

The Effects of Group Gender Composition on Group Performance and Dynamics

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Prior research has shown that gender composition can profoundly affect group-level outcomes and dynamics—groups with few women structurally disadvantage women’s influence and authority. However, most of these findings are based on lab experiments in which participants interact only briefly. Outside of the lab, scholars know very little about how a group’s gender dynamics change when real-world groups meet extensively over time. We randomize gender composition of semester-long groups in one of the top undergraduate accounting programs in the United States and measure individual and group-level outcomes through surveys and laboratory observation. Initial results show that when women are a minority in a group, they face a severe deficit in participation and authority at the beginning of the semester. [Preliminary findings: Though we find some limited evidence that the gap between men and women in *self-reports* of participation and influence narrows over the course of the semester, it does not appear that repeated interaction substantially improves women’s *observed* participation and influence.]

Project Description

The purpose of this research is to assess the effects of group composition on group dynamics through a field experiment. As the workforce is becoming increasingly diverse and women are more likely to pursue careers in historically male-dominated professions, individuals are increasingly exposed to cross-gender interactions in organizational settings. In the realm of politics, discussion and decision-making in mixed-gender groups that meet repeatedly is a central element of many political committees, boards, and councils at the local, state, and national level.

Previous research has shown that gender composition can profoundly affect group-level discussion dynamics and outcomes, but most of these findings are based on laboratory experiments in which participants do not interact over an extended period of time (Apestegua, Azmat, and Iriberry 2011; Dufwenberg and Muren 2006; Karpowitz and Mendelberg 2014). This means that scholars have thus far been unable to identify how a group's gender dynamics change when real-world groups meet repeatedly over time. Do repeated interactions among team members ameliorate women's marginalization by building trust, or do repeated interactions exacerbate women's marginalization by reinforcing gendered hierarchies?

We examine how women's participation and authority within groups changes over time by conducting a field experiment in partnership with a top-ten undergraduate accounting program in the United States. The program uses a team-based approach in which groups interact frequently during each semester as they complete their assigned work. The group experience dominates students' junior-year experience with the program. Hence, this is a unique, real-world setting in which to examine the role that group gender composition plays in group dynamics over time as group members interact repeatedly and a group culture develops.

As in many political and workplace settings, men outnumber women in the accounting program with which we partnered; in this case, women constitute about 25% of students in the program. With the cooperation of the program's directors, we randomly assigned students into their semester's team: a 5-person group with either 0, 1, or 3 women. We assess group functioning and dynamics (as well as individual's self-reported experience) through a combination of survey self-reports and direct observation in a lab setting where the group performs a collective task. A baseline survey is administered before students know their group assignments, then each month during the semester. The lab observation occurs at the beginning and end of the semester, allowing us to collect precise information about the group dynamics shortly after their group's initial formation and again after they have worked together for three months.

Pilot study data for this project was collected during the 2015-16 academic year. The 2016-17 academic year represents the first year of formal data collection. We gathered data on 260 students and 52 groups. Data collection is on-going during the 2017-2018 academic year, with 270 students and 54 groups under observation. Hence, by the end of this academic year, we will have studied 530 students in 106 groups. **We are actively looking for additional academic programs or workplaces to work with to expand our data collection efforts.**

[Preliminary] results from the first year of data collection show that women assigned to groups where they are outnumbered by men face a severe deficit in participation and authority at the

beginning of the semester. Though the gap between men and women in *self-reports* of participation and influence narrows on some measures (but not others) over the course of the semester, it does not appear that repeated interaction substantially improves women's *observed* participation and influence in the laboratory. We will have more confidence in our findings once we have collected the 2017-2018 data.]

Randomization

We randomly assign students to groups of five with three possible outcomes: 0 women and 5 men ("0F" groups); 1 woman and 4 men ("1F" groups); or 3 women and 2 men ("3F" groups). Because women constitute a minority of students in the program, we were constrained in the gender combinations we could realistically study.

At the request of the program, we block randomized on GPA to ensure groups have approximately equal average GPAs, as well as on international student status to ensure that international students are not clustered in any one group.

In Fall Semester 2016, we assigned 260 students into 21 0F groups, 18 1F groups, and 16 3F groups. In Fall Semester 2017, we assigned 270 students into 14 0F groups, 21 1F groups, and 20 3F groups. Thus, our sample size in each cell will be 35 0F groups, 39 1F groups, and 36 3F groups.

