

The Impact of Multicultural Student Belongingness at an 1862 Land-Grant Institution



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Abstract

A sense of belongingness in the underrepresented minorities (URM) collegiate experience requires that the student feel the university provides a safe and welcoming environment. The purpose of this study is to explore the sense of belongingness that contributes to URM's perceptions while participating in the summer programs at Kansas State University to increase future college of agriculture enrollment. We evaluate participants using a Likert Scale survey to rate their perceived belongingness and experience upon completion of the summer program. Overall, results indicate the summer program increased the underrepresented minority participants' sense of belongingness at Kansas State University because of the program coordinators, and exposure to an inviting environment. Additional findings show the program positively affected the collegiate experiences of the participants and increased their knowledge of the agricultural sciences.

Keywords: underrepresented minority, student belongingness, agricultural sciences, summer program

Academic recruiters have experienced a rising concern about the number of underrepresented minority (URM) students majoring in agriculture at 1862 land grant institutions. At Kansas State University, an underrepresented minority, based on race, is defined as a student who identifies as Black/African American, Hispanic/Latino, Multiracial, American Indian/Alaska Native, or Hawaiian/Other Pacific Islander (Office of Institutional Research, 2021). Programming efforts to recruit and retain URM students to institutions of higher education, specifically into colleges of agriculture with potential to diversify the agricultural industry, have been increasing in recent years. Previous research has suggested the use of recruiting visits, collaboration with high schools, and the implementation of summer programs are key to recruiting URM students (Hobbs, et al., 2021; Johnston, 2010; Strayhorn, 2010; Wiley & Hobbs, Jr., 2021). Kansas State University and the College of Agriculture's (COA) Diversity Programs Office (DPO) has utilized this approach through a variety of summer programs aimed at

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all age groups to increase awareness of agriculture and recruit underrepresented students into the COA (Carter et al., 2019).

The benefit of summer programs is well documented in previous literature. The use of such summer programs has been beneficial in increasing student awareness, exposure, and knowledge of agriculture. Many institutions that implement such summer programs operate under the assumption that students who participate are more likely to select agriculture as a major when entering college (Hu et al., 2008; Strayhorn, 2010). Though this might be the case, participation in summer programs does not guarantee the student will choose to study agriculture at *the same university that hosted the program they attended*. To successfully recruit and retain a student, it is imperative that the university provides an environment in which students feel they have the best opportunity to succeed while attending the university and post-graduation. Cultivating a sense of belongingness in students at an institution creates an environment where they have the tools and resources needed to matriculate through their collegiate career successfully and safely. Additionally, students that feel accepted by their peers and professors/mentors may feel more comfortable utilizing these resources while also feeling more confident in their academic abilities. Overall, exposing students to a university atmosphere where they feel they belong is vital to successful recruitment through summer programs.

The importance of 'belongingness' has been increasingly discussed in higher education, research, and policy as influencing the performance and wellbeing of students (Becker & Luthar, 2002; Reay et al., 2010; Tramonte & Willms, 2010). The consensus of literature defines student belongingness as the sense of being accepted, valued, included, and encouraged by others (Goodenow, 1993). A sense of belonging has been emphasized as an important predictor of retention throughout academia (Maestas et al., 2007; Stachl & Baranger, 2020). It can also influence a student's decision to attend a particular institution for their education. Faircloth and Hamm (2005) explored this idea, and found four measures that significantly impacted the feeling of belongingness among four ethnic groups (African American, Asian-descent, European American, and Latino). Those factors were: (1) times spent on extracurricular activities, (2) interactions and friendships with students, (3) bonding with teachers, and (4) perceived discrimination. Understanding these factors is important for institutions of higher education seeking ways in which to increase the recruitment and retention of minority students.

Previous literature suggests that there are several ways to increase student belongingness at the university level. These methods include providing programs that celebrate or highlight the students' culture, creating a safe place to discuss their problems/issues, and promoting inclusion of students from diverse backgrounds through open discussions and forums (Barkley et al., 2021; Carter et al., 2019; Maestas et al., 2007). Regarding summer programs, student belongingness may also be affected by utilizing program coordinators with similar backgrounds/culture to the students, ensuring there are other students in the program

with similar backgrounds/culture, and highlighting current programs in place to help students succeed (Hobbs, et al., 2021; Wiley & Hobbs, Jr., 2021). Though there is benefit in using summer programs as a tool for recruitment, the current literature provides little information to aid summer programs in helping URM students to feel they belong at an institution of higher education. Specifically, the current literature fails to tie student belongingness to summer programs in agriculture targeted at multicultural students. This presents a problem for program coordinators looking to successfully recruit and retain URM students into colleges of agriculture at their universities.

