use of available information sources beyond campus career services.

Keywords Career development, External influences, Business school, Campus career services, Academic departments

Paper type Research paper

Introduction

Widespread anxiety about the availability of well-paying jobs, the rising price of college and questions about whether graduates have the skills required by employers have all contributed to a global focus on career preparation across the higher education sector



(Dacre Pool and Sewell, 2007; Tomlinson, 2012). While this focus on student employability arguably implicates nearly every unit on campus, career services centers (CSCs) are widely viewed as playing an especially important role in helping students become prepared for a rapidly changing global economy. One way that CSCs may contribute to students' career preparation is by providing information on topics such as job openings, networking opportunities, skills required by employers and labor market trends – all with the goal of enhancing and supporting career exploration and decision-making (Dey and Cruzvergara, 2014). Indeed, providing up-to-date and customized information on these topics is increasingly viewed as one of the principal roles of a CSC on college or university campuses (Contomanolis *et al.*, 2015; Schaub, 2012).

Despite increasing interest in and scrutiny of CSCs, however, limited empirical research has examined students' own experiences with and perspectives about the types of information provided by CSCs. A promising line of inquiry has examined students' satisfaction with CSCs in Canada (Usher and Kwong, 2014) and the USA (Gallup-Purdue Index Report, 2016) and two survey-based studies of students' utilization of various career information resources shed important light on this issue (Pesch *et al.*, 2018; Zondag and Brink, 2017). Yet to our knowledge no studies have examined, at a more fine-grained level than is available through survey research, precisely how students experience and interpret the informational resources provided by CSCs or other units on a college or university campus.

Whether or not non-CSC units such as academic departments or external influences also play a role in providing students with career-related information is especially important, since CSCs cannot be assumed to be the sole source of information about careers for students. In fact, considerable evidence exists demonstrating that students' career decisions and emerging professional identities are strongly influenced by a panoply of other factors such as personal relationships, work-based learning experiences (e.g. internships) and family backgrounds (Lent *et al.*, 1994; Zondag and Brink, 2017).

Consequently, some argue that CSCs and other campus services need to adopt a more developmental and student-centered approach, such that services are grounded in and responsive to the specific life-stage, socio-cultural and developmental phases that students are experiencing while attending college or university (Arnett, 2015; Baxter Magolda, 2003; Lehker and Furlong, 2006). In addition, how (if at all) CSCs coordinate with other campus units (e.g. academic departments, student affairs) to provide students career-related information is a growing concern around the world (Dey and Cruzvergara, 2014; Terzaroli and Oyekunle, 2019; Wei *et al.*, 2016), which suggests the need for data on how students also utilize career-related information from other campus resources.

In this paper we report findings from a mixed-methods study that investigates how business students at a large research university in the USA used both CSC and non-CSC sources of career-related information to guide and inform career-related decisions and deliberations. To inform our study we drew upon Career Construction Theory (CCT), which emphasizes how individuals actively construct their understandings of their professional selves in concert with environmental and socio-cultural forces (Savickas, 2013). Through inductive thematic analyses of interview and focus group ($n = 35$), and descriptive statistics from an online survey ($n = 372$), we document limitations with existing CSC programs and the impact of diverse sources of career-related information (e.g. family, peers, CSCs and faculty) on students' social networks, vocational identities and career decision-making. Insights into these phenomena, particularly those derived from the qualitative portion of our study, contribute new empirical evidence to the field while also suggesting ways that CSCs can augment existing services or create new ones that take into account the actual information-seeking behaviors of students.

Background: Developmental theories and career information-seeking behaviors

Developmental theories such as CCT are uniquely well suited to analyses of career information-seeking behaviors given their emphasis on the dynamic interactions between individuals and the information that exists within their socio-cultural and organizational environments. CCT in particular focuses on how individuals cultivate their career interests and identities based on the perceptions and values that they have acquired through their actions within their unique socio-cultural space, and their roles in their familial, civic and educational contexts (Savickas, 2013).

Since developmental theories also emphasize that professional identities are not fixed or stable, but instead unfold in stages throughout people's lives (Savickas, 2013), stages such as those occupied by the age group most commonly associated with postsecondary education – that of 18 to 24 year olds – must be considered in the context of their occupying a distinct developmental phase between adolescence and adulthood (Arnett, 2015). Colleges and universities provide a unique transitional space for young people in this stage of emerging adulthood, where students encounter new opportunities and people from different backgrounds, that allows them to merge their past and current experiences to shape their career interests and identities (Arnett, 2015). At the same time, students also continue to be influenced by instructions and guidance given by significant figures in their lives, such as parents and caregivers, regarding career-related expectations, appropriate workplace behavior and other tacit norms regarding jobs and careers (Whiston and Keller, 2004).

