Food for Thought: Predicting Entrepreneurial Behavior

Dr. Craig G. Downing, Rose-Hulman Institute of Technology

Craig G. Downing is Department Head and Associate Professor of Engineering Management at Rose-Hulman Institute of Technology. His teaching responsibilities are focused on delivering graduate-level instruction related to Operations and Quality Systems. His interests are rooted in Academic-Industrial partnerships, Process Improvement, and Action Research in Engineering Management. Further, serves as one of the champions for leading the campus entrepreneurial initiatives. He is a certified Lean Six Sigma Master Black Belt.

Dr. Thomas P. James P.E., Rose-Hulman Institute of Technology

Tom James is presently a Professor of Entrepreneurship at Rose-Hulman Institute of Technology. His major interests are new product development and global business ventures. He currently teaches courses in accounting, finance, and entrepreneurial studies. In addition to teaching, Dr. James directs the ESCALATE program, a living-learning community focused on integrating entrepreneurship and technical disciplines. He received his PhD in Mechanical Engineering and an Executive MBA from Marquette University. He is a Fellow of the American Society of Mechanical Engineers and is a registered Professional Engineer (PE). Dr. James is also an avid inventor with over two dozen patents and he has several publications in peer reviewed journals related to his research in biomechanical systems. Prior to joining academia, he worked for over a decade in the consumer products industry, most recently as Senior Vice President of Global Engineering at Techtronic Industries, headquartered in Hong Kong, where he lived with his family for several years.

Dr. Diane Evans, Rose-Hulman Institute of Technology

Dr. Diane Evans is a professor in the engineering management department at Rose-Hulman Institute of Technology. She received her BS and MA degrees in mathematics at The Ohio State University and her MS and PhD in operations research and applied science from the College of William and Mary. Diane received her Black Belt in Six Sigma in 2011 from Purdue's Technical Assistance Program. Her current research and teaching interests are in probability, statistics, quality control, and Six Sigma. She has published journal articles in the areas of probability, statistics, statistics education, quality control, and Six Sigma, and has published a book in computational probability. Diane won Rose-Hulman's Dean's Outstanding Teacher Award in 2007, was named in Princeton Review's 300 Best Professors in America in 2012, and was selected as one of Microsoft's 365 "Heroes in Education" in 2012. In 2014, she spent her sabbatical working for Minitab statistical software company making educational materials for new statistics instructors.

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Abstract

One area of the non-digital entrepreneurial ecosystem showing strong growth is the food service sector. More specifically, the food truck business. Currently, the food truck business generates roughly 3 billion dollars of revenue annually. The relatively low barriers to entry and attractive returns on investment makes this an appealing path for culinary entrepreneurs over the traditional brick and mortar option.

A rising interest in food service businesses among entrepreneurs has led to the development of online simulations for instructional purposes, such as the New Venture Simulation: The Food Truck Challenge. Designed by Michael A. Roberto and made available online from Harvard Business Publishing for Educators, the food truck challenge provides a safe, yet fun, simulation to teach students the value of strategy and entrepreneurism.

Concurrent with the development of simulations that demonstrate entrepreneurial intent, new online survey instruments are available to gain insight into entrepreneurial mindedness. The objective of this paper is to determine if data collected from two survey instruments, Entrepreneurial Mindset Profile (EMP) and Builder Profile 10 Index (BP10), predict behavior in the food truck simulation. For example, if data from a mindset profile demonstrates a high tolerance for risk taking, does a student's actions in the simulation demonstrate a more risk tolerant profile?

For this research, approximately 150 students majoring in math, science, or engineering completed both online survey instruments, EMP and BP10, and participated in the Food Truck Challenge simulation. The study was designed to include an equal number of first-year students and seniors, with the seniors enrolled in either an entrepreneurship course or an engineering management course. First-year students took an introductory entrepreneurship course as part of their participation in an entrepreneurship living-learning community on campus.

