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OPENNESS TO DIVERSITY AND CHALLENGE: ASSESSMENT OF UNDERGRADUATE ATTITUDES AND EXPERIENCES IN THE COLLEGE OF AGRICULTURE AT KANSAS STATE UNIVERSITY

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Abstract

As society becomes more globally diverse, institutions of higher education have increased diversity programming for student success. Student openness to diversity and challenge has been found to have a large impact on changes in student attitudes, beliefs, and actions in the direction of greater tolerance to individual differences. This study uses regression analysis of survey data to measure (1) openness to diversity, and (2) diversity experience for students enrolled in the College of Agriculture at Kansas State University during the Fall Semester of 2020. Regression results indicate that student openness to diversity and challenge was found to be statistically associated with participation in diversity workshops, diversity class activities, and other personal and academic variables. The major implication of the statistical results is that there is an opportunity to influence student openness to diversity and challenge through enhanced programming for diversity appreciation and understanding as part of the university experience.

Keywords: Diversity and Challenge, Diversity Programming, Diversity Experience, Student Success

Introduction

Openness to diversity challenge is critical to achieving a successful undergraduate experience and working environment in the global society (Bowman, 2014). There has been a push for more diversity training in the academic realm to bring awareness to cultural differences and increase the openness to diversity. In addition, many universities have not only focused on diversity education for its faculty and staff, but also educate the student population to promote a safe and inclusive environment. It has been discovered that curricular and co-curricular diversity, as well as interaction diversity are forms of diversity experience in higher education. Fostering diversity in the course curriculum provides benefit to students as it prepares them for the diverse workplace environment they may experience when entering their careers. In addition, it is important for students to understand diversity in practice for their everyday life leading to higher levels of openness to diversity.

Kansas State University (KSU) has been committed to diversity, equity, and inclusion efforts both on the university and college level (Carter et al., 2019). Through establishing the Department of Multicultural Student Affairs, Chief Diversity Officer, the Kansas State University Tilford Group, and various programs, KSU offers diversity experience and trainings for faculty, staff, and students. Likewise, the KSU College of Agriculture created the only college Diversity Programs Office (DPO) in 2003 to increase diversity awareness among students, faculty, and staff. Through this leadership, the college has increased the multicultural student numbers by over 300% and

enhanced diversity programming efforts for its faculty since the DPO was established (Kansas State University, Office of the Registrar, 2021). The College of Agriculture's DPO is also focused on curricular and co-curricular diversity, interaction diversity, and creation of a comfortable college climate. Researchers have reported that campus climate is positively correlated with academic success, student retention, and overall satisfaction (Mayhew et al., 2005; Parker III and Trolian, 2018). Recognizing this, diversity experiences are vital to achieving a comfortable campus climate for all in an academic setting.

Using the foundation of previous studies, the present research seeks to utilize survey data to measure student attitudes toward diversity, the degree to which personal and academic characteristics influence attitudes, and how much experience students in the College of Agriculture have with persons with backgrounds different from themselves during the Covid-19 Pandemic. The specific objectives of this study were to measure (1) the impact of factors affecting students' openness to diversity and challenge, and (2) the level of diversity experience of students enrolled in the College of Agriculture at Kansas State University during the Fall Semester of 2020. Careful measurement and analysis of the extent to which students appreciate different perspectives, values, and ideas are crucial as the nation is rapidly moving toward an ethnically diverse and culturally pluralistic society.

Literature Review

There is a great deal of earlier literature on how college affects attitudes and diversity of issues and events, including political, religious, cultural, aesthetic, and intellectual attitudes and values (Antonio, 2001; Astin, 1993; Hurtado, 2001). Denson and Chang (2009) provided evidence that programmatic approaches to diversity interaction positively increase diversity outcomes. Diversity programming has led to higher levels of measured intellectual development and academic self-confidence (Laird, 2005). In addition, cross-racial interaction that occurs during the course of college life has also been shown to enhance learning and intellectual outcomes (Hu and Kuh, 2003; Gurin et al., 2002; Laird, 2005).

Openness to diversity has a large impact on student attitudes, beliefs, and actions in the direction of greater tolerance to individual differences (Whitt et al., 2001). Hu and Kuh (2003) used responses from the College Student Experience Questionnaire (CSEQ) from over 53,000 undergraduate students enrolled in 124 American universities to examine the effects of diversity experiences on desirable outcomes. Survey results demonstrated that white students had less contact with students from different backgrounds than nonwhite students. Interactions with persons of diverse backgrounds were found to have positive impacts on self-reported learning and personal development outcomes. Pascarella et al. (1996) found that students who lived on campus, studied the most, and who were most engaged with their student peers tended to have the highest levels of openness to diversity. Pascarella et al. (2004) measured and evaluated the college experience and outcomes of first-generation college students, including openness to diversity and challenge, and concluded that there were no differences between first-generation and other students in a measure of openness to diversity and challenge.