Consequently, developmental theories suggest that students' acquisition of such career-related information, whether from CSCs or peer groups, is critical to informing and shaping their identities as a professional and subsequent career decisions (e.g. Savickas, 2013). Additionally, CCT focuses on one's career adaptability, or the psychosocial resources that enable someone to deal with current or future tasks or career transitions, the latter of which is a global concern given the rapid changes underway in many nation's labor markets. In fact, a survey instrument developed using CCT has been tested and validated for use in 18 countries including Australia, China, Germany and Portugal, which attests to the international interest in CCT (Savickas and Porfeli, 2012). While our study does not focus on the construct of career adaptability *per se*, it addresses the origins of the information that may inform or shape their ability to adapt to changing circumstances.

However, while a growing body of research is examining different aspects of CSC operations including students' satisfaction with CSC services (Usher and Kwong, 2014), and comparative analyses of CSC operations in countries such as China and the USA (Wei *et al.*, 2016), and Italy and Nigeria (Terzaroli and Oyekunle, 2019), there exists little empirical research on the types of information that college students use and/or draw upon to make decisions about careers. In one of the few empirical studies on the topic, Pesch *et al.* (2018) found that undergraduate students in a US university increased engagement in activities that promoted career exploration (e.g. internships, career fairs) was linked with higher perceived occupational knowledge (i.e. knowing the tasks of their chosen careers) and a sense of major satisfaction and career certainty. While these findings highlight the positive benefits of increased information for career decision-making, they are limited in identifying the types of information sources that students gather and use, some of which could inform interventions (e.g. web-based resources, peer networks). In a longitudinal study that tracked the quality and frequency of career information sources of more than 1,000 US college students with food marketing-related majors, Zondag and Brink (2017) found that college professors and courses were rated as the most useful sources of career information, followed by career fairs, jobs or internships, and family members. The authors also found that while CSCs and career counselors were not as highly rated, they were widely viewed by students as an important source of career information. Similarly, in a mixed-methods study, Messersmith *et al.* (2008) interviewed 26 students in Information Technology (IT) related

occupations in the USA to investigate the social and contextual experiences that have contributed to their career interests. The researchers described participants' family, peers and other significant adults as critical sources of messages and contributors of formative experiences that cultivated their interests in IT careers. School and workplace experiences also provided participants with information about the technical skills required for an IT career and potential workplace environments.

While these studies documented the sources of salient career-related information and important socio-contextual experiences that influenced people's career decisions, they did not examine the ways in which these information sources (especially CSCs) and contextual factors contributed to students' career exploration and decision-making. Additionally, while some studies have documented business students' perception of their academic experience (Marks *et al.*, 2016), none have yet to focus on examining business students' sources of career information and their contributions. As one of the fastest growing majors for undergraduate students in the USA, understanding how they are using CSCs (or not) and which sources of information are most influential in their career planning is important for postsecondary leaders in this field. Thus, we aim to build upon these existing studies to examine how and by whom or what career information is transmitted to undergraduate business students.

As a result, a key question facing higher education administrators and career practitioners is not only if students frequent campus CSCs, but also how their experiences intersect with other sources of information related to their careers. By examining the sources of career information and the extent to which these sources influence undergraduate business students' career exploration and early decisions, we aim to extend the current literature on college students' use of career information (e.g. Zondag and Brink, 2017) to support institutions' career programs and interventions. This case study employs a concurrent mixed method design with emphasis given to the qualitative data (Creswell, 2014) to address the following research questions:

- RQ1.* 1 How are students using and experiencing CSC programs and services?
- RQ2.* From which sources are students acquiring information about careers and the world of work?
- RQ3.* What are the contributions of these information sources on students' career exploration and early career decisions?

Methods

This mixed-methods study involved collecting both survey and focus group data between January and May 2017. An online survey was sent to all registered undergraduate students in a undergraduate school of business (the school) in the US Midwest. A total of 372 students completed the survey, yielding a 14.8 percent response rate. At the end of the survey, students had the option to self-select into focus groups. In total, 35 students participated in 11 focus groups that lasted approximately 45 min each and ranged from two to five students per group (two students arrived to focus groups that had only one participant, which became an interview using the same protocol as the focus group). Focus group attendees and interviewees were paid \$20 for their participation. The demographic information of participants is included in Table I.