The purpose of this study is to assess the feelings of belongingness and agricultural knowledge gained by students after attending summer programs. This study analyzes four summer programs conducted by the Kansas State University COA Diversity Programs Office (DPO) to identify if the summer programs increased the student's knowledge of agriculture and aided in helping the students to feel they belong at Kansas State University.

Research Questions and Objectives

Two specific research questions were assessed in this study. Did students gain knowledge of the Food and Agricultural Sciences from participating in the summer programs? Do URM students prefer programs run by coordinators who share a similar background/culture? The objectives of this study were to: (a) evaluate student participants' knowledge of the Food and Agricultural Sciences, (b) examine student participants' feelings about programs with and coordinated by minorities, (c) assess student participants' feelings of belongingness to and acceptance at Kansas State University.

The results will add to the current literature gap by examining the effect of the DPO summer program's ability to increase the knowledge of agriculture and feelings of belongingness within the student participants. Additionally, the insight generated will provide potential strategies to improve the programming and recruitment efforts designed to increase the recruitment of URM students. Lastly, this study will increase the literature on summer programs and multicultural student belongingness by providing insights into program design factors that help to provide a greater sense of belonging to URM students.

University Selection Process Framework

When selecting a college or university, students undergo a decision-making process to guide them to their final university choice. The structure of, and factors affecting, the college selection process have been widely studied in various fields. Previous research has applied structural decision-making process models using complex decision stages (Ho & Hung, 2008; Johnston, 2010; Lee & Morrish, 2012), and combined models using economic and sociological viewpoints (Briggs & Wilson, 2007; Pampaloni, 2010). However, many of these models attribute the college selection of a student to several factors such as curriculum, academic reputation, cost, location, post-graduation employment, faculty and staff, and parents (Pittaoulis, 2012; Simões & Soares, 2010; Strayhorn, 2010). Thus, it is reasonable to assume that universities have points of differentiation over others based on the factors specified above (e.g., a parent of the student is an alum of a university, or one university is closer to home than another, etc.). However, if natural points of differentiation are not prevalent, intentional distinctions between universities' offerings must be considered to allow students to distinguish one university from another during the selection process (Lewison & Hawes, 2007). As a result, the university can potentially increase its recruitment ability and success of URM students.

Successful recruitment of students to a university requires an effective approach in depicting the value the university adds to a student. It is in the university's interest to communicate and depict to the student how their life will be better by attending that university. To accomplish this, universities must understand the value demanded by students. In turn, if the goal is to increase the recruitment of ethnic minority students, it is imperative to understand the factors that offer the greatest amount of value to ethnic minorities.

Ethnic Minority Student Selection Factors

It has been documented that ethnic minority students focus on factors such as student achievement/success, teacher support, connection to personal ethnic group, and school belongingness (Becker & Luthar, 2002; Booker, 2006; D'hondt et al., 2015). Students look for success while in college as well as success post-graduation from college when selecting a university. Students view success during college as the ability of the student to succeed in classes and the resources in place to help the student to achieve this. Success post-graduation is determined by the ability of the student to successfully transition into a career or graduate school post-graduation. However, not only is it important to portray to the student the type of career they will have, but why and how this career will help the student to achieve the life they want.

In terms of belongingness, students tend to see this as their ability to fit in and experience acceptance from others at the university (students, faculty, and staff) (Hausmann et al., 2007; Osterman, 2000). Not only that, but it is also

important for students to see other people at the university with whom they can relate to in terms of thought processes, previous experiences, and culture. Typically, having these types of people can help to establish a safe place where the students can fully express themselves without being misunderstood. A way to achieve this is by implementing intentional mentoring using current students that share a similar demographic background to the program participants. This creates an environment where program participants can feel comfortable interacting and asking questions. It also helps encourage students by allowing them to see the success of other students whom they identify with or use as active examples of success. This can be created through various discussions, programs, and events (Carter et al., 2019; Glass & Westmont, 2014; Tice et al., 2021), yet they must be evaluated to identify and improve effectiveness.