Data Collection and Survey Instruments

In August of each year, students complete the **August Survey** (Appendix 1) prior to knowing their group assignments. This longer survey asks students a variety of questions to get a baseline measure on prosociality, risk aversion, efficacy, conflict avoidance, ambivalent sexism, etc. Then, at the beginning of each subsequent month, students answer a shorter **Monthly Survey** (Appendix 2). This asks for self-reports of group functioning and individual efficacy.

Finally, at both the beginning and end of Fall semester, students spend 50 minutes the lab as a group to participate in the **Laboratory Protocol** (Appendix 3). This consists of a case-study evaluation task in which they are confronted with a new situation and asked to rank the helpfulness of resources for dealing with that situation. (For example, one version of the case study asks participants to rank resources needed to return to a base if stranded on the moon.) They first perform the resource ranking task on their own, with no help from other team members. This gives us a measure of individual performance on the task. Second, the group deliberates and performs the task together. Both individual and group-level performance is rated by comparing answers with those of experts in the field. Following the group-level stage, participants evaluate various aspects of their own experience and of the group's dynamics, such as which team member was most influential or which was most supportive of other group members.

Most importantly, the group portion of the task is recorded and later coded to identify who participates the most and how influential they are (Karpowitz and Mendleberg 2014). Outcome measures include the proportion of time men and women talk in the group, conversational

interruptions, a comparison of individual and group answers and performance on the task, and ratings of each group member by the other group members. This allows us to observe, measure, and analyze group interactions and to identify if/how they change over the course of the semester.

Analysis Plan

Following Karpowtiz and Mendelberg 2014, we expect to see women in 1F groups structurally disadvantaged at the beginning of the time period with regard to efficacy, voice, and authority vis-à-vis men and vis-à-vis women in 3F groups. Our primary interest is the change over time in the gender gap in efficacy, voice, and authority between women assigned to 1F groups and women assigned to 3F groups. In other words, if 1F women are indeed distinctly disadvantaged while 3F women are less so, does that gap shrink, widen, or stay the same over repeated interactions?

When analyzing the surveys, we have several dependent variables designed to measure group influence. In the Monthly Survey, the self-reported measures are Q2_1, Q2_2, Q3_4, and Q13. Q5 and Q6 represent group members' evaluations of who is the most and least influential member of the group. While other variables may reveal interesting patterns, these are the specific variables we expect might change if women's status in the group changes over time. Operationally, we are interested if the difference in the gender gap between 1F and 3F groups on these variables changes over time.

When analyzing the audio laboratory data, we follow Karpowtiz and Mendelberg (2014) and are interested in whether the difference in the gender gap between 1F and 3F groups changes with regard to "talk time" and conversational interruptions. We are also interested in the change in whether women were chosen as the most and least influential members of the group during the laboratory deliberation.

We do not have strong a priori expectations about the direction of these changes—if there are changes over time. Existing theory is sparse about the effect of time on group gender dynamics, and there are reasons to believe repeated interactions might ameliorate gender disparities in influence, or they might reinforce gender disparities in influence.

APPENDIX 1: AUGUST SURVEY

Accounting Jr. Core August 2016 Survey

[Consent Form]

Q1

Introduction

The School of Accountancy is working with several faculty members from other BYU departments on a research project that will be used for two purposes: 1) an internal program evaluation to assess different aspects of the Junior Core experience and 2) a scholarly research study to understand the process of decision-making across individuals and in groups. This scholarly research study is being conducted by Chris Karpowitz, Ph.D., Jessica Preece, Ph.D., and Olga Stoddard, Ph.D. at Brigham Young University.

The program requires participation in the tasks below for the internal evaluation as part of your class credit. However, allowing the data we gather from your participation to be used as part of the research study is completely voluntary and will not affect your grade or standing in the program in any way. Signing this consent form signifies your willingness to allow your data to be used in the scholarly research study. All data will be kept confidential.

Procedures

The initial survey, which should be completed before school begins, will take most people about 15-20 minutes to complete. During the semester, the following will occur:

1. You will receive a link to carry out an online survey through Qualtrics about once a month during the semester. These surveys take most people about 10 minutes to complete. Questions will address your perspectives about the program and your group dynamics. Because we want honest feedback, the content of your answers will not affect your grade or standing in the program in any way. Total time commitment for all of the surveys will be approximately 50 minutes.
2. In addition to these surveys, you will also participate in a group activity at a location in the Marriott School. You will receive more information and a separate consent form for that activity. If you allow your data to be used in the scholarly research part of the study, your name will never be published. Only aggregate, unidentifiable data will be published.