Research instruments

The survey contained questions that elicited information about participants' utilization and satisfaction with career services and sources of information regarding careers. Participants indicated on a single item how frequently they accessed CSC programs

Category	Subcategory	Survey (n = 372) M (range) n (%)	Focus group (n = 35) n (%)	Use of career information sources
Family income		\$100,000–149,999 (< \$24,999–> \$200,000)	No information	
Gender	Female	189 (50.8%)	23 (65.7%)	
	Male	183 (49.2%)	12 (34.2%)	
Race/Ethnicity	American Indian or Alaskan Native	1 (0.3%)	0 (0%)	
	Asian/Asian-American	47 (12.6%)	4 (11.3%)	
	Black/African-American	6 (1.6%)	0 (0.0%)	
	Hispanic/Latino/a	13 (3.5%)	1 (3.0%)	
	White	314 (84.4%)	30 (85.7%)	
Student status	First-generation	45 (12.1%)	No information	
	International	22 (5.9%)	No information	
	Domestic	350 (94.1%)	No information	

Table I.
Demographic information for survey and focus group participants

(i.e. “in the past 12 months, how often have you utilized career services at the School of Business”) using a four-point scale: 1 (once) to 4 (5 or more times). Participants also rated their satisfaction with CSC programs via three items using a Likert-style response scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Nine items were created to assess participants’ frequency of relying on different sources (e.g. immediate family members, friends and peers, career services at my college, faculty, etc.) when seeking career-related information. Participants rated their use of these resources using a five-point scale: 1 (never) to 5 (very frequently). Each item referred to the use of a particular source. To ensure face validity, survey items were reviewed by an expert in vocational psychology, and a group of undergraduates who were not part of the study were asked to carefully review phrasing of each item.

A semi-structured protocol was used to conduct the focus groups, which were facilitated by the second and third authors. Examples of questions asked include: Can you describe your experiences with your college’s career counseling/advising? When you have academic or career concerns, who do you go to for advice and suggestions? Do you actively seek out new opportunities for yourself in terms of learning and/or career development? Why or why not?

Data analysis

Using a qualitative dominant approach to analysis (Johnson and Onwuegbuzie, 2004), participant responses during the focus groups were coded using an inductive qualitative approach (Bernard, 2011). To address the research questions, the first and second authors thematically coded five of the 13 focus group transcripts using the NVivo software to produce an initial codebook that guided subsequent rounds of coding. The codebook was updated based on new codes and themes that emerged from remaining transcripts. The analysts returned to initial transcripts to verify that all possible codes were included.

Next, analysts returned to the 13 transcripts to identify statements of causal relationships between identified sources of career information and their contributions to students’ career development. A full causal statement included an antecedent or situation (e.g. “deciding on career path”), a mediator or contributor (e.g. “mom talks about changes in job field”), and its outcome (e.g. “openness to different career options”). These statements, known as causal fragments, were subsequently coded and organized into themes and broader categories.

The relationships between these thematically organized causal fragments (code-to-code links) were graphically depicted in as a causal network, or a visual representation of

interrelationships between and among variables (Miles *et al.*, 2014). To simplify these representations, code-to-code links that were infrequently cited were removed, resulting in causal networks comprised only of code-to-code links reported by more than one participant. The analysts met regularly to discuss our findings, discuss discrepancies, and collaboratively revise our codebook. The third author audited the codes at different points of the coding process to check for accuracy and validity. Last, descriptive statistics from the survey data were analyzed using SPSS 22.0 software.

Results

In this section, results are presented for each of the three research questions, first via descriptive findings from the quantitative analyses where relevant, followed by the qualitative analyses.

Students' utilization of and satisfaction with career services center

First, students were asked about their awareness of CSC services on campus. Out of the 372 respondents, 71 percent of them reported being aware of the CSC and having accessed them (i.e. 29 percent of students were unaware of the CSC and thus did not utilize services). A question was then posed regarding how frequently students used CSC services. With respect to frequency of use within the past year, the majority of students reported using the CSC two to three times (45.8 percent), followed by once (34.1 percent), four to five times (11.7 percent) and more than five times (8.3 percent). Students who indicated that they had used the CSC were then asked to rate their satisfaction with the services provided ($n = 264$). Participants reported the highest satisfaction with résumé writing services ($M = 3.98$, $SD = 0.83$), followed by individual advising sessions ($M = 3.77$, $SD = 0.99$), and assistance with interviewing skills ($M = 3.72$, $SD = 0.90$). The provision of culturally tailored services ($M = 3.44$, $SD = 0.97$) and information about labor market trends ($M = 3.27$, $SD = 0.89$) were rated least favorably.

Next, respondents who agreed to participate in focus groups were asked to describe their experiences with career services, as all focus group participants had visited the CSC at least once. Focus group results were organized into positive and negative experiences with CSC programs and services (see Table II).

Positive experiences with CSCs. There were three main areas in which respondents cited CSC programs and services to be meeting or exceeding their expectations. First, several students reported experiences that prepared them to be successful in securing employment. As the most frequently cited positive experience, students found mock interviews, job shadowing and résumé assistance to be the most helpful in securing jobs post-graduation. Another positive experience was how CSCs offered relevant information and resources. These observations included programs that connected students with established professional networks through the school, thus providing opportunities for students to make contacts with employers and alumni in their fields of interest. The third theme captured students' views that the programs offered tailored guidance and advice, referring to individual interactions with career advisors, where they were generally able to receive advice that was tailored to their unique ambitions and career goals.