Case Study Design

To gauge the effectiveness of the Kansas State University COA DPO summer programming efforts, we leveraged the perspectives of participants in four programs during the summer of 2021. The programs include Junior Minorities in Agriculture Natural Resources & Related Sciences (MANRRS), Project Impact Multicultural Academic Programs Success (MAPS), Project Impact Kompass, and Kansas State Research and Extension (KSRE) Summer Research Fellows Program.

Pre-Collegiate Program

The Diversity Programs Office (DPO) oversees one pre-collegiate program, the Junior MANRRS College for a Day. As part of outreach efforts with local communities, the Kansas State University chapter of MANRRS invites high school-aged and younger students from the surrounding counties to join Junior MANRRS. The College for a Day Event offers Jr. MANRRS members an opportunity to visit the COA at Kansas State University for one day. Participation in this program includes a tour of the various agriculture facilities on campus, and interactions with current students, faculty, and staff. Sessions also include a hands-on urban gardening activity conducted by the Department of Multicultural Student Affairs (DMSA) staff and an informational session exposing students to the field and career options within the COA at Kansas State University.

Collegiate Programs

The DPO oversees three collegiate-level programs: Project Impact MAPS, Project Impact Kompass, and KSRE Summer Research Fellows' Program. Project Impact MAPS and Kompass are programs designed to help incoming first-year students acclimate to the college environment and bolster the academic success of multicultural and first-generation college students. The Kansas State University Department of Diversity and Multicultural Student Affairs (DMSA) lead both programs, in partnership with the Colleges of Agriculture, Business, and Engineering. While both Project Impact programs share similar objectives, they differ in their duration. MAPS, for instance, is a six-week program, whereas Kompass is a three-day program. The KSRE program is an eight-week summer program designed

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to expose undergraduate students to graduate school academics, research, and life at Kansas State University. The format of the program consists of two weeks in virtual status and 6 weeks on campus at Kansas State University. Students that participate in the program conducted a summer research project with support from a faculty mentor at Kansas State University. Additionally, they participated in seminars and activities to help them grow accustomed to the graduate school environment. During the virtual portion of the program, students participated in seminar sessions led by faculty, staff, and corporate partners to encourage further academic and professional development.

Survey Design

Student participants in each program completed a fifteen-question survey comprised of thirteen 5-point Likert scale and two opened ended questions. The survey responses were analyzed to test the effectiveness of the summer program in educating the students about agriculture and providing an atmosphere/environment that fosters student belongingness. Six of the survey questions were designed to gauge the students' feelings about gaining knowledge about agriculture through attending the summer program. There were also six questions designed to observe the students' feeling of belongingness and acceptance while in the program; and one question to identify if they felt they belonged at Kansas State University.

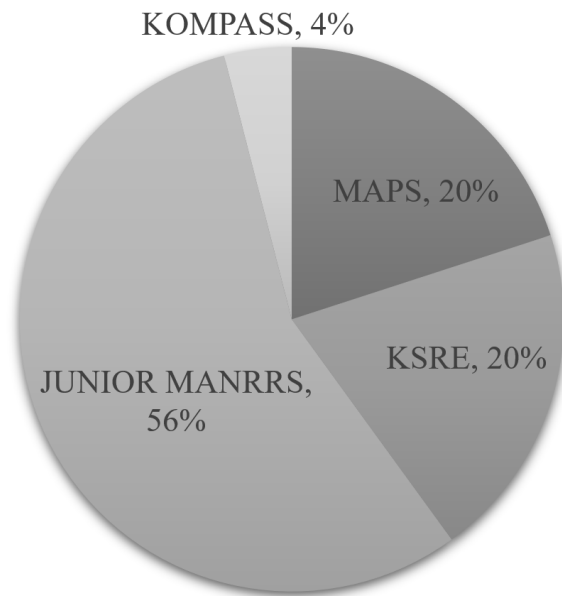
To maximize student responses, program coordinators administered a paper version of the survey, and students were asked to complete the survey during the allotted time for program reflection. Responses gauging the student's knowledge of agriculture, perception of the program, and feelings of belongingness at Kansas State University were recorded in Microsoft Excel. Variance testing and T-test analysis of unequal variance for pre-collegiate and collegiate responses, as well as African American and Non-African American responses, were produced using Stata Statistical software. In addition, means and other descriptive statistics were analyzed for all combined data, and individually for collegiate and pre-collegiate programs, and African American and Non-African American. Non-African American ethnicities were combined for valid statistical comparison due to the low number of respondents in each Non-African American ethnic category.