During the online simulation, students worked individually to achieve maximum revenue over five weeks, with the opportunity each week to pursue one of three options: (i) conduct business research and analysis, (ii) prospect a new location with a low-capacity pushcart, or (iii) commit to full scale by parking the food truck in a specific location. Students make decisions about the three courses of action and menu item(s) to offer in hopes of finding the best menu-location combination, thereby yielding the highest sales and "winning" the simulation.

The results of this research are particularly relevant to faculty and administration interested in understanding the value (predictability of behavior) gained from commercially available entrepreneurial mindset assessment instruments. It is conceivable that one-day entrepreneurial mindset instruments may predict entrepreneurial behavior while on campus and post-graduation.

Key Words: Entrepreneurship, Simulation, Mindset, Behavior

Introduction

When teaching entrepreneurship to math, science, and engineering students, contemporary educators often pursue a curriculum that combines an ad hoc collection of several perspectives. For example, a modern entrepreneurship course may introduce a view of the entrepreneur as an individual, with an emphasis on the necessary traits and skills to succeed, while also bringing into the mix a belief that entrepreneurship is a teachable process, e.g. the customer development process (Blank, 2013) and the lean process (Ries, 2011). Recently, there is a turn back to the entrepreneur, but this time from a cognitive perspective, i.e. entrepreneurial mindset (e.g., Fry, 2011; Kriewall and Mekemson, 2010; Condoor and McQuilling, 2009; Bilan et al., 2005). Finally, educators are thrusting experiential exercises into the curriculum, i.e. methods teaching (Cadotte, 2014; Greene and Neck, 2011). From our perspective, this mixed modality approach offers students a dynamic learning environment and an equally exciting opportunity for faculty members to conduct research related to student experiences and behaviors.

In this dynamic classroom setting, which includes historical context, reflection on one's mindset, process learning, and methods teaching, we developed a relevant research question, which is the basis for this paper: Does an entrepreneurial mindset assessment predict a student's behavior? Our immediate focus is on *action* behavior in an entrepreneurial setting. For example, given a particular business situation, is a student more inclined to "jump right in" or will they study the underlying fundamentals of the market opportunity and take a more measured approach.

The trend in teaching undergraduates in a technical setting has certainly veered away from development of full business plans to a more action-centered approach. To paraphrase Steve Blank's famous dictum, we are telling our students to get out of the building. The business model canvas (Osterwalder and Pigneur, 2010) is purportedly sufficient knowledge to take some action. Techstars popular concept of a 54 hour StartUp Weekend is geared towards getting participants in the field to prospect ideas, test problem-solution hypotheses, substantiate product-market fit, and validate the value proposition with a minimum viable product. Build something! Show customers! We have rooms full of 3D printers.

The taking-action movement has spawned game playing experiences directed toward entrepreneurship educators. In our pursuit of new innovations for the curriculum, we decided to use a business simulation to create a manageable experience that rewards the action-taking personality. Our search for a simulation was guided by our desire for a quick and competitive exercise that could be completed in a 50-minute session. After a bit of prospecting and seeking alignment with our teaching module on product-market fit, we decided to use a simulation from Harvard for Educators, *New Venture Exercise: The Food Truck Challenge*.

The simulation addresses a contemporary desire of millennial entrepreneurs to start a food truck business and rewards students for taking action, over conducting research. On average, online registration and gameplay takes approximately 40 minutes of class time. The simulation focuses on the proper placement of a food truck in a dynamic marketplace, with the goal of earning maximum revenue over five simulated weeks. A player can spend time conducting research, prospecting locations, and products with a pushcart, or going all-in with a food truck.

Conducting research reduces risk, but generates less revenue than a pushcart or a food truck. Jumping directly to a food truck is high risk, in that you may park the truck in a poor location, but the truck has the potential to earn the most revenue.

Within a week or two preceding or following the food truck simulation, students are given two online assessments that are designed to give insight into entrepreneurial mindset. The research presented here is designed to see if results from online mindset assessments correlate with a student's game playing behavior. For example, one might expect if a student's mindset profile ranks high in risk taking or action orientation, their game playing will exhibit this behavior.

