

Exploring Factors Influencing Agricultural Students' Engagement in Professional Development Experiences

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Abstract

There is a need to ensure graduates are prepared to succeed in a professional environment. The purpose of this study was to describe students' participation in professional development (PD) experiences at Oklahoma State University in the Ferguson College of Agriculture. The theory of planned behavior (TPB) and student involvement theory guided the study. In total, 122 undergraduate students participated. Students described PD events as those that led to personal development and career preparation. Respondents most frequently participated in PD events at least once per semester or at least once per month. The most participated in events included student organizations, career fairs, resume reviews, and networking events. Respondents indicated that a free or affordable event would incentivize them to participate, along with the opportunity to network with professionals. Time constraints and scheduling conflicts were commonly stated barriers to participation. Backwards stepwise regression models were run to assess TPB and demographic factors' ability to predict PD engagement. Subjective norms was the only predictor from the TPB framework to make the final regression models. Many respondents preferred receiving information about these events via email. It is recommended that these findings aid in the planning and marketing of PD events. Further research may be conducted to understand other influential factors on student behavior, behaviors across other disciplines, and the marketing of PD events.

Introduction & Literature Review

While it has been recognized that there is a continued shortage of U.S. college graduates with a bachelor's degree to fill careers in agriculture, food, and natural resources (Feldenpausch et al., 2019), there is also a need for students to possess strong leadership and professional skills, which is a gap recognized by industry employers (Degreenia & Sutton, 2020). While traditional learning environments provide a knowledge base for students, there is a need for professional development (PD) activities that prepare graduates for their careers (Moen et al., 2000), and many institutions are attempting to be more intentional about integrating PD into students' degree plans (Choate et al., 2019; Moen et al., 2000; White, 2017). Leaders in the agricultural and natural resources industries value students who possess personal and professional leadership competencies, including dependability, problem-solving, critical thinking, communication, and initiative (Easterly et al., 2017), which can be fostered through PD experiences (Blau & Snell, 2013; Parella et al., 2023).

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Student Involvement

Student involvement is "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 518). "A highly involved student is one who, for example, devotes considerable energy studying, spends much time on campus, participates actively in student organizations, and interacts frequently with faculty members and other students" (Astin, 1984, p. 518).

A variety of benefits occur from student involvement. Those who engage in student organizations show high levels of development, including establishing a purpose, career planning, life management, and cultural participation (Foubert & Grainger, 2006). They feel a sense of belonging and connection (Astin, 1993), are more likely to perceive their experiences in a positive manner (Abrahamowicz, 1998), and continue to be involved in their community and organizations beyond graduation (Schuh & Laverty, 1983). Beyond personal development, active student involvement is associated with a higher GPA (Webber et al., 2013) and improved job prospects (The Ohio State University, n.d.).

In addition to academic and personal development, increased student involvement shows psychological benefits, which is a concern because students with poor mental health are associated with lower academic success (Eisenberg et al., 2009). Bowman (2010) found that students in their first year who participated in co-curricular activities demonstrated positive psychological well-being, specifically in the areas of personal growth, relations with others, and purpose in life. Kilgo et al. (2016) reported that student involvement has a significant, positive correlation to psychological well-being over four years of college. Demetriou et al. (2017) reported that first-generation students' participation in student organizations benefited their personal lives.

PD Engagement

PD engagement is a form of student involvement that focuses on activities to help students transition from the classroom to the workforce (Blau & Snell, 2013). PD includes activities like mock interviews and resume reviews, but they also include broader activities like industry professionals speaking at student events and book clubs (Bechtel & O'Sullivan, 2006; Blau & Snell, 2013; Gulati, 2021).

Students in the Ferguson College of Agriculture have access to a variety of PD opportunities. These include competitive teams, Greek life, study abroad, professional organizations, and career services opportunities. Livestock judging, soil judging, and quiz bowl team members have reported that participation contributed to career-related skills, such as public speaking, ability to work toward a team goal, being self-assertive, engaging in critical thinking, verbal communication abilities, being task and goal-oriented, and increasing confidence as a leader (Al-Ismaily et al., 2023; Bampadisou et al., 2016; Bolton et al., 2015; Cavinder et al., 2011; Rees & Johnson, 2020). Greek life participation has been linked to improved networking opportunities, vocational identity, career-decision making, self-efficacy, and goal commitment compared to non-Greek members (Freedman, 2016; McClain, 2014). Study abroad can help prepare students for the global marketplace (Hermans, 2007) by improving intercultural, intrapersonal, and cognitive competencies (Farrugia & Sanger, 2017; Franklin, 2010). And professional student organizations, like Agriculture Future of America (AFA), can help students develop various skills, network with professionals, and locate internships (Munoz et al., 2016; Peltier et al., 2008; Svacina & Barkley, 2010; Walker et al., 2018)

Students are more interested in participating in student organizations when PD activities are available (Munoz et al., 2016; Nolen et al., 2021), which helps the organizations be more successful (Wachenheim, 2007). PD activities improve leadership skills (Feldpausch et al., 2019) and career readiness (Won You, 2020), which are valued by employers (Wilson et al., 2019).