Data Summary

Forty-six students participated in the four DPO summer programs and completed the survey. As shown in Figure 1 below, 56% of the respondents were Junior MANRRS participants, 20% were MAPS participants, 20% were KSRE participants, and the remaining 4% represented Kompass participants. As mentioned earlier, the age ranges of each program vary. As a result, approximately 17% of students were younger than 10 years old, 15% ranged from 11 years to 13 years old, 26% were between the ages of 14-17 years old, and 41% of respondents were above the age of 18. Regarding participant gender, 61% of respondents were female and 39% were male. In addition, there were approximately six ethnic groups represented in the data population.

Figure 1.

DPO Summer Survey Responses by Program



The survey participants' ethnicity breakdown is presented in Figure 2 below. Of the forty-six student responses, 61% of respondents were black/African American, 22% were multiracial, 9% identified as Hispanic/Latino, 4% were White/Caucasian, 2% were American Indian, and 2% were unknown. The survey respondent ethnicity breakdown reflects the COA DPO's attempt to increase the multicultural student population attending Kansas State University COA as the representation of non-white attendees to predominantly white institutions (institutions of higher education where whites make up 50% or more of the student demographics) is relatively low compared to the population of white student attendants. In addition, a predominantly African American staff coordinated the programs examined in this study; therefore, the large African American response rate allows the researchers to examine the students' feelings about attending programs by coordinators who share a similar background/culture.

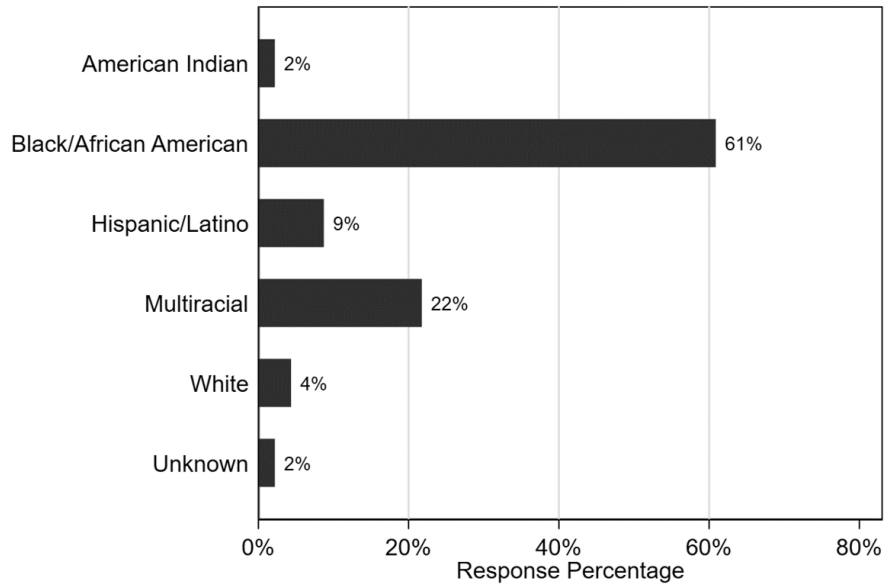
Results and Discussion

The means and standard deviation of all participants, pre-collegiate participants, collegiate, Black/African-American, and Non-Black/African-American participants are shown in Table 1. All results are discussed in reference to the three objectives previously presented. Questions 2, 3, 4, 5, 6, and 8 are analyzed to address objective one; questions 1, 7, 9, 10, 11, and 12 are examined to represent objective 2; question 13 and open-ended question 14 address objective 3. For analyzing the mean responses, the Likert scale range options were strongly disagree, 1.0-1.49; disagree, 1.50-2.49; neutral, 2.50-3.49; agree, 3.50-4.49; and strongly agree, 4.50-5.0. Analysis of question means is in reference to desired responses (responses that agreed with the sentiments of knowledge gained and sense of belongingness). More specifically, it is desired that a respondent will strongly agree to questions about knowledge

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Figure 2.