Milem and Umbach (2003) studied how student plans for involvement in diversity-related activities in college varied across race, personality type, and experience with diversity. The authors concluded that white students are the least likely to be prepared for diversity experiences and

interaction in college. Students who selected social and artistic majors were more likely to plan to participate in diversity experiences, and personality had an influence on self-reported desire to engage in diversity experiences. Pagoto et al. (2020) conducted a study during the Spring Semester of 2020, which determined that having less interaction and communication with instructors and students had a negative impact on students. The lack of ability to safely interact with others could have influenced openness to diversity and decreased opportunities for diversity experience due to Covid-19. Denson and Chang (2009) identified three forms of racial diversity in higher education: (1) structural diversity (racial composition of enrolled students), (2) curricular and co-curricular diversity (diversity programming targeted at enhanced knowledge of diversity), and (3) interaction diversity (informal relationships and interactions between enrolled students). This study provides a measure of curricular and co-curricular diversity and interaction diversity.

Methodology

Theoretical Considerations and Data Collection

A short number of survey questions based on previous literature addressed the degree to which students are open to cultural and racial diversity, diversity values, and openness to academic and personal challenges. Demographic information was also collected to allow for the statistical analysis of the determinants of diversity values, and openness to diversity and challenge for undergraduate students enrolled in the College of Agriculture at Kansas State University. Econometric analyses of the survey data provided: (1) quantitative estimates of the impact of personal characteristics and college experiences on the level of openness to diversity, and (2) quantitative estimates of the determinants of the level of experience with diversity in college. The major implication of the statistical results is that the opportunity to influence student openness to diversity and challenge has been expanded through implementation and promotion of diversity programming. These programs include workshops and academic courses that enhance the appreciation and understanding of persons with different backgrounds, experiences, and beliefs.

During the Fall Semester of 2020, an electronic survey was sent to 2,163 enrolled undergraduate students in the College of Agriculture. Complete and usable responses were returned by 359 enrolled students, yielding a response rate of 17%. The survey was administered during the Covid-19 pandemic, and at this time, Kansas State University had a large number of positive cases with a majority of the students in quarantine and/or isolation. The University was all remote, with classes offered online. The University was sending daily emails to students about the pandemic, and how to react to it. Given this highly unusual situation, the survey received a lower response rate than usual. Although the survey was sent several times, and reminder messages were sent, many students had a sense of information overload, resulting in fewer respondents than expected. However, the results are interesting and important, and should be interpreted as such.

Data Analysis

Data were analyzed using means, standard deviations, correlation, and regression analysis. The study's determinants included: (1) sociodemographic characteristics, (2) student background, (3) college experience, (4) living situation, and (5) exposure to diversity. To identify and quantify the determinants of the openness to diversity and challenge (OPEN) and experience with diversity (DIVX) in the College of Agriculture at Kansas State University, several groups of potential factors in the students' background were examined, as in equations (1) and (2):

$$\text{OPEN}_i = f(\text{DIVX}_i, \text{Diversity Workshops and Classes, Experience, Personal Characteristics, Demographic Variables, Academic Characteristics}) \quad (1)$$

$$\text{DIVX}_i = f(\text{Diversity Workshops and Classes, Experience, Personal Characteristics, Demographic Variables, Academic Characteristics}) \quad (2)$$

The two models share identical independent variables, with the exception of the diversity experience variable (DIVX). The openness to diversity model (OPEN) includes the measure of diversity experience (DIVX) as an independent variable, to capture the impact of experience with diversity on the level of openness to diversity. The measure of openness to diversity and challenge (OPEN) and student experience with diversity (DIVX) were taken from the College Student Experience Questionnaire [CSEQ] (Kuh et al., 2003). In explaining the analysis, the following are germane: (1) The variable DIVX is considered to be predetermined, or exogenous, allowing for the inclusion as an independent variable in the OPEN regression without simultaneity bias; (2) Separate regressions were estimated using each of the eight openness to diversity questions (Table 1) as the dependent variables. Results were qualitatively similar to those presented in Table 5 for the average variable, OPEN; (3) Separate regressions were estimated using each of the seven diversity experience questions (Table 3) as the dependent variables. Results were qualitatively similar to those presented in Table 5 for the average variable DIVX; and (4) For each group of categorical variables, the variable with the highest frequency of responses was omitted from the regressions as the default category. These omitted default variables are: “Never” for diversity in class discussions and assignments, Freshman, White, Farm/Ranch, Both Parents College, 12-14 credit hours, House/Drive Distance, Other Students, and major in Animal Sciences (Table 5).