Past research revealed that student participation in extracurricular activities is partially driven by

the opportunity for students to network with industry professionals, which is a form of PD integration (Feldpausch et al., 2019; Wachenhein, 2007; Walker et al., 2018). They are facilitating new relationships and maintaining existing relationships, which is crucial for securing employment upon graduation (Badoer et al., 2021). Networking can improve students' perceptions of their employability (Batistic & Tymon, 2017), social and cultural capital (Davis & Warfield, 2010), productivity (Davis & Warfield, 2010), and career success outcomes (Forret & Dougherty, 2004). These connections have long-term impacts (Forret & Dougherty, 2004; Wolff & Moser, 2009).

Universities and colleges use career fairs and career services centers to help students gain employment. Career fairs provide students with the ability to explore career and internship opportunities as many companies gather in one location (Gordon et al., 2014; Payne & Sumter, 2005). This can increase students' awareness of career options and provide networking options (Payne & Sumter, 2005). Recruiters and students value the interactions provided at career fairs (Gordon et al., 2014). Gordon et al. (2014) recommended recruiters and students engage beyond the career fair, such as panels, forums, or in-class presentations.

College students often need career counseling and career services (Fouad et al., 2006), and students who use career services are more likely to secure internships and receive more job offers (VanDerziel, 2022). Career services emerged on college campuses over the past 50 years to address student concerns and provide resources and counseling regarding employment upon graduation by helping students identify career interests and values, resume reviews, interview preparation, connecting students to employers, and more (Dik & Steger, 2008; Huss et al., 2017; Marks & O'Connor, 2006; McGrath, 2002; Ross & Young, 2005; Tillotson & Osborn, 2012; Vidalis, 2012). In general, students find career services programs useful for helping them secure employment and providing resources and advice, but sometimes they have negative experiences because of insufficient support for underrepresented students and a lack of personalization. Thompson et al. (2023) found students who engaged with career services exhibited greater career optimism compared to students who did not take advantage of the resources and counseling services.

Marketing Student Events and Activities

One barrier to student participation in campus events is their lack of knowledge of the event or receiving information about the event too late (Lubbers & Joyce, 2014). At Oklahoma State University (OSU), events and activities are marketed on campus through printed materials such as A-frame posters, banners, booklets, brochures, flyers, and similar mediums (OSU Campus Life, n.d.). However, these standard promotional materials alone are not sufficient means of effectively attracting students to events (Lubbers & Joyce, 2014). New technologies are a way to support and communicate well with college students (Heiberger & Harper, 2008). Utilizing social media content to promote events and activities enables convenient access to information, reaching a large audience (Lubbers & Joyce, 2014). Campus Life and the Student Union marketing department offer help and tips for marketing student events on social media. Student organizations have access to an online student event database, CampusLink, and the university calendar to digitally promote participation in events across campus (OSU Campus Life, n.d.).

Flaherty (2023) revealed that students' lack of engagement across campus is impacted by their lack of knowledge about the events and activities hosted on campus. Robinson and Stubberud (2012) found that students prefer face-to-face communication, with email coming in second, followed by telephone, chat, texting, paper-based communication, and finally, Facebook. Swanson et al. (2018) also found that students prefer face-to-face communication. Students liked email but did not like social media for academic purposes (Swanson et al., 2018). Similarly, Robson et al. (2016) reported that students prefer email for university communication. Lubbers and Joyce (2014) found that students preferred word-of-mouth communication and communication from friends, followed by flyers and Facebook. Many traditional forms of campus promotion, like table tents and newspapers, were reported as the least effective (Lubbers & Joyce, 2014). In short, results have varied for preference and effectiveness.

Theoretical Framework

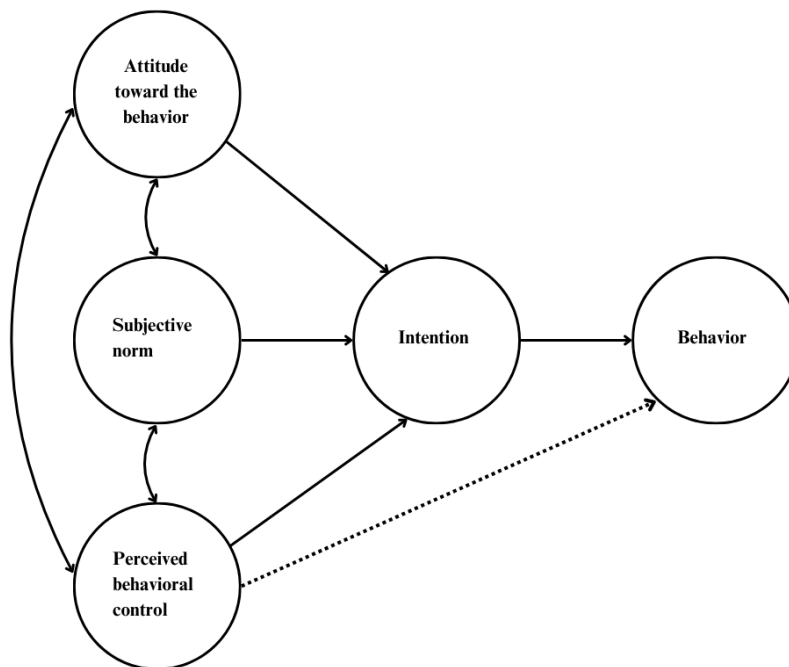
Icek Ajzen's theory of planned behavior (1991) and Alexander Astin's theory of student involvement (1999) provided the theoretical framework for this study. The theory of planned behavior allowed for exploration of the influences on undergraduate student behavior, while the theory of student involvement contributed insights into student engagement in PD activities.