Negative experiences with CSCs. Negative experiences with career services were categorized into three main themes. The most frequently cited theme, insufficient internship and employment support, was based on students' reports of areas of growth in supporting students secure internship and employment. These critiques included a lack of geographic diversity (e.g. international work opportunities) with respect to employers featured in the CSC's network and desire for more nuanced and rigorous coaching around the job selection process (e.g. salary negotiations).

Theme: Students said they	Definition: Students said career services	Frequency	Use of career information sources
<i>Positive experiences</i>			
1. Learned how to secure employment	Provided coaching and training of skills pertinent to employment (e.g. interviewing, résumé critique)	7/20 (35.0%)	
2. Received relevant information and resources	Provided adequate occupation-related information and assisted in expanding students' networks	6/20 (30.0%)	
3. Received tailored advice and guidance	Cultivated relationships with students that increased students' comfort with asking questions and facilitated students' self-awareness	5/20 (25.0%)	
<i>Negative experiences</i>			
1. Received insufficient internship and employment support	Needed improvement in these areas: connecting students with work opportunities, more rigorous skills coaching (e.g. negotiations, interviewing), and expanding network of employers into other geographic regions	31/86 (36.0%)	
2. Found staff to lack professionalism and relevant knowledge	Perceived as inadequate given high staff turnover and limited availability; and characterized staff as having limited knowledge about industry-specific insights and labor trends, and at times, unsupportive of students	26/86 (30.2%)	
3. Received "cookie-cutter" advising with low levels of personalization	Provided guidance and advice that was poorly tailored to meet needs for career exploration, instead seeming "scripted" for average student and focused on job-matching	21/86 (24.4%)	

Table II.
Themes of students' positive and negative experiences with CSC

The second most salient theme was career advisors' lack of professionalism and relevant knowledge. Observations included advisors' limited knowledge about specific industry trends, a need for the CSC to acquire and retain advisors with more specific and updated disciplinary expertise, and instances when career advisors were rude or discouraging, resulting in some students leaving advising appointments feeling less confident than when they first arrived at the CSC.

The last theme was the CSC's "cookie cutter" advising and a lack of personalization. As one student described, "I just felt like they were missing who I was, like the advice they were giving me was the same thing they say to every student." Other similar statements were grounded in concerns about not receiving sufficient information and support with respect to their long-term career goals, and instead, noted that advisors focused too much on short-term post-graduation employment.

Sources of career information

Survey respondents were asked to rate their use of career information sources. Sociocultural factors such as friends/peers ($M = 3.94$, $SD = 0.88$) and family ($M = 3.94$, $SD = 1.02$) were rated as frequently used sources for career information, followed by personal experiences ($M = 3.85$, $SD = 0.87$). Online resources were ranked next ($M = 3.58$, $SD = 1.09$) followed by career services ($M = 3.01$, $SD = 1.02$). The least utilized sources were faculty ($M = 2.99$, $SD = 0.97$), labor market information ($M = 2.77$, $SD = 1.05$), and media reports ($M = 2.63$, $SD = 1.04$).

Next, focus group participants were asked to describe their sources of career information. Three categories of career information sources were identified: sociocultural sources, institutional sources and exploratory activities.

Sociocultural sources (68 out of 153 codes; 44 percent). This category refers to the individuals, social norms, and expectations that students reported to have influenced their views about work and potential careers. These factors include, from the most frequently reported to the least: the types of occupations held by family members; family advice,

support and expectations; college and high school educators' advice and encouragement; guest speakers in college courses; and work supervisors.

Many students discussed that their parents played significant roles in providing career information and subsequently, shaping their career exploration. For example, students described receiving parental advice or discouragement against certain occupations, as well as strategies to negotiating salaries or accepting job offers. Students also reported having their career trajectories vicariously influenced by their parents' occupations; for example, several students described their desire to pursue a business-oriented career (e.g. starting a business) as a result of their parents' work as entrepreneurs. Educators and work supervisors also represented a source of career advice, and was considered to be a less biased source of information as compared to family.

Institutional sources (66 out of 153 codes; 43 percent). This category refers to organizational or institutional offices and staff that provided career information to students. These sources include: individual meetings with CSC advisors; classroom experiences in high school and college that explicitly featured career information (e.g. current industry trends); CSC resources; professional student organizations; and general support from their school.

The most widely reported institutional source of information were sessions with career advisors, where students were able to discuss their goals, facilitate their job search skills (e.g. job application materials) and obtain information about industries of interest. Students also reported that they developed deeper insights into occupations from comments or anecdotes told by instructors, and from guest speakers invited to their classes. Professional student organizations (e.g. actuarial science club) served as another career information source by hosting opportunities for students to network and exchange industry-specific knowledge.