Results

The study’s results on openness to diversity and challenge (OPEN) are reported in Tables 1 and 2. The short survey of eight questions (Table 1) taken from the CSEQ was utilized, following the previous work of Whitt et al. (2001). Survey respondents were asked to respond to the eight statements on a Likert scale from 1 = “Strongly Disagree” to 5 = “Strongly Agree.” These questions have been shown to be both reliable and valid in numerous surveys and in extensive literature (Kuh et al., 2003; Whitt et al., 2001; Shim and Perez, 2018; Umbach and Kuh, 2006). Responses ranged between the lowest value (=1) and the highest value (=5) for each question. The average response across all eight questions equaled 3.57, indicating responses between “indifference” and “agreement” for the eight questions. Following previous research, the mean value of the Likert scale for the eight survey statements was used as a measure of undergraduate openness to diversity and challenge (OPEN), as reported in Table 1.

Relatively low levels of openness to diversity and challenge were reported by agricultural students. To better understand the relationship between the questions, correlation coefficients were calculated, and are reported in Table 2. The coefficients range from 0.35 to 0.70, indicating similarity, but not uniformity, across questions. All coefficients >0.5 are bolded within Table 2. The average of the eight questions (OPEN) was highly correlated with each of the individual questions, with coefficients ranging from 0.63 to 0.81. This indicates that the average level of openness is representative of a student’s overall level of openness to diversity and challenge. Therefore, the regression model developed below is for the average level of openness (OPEN).

Table 1. Descriptive Statistics of Openness to Diversity Questions

Variable	Description	Mean	S.D.
OPEN1	“I enjoy having discussions with people whose ideas and values are different from my own.”	3.85	0.80
OPEN2	“The real value of a college education lies in being introduced to different values.”	3.44	1.11
OPEN3	“I enjoy talking to people who have values different from mine because it helps me understand myself and my values better.”	4.09	0.79
OPEN4	“Learning about people from different cultures is a very important part of my college education.”	3.76	1.02
OPEN5	“I enjoy taking courses that challenge my beliefs and values.”	3.41	0.98
OPEN6	“The courses I enjoy the most are those that make me think about things from a different perspective.”	3.67	0.94
OPEN7	“Contact with individuals whose background (e.g. race, national origin, sexual orientation) is different from my own is an essential part of my college education.”	3.43	1.12
OPEN8	“I enjoy courses that are intellectually challenging.”	4.03	0.77
OPEN	Average of eight openness to diversity questions.	3.71	0.72

Number of observations equals 359. Survey responses: 1 = “Strongly Disagree,” 2 = “Disagree,” 3 = “Neither Agree nor Disagree,” 4 = “Agree,” 5 = “Strongly Agree.”

The results for the regression is reported in Table 5. Some of the coefficients of selected variables were significant while others were not. Student experience with diversity (DIVX) was also measured with questions from the CSEQ. Following Hu and Kuh (2003) and Pascarella et al. (2001), seven statements were included to quantify student exposure to persons other than themselves, as shown in Table 3. Following previous research, the mean value of the Likert scale from 1 = “Never” to 4 = “Very Often” for the seven survey statements was used as a measure of undergraduate diversity experience. The average response for diversity experience questions in 2020 ranged between 1.81 for, “Had serious discussions with students from a country different from yours,” (DIVEXP7) to 2.62 for, “Became acquainted with students whose race or ethnic background was different from yours” (DIVEXP1). This range of responses indicates that students who responded to the survey on average participated in the activities listed in Table 3 “occasionally.”

Table 2. Correlation Coefficients of Openness to Diversity Questions

	OPEN1	OPEN2	OPEN3	OPEN4	OPEN5	OPEN6	OPEN7	OPEN8	
OPEN1	1.0000								
OPEN2	0.4168	1.0000							
OPEN3	0.7024	0.4062	1.0000						
OPEN4	0.4356	0.6619	0.4860	1.0000					
OPEN5	0.5411	0.5495	0.5568	0.5091	1.0000				
OPEN6	0.4605	0.5734	0.4774	0.5918	0.5450	1.0000			
OPEN7	0.4176	0.6762	0.4713	0.7024	0.5177	0.5887	1.0000		
OPEN8	0.4103	0.3580	0.4195	0.4263	0.4687	0.4994	0.3532	1.0000	
OPEN	0.6996	0.7948	0.7231	0.8133	0.7746	0.7860	0.8077	0.6262	1.0000

Number of observations equals 359. Variable definitions appear in Table 1.