Risks/Discomforts

There are minimal risks to you in this research study beyond what you would encounter in your everyday participation in the Accounting Jr. Core program. The surveys you will take will ask standardized, commonly asked questions. However, it is possible you could encounter some potential emotional discomfort. If answering any specific question causes you emotional discomfort, you may skip it.

Benefits

There will be no direct benefits to you. It is hoped, however, that through your participation researchers may learn about group dynamics and decision-making and that this study will inform future Marriott School team assignment and become an important contribution to the scholarly literature on this topic.

Confidentiality

The research data will be kept in a secure location and on password protected computer and only the researchers will have access to the data. At the conclusion of the study, all identifying information will be removed and the data will be kept in the researcher's locked office.

Compensation

No compensation will be given for completion of the surveys.

Participation

While participation in these tasks is required as part of the internal program evaluation, you do not have to grant access to the data collected during these activities for external scholarly research purposes. You have the right to refuse participation at any time in the external scholarly research study; if you do not consent, your data will not be used in scholarly data analysis nor will

it be published in any scholarly article. Refusal to participate in the scholarly study will not jeopardize your class status, program placement, grade, or standing with the university.

If you choose to make your data available for the scholarly study, your responses will always be kept completely confidential and your name will never be attached to your responses or the study results in any way.

Questions about the Research

If you have questions regarding this study, you may contact Olga Stoddard, Ph.D. (olga.stoddard@byu.edu), Chris Karpowitz, Ph.D. (chris_karpowitz@byu.edu), and/or Jessica Preece, Ph.D. (jessica_preece@byu.edu) for further information.

Questions about Your Rights as Research Participants

If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; irb@byu.edu.

Q2 Statement of Consent:

(Completion of surveys is still required for class credit, but data collected from the survey will not be used in scholarly research if you do not consent.)

- I have read and understood the above information and consent to participate in this study. (1)
- I do not wish to participate in the scholarly study and request that any data collected on me be excluded from any published academic articles. I understand that I still must complete the surveys for class credit as part of the internal program evaluation. (2)

Q3 Welcome to the first survey of our internal program evaluation. This first survey is the longest of the surveys with lots of questions so please bear with the time and length. We advise that you take this survey on a computer or tablet rather than a cell phone. The subsequent surveys are significantly shorter and will not be a heavy time burden for your semester's coursework.

We will ask you a series of questions in which there are no right or wrong answers. We are only interested in your personal opinions. The answers you provide will in no way affect your grade. You will only be graded for completion of the survey. Please answer the questions honestly and to the best of your ability so that we can help make your and future students' experience in the program better.

Thank you!

Q4 In this first set of questions, we present you with a series of statements that you may or may not agree with. Please indicate the extent to which you agree or disagree with each of the following statements by clicking on the appropriate button. Remember there are no right or wrong answers to any of these questions.

[Egalitarianism vs. Individualism]

Q5 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
Relative equality of wealth is a good thing. (1)	<input type="radio"/>				
Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed. (2)	<input type="radio"/>				
Even if people try hard, they often cannot reach their goals. (3)	<input type="radio"/>				
Most people who fail should not blame the system; they have only themselves to blame. (4)	<input type="radio"/>				
If people work hard they almost always get what they want. (5)	<input type="radio"/>				

Q6 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
If people were treated more equally in this country, we would have fewer problems. (1)	<input type="radio"/>				
It is not really that big of a problem if some people have more of a chance in life than others. (2)	<input type="radio"/>				
For some people to succeed, others must fail. (3)	<input type="radio"/>				
Any person who is willing to work hard has a good chance at succeeding. (4)	<input type="radio"/>				
This country would be better off if we worried less about how equal people are. (5)	<input type="radio"/>				

[Risk Aversion]

Q7 Rate your willingness to take risks in general with 1 being completely unwilling and 10 being completely willing.

_____ Willingness to take risks in general. (1)

Q8 For each of the following statements, please indicate your likelihood of engaging in each activity or behavior.