Theory Of Planned Behavior

Ajzen's Theory of Planned Behavior (TPB) is often used to understand, predict, and change significant human social behaviors (Ajzen, 2012), including those related to undergraduate student involvement (Carmack & Heiss, 2018; Damron-Martinez et al., 2012; Ingram et al., 2000; Norman, 2018). Ajzen (1991) explained that the stronger one's intention is to engage in a specific behavior, the more likely it is to be performed. TPB has been used to understand a variety of social behaviors in the agricultural industry and beyond, including consumer purchasing intent (Stollar et al., 2022), social media behaviors (Pelling & White, 2009), conservation behaviors (Chaudhary et al., 2017), safe driving behaviors (Foxwell et al., 2023), and student behaviors (Foltz et al., 2021).

Figure 1

Icek Ajzen's (1991) Theory of Planned Behavior



TPB relies on three components to serve as predictors for the behavioral intention of the specified behavior: attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 2012). Attitude toward the behaviors is considered one's personal evaluation of the behavior (Ajzen, 2012). Subjective norms include the social pressure one feels to perform or not perform the identified target behavior (Ajzen, 2012). Perceived behavioral control measures how much control one has over performing the behavior, along with their confidence of performing the behavior (Francis et al., 2004). If one has a greater favorability of the attitude towards the behavior, more positive subjective norms, and a higher level of perceived behavioral control, they will exhibit a stronger intention to perform the behavior (Ajzen, 2012).

TPB has been used to understand undergraduate student behaviors, including behaviors related to PD engagement. Bobbit and Akers (2013) found that TPB explained students' intent to study abroad, but attitudes was the largest predictor of intention. Carmack and Heiss (2018) used the TPB to understand and predict undergraduate students' intent to use LinkedIn, finding the full model was significant, but past behavior and subjective norms via parents predicted LinkedIn intent to use the most. Damron-Martinez et al. (2012) sought to understand college students' intent to pursue a minor in business and found that all three were statistically significant predictors, though subjective norms was the strongest. Ingram et al. (2000) used the TPB to understand college students' intentions and behaviors related to graduate school, with each variable contributing to the prediction of intention. Students' attitudes towards the behavior exhibited the strongest correlation with intention.

Student Involvement Theory

Astin's student involvement theory defines student involvement and theorizes that a highly involved student will experience greater learning and personal development (Astin, 1999). The theory originated from a study of college dropouts, which aimed to identify factors affecting students' persistence to finish their degree (Astin, 1975). The significant effects of students' persistence are each related to their level of involvement.

Since Astin's original exploration of student involvement, the theory has been used to understand a variety of factors influencing involvement, including place of residence, student-faculty interactions, and athletic involvement (Astin, 1999). The theory has also been used to understand student behaviors related to on-campus involvement, including the motivations and barriers to participation (Foltz et al., 2021). Additionally, the benefits of student involvement and the college experience have been studied through the lens of the student involvement theory, revealing that student engagement is linked to higher levels of psychosocial development and greater student success and satisfaction (Foubert & Grainger, 2006; Webber et al., 2013).

A variety of factors can help motivate students to be more involved. Trolan (2019) found that early identification of career goals can lead to engaging in on-campus experiences to develop career skills. Foltz et al. (2021) reported that extra credit was the strongest incentive to attend on-campus events, but material incentives (e.g., free food and t-shirts) and personal interest (e.g., marketing to people who have demonstrated a previous interest in the subject) also helps. Hoover and Dunigan (2014) showed that participation in student organizations was driven by opportunities for leadership development, relevance to students' career and major goals, time to socialize with peers, and opportunities to connect with students with similar interests.

While it would be ideal for all students to actively participate in events and activities across campus, there are several barriers to student participation: timing and location of events, lack of knowledge about events and activities, off-campus work, schoolwork, cost of participation, not living near campus, a feeling of not belonging, difficulty transitioning to university life, cultural barriers, and caretaking responsibilities (Crabtree, 2023; Flaherty, 2023; Lubbers & Joyce, 2014). Work conflicts are particularly noteworthy because low-income students are more likely to need to work to afford college (Bozick, 2007). Students who work more than 20 hours per week are at an increased risk of dropping out (Hovdhaugen, 2015), and many students report higher levels of stress because of their jobs (Robotham, 2012).

Purpose and Objectives

There is a significant amount of literature exploring student engagement, but there is minimal research investigating undergraduate students' engagement in PD experiences. Students engaging in PD experiences will be better equipped to enter the workforce and fill necessary jobs in the agricultural, food, and natural resource industries (Blau & Snell, 2013; Parella et al., 2023), but to increase engagement, career

services units at universities need to understand students' PD perceptions to better market opportunities. Specifically, the TPB can help explain if students' attitudes, subjective norms, and perceived behavioral control affect participation in PD experiences. These insights can provide valuable information into understanding undergraduate engagement in these experiences.