Table 3. Descriptive Statistics of Diversity Experience Questions

Variable	Description	Mean	S.D.
DIVEXP1	“Became acquainted with students whose race or ethnic background was different from yours.”	2.62	0.79
DIVEXP2	“Became acquainted with students from another Country.”	2.03	0.80
DIVEXP3	“Had serious discussions with students whose philosophy of life or personal values were very different from yours.”	2.35	0.87
DIVEXP4	“Had serious discussions with students whose political opinions were very different from yours.”	2.47	0.91
DIVEXP5	“Had serious discussions with students whose religious beliefs were very different than yours.”	2.37	0.93
DIVEXP6	“Had serious discussions with students whose race or ethnic background was different from yours.”	2.29	0.88
DIVEXP7	“Had serious discussions with students from a country different from yours.”	1.81	0.80
DIVEXP	Average of seven diversity experience questions.	2.28	0.64

Number of observations equals 359. Survey responses are: 1 = “Never,” 2 = “Occasionally,” 3 = “Often,” and 4 = “Very Often.”

Following Hu and Kuh (2003), correlation coefficients are reported across each diversity experience question (Table 4). The coefficients range from 0.28 to 0.76, closely mirroring those estimated by Hu and Kuh (2003) for over 53,000 students in 124 universities across the United States. All correlations > 0.50 are marked in bold in Table 4. This provides some evidence of the

reliability of the questions used to measure diversity experience. Each of the seven questions is highly correlated with the average (DIVX), with coefficients ranging from 0.69 to 0.81, and the results are also similar to those of Hu and Kuh (2003). The average diversity experience variable (DIVX) is used as the dependent variable in the regression reported in Table 5. Summary statistics for the included variables in the 2020 survey are reported in table 5, together with the regression results. In this case also, some of the coefficients of selected variables were significant while others were not.

Table 4. Correlation Coefficients for Diversity Experience Questions

	DIVX1	DIVX2	DIVX3	DIVX4	DIVX5	DIVX6	DIVX7	DIVX
DIVX1	1.0000							
DIVX2	0.5842	1.0000						
DIVX3	0.3485	0.4116	1.0000					
DIVX4	0.2811	0.2752	0.6359	1.0000				
DIVX5	0.4030	0.3304	0.5782	0.5733	1.0000			
DIVX6	0.6625	0.5285	0.5048	0.4026	0.4963	1.0000		
DIVX7	0.5485	0.7606	0.4572	0.3727	0.4341	0.6442	1.0000	
DIVX	0.7186	0.7270	0.7602	0.6907	0.7419	0.8066	0.7933	1.0000

Number of observations equals 359. Variable definitions appear in Table 3.

Table 5. Summary Statistics of Variables, Openness to Diversity and Diversity Experience Regression Results

Variable	Mean	SD	Min	Max	Open to Diversity			Diversity Experience		
					Beta	se	t-stat	Beta	se	t-stat
<i>Dependent Variables</i>										
OPEN	3.71	0.72	1	5	--	--	--	--	--	--
DIVX	2.28	0.64	1	4	--	--	--	--	--	--
<i>Intercept</i>	--	--	--	--	0.492	0.995	0.494	2.157**	0.916	2.355
<i>Diversity Experience</i>										
DIVX	2.28	0.64	1	4	0.267***	0.067	3.985	--	--	--
Diversity Crs.	0.58	--	0	1	-0.028	0.081	-0.346	-0.047	0.085	-0.553
Diversity Wksp.	0.41	--	0	1	0.188**	0.077	2.442	0.152**	0.075	2.027