	Very Likely (5)	Likely (4)	Not sure (3)	Unlikely (2)	Very Unlikely (1)
Admitting that your tastes are different from those of your friends. (1)	<input type="radio"/>				
Defending an unpopular issue that you believe in at a social occasion. (2)	<input type="radio"/>				
Arguing with a friend about an issue on which he or she has a very different opinion. (3)	<input type="radio"/>				
Disagreeing with your father on a major issue. (4)	<input type="radio"/>				
Taking a job that you enjoy over one that is prestigious but less enjoyable. (5)	<input type="radio"/>				

[Prosociality]

Q9 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
I am pleased to help my friends/colleagues in their activities. (1)	<input type="radio"/>				
I share the things that I have with my friends. (2)	<input type="radio"/>				
I try to help others. (3)	<input type="radio"/>				
I find it difficult to lend money or other belongings. (4)	<input type="radio"/>				

Q10 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
I easily put myself in the shoes of those who are in discomfort. (1)	<input type="radio"/>				
I help immediately those who are in need. (2)	<input type="radio"/>				
I do what I can to help others avoid getting into trouble. (3)	<input type="radio"/>				
I intensely feel what others feel. (4)	<input type="radio"/>				

[Efficacy]

Q11 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
I feel like I accomplish more when I work with other people. (1)	<input type="radio"/>				
Group work makes everything harder than it needs to be. (2)	<input type="radio"/>				
I am capable of participating effectively in group discussions about important issues. (3)	<input type="radio"/>				
I am confident in my abilities, even when confronting tasks I haven't done before. (4)	<input type="radio"/>				
In general, I do better on most things than most people. (5)	<input type="radio"/>				
I am frequently frustrated by my inability to express my opinions to others. (6)	<input type="radio"/>				

[Group Deliberation]

Q12 We want to ask you a little bit about previous group work that you've done. Think back to the most recent time you worked in a group to complete a task. What was the group (e.g. biology lab assignment, Relief Society presidency meeting, etc.)?

Q13 Now thinking back to that last group you worked with in response to the previous question, please answer the extent to which you agree or disagree with the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
My opinions were influential in shaping the group discussion and final decision. (1)	<input type="radio"/>				
I felt like my voice was heard during the group discussion. (2)	<input type="radio"/>				
Group discussions helped me better understand the issues. (3)	<input type="radio"/>				
Group work made everything slower and harder to accomplish. (4)	<input type="radio"/>				
Members of my group treated each other with respect and courtesy. (5)	<input type="radio"/>				
I would describe myself as a leader in the group. (6)	<input type="radio"/>				

[Demographics]

Q14 We're halfway there! Hang in there! The following are a series of questions for classification purposes and will help us properly analyze responses to this survey. Your answers will always be kept strictly confidential. We only report results for groups of people, not for individuals.

Q15 What do you expect your parents' 2016 income to be?

- Under \$50,000 (1)
- \$50,000-\$74,999 (2)
- \$75,000-\$99,999 (3)
- \$100,000-\$149,999 (4)
- \$150,000-\$199,999 (5)
- \$200,000-\$250,000 (6)
- Over \$250,000 (7)

Q16 In what year were you born?

[Dropdown List from 2005 to 1930]

Q17 What is your gender?

- Male (1)
- Female (2)

Q18 What is your marital status?

- Single (1)
- Married (2)
- Divorced (3)
- Widowed (4)

Q19 What is your most recent overall GPA?

- 4.00 (1)
- 3.90-3.99 (2)
- 3.80-3.89 (3)
- 3.70-3.79 (4)
- 3.60-3.69 (5)
- 3.50-3.59 (6)
- 3.40-3.49 (7)
- 3.30-3.39 (8)
- 3.20-3.29 (9)
- 3.00-3.19 (10)
- Below 3.00 (11)

Q20 Which of the following best describes your racial or ethnic background? (Select the answer that best applies to you. Select multiple answers if necessary.)

- White/Caucasian (1)
- Black/African American (2)
- Asian (3)
- Hispanic/Latino (4)
- Pacific Islander (5)
- Other (6)

Q21 Did you hold a leadership position in high school (e.g., president of a club, student body officer, etc.)?

- Yes (1)
- No (2)

Q22 Have you served a mission for the LDS Church?

- Yes (1)
- No (2)
- I'm not LDS (3)

Q23 Since graduating from high school, have you been in a ward or stake leadership position in the LDS Church and/or in a mission? If yes, what position(s)? (Check all that apply.)