The purpose of this study was to describe students' participation in PD experiences. To accomplish the purpose of this study, the following objectives were developed:

1. Describe undergraduate students' PD engagement;
2. Describe respondents' attitudes, subjective norms, and perceived behavioral control towards participating in PD experiences;
3. Determine how respondents' attitudes, subjective norms, and perceived behavioral control, along with demographic variables, predict participation in PD experiences, along with demographic variables;
4. Describe the barriers and incentives to student participation in PD experiences; and
5. Describe students' communication preferences regarding PD experiences.

Methods

To accomplish the objectives of this study, an online survey was conducted of undergraduate students in the Ferguson College of Agriculture. The online questionnaire was built and distributed in Qualtrics. The questionnaire was mostly quantitative, though a qualitative question related to defining PD was included.

An initial email was sent to 2,464 students, which was the accessible population provided by the university. Students were incentivized to participate with the chance to win one of three, \$50 Amazon gift cards. One follow-up email was sent to students who did not complete the survey five days later. In total, 199 individuals started the survey, and 171 individuals completed the survey. 122 responses were deemed usable, resulting in a response rate of 4.9%. We were limited to the initial email invitation and one follow-up email due to university restrictions. While the response rate was not ideal, there were enough responses to provide adequate power for the analysis (see analysis at the end of the Methods section). Table 1 shows how respondents' demographics compared to the college's (Office of Institutional Research and Analytics, 2024).

Table 1*Demographics of Population and Respondents*

Characteristic	Population		Respondents	
	<i>n</i>	Percent	<i>n</i>	Percent
Gender ^a				
Female	1,899	62.0	103	84.4
Male	1,162	37.9	18	14.8
Race ^b				
White	1,957	79.6	106	86.9
American Indian or Alaska Native	142	5.8	16	13.1
Hispanic	176	7.1	3	2.5
Black or African American	36	1.5	1	0.8
Asian	18	0.7	2	1.6
Native Hawaiian or Pacific Islander	1	0.04	0	0.0
Class Standing ^c				
Freshman	406	16.5	32	26.2
Sophomore	556	22.6	22	18.0
Junior	701	28.5	31	25.4
Senior	972	39.5	37	30.3

^a does not total to 100% because a respondent selected other

^b totals above 100% because respondents could select multiple options

^c does not total to 100% because of rounding

Beyond the demographics reported by OSU, this study sought to understand other respondent characteristics (Table 2). The majority were not first-generation college students, and most had a job while in school. Of the 89 respondents with a job, the largest group reported working 15 to 20 hours per week ($n = 35$, 39.3%).

Table 2*Respondent-Specific Demographics*

Characteristic	<i>n</i>	Percent
Are you a first-generation college student?		
No	93	76.2
Yes	29	23.8
Do you work a part-time or full-time job while in school?		
Yes	89	73.0
No	33	27.0
How many hours do you work per week? ($n = 89$)		
0 - 5	8	9.0
5 - 10	13	14.6
10 - 15	22	24.7
15 - 20	35	39.3
20 +	11	12.4

The first item of the questionnaire was open-ended and asked respondents to describe what events and activities they consider to be PD experiences. No definition of PD was provided to the respondents before this question to avoid priming their responses. The respondents were then provided with Blau and Snell's (2013) definition of PD along with examples of PD experiences. Blau and Snell (2013) defined PD as engagement in activities to help students successfully transition from the classroom to the workforce.

The example experiences provided included "networking events, career fairs, resume reviews, student organization activities, industry professionals, competitive teams, etc."

Respondents then indicated which PD experiences they engaged in using a yes or no item, which is preferred overall check-all-that-apply (Dillman et al., 2014). The list of 13 PD experiences was compiled based on Blau and Snell's (2013) definition of PD engagement and opportunities available to Ferguson students. Respondents also indicated their frequency of participation in PD experiences.

Students' attitudes, subjective norms, and perceived behavioral control were measured from an adaptation of a previous TPB study on state FFA officers' social media use (Rogers-Randolph et al., 2021), following recommendations from the Francis et al. (2004) and Ajzen (2006) manuals for constructing TPB questionnaires. Respondents' attitudes toward the behavior were measured through bipolar adjectives. Subjective norms were measured through five statements referring to social pressures. Perceived behavioral control was measured through four statements regarding their confidence and control over participating in PD experiences. Using Cronbach's alpha, the reliability of the scales were .760 for attitude, .844 for subjective norms, and .793 for perceived behavioral control. Scores of .70 to .90 are acceptable for reliability coefficients (McMillan & Schumacher, 2010).

To understand the barriers and incentives to student participation in PD experiences, students responded to the statement "I would be more inclined to participate in professional development experiences if _____," and the statement, "I do not participate in professional development experiences because _____." Fourteen items were used to measure participation incentives and six items measured barriers to participation.