Table 5. Continued

Variable	Mean	SD	Min	Max	<u>Open to Diversity</u>			<u>Diversity Experience</u>		
					Beta	se	t-stat	Beta	se	t-stat
<i>Diversity in Class Discussions and Assignments</i>										
Never	0.16	--	0	1	--	--	--	--	--	--
Occasionally	0.57	--	0	1	0.250**	0.117	2.137	0.303**	0.100	3.030
Often	0.23	--	0	1	0.356***	0.137	2.599	0.402***	0.126	3.190
Very Often	0.04	--	0	1	0.363*	0.222	1.635	0.803***	0.183	4.388
<i>Year in College</i>										
Freshman	0.24	--	0	1	--	--	--	--	--	--
Sophomore	0.23	--	0	1	0.025	0.136	0.184	0.126	0.123	1.024
Junior	0.23	--	0	1	0.054	0.162	0.333	0.065	0.135	0.481
Senior	0.25	--	0	1	-0.113	0.19	-0.574	0.101	0.153	0.660
Five or more yrs.	0.05	--	0	1	-0.384	0.250	-1.536	0.211	0.208	1.014
<i>Personal Characteristics</i>										
Female	0.69	--	0	1	0.241***	0.083	2.904	-0.001	0.079	-0.013
Age (years)	20.0	1.67	18	25	0.092**	0.038	2.421	0.023	0.035	0.657
Married	0.02	--	0	1	0.623**	0.316	1.972	-0.465	0.302	-1.540
<i>Race/Ethnicity</i>										
White	0.88	--	0	1	--	--	--	--	--	--
Black/Af. Amer.	0.02	--	0	1	-0.017	0.298	-0.057	0.017	0.212	0.080
Asian/As. Amer.	0.03	--	0	1	0.035	0.202	0.173	0.029	0.221	0.131
Hispanic/Latinx	0.03	--	0	1	0.273**	0.118	2.314	0.359**	0.171	2.099
Native American	0.01	--	0	1	0.174	0.239	0.728	0.167	0.203	0.823
Other	0.03	--	0	1	0.099	0.204	0.485	-0.089	0.253	-0.352
<i>Community of Origin</i>										
Farm/Ranch	0.38	--	0	1	--	--	--	--	--	--
Rural Area	0.18	--	0	1	-0.036	0.110	0.327	-0.107	0.094	-1.138
Town <5000 pop.	0.09	--	0	1	-0.009	0.143	0.063	-0.379***	0.118	-3.212
City 5-50K pop.	0.21	--	0	1	0.141	0.106	1.330	-0.116	0.095	-1.221
Urban >50K pop.	0.14	--	0	1	0.259**	0.126	2.056	-0.068	0.105	-0.648
<i>Parent Education</i>										
No College	0.15	--	0	1	0.104	0.109	0.954	0.070	0.095	0.737
Both Parents Col.	0.59	--	0	1	--	--	--	--	--	--
Father College	0.08	--	0	1	0.105	0.137	0.766	-0.246**	0.121	-2.033
Mother College	0.18	--	0	1	0.037	0.095	0.389	-0.134	0.091	-1.473
<i>Enrolled Credit Hours</i>										
<6 hours	0.01	--	0	1	0.384*	0.204	1.882	0.032	0.285	0.112
7-11 hours	0.03	--	0	1	-0.165	0.225	-0.733	-0.325**	0.145	-2.241
12-14 hours	0.47	--	0	1	--	--	--	--	--	--
15-16 hours	0.36	--	0	1	-0.022	0.075	-0.293	0.030	0.071	0.423
>17 hours	0.13	--	0	1	-0.031	0.123	-0.252	-0.051	0.131	-0.389