DPO Summer Survey Responses by Ethnicity



gained during the program (objective 1 questions), indicating the program successfully increased respondents' knowledge of agriculture. Likewise, the desired response for all objective 2 (excluding question 9) and 3 Likert scale questions are also strongly agree, indicating the participants enjoyed being in programs coordinated by URMs, and they felt a sense of belonging while at Kansas State University. However, question 9's desired response is strongly disagree, indicating the participants felt comfortable communicating during the summer program. The combined means of all respondents will be discussed for each question. However, comparison of pre-collegiate and collegiate responses will be presented for questions that were statistically significant in the unequal variance t-test (questions 3, 7, 10, 11, and 13).

As shown in Table 1, the average response to each question signals a strongly agree response for all questions, excluding question 9. This is suspected as the desired response for question 9 is strongly disagree; yet, the average response for this question was disagree instead of strongly disagree. Nevertheless, all remaining questions had a desired response of strongly agree (4.50-5.0). Observing the questions for objective one, we see the means for all student responses as a whole (column 2) were strongly agree. This is interpreted that all students felt they gained knowledge of agriculture through attending the summer programs at Kansas State University. When comparing the responses of pre-collegiate students (column 4) and collegiate students (column 6), we see that the average responses for collegiate students were higher and closer to the desired responses for the pre-collegiate students in all questions. Although the reported means are different for the questions pertaining to objective 1, there were no statistically significant differences between the pre-collegiate and collegiate means. Regarding the ethnicity comparison, there is a statistically significant difference for question 2, "I felt this program offered science-related

experiences." As noted in Table 1, Black/African American students reported a higher mean for question 2 than Non-Black/African-American students.

The average responses to the questions relating to student belongingness signal that all participants provided responses favorable to the desired response. This is interpreted to represent the students who felt a sense of belonging while attending the summer program at Kansas State University. Observing the statistically significant responses for pre-collegiate and collegiate students relating to objective 2, we see that the three significant questions were answered in a more favorable response (response closer to the desired outcome) for the collegiate students than those for the pre-collegiate students. More specifically, Table 1 shows the collegiate responses for questions 7) I could see myself enjoying working in agriculture as a career, 10) I enjoyed being a program with students that looked like me, and 11) I enjoyed being in a program where program coordinators look like me, were closer to the desired response for collegiate students. We notice from the results that the collegiate students had higher averages to the questions pertaining to being in programs with students and coordinators who look like them. There is a possible correlation between the higher response for collegiate students and the level of exposure to other professors and students who currently attend Kansas State University. As noted in the program descriptions above, the collegiate student programs are longer (several weeks) than the pre-collegiate experience (one day), resulting in more interactions for the collegiate participants with other Kansas State University students and professors. Regarding the ethnicity comparison for objective 2, only question 1, "I felt respected as an individual during the summer program," reported a statistically significant difference. More specifically, the Non-Black/African American students reported a higher mean response to question 1 than the Black/African American students, possibly indicating that

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Table 1.

