Preference and Decision Making in Large-Scale Communities

Cassandra Martin and Kristin Weger
The University of Alabama in Huntsville

ABSTRACT

Understanding the formation of preferences as they relate to decision making is a crucial task in understanding aspects of major projects; however, current literature has a deficit of this focus in regards to large-scale projects and large communities. This study aims to bolster the understanding of these large community preferences as they relate to large-scale projects. The study was conducted at the 2019 American Astronomical Society (AAS) conference in order to gain information from the astrophysics community regarding NASA Decadal missions. Community preferences for Decadal missions are assessed through the Decadal Survey to summarize the opinions of the astronomical community regarding which missions should be prioritized in the next decade of NASA research. Data were collected using an online survey intended to measure community preferences. Researchers hypothesized that community preferences for engineering attributes of large-scale projects would differ, such as preferences for attributes such as the profitability of the mission, efficiency, reliability, resilience, etc. Conditions were derived from actual responses, and participants were sorted into four existing conditions: industry, academia, undergraduate/graduate students, and other community. Most results were insignificant, but support was found that community preferences differed, particularly preferences of industry and academia versus students. Implications of this research suggest that project leaders of Decadal missions should take into consideration the preferences of each community separately. When predicting the decisions that agencies and communities will make, understanding the differences in the type of preferences formed will provide a valuable tool.

H0. There will be a significant difference between community preferences

H1. There will be a significant difference between community preferences for large-scale mission attributes

COMMUNITIES

Industry
Management
Engineers

Academia
Tenure-tracked
Tenure

Students
Undergraduate
Graduate

RESULTS

Industry
M = 2.92, SD = 1.14
Academia
M = 2.88, SD = 1.01
Students
M = 2.88, SD = 1.01
Other
M = 3.00, SD = 1.41

Overall significant difference, p = .017

DISCUSSION

• Overall differences tended to be between students and other communities, despite student beliefs that their opinion aligned with more than 80% of the astronomy community
• Students were more likely to be significantly different from industry than academia, reflecting the closer context of student life and the academic community
• However, students do not hold specific investments within the decadal missions, unlike industry or academia.
• Therefore, students portray a more idealistic preference that sets them apart from a professional viewpoint

REFERENCES


The materials in this document are copyrighted and issued for instructional or research use solely for use by members of the University of Alabama in Huntsville. For permission to reproduce for any other purpose, please contact the University of Alabama in Huntsville University Relations Office, 205-726-2796.