- Bishopric (1)
- Elder's Quorum / Relief Society President (2)
- Elder's Quorum / Relief Society Presidency (3)
- Young Men's / Young Women's President (4)
- Young Men's / Young Women's Presidency (5)
- Primary President (6)
- Primary Presidency (7)
- Sunday School President (8)
- Sunday School Presidency (9)
- High Priest Group Leader (10)
- Assistant to the President (11)
- Sister Training Leader (12)
- Zone Leader (13)
- District Leader (14)
- Other: (15) _____
- Have held leadership position(s) in my non-LDS religion (16)

[Hostile and Benevolent Sexism]

Q24 The following questions will be a series of statements again that you may or may not agree with. Please indicate the extent to which you agree or disagree with each of the following statements by clicking on the appropriate button. Remember there are no right or wrong answers to any of these questions, but please be honest.

Q25 Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman. (1)	<input type="radio"/>				
Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality." (2)	<input type="radio"/>				
Women are too easily offended. (3)	<input type="radio"/>				
Many women have a quality of purity that few men possess. (4)	<input type="radio"/>				
Women exaggerate problems they have at work. (5)	<input type="radio"/>				
Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives. (6)	<input type="radio"/>				

[Need for Cognition]

Q26 Some people have opinions about almost everything; other people have opinions about just some things; and still other people have very few opinions. What about you? Would you say you have opinions about almost everything, about many things, about some things, or about very few things? Please indicate which statement best describes you.

- I have opinions about almost everything (1)
- I have opinions about many things (2)
- I have opinions about some things (3)
- I have opinions about very few things (4)

Q27 Some people like to have responsibility for handling situations that require a lot of thinking, and other people don't like to have responsibility for situations like that. What about you? Do you like having responsibility for handling situations that require a lot of thinking, do you dislike it, or do you neither like it nor dislike it?

- Like it a lot (5)
- Like it somewhat (4)
- Neither like nor dislike it (3)
- Dislike it somewhat (2)
- Dislike it a lot (1)

[Need to evaluate]

Q28 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
It is very important to me to hold strong opinions. (1)	<input type="radio"/>				
I often prefer to remain neutral about complex issues. (2)	<input type="radio"/>				

Q29 How much of the time do people get what they deserve in life?

- Always (5)
- Most of the time (4)
- About half the time (3)
- Once in a while (2)
- Never (1)

[Conflict Avoidance]

Q30 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
When people argue about issues, I often feel uncomfortable. (1)	<input type="radio"/>				
If I'm sure I'm right about an issue, I don't waste time listening to other people's arguments. (2)	<input type="radio"/>				
I usually find it easy to see issues from other people's points of view. (3)	<input type="radio"/>				
I have no problem revealing my beliefs, even to someone who would disagree with me. (4)	<input type="radio"/>				
I enjoy challenge the opinions of others. (5)	<input type="radio"/>				

Q31 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
I would rather not justify my beliefs to someone who disagrees with me. (1)	<input type="radio"/>				
I do not take it personally when someone disagrees with my views. (2)	<input type="radio"/>				
When I'm in a group, I often go along with what the majority decides is best, even if it is not what I want personally. (3)	<input type="radio"/>				
When I'm in a group, I stand my ground even if everyone else disagrees with me. (4)	<input type="radio"/>				
I feel upset after being involved in an argument. (5)	<input type="radio"/>				

[Sunshine Democracy and Stealth Democracy]

Q32 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
Openness to other people's views, and a willingness to compromise, are important for politics in a country as diverse as ours. (1)	<input type="radio"/>				
It is important for elected officials to discuss and debate things thoroughly before making major policy changes. (2)	<input type="radio"/>				
In a democracy like ours, there are some important differences between how government should be run and how a business should be managed. (3)	<input type="radio"/>				
Elected officials would help the country more if they would stop talking and just take action on important problems. (4)	<input type="radio"/>				
Most people are too self-interested to agree on solutions that serve the common good. (5)	<input type="radio"/>				

Q33 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
What people call "compromise" in politics is just selling out one's principles. (1)	<input type="radio"/>				
Our government would run better if decisions were left up to successful business people. (2)	<input type="radio"/>				
Our government would run better if decisions were left up to non-elected independent experts. (3)	<input type="radio"/>				
Sometimes politics and the government seem so complicated that a person like me can't really understand what is going on. (4)	<input type="radio"/>				
I feel that I have a pretty good understanding of the important political issues facing us today. (5)	<input type="radio"/>				

[Confrontation and Emotion]