Survey Summary Statistics

| Survey Question | Desired | All Mean | PC Mean | Col Mean | Black Mean | Non-Black Mean |
|---|---------|----------------|--------------------------|--------------------------|------------------------|------------------------|
| 1. I felt respected as an individual during the summer program. | 5.00 | 4.63 (0.53) | 4.69 (0.55) | 4.55 (0.51) | 4.54* (0.58) | 4.78* (0.43) |
| 2. I felt this program offered science-related experiences. | 5.00 | 4.65 (0.57) | 4.62 (0.64) | 4.70 (0.47) | 4.75* (0.52) | 4.50* (0.62) |
| 3. I have a better understanding of what agriculture is by participating in the summer program. | 5.00 | 4.63 | 4.46** (0.71) | 4.85** (0.37) | 4.57 (0.63) | 4.72 (0.57) |
| 4. I learned about the importance of food and agricultural sciences in our world. | 5.00 | 4.76 (0.48) | 4.69 (0.55) | 4.85 (0.37) | 4.79 (0.42) | 4.72 (0.57) |
| 5. I am aware of more career opportunities in agriculture than before I participated in the summer program. | 5.00 | 4.65 (0.60) | 4.65 (0.63) | 4.65 (0.59) | 4.71 (0.46) | 4.56 (0.78) |
| 6. I learned about different major and career options in food and agriculture that interest me. | 5.00 | 4.63 (0.71) | 4.62 (0.80) | 4.65 (0.59) | 4.68 (0.67) | 4.56 (0.78) |
| 7. I could see myself enjoying working in agriculture as a career. | 5.00 | 4.17 (1.06) | 3.77*** (1.21) | 4.70*** (0.47) | 4.21 (0.99) | 4.11 (1.18) |
| 8. I learned about the importance of working with people from diverse backgrounds. | 5.00 | 4.63 (0.64) | 4.62 (0.64) | 4.65 (0.67) | 4.64 (0.56) | 4.61 (0.78) |
| 9. I feel it is difficult to communicate with people that do not look like me. | 1.00 | 2.39 (1.47) | 2.15 (1.52) | 2.70 (1.38) | 2.50 (1.55) | 2.22 (1.35) |
| 10. I enjoyed being in a program with students that looked like me | 5.00 | 4.35 (1.06) | 4.08** (1.26) | 4.70** (0.57) | 4.25 (1.21) | 4.50 (0.79) |
| 11. I enjoyed being in a program where program coordinators look like me | 5.00 | 4.35 (1.06) | 4.15* (1.26) | 4.60* (0.68) | 4.29 (1.18) | 4.44 (0.86) |
| 12. I felt comfortable interacting with teachers during the summer program. | 5.00 | 4.63 (0.64) | 4.65 (0.69) | 4.60 (0.60) | 4.68 (0.55) | 4.56 (0.78) |
| 13. Because of this summer program, I would feel welcomed as a student at Kansas State University. | 5.00 | 4.43 (0.78) | 4.58* (0.70) | 4.25* (0.85) | 4.43 (0.79) | 4.44 (0.78) |

Note. Desired represents the desired response. All mean indicates the combined mean of all respondents. PC mean indicates the mean of all pre-collegiate students. Col mean indicates the means of all collegiate students. Black mean indicates the mean of all Black/African American students. Non-Black mean indicates the mean of all Non-Black/African American students. Standard deviations are reported in parenthesis. Statistical significance is reported for the t-test for unequal variance for Pre-collegiate and Collegiate comparison, and Black/African American and Non-Black/African American comparison.

*** p < 0.01; ** p < 0.05; * p < 0.10

the Black/African American students felt less respected during their time in the programs. Although this study does not confirm, there is a possible correlation between the lack of respect experienced by Black/African-American and the level of exposure to external factors outside the control of the program (i.e., negative people and perspectives of people who are not in the program). However, more research is needed to confirm this notion.

To identify if the students felt welcome to Kansas State University after attending the program, we examine question 13. As shown in Table 1, the average response for all respondents suggests that the students strongly agree to feeling welcomed as a student to Kansas State University. However, when examining the responses based on collegiate status, we notice that pre-collegiate students

have a stronger response to this question than collegiate students do. In fact, the collegiate student average response indicates that they “agree” to this statement, rather than “strongly agree”. As mentioned previously, we expect there is a correlation with their perception and past experiences that provides a lower response to these questions. Yet, combining the student belongingness responses with question 13, we consider the survey results to indicate the student participants, on average felt a sense of belongingness while attending the summer programs at Kansas State University.

To further examine if the participants did, or did not, feel welcomed at Kansas State University, we assessed the open-ended responses where students provided an explanation to clarify their answer to question thirteen. We

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Table 2.

Favorable Responses to Question 13 Results

| Favorable Responses |
|---|
| <ul style="list-style-type: none">• I now know people who will make me feel welcomed & I have a space where I know I will be safe• Seeing the faculty and staff really involved with helping us succeed• Knowing there are POC makes me feel more welcomed• Because I saw all the faculty members that are there for us to help• Professor Donley made me feel welcome and I hope all the teachers were the same• diversity• I would say Raymond's presentation convinced me• They were welcoming and wanted to get to know us as well as they explained themselves• Friendly• the teachers• the people were nice, welcoming, and explained things well• getting to know all the fundamentals of coming to college here• the vibe is comforting• they opened new opportunities to a new fascinating career choice. They also welcomed me with open arms• because I feel welcomed and made new friends• I had a chance to work the pet food program which was nice and friendly but that doesn't speak for the entire institution• All the administrators are friendly and welcoming towards me and I've gained so many opportunities in the short time I've been here• friendly environment, lots of support and help• I feel like the mentors I had this summer would work well with me and support me well if I were to come here• They gave me great information and they were very welcoming |

Table 3.