Table 5. Continued

Variable	Mean	SD	Min	Max	Open to Diversity			Diversity Experience		
					Beta	se	t-stat	Beta	se	t-stat
Academic Characteristics										
Transfer Student	0.19	--	0	1	0.001	0.103	0.010	0.138	0.112	1.232
International	0.01	--	0	1	-0.054	0.236	-0.229	-0.934***	0.315	2.965
Seek Adv. Deg.	0.60	--	0	1	0.307***	0.088	3.489	0.089	0.082	1.085
HS GPA	3.62	0.28	2.25	3.75	0.019	0.144	0.132	-0.288**	0.130	-2.215
Living Situation: Location										
Residence Hall	0.24	--	0	1	0.280**	0.127	2.205	0.158	0.131	1.206
Greek House	0.07	--	0	1	-0.182	0.177	-1.028	0.076	0.125	0.608
House/Walk Dis.	0.32	--	0	1	0.117	0.098	1.194	0.115	0.093	1.237
House/Drive Dis.	0.30	--	0	1	--	--	--	--	--	--
Other	0.06	--	0	1	-0.290	0.193	-1.503	0.305**	0.129	2.364
Time Allocation										
No Job	0.38	--	0	1	-0.168	0.111	-1.514	0.111	0.097	1.144
Work Hrs/Wk	11.21	11.85	0	40	-0.005	0.005	-1.000	0.011***	0.004	2.750
Study Hrs/Wk	14.23	9.05	0	40	-0.002	0.004	-0.500	0.008**	0.004	2.000
Living Situation: Roommates										
Live Alone	0.14	--	0	1	-0.121	0.117	-1.034	-0.028	0.098	-0.286
Other Students	0.70	--	0	1	--	--	--	--	--	--
Spouse/Partner	0.06	--	0	1	0.063	0.162	0.389	-0.002	0.229	-0.009
Parents	0.06	--	0	1	0.249	0.158	1.576	-0.232*	0.140	-1.657
Relatives	0.01	--	0	1	0.234	0.239	0.979	-0.361	0.233	-1.549
Nonstudents	0.01	--	0	1	0.583***	0.212	2.750	0.230	0.299	0.769
Other	0.02	--	0	1	0.199	0.234	0.850	-0.098	0.221	-0.443
Major Field of Study										
Agribusiness	0.14	--	0	1	-0.016	0.123	-0.130	-0.108	0.118	-0.915
Ag Communications	0.05	--	0	1	0.301*	0.169	1.781	-0.400***	0.142	-2.817
Ag Economics	0.10	--	0	1	0.073	0.154	0.474	-0.130	0.120	-1.083
Ag Education	0.05	--	0	1	0.129	0.146	0.884	0.122	0.169	0.722
Ag Tech Management	0.01	--	0	1	-0.550***	0.222	-2.477	-0.295	0.412	-0.716
Agronomy	0.06	--	0	1	-0.119	0.198	-0.601	-0.026	0.171	-0.152
Animal Sciences	0.35	--	0	1	--	--	--	--	--	--
Bakery Science	0.03	--	0	1	0.321**	0.157	2.045	0.216	0.209	1.033
Feed Science	0.003	--	0	1	0.577***	0.211	2.735	-0.091	0.182	-0.500
Food Science	0.03	--	0	1	0.189	0.241	0.784	0.237	0.155	1.529
General Agriculture	0.003	--	0	1	-0.279**	0.144	-1.938	-0.192	0.121	-1.587
Horticulture	0.06	--	0	1	0.369***	0.120	3.075	-0.044	0.177	-0.249
Milling Science	0.02	--	0	1	-0.090	0.308	-0.292	0.336	0.309	1.087
Park Mgt. and Con.	0.02	--	0	1	-0.235	0.194	-1.211	-0.135	0.172	-0.785
Pre-Vet Medicine	0.06	--	0	1	-0.100	0.162	-0.617	0.073	0.158	0.462
Wildlife and Outdoor	0.01	--	0	1	0.026	0.361	0.072	0.333	0.264	1.261
Other Major	0.003	--	0	1	-0.608*	0.322	-1.888	-0.462**	0.223	-2.072

Table 5. Continued

Observations	359	359
Root MSE	0.61275	0.57033
R-Square	0.3945	0.3419

Reported coefficients, standard errors, and t-statistics are heteroscedastic-consistent (White).

***Sig at 1%; **Sig at 5%; *Sig at 10%.

Discussion

Descriptive Results

The level of diversity experience among students enrolled in the College of Agriculture at Kansas State University was measured in this study. The average of openness to diversity and challenge was 3.71, indicating that respondents were mostly indifferent or agreed with openness to diversity and challenge. Also, average student experience with diversity, (DIVX) was 2.28, indicating that survey respondents only “occasionally” had experiences with diversity listed in Table 3. Fifty-eight percent of the respondents had taken a diversity course, and 41% had participated in a diversity workshop (Table 5). These results show the ability for expansion of diversity programming to provide more experiences with people from different backgrounds as part of the university experience.

The survey question to identify the inclusion of diversity in curricular discussions and assignments resulted in approximately 57% of respondents reporting “Occasionally” (Table 5), and 23% reporting “Often.” Sixteen percent reported “Never,” indicating that most courses taken by enrolled students include some component of diversity. Personal characteristics variables included in the model were gender, age, marital status, and race. Survey respondents were 69% female, the mean age was 20 years, two percent were married, and 12% were nonwhite. Demographic variables include community of origin, educational levels of parents, living situation, and time allocation. Approximately 38% of the respondents came from a farm or ranch and 14% came from cities of more than 50,000 people. Fifty-nine percent of enrolled students came from families where both parents had a college education; 26% had one parent with college education, and 15% had neither parent with a college education. The level of parent education reflects a major shift in the demographics of students enrolled in the College of Agriculture.

Thirty-two percent of the sample lived in a location within walking distance of the University; 30% drove to school; 24% live in residence halls, and 7% lived in Greek Houses. Thirty-eight percent of the students did not have a job. The average workload among those who worked was approximately 11.2 hours per week. The average number of study hours per week was 14.2. A large majority of students responding to the survey lived with other students (70%); 14% lived with a spouse or partner, parents, relatives, or with friends not enrolled in school, and another 14% lived alone.