Exploratory activities (19 out of 153 codes; 12 percent). This category refers to work-related activities in which students were engaged that provided career information. These activities include: internships; online research on jobs and careers; and previous work experience. Students described their internship and previous work experiences as important in increasing their exposure to their careers of interest while illuminating their personal preferences (e.g. company culture). Additionally, students relied upon information they gathered via online research regarding specific job industries and companies to shape their career exploration.

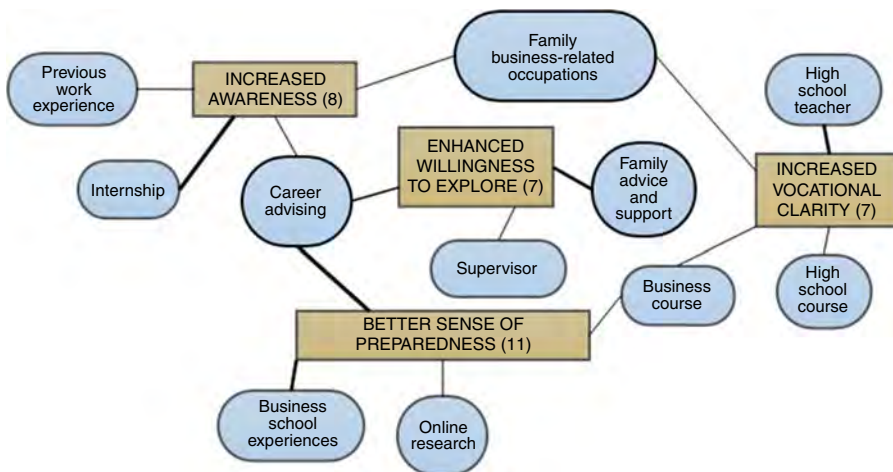
The contributions of career information sources

We next examined how these different sources of information were used by students to make decisions about their careers and futures. The graphics accompanying each set of findings outline the network of themes that respondents linked together, with specific topics ultimately leading to particular outcomes. Results from the causal network analysis fell into three main categories: psychological characteristics, career decisions and social capital.

Psychological characteristics. This category refers to the thoughts, beliefs and attitudes that individuals hold about themselves and the world of work. Students reported four types of psychological outcomes that were influenced by a variety of people, events and programs: better sense of preparedness, increased awareness, enhanced willingness to explore and increased vocational clarity (see Figure 1).

Better sense of preparedness (11 out of 126 codes; 8 percent). This theme describes students' increased sense of preparedness in pursuing their career goals. Specifically, students reported four influences that increased their preparedness, listed in descending order of frequency: career advising, overall business school experiences, business coursework, and online research. Both career advising and business school experiences

PSYCHOLOGICAL CHARACTERISTICS DIAGRAM



Notes: Bolder lines indicate the strongest links between sources of information and their contributions. These links were most frequently cited by participants

Use of career information sources

Figure 1. Causal network diagram linking psychological characteristics with sources of information

represent institutional factors that prepared students to seek employment post-graduation (e.g. mock interviews and job fairs). For example, while preparing for a job interview, one student noted the helpfulness of career services in providing a list of commonly asked behavioral interview questions, which familiarized him with the interview process and reduced his anxiety. Discussions with career advisors around systemic concerns in the workplace, such as gender inequity, allowed female-identified students to anticipate potential challenges and advocate for themselves.

Increased awareness (8 out of 126 codes; 6 percent). This theme refers to the experiences that led to students' development of a deeper awareness and understanding of their career goals, job preferences and career options. Students described four factors that increased their awareness: internships, previous work experience, career advising and family business-related occupations. Internship experiences were most frequently cited as being influential in exposing students to new or unexpected career opportunities. One student noted: "It's a real estate internship, a real estate company and I've really never thought about real estate before. I'm (a retail major) and it's completely different, but (real estate) is definitely a career path that I'm thinking about pursuing."

Enhanced willingness to explore (7 out of 126 codes; 5 percent). One psychological contribution is an enhanced willingness to explore different career opportunities. Students identified three main sources: family advice and support, career advising sessions and their work supervisors. In particular, students reported feeling confident with exploring and experimenting with different career options based on encouragement from their family members. Services provided by their CSC such as career advising were reportedly facilitative of students' discovery and exploration of career interests and trajectories. For example, one student noted that a detailed conversation with a CSC advisor allowed him to discover more insight about himself, his career and life goals, and potential career paths.

Increased vocational clarity (7 out of 126 codes; 5 percent). Another contribution of these information sources is an increased clarity for vocational and career goals. The four sources were: high school teachers, college-level business courses, business-related high school

courses and family business-related occupations. Several students described that their interest in pursuing business school were piqued by their high school teachers, all of whom had identified these students' aptitude for business-oriented careers and encouraged them to consider business major in college. For example, one student noted that their math teacher "really influenced [them] in pursuing numbers and told [them] that [finance] might be a good career for me." Exposure to business-related content through accounting courses in college and high school, and through their parents' operations of small businesses, were also sources of information that clarified students' professional goals.