Q34 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
I feel more comfortable having an argument in person than over the phone. (1)	<input type="radio"/>				
I dislike when others have eye contact with me during an argument. (2)	<input type="radio"/>				
If I were upset with a friend, I would discuss it with someone else rather than the friend who upset me. (3)	<input type="radio"/>				
When I have a conflict with someone, I try to resolve it by being extra nice to him or her. (4)	<input type="radio"/>				
I always prefer to solve disputes through face-to-face discussion. (5)	<input type="radio"/>				
After a dispute with a neighbor, I would feel uncomfortable seeing him or her again, even if the conflict had been resolved. (6)	<input type="radio"/>				

Q35 Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
Everything should be out in the open in an argument, including emotions. (1)	<input type="radio"/>				
It makes me uncomfortable watching other people express their emotions in front of me. (2)	<input type="radio"/>				
It shows strength to express emotions openly. (3)	<input type="radio"/>				

[Career Aspirations]

Q36 In the next 15 years, how likely do you think it is that you will have a position as a partner or director of an accounting firm or other high executive position in a corporation or firm?

- Very Likely (5)
- Likely (4)
- Neither Likely nor Unlikely (3)
- Unlikely (2)
- Very Unlikely (1)

Q37 Please tell us a little more about what you expect your career accomplishments will be 15 years from now.

[Political Ideology]

Q38 We're almost finished! Just a couple more questions about you!

Q39 Generally speaking, do you consider yourself to be a(n):

- Republican (1)
- Democrat (2)
- Independent (3)
- Something else (4)

Answer If Generally speaking, do you consider yourself to be a(n):
Republican Is Selected

Q40 Would you call yourself a strong Republican or a not very strong Republican?

- Strong (1)
- Not very strong (2)

Answer If Generally speaking, do you consider yourself to be a(n):
Democrat Is Selected

Q41 Would you call yourself a strong Democrat or a not very strong Democrat?

- Strong (1)
- Not very strong (2)

Answer If Generally speaking, do you consider yourself to be a(n):
Independent Is Selected Or Generally speaking, do you consider yourself to be a(n):
Something else Is Selected

Q42 Do you think of yourself as closer to the Republican or Democratic party?

- Republican (1)
- Democratic (2)
- Neither (3)

Q43 On most political matters do you consider yourself:

- Strongly conservative (1)
- Moderately conservative (2)
- Neither, middle of the road (3)
- Moderately liberal (4)
- Strongly liberal (5)
- Don't know (6)

Q44 You've finished the survey! Don't forget to click "Submit" so that your responses will be recorded and you can receive your grade for completion of this survey. Thanks for participating! You will receive the next (much shorter) survey in several weeks.

Appendix 2: Monthly Survey

Introduction

Q1 Welcome to the third survey of our Jr. Core internal program evaluation this semester, Winter 2017. The survey should take approximately 5 to 7 minutes to complete. We advise that you take this survey on a computer or tablet rather than a cell phone. We will ask you a series of questions in which there are no right or wrong answers. We are only interested in your personal opinions. **The answers you provide will in no way affect your grade. You will only be graded for completion of the survey.** Please answer the questions honestly and to the best of your ability so that we can help make your experience and future students' experience better in the program. Thank you!

Group Deliberation

Q2 Think about your group work *within the past week* and answer the questions accordingly.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
My opinions are influential in shaping the group discussion and final decision. (Q2_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like my voice is heard during the group discussion. (Q2_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group discussions help me better understand the issues. (Q2_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group work makes everything slower and harder to accomplish. (Q2_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Think about your group work *within the past week* and answer the questions accordingly.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
A few people tend to dominate the discussions. (Q3_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my group treat each other with respect and courtesy. (Q3_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my group are too quick to agree with each other. (Q3_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would describe myself as a leader in the group. (Q3_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Leadership Attributes: Influential

Q4 On the following questions, we will ask you about attributes you and your group members possess. Please select the member of your current group who best fits the description from the dropdown list. This can include yourself. Please be honest in your answers. This is for information purposes only. This will not affect anyone's grade. All answers will be kept strictly confidential.

Q5 Who has been the **most influential** member of your group during group discussion and collaboration?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Q6 Who has been the **least influential** member of your group during group discussion and collaboration?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Leadership Attribute: Supportive

Q7 Who has been the **most supportive** member of your group during group discussion and collaboration?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Q8 Who has been the **least supportive** member of your group during group discussion and collaboration?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Leadership Attribute: Competent

Q9 Which member grasps the concepts the fastest?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Q10 Which member grasps the concepts the slowest?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Leadership Attribute: Helpful

Q11 Which member is the most helpful in solving problems when your group faces a challenge or a difference of opinion?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Q12 Which member is the least helpful in solving problems when your group faces a challenge or a difference of opinion?