Academic characteristics include year in college, enrolled credit hours, transfer status, international student status, a desire to seek an advanced degree, high school GPA, and major field of study. More experienced students were more likely to respond to the survey: responses came from seniors (30%), juniors (23%), sophomores (23%), and freshmen (24%). This is an additional source of potential respondent bias, since greater levels of college experience were associated with a higher probability of response. Perhaps older students are more comfortable sharing information

or have a greater sense of responsibility for participation in surveys. A plurality of students were enrolled in 12-14 credit hours (47%), and 36% were enrolled in 15-16 hours. A relatively lower percentage of students (13%) were enrolled in 17 or more credit hours. Transfer students comprised 19% of the sample, 60% were interested in seeking an advanced degree. The average self-reported high school grade point average was 3.62 on a four-point scale, with a range of between 2.25 and 3.75. The major field of study reflected by the survey sample reflects the population of the College of Agriculture: the most frequent major reported was Animal Sciences (35%), followed by Agribusiness (14%), Agricultural Economics (10%), Horticulture (6%), and Pre-Vet Medicine (6%).

Estimation Results

Openness to Diversity and Challenge

Results of the openness to diversity and challenge (OPEN) regression are also reported in Table 5. The reported coefficients, standard errors, and t-statistics are corrected for heteroscedasticity White (1980). The regression explained approximately 39% of the variation in OPEN, as indicated by the R-squared measure. The estimated coefficient of DIVX equaled 0.267; it is positive and significant at the 1% level. This indicates that experience with diversity is directly associated with the openness to diversity and challenge.

The coefficient of female was 0.241 and was significant at the 1% level, implying that females were more open to diversity and challenge than males. Older students and married students were found to be more open to diversity and challenge; these coefficients were significant at the 5% (Table 5). Students from urban areas (populations of greater than 50,000 people) were more likely to be open to diversity and challenge relative to the default category of those respondents raised on a farm or ranch. The coefficient was 0.259 and significant at the 5% level. This may be capturing the likelihood that urban areas provide more experience with diversity, and thus more openness to it. The other community of origin variables were insignificant, perhaps due to the inclusion of DIVX, which accounts for diversity experience, resulting in a lack of influence for the size of the hometown.

The coefficients (0.250, 0.356, and 0.363) for students who reported higher frequencies of exposure to diversity class discussions and assignments were statistically significant (respectively, 5%, 1%, and 10%) relative to openness to diversity and challenge. Likewise, the coefficient (0.188) of students who participated in diversity workshops was significant at the 5% level, implying that such students were more open to diversity and challenge (Table 5). These results provide the major implication of the study; they provide some evidence that diversity programming affects student attitudes toward diversity. The results align with previous findings showing diverse interactions positively impacts student attitudes, behavior, and learning outcomes (Pascarella et al., 2004; Wiley and Hobbs, Jr., 2021). Interestingly, students who enrolled in less than 6 credit hours were more open to diversity than the default category of students enrolled in 12-14 hours. This may indicate a difference in personal values and attitudes across students; students who take fewer classes may be less driven to success and goal-oriented than those who are enrolled in higher course loads. These results may also reflect the findings of Milem and Umbach (2003) who reported that students who selected social and artistic majors were more likely to plan to participate in diversity experiences, and that personality plays an important role in attitudes toward diversity.

The coefficient (0.307) of undergraduate students who desire to pursue an advanced degree was significant at the 1% level, indicating that such students are more open to diversity than those who did not have a desire to further their education beyond the undergraduate level. This is in line with the conventional wisdom that institutions of higher education are more open to people of all backgrounds, and students who desire to remain at the university may be attracted to this environment. Openness to diversity and challenge was not significantly related to time allocation whether a student held a job, how many hours worked per week, or how many hours studied per week. What is more important is that the coefficient (0.583) of students who lived with friends who were not enrolled in college was statistically significant at the 1% level, implying they were more open to diversity and challenge than those students who had other living arrangements. This could reflect more experience with persons from a more diverse background. Several major fields of study were found to be more open to diversity and challenge than the default major, Animal Sciences. The coefficients of Ag Communication (0.301), Bakery Science (0.321), Feed Science (0.557), and Horticulture (0.369) were all positive and statistically significant. These majors attract students who may be more open to diversity and challenge, and exposure to diverse students within the major could enhance student openness to diversity and challenge. More research is needed to explore this important and fascinating relationship, respectively, at 10%, 5%, 1%, and 1% levels).