Career decisions. This category captures themes related to students' decision-making about their academic majors and careers. Three themes were identified in this category: deciding on specific major, deciding on general academic program and articulating disciplinary foci (see Figure 2).

Articulating disciplinary foci (10 out of 126 codes; 8 percent). This theme refers to students' decisions to pursue business as their academic discipline. The three main information sources that shaped their choice (listed in order of most to least frequent) were: non-business courses, family advice and support and their family's business-related occupations. Students reported that their lack of fit or skills when taking non-business college courses (e.g. biology) prompted them to consider business as a more viable career path. Students also described receiving family advice and support in the form of caution against pursuing a particular career field (e.g. education due to low pay) and encouragement toward finding a business-oriented career path because of the potential to earn high incomes and enjoy job stability.

Deciding on general academic program (20 out of 126 codes; 16 percent). This theme refers to students' decision to apply to and enroll in the business school (majors were declared after acceptance into the school). Sources of influence included: family's business-related occupations, career advising, high school courses and instructors. Many students traced their decisions to enroll in the business school to their familiarity with the industry based on common business-oriented jobs (e.g. finance) held by family members. One student described: "I just did what I knew. Like my dad was in business, so [...] I'll study business. And I would be sure I'd get a job. I found out my roommates too, each of us is studying exactly what our dad does." Additionally, students reported having had positive experiences with business school advisors whom supported their interest in applying for the school.

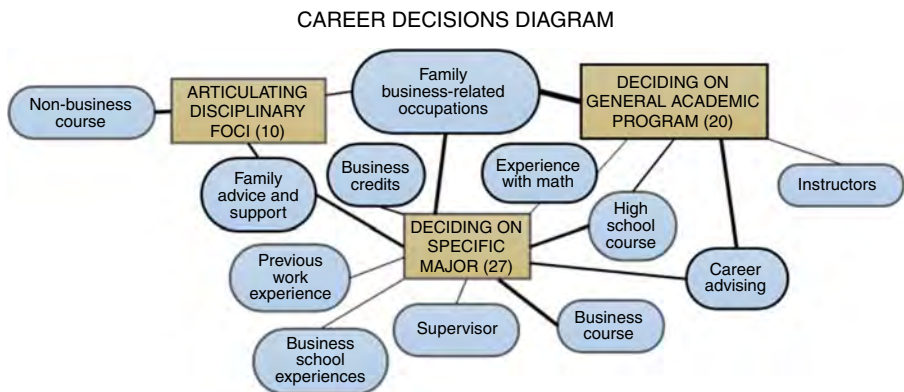


Figure 2.
Causal network diagram linking career decisions with sources of information

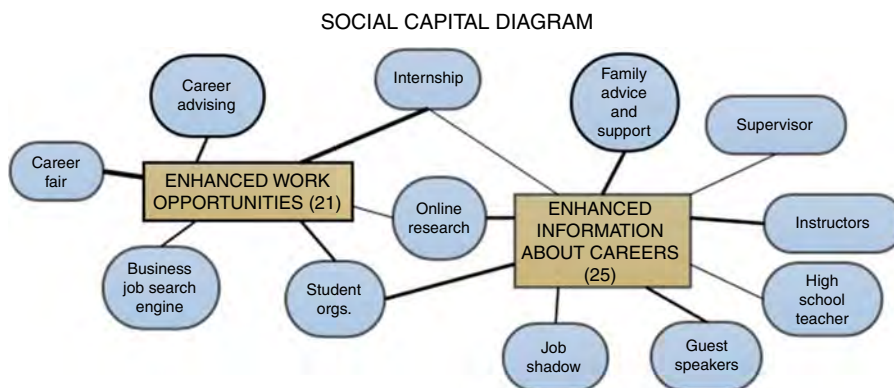
Notes: Bolder lines indicate the strongest links between sources of information and their contributions. These links were most frequently cited by participants

Deciding on specific major (27 out of 126 codes; 21 percent). This theme captures students' decision to declare their majors (e.g. finance, marketing or accounting) in the business school. Information sources included: business courses, family's business-related occupations and family advice and support. For several students, taking a course in a specific field of business enhanced their interest and led them to decide to major in that specialty. For others, parental connections to the business school specifically shaped their decision. Another factor that shaped students' decisions was family members' advice. Similarly, advice about what not to major in also influenced students' thinking, such as concerns about the changing state of the global economy, and the low job security and salaries of non-business occupations (e.g. teaching).

Social capital. This category captures the ways in which students' career information sources further developed their professional and social networks, subsequently yielding more career information and opportunities for students (see Figure 3).