Three items on the questionnaire investigated students' communication preferences regarding PD experiences. Respondents indicated where they had seen PD events promoted, including social media, printed materials, email, Canvas, in class, student organization meetings, GroupMe, and LinkedIn. Respondents were asked who had informed them of PD events, which included a professor, academic advisor, peers, student organization leadership, and career services staff had informed them about an event. For communication preferences, respondents indicated if they preferred email, word-of-mouth, Canvas, and printed materials.

To help ensure the validity of the instrument, it was based on an existing instrument (Rogers-Randolph et al., 2021) and based on recommendations from Francis et al. (2004) and Ajzen (2006). This project was for a master's thesis, and content validity was addressed by having the committee members review the instrument because of their expertise in student PD and survey design (Fraenkel & Wallen, 2006). Cognitive interviews were also conducted to determine whether respondents understood the questions as intended and to gain feedback to improve the clarity of the instrument (Dillman et al., 2014). The interviews were conducted with three individuals who were not a part of the target population but could provide similar perspectives. Two changes were made: The question regarding the frequency of participation in PD experiences was modified from *once per week* to *at least once per week* to accommodate potential variability in respondents' answers, and the phrase, "to clarify and ensure a consistent understanding of professional development throughout this study, the following definition is provided," was added to provide context when the definition was provided.

The data collected from the instrument were analyzed using the Statistical Package for Social Sciences (SPSS). Multiple data analysis methods were employed to understand the data, including descriptive statistics, linear regression, and coding. For objective 1, the open-ended responses from the first item of the questionnaire were coded for themes, which can be used to categorize descriptive data, like open-ended survey responses (Saldaña, 2021). Additionally, the frequency of participation in PD experiences was calculated. This included totaling the number of PD experiences a respondent engaged in and the frequency of how often a respondent engaged in PD experiences. For objective 2, means and

standard deviations were calculated for the individual items of the attitudes, subjective norms, and perceived behavioral control, in addition to grand means. For objective 3, a backwards stepwise regression was used to determine the influence of attitudes, subjective norms, and perceived behavioral control over actual behavior, along with additional variables of gender (coded as male or not male), race (coded as White or not White), academic class, first generation, and hours worked (those who did not have a job were coded as 0). Stepwise regression is used for exploratory analysis. In this case, this was because of the addition of other variables to the TPB model. A backwards stepwise regression model was chosen to minimize suppressor effects, which would increase the risk of a Type II error (Field, 2018). Before running the regression, the total number of PD activities participated in was calculated for each respondent. The number of responses was a limitation for the study. To detect a medium effect size (.2 or larger for Cohen's f^2) for eight variables, power was .951, but for small effect sizes (i.e., .1 or larger for Cohen's f^2), power dropped to .658. This was calculated in SPSS. For objective 4, the frequency of barriers and incentives was calculated to understand the most common barriers and incentives to participating in PD experiences. Frequencies were also calculated for objective 5, which addressed communication preferences.

Results

Objective 1: Describe undergraduate students' PD engagement.

The open-ended responses from the first item of the questionnaire were coded for themes to understand what events and activities respondents consider to be PD experiences. They were asked this question before being given a definition to understand what their beliefs of PD were prior to any priming the definition would provide. Respondents identified activities that related to a specific industry, led to personal development, prepared them for a career, allowed for interaction with industry professionals, and leadership experiences. These five themes encompass the events and activities that respondents associate with PD when unprompted.

The *first theme* included events related to one's preferred industry or career path and chosen major. Respondents described PD events as those that allow for hands-on learning opportunities: "I consider hands-on experience in any department to be professional development experience because that way it is easier to learn and determine what you like and/or want to do after college as a professional career." This included student organizations related to a specialized interest, volunteer experiences, work experience, and research opportunities.

The *second theme* was that PD events were thought to encompass experiences that led to self-improvement, development, and continuous learning, specifically experiences that led to the development of career skills: "Career fairs, resume workshops, workshops/trainings where you learn about stuff specific to your field and/or get a certificate for it." Some respondents indicated activities that developed transferrable skills, professionalism, and public speaking skills, or resulted in skills certification are PD experiences. Others indicated team-building experiences, conflict resolution, or goal-setting activities as PD experiences.

The *third theme* was that PD experiences prepared students for a career, to find a job, or to transition from college to work: "How to write a good resume and cover letter, what to wear for interviews, how to transition into the work force, developing a well-put-together portfolio. a lot of what's covered in [major] professional development course." This included career fairs, mock interviews, career workshops, advising appointments with career services, resume reviews, and networking experiences.

The *fourth theme* noted experiences that allowed for interaction and networking with industry professionals, like a conference or convention. Some respondents indicated job shadowing and internship experiences serve as PD experiences, while others responded that webinars, seminars, or panels in which industry professionals shared their knowledge and advice are PD experiences: "Internships, classes,

interpersonal work, shadowing, work/study, clubs, - anything that requires you to shake hands and make connections."

And the *fifth theme* described leadership experiences as a form of PD. This included leadership seminars, serving in a leadership role, and leadership training experiences: "I feel like any leadership course/ experience could be considered professional development."

Most respondents engaged in PD experiences at least once per semester ($n = 56, 45.9\%$), followed by at least once per month ($n = 32, 26.2\%$) and participation at least once per year ($n = 23, 18.9\%$). Only three respondents indicated they never participated in PD experiences ($n = 3, 2.5\%$), while eight respondents indicated they participated in PD experiences at least once per week ($n = 8, 6.6\%$).