Three other major fields of study were found to be negatively related to openness to diversity and challenge relative to the default category of Animal Sciences. The coefficients of AgTech Management (-0.550), General Agriculture (-0.279), and “Other” major (-0.608) were negative and statistically significant, respectively, at 1%, 5%, and 10%. Students who enroll in these majors are likely less open to diversity and challenge than students in Animal Sciences. It is difficult to draw any conclusions about the categories of General Agriculture and Other Major, since these represent a very small number of students (two students in each category). Thus, the results could be due to the small number of observations in these two categories.

Experience with Diversity

Results of the diversity experience (DIVX) regression also appear in Table 5, where the R-squared of 34% is reported. The coefficient of diversity workshops (0.152) was positive and significant at the 5%. This result could reflect that greater appreciation of diversity experience results in participation in workshops. Also, the coefficients of diversity in class discussion and assignments were positive and significant at the 1% level, respectively, 0.303 for “occasionally,” 0.402 for “often”, and 0.803 for “very often.” This means that diversity in class discussions and assignments, result in an increase in interactional diversity experiences. It is reasonable to infer that courses and workshops are correlated with greater levels of openness to diversity and challenge both directly and indirectly through the diversity experience variable. Therefore, the provision and promotion of more diversity programming in both workshops and classes is likely to lead to a measurable, positive impact on the diversity experience among students of the College of Agriculture at Kansas State University. A related study done by Barkley et al. (2005) at Kansas State University yielded similar results.

None of the coefficients were significant regarding the diversity experience. This result is unexpected, since students are likely to increase their level of diversity experience throughout their college education. The result may reflect the idea that students who do not participate in diversity programs and coursework may not gain diversity experience from college enrollment alone.

Further research is needed to determine if college enrollment and experience alone has an impact on student diversity experience. Additionally, the coefficient of Hispanic/Latinx students (0.359) was significant at 5% level, meaning the students had higher levels of diversity experience than white students (the default). Yet, the coefficients of all other remaining races/ethnicities were not statistically significant compared to white students. This is an interesting and important result, and deserves further research and understanding.

The coefficient (-0.246) of students whose fathers had college degree was negative and significant at the 5% level. This means a negative influence on the diversity experience.

Also, the coefficient (-0.325) of students enrolled 7-11 credit hours was negative and significant at the 5% level. Again, this means a negative influence on the diversity experience. The coefficient (-0.934) was negative and significant at the 1% level for diversity experience for international students, an unexpected result. This may be due to the unusual time, during the Covid-19 pandemic, when the study was conducted; all classes were in virtual or hybrid setting, making interaction less possible. Furthermore, regarding living situation (roommate), the coefficient (-0.232) for parents was negative and significant at the 10% level; the only significant variable in this category. This is not surprising, as living with parents will obviously decrease the diversity experience. None of the coefficients of year in college were significant, and therefore, did not appear to affect the diversity experience. However, greater time spent at college does not appear to directly facilitate any discernable changes in attitudes about diversity and challenge. However, to the extent that enrollment in college is associated with activities that lead to greater diversity experience, such as class activities and diversity workshops more open attitudes can occur through greater levels of interactional experience with diversity.

Conclusion

Openness to diversity is vital for student success as it fosters a safe and inclusive environment for all. The objective of this study was to measure the impact of factors affecting students' openness to diversity and challenge, and the level of diversity experience of students enrolled in the College of Agriculture at Kansas State University during the Fall semester of 2020. Overall, the regression results demonstrate that first, openness to diversity and challenge is influenced by several factors, including experience with diversity interaction, class diversity experience, diversity workshops, gender, age, marital status, urban background, living in a residence hall, enrolled credit hours, desire to obtain an advanced degree, and major field of study. Additionally, the results demonstrate that student openness to diversity increases as the level of diversity experience rises. Therefore, it is important to not only understand the factors affecting student openness to diversity, but also factors affecting students' level of diversity experience.

Second, the level of experience with diversity was found to be statistically associated with participation in diversity class activities and diversity workshops, Hispanic/Latinx, small town background, parent education levels, international student, high school GPA, work hours, study hours, and major field of study. Diversity experience level was shown to be higher among students who participated in diversity class activities and diversity workshops, Hispanic/Latinx students, and student work and study hours. Furthermore, since diversity workshops and in-class activities were found to positively impact diversity experience and openness to diversity, diversity programming should be encouraged. Diversity programming provides opportunity to enhance the appreciation and understanding of individuals with diverse backgrounds, experiences, and beliefs;

consequently, leading to higher openness to diversity and diversity experiences. The major implication of the statistical results is that there exists an opportunity to influence student openness to diversity and challenge as well as diversity experience in the College of Agriculture at Kansas State University.

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