Enhanced information about careers (25 out of 126 codes, 20 percent). This theme refers to the insights and information that broadened students' understanding of particular occupations and increased their interest in these fields. Influential factors included: instructors, family advice and support, online research and student organizations. Faculty and instructors played an influential role in students' thinking about careers via their discussions about the workplace. One student recounted how she had found her instructor of a marketing course to have deepened her understanding of the digital aspects of marketing specific to the restaurant industry. Family advice and support also were important in developing a nuanced understanding of certain professions, such as accounting. In other cases, students utilized online resources to obtain further information about different careers. Last, student organizations also provided a venue through which students acquired information about possible careers.

Enhanced work opportunities (21 out of 126 codes, 17 percent). Students reported that their professional, academic and social networks and connections led to more work opportunities. Factors shaping this outcome included: the business school career fair, internships, student organizations and career advising. The most frequently cited factor that offered company-specific information and opportunities to students was the business school career fair, during which regional recruiters are available on campus to meet and greet students.



Notes: Bolder lines indicate the strongest links between sources of information and their contributions. These links were most frequently cited by participants

Figure 3. Causal network diagram linking social capital with sources of information

Discussion

For many college and university students, attending an institution of higher education offers opportunities to create new networks and experiences that allow them to explore different vocational trajectories. Within the higher education sector around the world, CSCs are increasingly viewed as a critical venue for assisting students with their career planning, especially via the dissemination of information related to job-seeking, labor market dynamics and placement opportunities (Terzaroli and Oyekunle, 2019; Usher and Kwong, 2014). At the same time, information and tacit norms gleaned from students' early life experiences and socialization into different communities of practice (i.e. disciplinary, familial, peer networks) also shape how they think about themselves and appropriate career options and opportunities (Savickas, 2013). While previous research on students' use of career information demonstrated the significance of family, peers, academic and workplace experiences on their occupational knowledge and career certainty (Messersmith *et al.*, 2008; Pesch *et al.*, 2018; Zondag and Brink, 2017), little empirical evidence exists on how CSCs and other information sources are used to inform student career decision-making, particularly at a fine-grained level that qualitative data and analyses can provide.

In the remainder of this paper, we discuss the contributions of our study to the international literature on career development among higher education students, implications for practitioners, limitations to the study and areas of inquiry for future research.

Diverse sources of career information impact students' career exploration

In this study we have confirmed prior research (e.g. Pesch *et al.*, 2018) that students do in fact draw upon a wide range of information sources – including but not limited to CSCs – to gain career information that supported their vocational exploration and decisions. Consistent with developmental perspectives (Arnett, 2015; Savickas, 2013), students obtained career information from a variety of sources, broadly categorized as sociocultural resources (e.g. family), institutional resources (e.g. CSC) and independent activities (e.g. work experience) when exploring their careers. Our study makes a new contribution to the literature in demonstrating how – according to students' own narratives and meaning-making of this process – these information sources are best viewed as part of a complex ecosystem of advice and socio-cultural and institutional influences that students are exposed to and actively seek out. In particular, family members and peer networks were influential sources of career information, as students were drawn to pursuing occupations similar to their caregivers and critically influenced by the norms and biases expressed by friends and family members when deciding their career choices. This finding reinforces previous research that underscored the influence of friends and family members, particularly those who are involved in the students' field of interest, as especially potent sources of career information and influence (Turner and Lapan, 2002).

Our results also highlight the range of social figures from whom students seek career information including high school and college instructors, career advisors, workplace supervisors, and guest speakers. Furthermore, depending on the specific need of a student with respect to their career search process (e.g. researching occupations, seeking internship experiences), they appear to seek out (or are exposed to) different people whose expertise or presence is most relevant to that activity. These results are consistent with CCT and other developmental theories, where college students who are in a unique period of their development as professionals, are especially influenced by socio-cultural forces, such that peer groups, faculty mentors, the broader culture and institutional resources (of which CSCs are but one) function in a more complex and inter-connected manner than is commonly assumed in the literature, where a particular campus unit (e.g. CSC programs) exerts a linear and direct influence on student outcomes.

These findings raise an important question for the field – what role, if any, can and should CSCs play in supporting student development amidst this ecosystem of advice? For some institutions, CSCs need to shift from a model of providing generic services such as mock interviewing, career fairs and resume preparation, to a more customized approach that speaks to individual students' needs and identities while also connecting them to networks of professionals and peers (Contomanolis *et al.*, 2015; Schaub, 2012). Given evidence reported in this paper that some students felt that CSC services were inadequately customized to their own disciplines or personal circumstances, such a perspective is consistent with our data. However, limited resources will continue to be a constraint across the postsecondary sector, and while we argue that institutions should invest more resources into CSCs and career development activities, it is likely that staff working in this area will need to explore new tools and approaches for meeting students needs.