Table 3 shows the most popular PD event that respondents participated in was student organizations ($n = 102, 85\%$), followed closely by the career fair ($n = 101, 82.8\%$). More than half of the respondents also indicated they participated in resume reviews ($n = 83, 68\%$) and networking events ($n = 63, 52.1\%$). The least common PD events and activities include Greek life ($n = 25, 20.7\%$), study abroad ($n = 20, 16.5\%$), Presidents Leadership Council ($n = 12, 9.9\%$), and the Oklahoma Agricultural Leadership Encounter ($n = 6, 5\%$).

Table 3

Respondents' Participation in PD Activities

What professional development events and activities do you participate in at Oklahoma State University?	Yes	
	<i>n</i>	Percent
Student Organizations	102	85.0
Career Fair	101	82.8
Resume Review	83	68.0
Networking Events	63	52.1
Industry Professional Organizations	55	45.5
Mock Interview	35	28.9
Competitive Teams	31	25.4
Career Services Workshop	30	24.8
Employer Information Sessions	29	24.2
Greek Life	25	20.7
Study Abroad	20	16.5
Presidents Leadership Council	12	9.9
Oklahoma Agricultural Leadership Encounter	6	5.0

Objective 2: Describe respondents' attitudes, subjective norms, and perceived behavioral control towards participating in PD experiences.

The grand mean for the attitude scale was 1.88 ($SD = 0.46$; Table 4). Lower scores were indicative of a positive attitude toward the behavior. Overall, respondents reported positive attitudes toward participating in PD experiences.

The subjective norms scale was used to understand the social pressures surrounding undergraduate students' participation in PD experiences at OSU (Table 5). The grand mean of the subjective norms scale was 4.56 ($SD = 1.20$). Higher scores suggest a greater social pressure to participate in PD experiences.

The measure of perceived behavioral control revealed respondents' confidence in their capabilities to participate in PD experiences (Table 6). The grand mean for overall perceived behavioral control was 5.11 ($SD = 1.15$). A higher score suggested a greater confidence in respondents' ability to participate in PD experiences.

Table 4*Attitudes towards Behavior*

Item	<i>n</i>	<i>M</i>	<i>SD</i>
Good: Bad	120	1.22	0.54
Unpleasant: Pleasant ^a	121	2.18	0.97
Useless: Useful ^a	120	1.48	0.78
Worthless: Valuable ^a	121	1.42	0.68
Enjoyable: Unenjoyable	120	2.25	0.97
Important: Unimportant	118	1.42	0.80
Easy: Hard	121	2.78	0.83
Manageable: Unmanageable	121	1.85	0.78
Accessible: Inaccessible	121	1.99	0.90
Affordable: Unaffordable	121	2.06	0.89
Overall Attitude	115	1.88	0.46

Note. Responses are based on a semantic differential scale of 1 (positive attitude) to 5 (negative attitude).

^a Reverse coded in analysis

Table 5*Subjective Norms about the Behavior*

Item	<i>n</i>	<i>M</i>	<i>SD</i>
Most people who are important to me think that I should participate in professional development experiences at least once a month.	122	4.77	1.43
It is expected that I should participate in professional development experiences at least once a month.	122	3.87	1.70
The people in my life whose opinions I value would approve of me participating in professional development experiences at least once a month.	122	6.06	1.18
Most people who are important to me participate in professional development experiences at least once a month.	122	3.85	1.70
Most people who are similar to me participate in professional development experiences at least once a month.	122	4.23	1.57
Overall Subjective Norm	122	4.56	1.20

Note. Responses are based on a scale of 1 = *strongly disagree* to 7 = *strongly agree*

Table 6*Perceived Behavioral Control of the Behavior*

Item	<i>n</i>	<i>M</i>	<i>SD</i>
I am confident that I could participate in professional development experiences at least once a month if I wanted to	122	5.48	1.35
It is easy for me to participate in professional development experiences at least once a month	122	4.30	1.61
The decision to participate in professional development experiences at least once a month is in my control	122	5.40	1.40
Whether or not I participate in professional development experiences at least once a month is entirely up to me	122	5.30	1.57
Overall Perceived Behavioral Control	122	5.11	1.15

Note. Responses are based on a scale of 1 = *strongly disagree* to 7 = *strongly agree*

Objective 3: Determine how respondents' attitudes, subjective norms, and perceived behavioral control, along with demographic variables, predict participation in PD experiences, along with demographic variables.

A backward stepwise regression was run to assess the following predictors' effect on frequency of participation in PD activities: attitude toward behavior, subjective norms, behavioral control, gender (coded as male or not male), race (coded as White or not White), academic class, first generation student, and hours worked per week (those who did not work were coded as 0). Seven models were produced, excluding a variable with each iteration. Model 1 was $R^2 = .214$, Model 2 was $R^2 = .214$ ($\Delta R^2 = .000$) after removing race, Model 3 was $R^2 = .214$ ($\Delta R^2 = .000$) after removing first generation, Model 4 was $R^2 = .214$ ($\Delta R^2 = .000$), after removing perceived behavioral control, Model 5 was $R^2 = .201$ ($\Delta R^2 = -.013$) after removing attitude toward behavior, Model 6 was $R^2 = .188$ ($\Delta R^2 = -.012$) after removing hours worked per week, and Model 7 was $R^2 = .177$ ($\Delta R^2 = -.011$) after removing class. The final model included subjective norms and gender as predictors. Those who had stronger subjective norms and women were more likely to engage in PD activities more often.