- \${e://Field/groupmember1} (1)
- \${e://Field/groupmember2} (2)
- \${e://Field/groupmember3} (3)
- \${e://Field/groupmember4} (4)

If numofmembers Is Equal to 5

- \${e://Field/groupmember5} (5)

Group Evaluation

Q13 On average, do you speak more, less, or about the same amount as other group members when discussing group assignments?

- More (3)
- The same (2)
- Less (1)

Q14 On average, do you come up with more, fewer, or about the same number of ideas as other group members when brainstorming group projects?

- More (3)
- The same (2)
- Fewer (1)

Q15 How satisfied or dissatisfied are you with your group interactions?

- Very satisfied (5)
- Somewhat satisfied (4)
- Neither satisfied nor dissatisfied (3)
- Somewhat dissatisfied (2)
- Very dissatisfied (1)

Q16 Which of the following best captures how your group typically makes a decision about an assignment, aspects of a project, etc.?

- One or two group members make the decision for the group, but in the end, most others aren't sure or would prefer something different. (1)
- Three or four group members make the decision, but in the end, there are one or two who aren't sure or would have preferred something different. (2)
- All members of the group make the decision together, and in the end, no members of the group aren't sure or would prefer something different. (3)

Q17 How often do members of your group have disagreements or differences of opinion?

- Very often (4)
- Sometimes (3)
- Rarely (2)
- Never (1)

Open-Ended Group Evaluation Question

Q26 Is there anything else you would like to tell us about your group's discussions or decision-making processes so far? Please enter your comments below.

Submit

Q30 Thank you for participating! Don't forget to click "Submit" so that your responses will be recorded and you can receive your grade for completion of this survey. You will receive the next evaluation survey next month.

Appendix 3: Lab Protocol

Lab Experiment Protocol

I. Lab Introduction

Our experimental subjects will be first-year students in the BYU Accounting Junior Core (Accountancy Department) at the Marriott School of Business. The program will require students to participate in the lab experiment twice, the first being held at the beginning of the semester and the second at the end of the semester.

Students will sign up as a group for a time slot to participate in the lab. We will reserve six study rooms on the first floor of the Tanner building. Students will arrive as a group and a research assistant will take the group to one of the study rooms. Each student will receive a consent form and be asked to read and sign the consent form (see Appendix 1 for the consent form).

The experiment consists of three stages, which will be explained to the subjects in detail one stage at a time. Subjects will participate in each stage only once. In the first and third stages, they will work on a task individually. In the second stage they will work as part of a group. Their group consists of themselves and three or four other individuals whom the Accounting Jr. Core program has grouped them with for the entire fall semester.

II. Stage 1

Each student will then be given a scenario to read (see sections VI and VII) with an accompanying list of items. The scenario describes a survival situation in which the person must rank 15 items from most important to least important to their survival. The scenario will be different for the beginning and end of semester labs. The students will do this individually first without the help of the other group members. The students will spend approximately 15 minutes completing the consent form and ranking each item on their own.

III. Stage 2

After this individual task, the students will come together as a group to discuss the scenario and decide as a group each item's ranking. The discussion will be audio recorded for data analysis. This stage will take approximately 20 minutes to complete with 15 minutes of discussion time and 5 minutes for equipment set up and testing.

IV. Stage 3

The students will then separate again to complete an evaluation questionnaire individually of the discussion and task they just did. This will take approximately 10 minutes to complete. See Appendix 3 for evaluation questions.

V. Payment

After the completion of Stage 3, each participant will proceed to the payment room and receive a base payment of \$5. Once all groups have participated, the team with the best-ranked items (answers given by sources) from Stage 2 will receive \$50 per member. The individual with the best-ranked items from Stage 1 will also receive \$50.

VI. Beginning of Semester Lab Task:

Source:

<https://www.humber.ca/centreforteachingandlearning/assets/files/pdfs/MoonExercise.pdf>

Scenario:

“You are a member of a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. However, due to mechanical difficulties, your ship was forced to land at a spot some 200 miles from the rendezvous point. During reentry and landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance for your crew in allowing them to reach the rendezvous point. Place the number **1** by the most important item, the number **2** by the second most important, and so on through number **15** for the least important.”