The varied outcomes of career information sources

This study also documented that students' drawing upon diverse sources of sociocultural and institutional information, led to three distinct types of outcomes – development of psychological characteristics, career decisions and social capital. First, these results highlight the fact that a sole focus on wages and employment status, common outcome measures associated with institutional factors and derived from first-destination surveys, capture only a narrow slice of potential student outcomes. Second, while these findings are consistent with previous literature that have hypothesized and documented the varied contributions of significant role models and resources in college (Whiston and Keller, 2004; Zondag and Brink, 2017) toward students' career explorations, our data (i.e. causal network analysis) empirically and graphically depicts the interconnectedness of these sources and outcomes.

Specifically, our findings demonstrate the prominence of certain information sources (e.g. family's involvement in business as a sociocultural resource) in impacting students' career decisions (e.g. entering business school), which can also be interpreted in terms of the ways that social capital (i.e. resources embedded in social networks and relationships) can reproduce opportunity (or inequality) over time (Lin *et al.*, 2001). In other words, the influence of family and social networks on students exceeds that of being a mere source of information and advice, as they also can provide individuals with tips on job openings or entrée into a company or profession that is not available to students lacking these connections. Additionally, our results reinforce past research that has demonstrated how opportunities in college and through work-related activities (e.g. internships) continue to serve to enrich students' social capital such that some students are afforded greater opportunities that increase their chances of career success, while other students lack such opportunities (Farmer-Hinton, 2008). Consequently, the field should pay careful attention to cultivating students social and professional networks, especially low-income, first-generation and/or under-represented students who may lack advantageous social capital that is enjoyed by their more privileged classmates.

Implications for the field of career services in higher education

Ultimately, these findings underscore the need for student affairs and career services professionals to be attentive to the various sources of career information students utilize in shaping their career exploration and decisions, and to strengthen institutional programs that can expand and enhance these diverse sources of information, particularly for students who may lack role models and social capital (e.g. low-income, first-generation college students). For example, CSCs should engage with students who may lack social capital and professional networks as early as possible and work to expand their networks so that they might have stronger ties to their chosen industry. CSCs can also partner with

student organizations to embed career-related programs (e.g. workshops) as a way to outreach to students via their existing peer networks. The outreach and advertising of CSCs continue to be important to attract students early in their college career, and particularly for underrepresented students for whom these tools and networking opportunities may be invaluable.

Given that students already draw career information from a diverse set of individuals and experiences, and the low rate of utilization of CSC offerings, higher education institutions should also consider the potential for integrating career exploration more heavily into academic curricula (Young, 2016). For example, CSCs could work more closely with faculty members/instructors to integrate activities and instruction related to career exploration into courses or experiences. Such synergy between instructors and CSCs can further amplify the support students receive related to their career development given that faculty members and instructors are already identified as sources of relevant and current information for their respective trades/industries. Similarly, CSCs can continue to build upon their relationships with employers to explicitly attend to students' career exploration when the latter are engaged in work-based learning opportunities (e.g. internship, co-ops).

To better meet students' individual needs, CSCs should prioritize ways to support the reflective processes that are inherent in career exploration. For example, career advisors may consider offering narrative exercises may enable students to better understand their own life themes, explore their vocational interests, and enhance their vocational clarity (Savickas *et al.*, 2009). It is important for CSCs to cultivate and foster close partnerships with other student services (e.g. counseling center) to ensure that students are referred to other professionals that can help them explore their career paths more holistically, especially when some of these services exceed the constraints of CSCs. Conversely, mental health practitioners in college counseling centers are encouraged to explicitly assess for and address career concerns as part of treatment to ensure that these concerns are not artificially relegated to CSC practitioners only (Schaub, 2012).

Conclusions

Because our study is limited to a particular business school's CSC in the USA, we recommend researchers to further examine patterns of information usage and subsequent outcome in additional schools and colleges around the world. Given that we relied on cross-sectional data, longitudinal study designs would also be beneficial to testing these postulated relationships over time. Given the lack of available data on demographic characteristics of the sample population with which to conduct a non-response bias for the survey portion of the study, and the self-selection of students into the focus groups, it is possible that study participants are not representative of the larger population of undergraduate business students at our study institution. Additionally, more research focused on the perspective of CSCs is needed to better understand constraints and challenges faced by career offices and professionals in supporting students' career development in our current economic landscape.

Ultimately, our study demonstrates that CSCs can be a source of institutional resource for students' career development, but a disproportionate amount of attention and pressure are placed on CSCs to meet the needs of both their constituents – including policy makers, practitioners and students – and the workforce. Our results emphasize the confluence of sociocultural and institutional factors, as well as independent activities that contribute as sources of career information for students thereby shaping their career exploration via goals, decisions and actions during college. Given the complex interrelationship of factors that influence students' career exploration and outcomes, it is important for CSCs to partner with other institutional agents and offices, and existing networks within which students are captured to provide career support in a more integrated manner.

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