Another backward stepwise regression was run to assess the same predictors' effect on variety of PD activities engaged in. Model 1 was $R^2 = .111$, Model 2 was $R^2 = .111$ ($\Delta R^2 = .000$) after removing gender, Model 3 was $R^2 = .111$ ($\Delta R^2 = .000$) after removing hours worked per week, Model 4 was $R^2 = .111$ ($\Delta R^2 = .000$) after removing race, Model 5 was $R^2 = .108$ ($\Delta R^2 = -.003$) after removing attitude toward the behavior, Model 6 was $R^2 = .105$ ($\Delta R^2 = -.003$) after removing perceived behavioral control, and Model 7 was $R^2 = .099$ ($\Delta R^2 = -.006$) after removing first generation. The final model included subjective norms and class. Those who had stronger subjective norms and those who were further along in their undergraduate degrees were more likely to engage in a wider variety of PD activities.

Objective 4: Understand the barriers and incentives to student participation in PD experiences.

Objective 4 used frequencies and descriptive statistics to understand the barriers and incentives to students' participation in PD experiences. Table 7 shows respondents' agreement with various participation incentives. Respondents agreed that if the event was free ($M = 6.31$), affordable ($M = 6.07$), directly related to their major ($M = 6.36$), and presented the opportunity to network with industry professionals ($M = 6.23$), they would be more inclined to participate. There was also agreement that monetary incentives ($M = 5.75$), extra credit ($M = 5.95$), and a free meal ($M = 5.86$) would incentivize participation. When looking at the time of day of PD experiences, respondents agreed they would be most inclined to participate if the event was in the evening ($M = 5.48$), compared to in the morning ($M = 3.43$) or during the day ($M = 4.50$).

Table 8 shows the barriers to student participation in PD experiences. Respondents agreed that scheduling conflicts ($M = 5.74$) and lack of time ($M = 5.35$) are reasons they do not participate in PD experiences. Enjoyment ($M = 3.91$), cost ($M = 3.17$), and perceived value of PD ($M = 3.05$) are not perceived as significant barriers to participation.

Table 7*Incentives to Participate in PD Experiences*

I would be more inclined to participate in professional development experiences if	<i>n</i>	<i>M</i>	<i>SD</i>
The event was directly related to my major	122	6.36	0.98
The event was free	122	6.31	0.90
I could network with industry professionals	122	6.23	1.10
The event was affordable	120	6.07	0.97
I was offered extra credit for my attendance	122	5.95	1.35
There was a free meal offered at the event	122	5.86	1.22
There was a monetary incentive for my participation	122	5.75	1.28
I could learn about new careers	122	5.74	1.28
I could list my attendance on my resume	122	5.68	1.43
I did not have to travel off campus for the event	122	5.61	1.38
The event was in the evening	122	5.48	1.47
The event did not last more than an hour	121	5.32	1.46
The event was during the day	122	4.50	1.55
The event was in the morning	121	3.43	1.70

Note. Scales ranged from 1 = *strongly disagree* to 7 = *strongly agree*

Table 8*Barriers to Participation in PD Experiences*

I do not participate in professional development experiences because	<i>n</i>	<i>M</i>	<i>SD</i>
They often conflict with my schedule	122	5.74	1.24
I do not have time	122	5.35	1.24
I do not find them engaging	121	4.10	1.68
I do not find them enjoyable	122	3.91	1.67
I cannot afford to	122	3.17	1.60
I do not see value in participating	122	3.05	1.72

Note. Scales ranged from 1 = *strongly disagree* to 7 = *strongly agree*

Objective 5: Describe students' communication preferences regarding PD experiences.

Frequencies were used to understand students' communication preferences regarding PD experiences. The most identified channel of communication was email ($n = 118, 96.7\%$), followed by printed materials ($n = 111, 91.0\%$), and social media ($n = 98, 80.3\%$). When looking at the people who have informed respondents about PD events, the most commonly identified people were professors ($n = 105, 86.1\%$), followed by peers ($n = 91, 75.2\%$), student organization leadership ($n = 88, 72.1\%$), academic advisors ($n = 72, 60.0\%$), and career services staff ($n = 68, 56.7\%$). Respondents prefer to learn about events through email ($n = 111, 91\%$), followed by social media ($n = 97, 80.2\%$), and Canvas ($n = 90, 75.0\%$). The least preferred methods of communication included printed materials ($n = 83, 69.7\%$). While printed materials were identified as the least preferred methods of communication, over half of respondents still indicated they preferred these channels of communication.