Items to Rank:

- _____ Box of matches
- _____ Food concentrate
- _____ 50 feet of nylon rope
- _____ Parachute silk
- _____ Portable heating unit
- _____ Two .45 caliber pistols
- _____ One case of dehydrated milk
- _____ Two 100 lb. tanks of oxygen
- _____ Stellar map
- _____ Self-inflating life raft
- _____ Magnetic compass
- _____ 20 liters of water
- _____ Signal flares
- _____ First aid kit, including injection needle
- _____ Solar-powered FM receiver-transmitter

VII. End of Semester Lab Task:

Source:

http://insight.typepad.co.uk/lost_at_sea.pdf

Scenario:

You have chartered a yacht with three friends, for the holiday trip of a lifetime across the Atlantic Ocean. Because none of you have any previous sailing experience, you have hired an experienced skipper and two-person crew.

Unfortunately in mid Atlantic a fierce fire breaks out in the ships galley and the skipper and crew have been lost whilst trying to fight the blaze. Much of the yacht is destroyed and is slowly sinking.

Your location is unclear because vital navigational and radio equipment have been damaged in the fire. Your best estimate is that you are many hundreds of miles from the nearest landfall.

You and your friends have managed to save 15 items, undamaged and intact after the fire. In addition, you have salvaged a four man rubber life craft and a box of matches.

Your task is to rank the 15 items in terms of their importance for you, as you wait to be rescued. Place the number 1 by the most important item, the number 2 by the second most important and so forth until you have ranked all 15 items.

Items to Rank:

- _____ A sextant
- _____ A shaving mirror
- _____ A quantity of mosquito netting
- _____ A 25 liter container of water
- _____ A case of army rations
- _____ Maps of the Atlantic Ocean
- _____ A floating seat cushion
- _____ A 10 liter can of oil/petrol mixture
- _____ A small transistor radio
- _____ 20 square feet of opaque plastic sheeting
- _____ A can of shark repellent
- _____ One bottle of 160 proof rum
- _____ 15 feet of nylon rope
- _____ 2 boxes of chocolate bars
- _____ An ocean fishing kit & pole

Post Discussion Questionnaire

{ To be completed immediately following the group discussion in lab }

We would now like to ask you a series of questions about your group discussion. For each of these questions, please answer as honestly as possible in regards to how you personally felt about the group interaction.

The answers you provide here will in no way affect your payment or any other part of the procedure. We simply want to know your honest impressions about the conversation you just had with the other members of your group.

Below you will find a series of statements about the group discussion that you may or may not agree with. Please indicate the extent to which you agree or disagree with each of the following statements by clicking on the appropriate button. Remember, there are no right or wrong answers to any of these questions. We are only interested in your own personal opinions.

Response Options: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree

1. The group thoroughly considered all aspects of each payment scheme.
2. With respect to the issues we discussed, the other group members and I share the same basic values.
3. My opinions were influential in shaping the group discussion and final decision.
4. I feel like my voice was heard during the group discussion.
5. The group discussion helped me better understand the different payment schemes.
6. Group work made everything slower and harder to accomplish.
7. Disagreement among group members made our discussion difficult.
8. A few people dominated the discussion.
9. All different perspectives were welcome in our discussion.
10. Members of my group treated each other with respect and courtesy.
11. Members of my group were too quick to agree with each other.

Who was the most influential member of your group during the group discussion? (Indicate using the letter on the nameplate in front of the group members.)

- A
- B
- C
- D
- E

Who was the least influential member of your group during the group discussion?
(Indicate using the letter on the nameplate in front of the group members.)

- A
- B
- C
- D
- E

How satisfied or dissatisfied are you with your group discussion?

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

How satisfied or dissatisfied are you with the final ranking selected by the group?

- Very Satisfied
- Satisfied
- Neither satisfied or unsatisfied
- Unsatisfied
- Very Unsatisfied

Which of the following best captures how your group made a decision about the final ranking?

1. One or two group members made the decision for the group, but in the end, most others weren't sure or would have preferred something different.
2. Three or four group members made the decision, but in the end, there were one or two who weren't sure or would have preferred something different.

3. All members of the group made the decision together, and in the end, no members of the group weren't sure or would have preferred something different.

Is there anything else you would like to tell us about your group's discussion or decision? Please enter your comments below.