Factors Influencing Choice of Major in the College of Agriculture and Life Sciences at Iowa State University

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Purpose

• To determine what factors influenced first year students at Iowa State University (ISU) to choose a major within the College of Agriculture and Life Sciences (CALS).
Theoretical Framework

- Champan (1981) Model of College Student Choice
Model of College Student Choice

[Diagram showing various factors affecting college student choice, including student characteristics, external influences, and college's choice of students.]
Factors Influencing Selection of a College Major

Interpersonal factors

- Parents
- Friends/peers
- High school teachers
- College instructors

Personal characteristics

- Age
- Gender
- Race/ethnicity
- Socioeconomic status
- Interest in subject
- Aptitude in subject
- Personality traits
- Work values

Environmental factors

- Class size
- Quality of instruction
- Reputation of school/program
- Employment opportunities
- Earning potential
- Potential careers
- Industry dynamics
- Media

Objective (demographics)

Subjective (psychographics)

College-related

Occupation/industry-related
Research Design

Qualitative Study

• Two Focus Groups
• Seven Personal Interviews
Subjects

First year students in CALS

- Transfer students
- Direct from high school
- Self-selected

Introductory classes in Ag Ed, Ag and Biosystems Engineering, Animal Science, Agronomy and Ag Business
## Demographics

<table>
<thead>
<tr>
<th>Major</th>
<th># of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science/Dairy Science</td>
<td>9</td>
</tr>
<tr>
<td>Agriculture Business</td>
<td>2</td>
</tr>
<tr>
<td>Agriculture and Biosystems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Agronomy</td>
<td>2</td>
</tr>
<tr>
<td>Agriculture Education</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture Studies</td>
<td>1</td>
</tr>
<tr>
<td>Genetics</td>
<td>1</td>
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</tbody>
</table>
## Demographics

<table>
<thead>
<tr>
<th>Permanent Residence</th>
<th># of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>9</td>
</tr>
<tr>
<td>Rural, non-farm</td>
<td>8</td>
</tr>
<tr>
<td>City or suburban area</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entrance to University</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct from high school</td>
<td>13</td>
</tr>
<tr>
<td>Transfer</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>15</td>
</tr>
<tr>
<td>Male</td>
<td>7</td>
</tr>
</tbody>
</table>
Instrumentation

- Semi-structured 1 hour interview process
- Seven open-ended questions
- Pre-interview questionnaire
Data Collection and Analysis

- Interviews held on campus
- Interviews digitally recorded and notes taken
- Transcription software *Temi*
- Data was coded and major themes identified
Findings Question 1: Engagement

What grade level did you seriously begin thinking about attending college?

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always knew I would attend</td>
<td>4</td>
</tr>
<tr>
<td>Middle School</td>
<td>3</td>
</tr>
<tr>
<td>Freshman Year</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td>2</td>
</tr>
<tr>
<td>Junior Year</td>
<td>4</td>
</tr>
<tr>
<td>Senior Year</td>
<td>4</td>
</tr>
</tbody>
</table>
Findings Question 2: Exploration

When you started thinking about colleges, what prompted you to gather information about certain schools and majors?

- Proximity to home
- On-line search for the top animal science schools
- Other people’s opinions
- On-line
Participant Quotes

“Preferably somewhere I could have my rabbits, which are important to me. I mean, for someone who went really far from home, I can tell you it’s really nice to have that piece of familiarity as you go through school.”

“I was told when I was really little that ISU is where I would go, so I didn’t really look anywhere else”
Findings: Question 3

What personal factors influenced your decision?

- Love of animals
- Exposure to production agriculture
- Enjoy being outdoors
- Enjoy science
- Personal satisfaction
- Enjoy a challenge
Participant Quote

• “So I really like science, and I really like to learn and push myself, especially at a high level. I found that genetics is a really cool mix of that, of getting to do science and be on the forefront of research and feeling like I can make a difference in the world too.”
Findings: Question 4

What interpersonal factors went into your decision to choose your major?

• Parents
• 4-H and FFA
• Events held on campus
• Other family
• Other youth organizations
• Friends
• Farming
Participant Quote

“I guess for me, like growing up on a farm, I knew I wanted to be in the agricultural sector, but I also had a dad that was trained as a civil engineer before he started farming. So problem solving and challenging yourself was always something that was really valued within my family. So I really wanted to find a major that focused a lot around that problem-solving aspect and something that would really challenge me as well.
Findings Question 5

What are the environmental factors related to the college that affected your major choice?

- Reputation
- People
- Cost
- Location
- Beauty of campus
- Extracurricular activities
- Facilities
Participant Quote

“I think just the atmosphere, the outdoors and how beautiful it [campus] is. It doesn’t seem like you're going to school. Its really nice here and my visit to the agronomy department solidified kind of how like this is a program for me.”
Findings: Question 6

What career/industry factors went into your decision to choose your major?

- Career fair
- Vet School
- Placement rates
- Internships
- High demand for agriculture jobs in Iowa
- Job flexibility
Participant Quote

“Diversity and for me it was flexibility in the job and knowing what with my major I could move in a lot of different career paths.”

“the placement rates are really high and then looking at the broad range of different jobs that people did.”
Findings: Question 7

I compiled two existing models into one comprehensive model. What is missing?
What is missing from the model?

- Social Factors
- Work-life balance
- Study Abroad
- Curriculum
- Math
Conclusions- Interpersonal

- Being outside
- Working with animals
- Science
- Challenging experiences
- Agriculture involvement
Conclusions - People

- Parents
- Friends
- Other relatives
- Participation in events on campus
- 4-H and FFA involvement
Conclusions – College Factors

• Reputation
• Location
• People
• Aesthetics
• Cost
• Extracurricular opportunities
Conclusions - Career

• Career and industry opportunities
• Job placement rates
• Career fair
• Job flexibility
Revised Model of Major Choice

Interpersonal factors
- Social
  - close to family
  - work-life balance
  - friend network
- People
  - Parents, relatives, friends
- Previous experiences
  - agriculture background, youth activities, campus events

Personal Factors
- Objective Characteristics
  - Demographics
- Subjective Characteristics
  - Interest, aptitude, work values, personality traits, science interest, animals, outdoors,

Environmental Factors
- College Related
  - class size, quality and reputation of school, cost, location, aesthetics, extracurricular opportunities
- Career Related
  - employment opportunities, earning potential, flexibility, internships,
Implications

- Provide opportunities for high school students to be on campus
- Recruitment materials are not necessarily used
- Highlight career opportunities
- Show off your campus