Non-favorable Responses to Question 13 Results

| Non-favorable Responses |
|---|
| <ul style="list-style-type: none">• The bsu came on a bit strong and made me feel uncomfortable. Why can't we just coexist, why must we try to differentiate ourselves for the sake of differentiation• Mainly because there wasn't enough people• they seem nice but it might not be for me• The campus is great, but I'm still not sure if Kansas State University will be a good cultural fit for me-I am still evaluating my options• the atmosphere around the campus is off• individuals in other programs |

separated the responses into favorable and unfavorable categories based on answers to question 13. More specifically, the open-ended response of a student who answered agree or strongly agree to question 13 is placed into the favorable response category, and responses of students who answered neutral, disagree, or strongly disagree were placed into the non-favorable category. Of the forty-six respondents, only forty-one of them provided an open-ended response to the question. In addition, twenty-seven of those responses provided insight relating to students' feelings of belongingness based on the environment experienced during the programs. Thus, only the twenty-seven responses are reported in Table 2 and discussed below.

As shown in Table 2 below, the majority of the participants felt welcomed to Kansas State University because of the environment they experienced while attending the summer programs. More specifically, twenty-one of the twenty-

seven open-ended responses were favorable responses in which the student accredited their feeling of belonging at Kansas State University to the faculty, staff, culture, and/or diversity they experienced while on campus. In contrast, there were six respondents who provided a non-favorable response to question 13, as presented in Table 3. When further examining their open-ended response, the participants noted that the environment was not a good fit for them. Although they did not go into detail as to why they did not like the fit, it is understandable that each student may have a different view of the experience within the summer programs. However, we consider the responses to question 13 and the favorable responses to the open-ended questions to provide evidence of the importance of creating a sense of belonging in the summer programs through the environments presented to the students. Thus, it is documented in the open-ended responses that this type of environment can be created and facilitated by exposure to faculty and staff.

Summary

To successfully recruit and retain a student, it is imperative that the student feels the university provides a safe environment where the student feels they have the best opportunity to succeed (while in school and post-graduation). Although there is benefit in using summer programs as a tool for recruitment, current literature does not provide information to aid summer programs in helping underrepresented students to feel they belong at the university. The purpose of this study is to assess the impact of activities to increase student belongingness through summer programs. More specifically, this study analyzes four summer programs conducted by the Kansas State University COA DPO to identify if the summer programs increased the student's knowledge of agriculture and aided in helping the students to feel they belong at Kansas State University.

Results from the study show the students felt a sense of belonging while attending the summer program at Kansas State University as their responses indicate agreement with the belongingness questions. In addition, the students also expressed a feeling of knowledge gained related to agriculture after attending the Kansas State University agricultural summer programs. Lastly, the students felt they were welcomed to Kansas State University because of their participation in the summer programs. Hence, the researchers conclude that the summer program was successful in increasing the student's knowledge of the subject matter and providing an environment which fostered a sense of belongingness for the student participants.

The impact of this study is threefold. First, the results will add to the literature gap by examining the effect of DPO summer program's ability to increase the knowledge of agriculture and feelings of belongingness within the student participants. Second, academic and COA recruiters will benefit as this study offers implications to improve the success of recruitment efforts using summer programs by increasing student belongingness through summer programs. Lastly, the study will increase the literature on summer programs, minorities, student belongingness, which in turn will benefit underrepresented students, as there is potential to design programs to provide a greater sense of belonging to underrepresented students allowing them to thrive.

Although this research is useful, it is not free of caveats. This research is limited as it fails to control for a baseline measurement to gauge the participants' answers to the questions prior to the program. More specifically, the researchers are unable to assess the students' feelings towards the university and program environment prior to attending the program; therefore, it is difficult to gauge the true level of impact the program had on the students. Future research studies should account for this issue using some form of pre-program perception measure, such as pre-and post-survey, to identify the true impact of the summer program on the students. In addition, future research should apply this approach to multicultural students in other programs (not managed by multicultural program staff) to compare the responses and gain a better understanding

of the impact of student belongingness on the student participants.

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