Conclusions

Similar to Blau and Snell's (2013) definition of PD experiences, respondents described PD as events and activities that lead to skill development, career readiness, or work experience. They specifically mentioned the career fair, resume reviews, mock interviews, and other traditional career services to be PD

events and activities. The chance to interact and network with industry professionals have been valued in past research (Munoz et al., 2016; Walker et al., 2018). Respondents were less likely to consider student organization activities, study abroad, Greek life, and competitive teams as PD unprompted. While student organizations were not always considered PD by respondents prior to being provided the Blau and Snell definition, they were the most common PD activity students engaged in.

Students reported a variety of barriers, including time and scheduling conflicts (Flaherty, 2023; Lubbers & Joyce, 2014). While work has shown up in past research as a barrier (Bozick, 2007), it was not a predictor in either of the final stepwise regression models. Respondents preferred PD opportunities be in the evening.

There were several incentives that may encourage student engagement in these activities. While cost did not appear to be a barrier to respondents and they were not necessarily looking for monetary incentives, one of the highest agreed-upon incentives was a free event. Other highly agreed-upon incentives included the opportunity to network with industry professionals, the event's relation to one's major, and the opportunity to learn about a new career, which is consistent with past research (Feldpausch et al., 2019; Foltz et al., 2021; Munoz et al., 2016; Wachenhein, 2007). Material incentives are key motivators for PD engagement (Foltz et al., 2021), particularly extra credit.

The Theory of Planned Behavior is used to predict the intention of a behavior, which should ultimately lead to the actual behavior (Ajzen, 2012). In this study, the behavior was measured by frequency and variety of participation. The only component of TPB that made it into both final models after the backward stepwise regressions was subjective norms. In other words, receiving support and encouragement from peers, mentors, and family was a better predictor than attitudes and perceived behavioral control toward the behavior. These findings are not consistent with past literature, which found attitudes to be a significant predictor of undergraduate behavioral intention (Bobbit & Akers, 2013; Ingram et al., 2000; Norman, 2011). This finding may be because the TPB was used to predict actual behavior and not intentions in this study, though the application of the model to PD engagement could have also caused the difference.

Understanding the perceptions and behaviors related to PD engagement may provide insight into the best ways to market these opportunities to students. Lack of information has a negative impact on students' engagement (Flaherty, 2023), so it is important to ensure students have access to accurate information. Email was the most commonly used and preferred option for respondents, in line with past research (Robinson & Stubbered, 2012; Robson et al., 2016; Swanson et al., 2018). Social media was also a preferred option for learning about PD events, which is interesting because students often do not like engaging in social media for academic purposes (Swanson et al., 2018), but it could be more effective for PD (Lubbers & Joyce, 2012). Of note is that print materials were the least preferred and showed up as least effective in past research (Lubbers & Joyce, 2012), but they were the second most commonly used option by respondents, so there may still be a place for them in PD promotion.

While the findings can help inform marketing and promotion of PD activities going forward, care needs to be taken in extending the findings, given the response rate. There is the possibility the respondents are not representative of the larger population. Non-respondents may have different rates of engagement in PD activities or different motivations.

Recommendations for Practice

The first recommendation is to create PD events in which students can interact with industry professionals. Past research and this study revealed students not only associate PD events with networking, but students also value the time to connect with these professionals (Munoz et al., 2016; Walker et al., 2018). These networking connections are valuable to students as they transition from the classroom to the workforce, not only for the sake of potentially securing employment upon graduation but also to learn about

new careers. Therefore, the second recommendation for PD event planning is to organize events that allow students to explore a variety of career paths, beyond a career fair. Value is added by bringing in a variety of industry professionals from different career paths to show students how they can use their college degrees in the real world. These events could be career roundtables, opportunities to participate in job shadowing experiences, industry-specific employer networking sessions, or visits to relevant industry organizations.

The significance of subjective norms as a predictor for the frequency of involvement in PD should also be considered when advertising these events. Because subjective norms are a measure of social pressure to perform a behavior (Ajzen, 1991), content can be geared towards positively and proactively encouraging students to participate through social influences. This could include establishing and maintaining expectations for student involvement in PD activities. More research is needed to identify the individuals and opinions who are most valued by undergraduate students.

The communication channel preferences identified by respondents indicate that PD event advertisements should be delivered via email and social media. Students not only preferred email, but it was also the most common place where past marketing had taken place. While printed materials were identified as the least preferred method of communication, students recognize these printed materials on campus, and therefore, they may still be a useful way to spread information about an event.

Recommendations for Research

There are a variety of opportunities for future research. Given the response limitations and the target population, similar research should be replicated at other institutions and colleges. Research could also be expanded to look at other student engagement behaviors, as well as other variables that may help explain student engagement. Because subjective norms were the strongest predictor for PD engagement, future research should explore the best way to leverage that characteristic in marketing activities.

While the results of this study quantified student perceptions, qualitative research would be advantageous to understand why students value certain experiences more than others. That research could then be used to inform best practices for facilitating those opportunities for students.

It was noteworthy that women were more likely to engage in PD activities than men. More research is needed to understand if this is happening at other colleges and universities. If so, then research is needed to understand why men are less likely to engage in those activities.

Further research can explore the marketing of PD events. While this study identified students' preferred communication channels, research could investigate specific messaging and the effectiveness of different marketing techniques.

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