Career Aspirations of the Agricultural Technology & Mechanical Systems State CDE Competitors

Ms. Tori Davis, Undergraduate Researcher

Dr. Steven Boot Chumbley, Associate Professor

Texas A&M University-Kingsville

700 University Blvd., MSC 228

Kingsville, TX 78343

tori.davis@students.tamuk.edu

steven.chumbley@tamuk.edu

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Introduction/Conceptual Framework

Agricultural mechanics is traditionally an important component of agricultural education (Langley, Tummons & Kitchel, 2018). Research has shown rural students involved in agriculture return to the farm and assist with the family business (Dyer & Breja, 2003). It is important that we identify who the students are that compete in agricultural mechanics-based events (CDEs). Having an understanding of students who compete in the Agricultural Technology & Mechanical Systems (AGSTM) CDE, will help us address the national shortage we are facing for qualified undergraduates (Settle, et. al, 2013). The researchers also hoped to understand how the demographics of participants in the AGSTM CDE compared to FFA membership as a whole across Texas

When contacting the Texas FFA executive director, it was found that the majority of FFA students classified as white (57%) males (53%). Within the Texas FFA there is 10 different ethnicities, the least represented of those students identified as Alaskan native (0%) compared to the largest percentage of students identifying as white, non-Hispanic (57%). Previous research has shown that participants enrolled in agricultural mechanics events exhibit higher interest in pursuing an agriculture career (Lund & Chumbley, 2018).

Objective

The objective of this study is to determine the demographics, educational goals and career goals of participants at the state Agricultural Technology & Mechanical Systems career development event (CDE).

Methods/Procedures

The sample population for this study was students participating in the state AGSTM's CDE. Data was collected at the state CDE using a researcher development demographic survey. The eight-question survey sought information related to basic demographics, post-secondary education plans, career goals and if parents had careers in agriculture. A total of 141 students competed in this event with 99 completing the survey, resulting in a response rate of 70%.

Data was examined using SPSS version 23 (SPSS, 2015). Participant responses were analyzed using measures of central tendency. During this study it was found that students were interested in pursuing careers in 17 diverse career areas. Using the study done previously at the San Antonio Stock Show and Rodeo Annual Agricultural Mechanics Project Show (Lund and Chumbley, 2018), the study found that the majority of students wanted to "just make money", the goal of this study is to determine what the career goals are for students at the state level and see if these findings can relate to this study done previously.

Results/Findings

Participants were predominately male (90.9%), white (87.9%) in their senior year (45.5%) and were from rural communities (55.6%) and school 3A (30.3%) schools. Females only made up 7.1% (n = 7) and the only other ethnicity, Hispanic, made up 12.1% (n = 12) of overall participants. Those students from urban and suburban areas made up 20.2% (n = 20) each.

Future career intentions of the students were diverse, but there was a trend of those that intended to go into engineering and the metal fabrication/welder field (14.1%) When asked what their primary post-secondary school choice was, the majority selected college/university (66.7%). The survey asked if parents had a career in agriculture and the majority answered no (60.6%).

The future career goals differed among the regions, with the majority of rural students expressed interest in becoming metal fabricators/welders or stating "just wanted to make money" (14.5%) . The next most prevalent career choice was general construction/ building trades (15%). When comparing career intentions or students from an urban area, the majority of participants expressed intentions to become engineers (20%) or enter the general construction/ trade (15%). This ties back to the overall results which shows that the third most prominent career choice was general construction/ trade.

Conclusions & Recommendations

Students participating in the state agriculture mechanics CDE were found most interested in pursuing career paths in engineering, welding or building trades. With engineering being one of the largest areas of interest for agriculture mechanics students these students need to have critical thinking skills with open ended problems which are applicable in real life. More post-secondary schools especially, College of engineering could use the AGSTM CDE as an opportunity for program recruitment. There was an overwhelming majority of males compared to females. As previously mentioned, this is not representative the Texas FFA student population. In personal communication with the Texas FFA executive director (Ray Pianzek, Sept. 2019) the dispersion between males and females is closer to 50/50. From this we can conclude that males are more interested in the AGSTM CDE compared to females. We found that the majority of students did not come from an agriculture background. These findings highlight the appeal of agricultural mechanics to students from a variety of backgrounds and who have diverse career intentions.

A recommendation for future studies would be replicate this study in other state CDE's in order to compare differences between these competitors. Along with the questions that were asked in this survey, we would also include a question asking the students if they plan on working in the agriculture field after they graduate high school. Another recommendation for research is to replicate this study at the National FFA AGSTM contest to determine any difference sin the competitors' populations. This would allow the researcher to determine if the majority of the students plan to obtain a career in the agriculture industry and assess their understanding of just what the agriculture field is. Teachers are encouraged to train the AGSTM CDE and open the opportunities that his brings to all students. It is our hope that this information can be used by industry leaders to recruit and prepare the future leaders in agriculture.

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