From past research experience, we chose two online assessment instruments: (i) Entrepreneurial Mindset Profile (EMP) from Eckerd College (Davis et al. 2016) and (ii) Builder Profile 10 Index (BP10, formerly EP10) from Gallup (Badal and Streur, 2014). Using the simulation and assessment instruments over the past two years, we have studied nearly 150 math, science, and engineering students and have only scratched the surface of our research questions, but we are eager to share some initial results with you in this paper.

For faculty teaching entrepreneurship, we are accustomed to the persistent question related to the impact of our teaching on entrepreneurial behavior (Rauch and Hulsink, 2015). For example, if we teach students an action-oriented version of entrepreneurship, are they more likely to approach an entrepreneurial venture in this manner? If we teach a bookish and rigorous financial approach based on the gap and competitive landscape analysis, will students act in this manner? On the other hand, is there an internal compass that drives a student's behavior, regardless of our teaching methodology? In this light, we are not asserting in this paper that we have evidence linking our teaching to behavior. Rather, we are exploring the possibility that entrepreneurial mindset profiles may offer some insight into student behavior through business simulations.

There is a vast body of literature on the relationship between attitudes, personality, and behavior as developed by Ajzen in his landmark book on the subject (1988). From the literature, we know that a person's disposition is often linked to their behavior. Ajzen points out that when people are caught cheating, they are considered dishonest. However, this does not mean, for example, that if a personality profile, such as the Myers Briggs, classifies you as *Introverted* that you cannot be successful as a public speaker. The relationship between traits, intent, and behavior is complex and well beyond the scope of this paper.

In general, the literature supports our research direction. For example, in the area of risk-taking, several studies have used survey instruments to identify personalities, attitudes, and risk perception as a means of predicting reckless driving behavior (Ulleberg 2003). In the field of entrepreneurship, Rauch and Frese (2007) investigated the role of personality traits in the decision to start a business. Their contribution to the literature was to match traits to entrepreneurial tasks by demonstrating correlation. Unfortunately, the review of literature in the field of entrepreneurship did not yield any other studies directly related to our research goals/questions.

Our goal with this paper is to contribute initial results related to the possibility of using a business simulation to demonstrate entrepreneurial behavior. The unique contribution here is

correlation studies to link behavior when gameplaying to traits and skills identified in entrepreneurial mindset assessments.

Overview of Entrepreneurial Mindset Profiles

Following is a brief summary of the entrepreneurial mindset profiles in order to create some context for when the research results are presented. For a full description of the assessments, including a study that compared outcomes for a group of engineering students that completed both profiles, please see, "Comparison of Two Survey Instruments for the Assessment of Entrepreneurial Mindset" (James, Downing, and Evans, 2017).

Entrepreneurial Mindset Profile (EMP)

Researchers from Eckerd College conducted two studies for validation of the final EMP instrument. Validation studies consisted of 389 entrepreneurs and 397 managers from a diverse group of industries, including manufacturing, finance, hospitality, energy, and technology. In addition, they conducted a study with college students, where 183 self-identified as being entrepreneurs and 175 as not being entrepreneurs.

The EMP makes a clear distinction, and intentional split, between traits and skills. Paraphrasing the authors, a person's skills can be nudged with education, but traits are more stubborn and inherent. Ultimately, through two rounds of correlation studies, the EMP settles on seven traits and seven skills to capture entrepreneurial mindset, Table 1.

Table 1: EMP categories of traits and skills

Traits	**Skills**
Independence	Future Focus
Preference for Limited Structure	Idea Generation
Nonconformity	Execution
Risk Acceptance	Self-Confidence
Action Orientation	Optimism
Passion	Persistence
Need to Achieve	Interpersonal Sensitivity

The EMP report provides quantitative data in both tabular and graphical form. The data associated with each item is scored from 1 to 5, where a 1 represents the response "Does not describe me well" and a 5 represents the response "Describes me well" to any particular item in the survey. The report contains two graphs that depict a student's scores relative to the validation set, entrepreneurs and managers. An example graph from a group report for skills is shown in Figure 1. A similar graph is produced for traits.

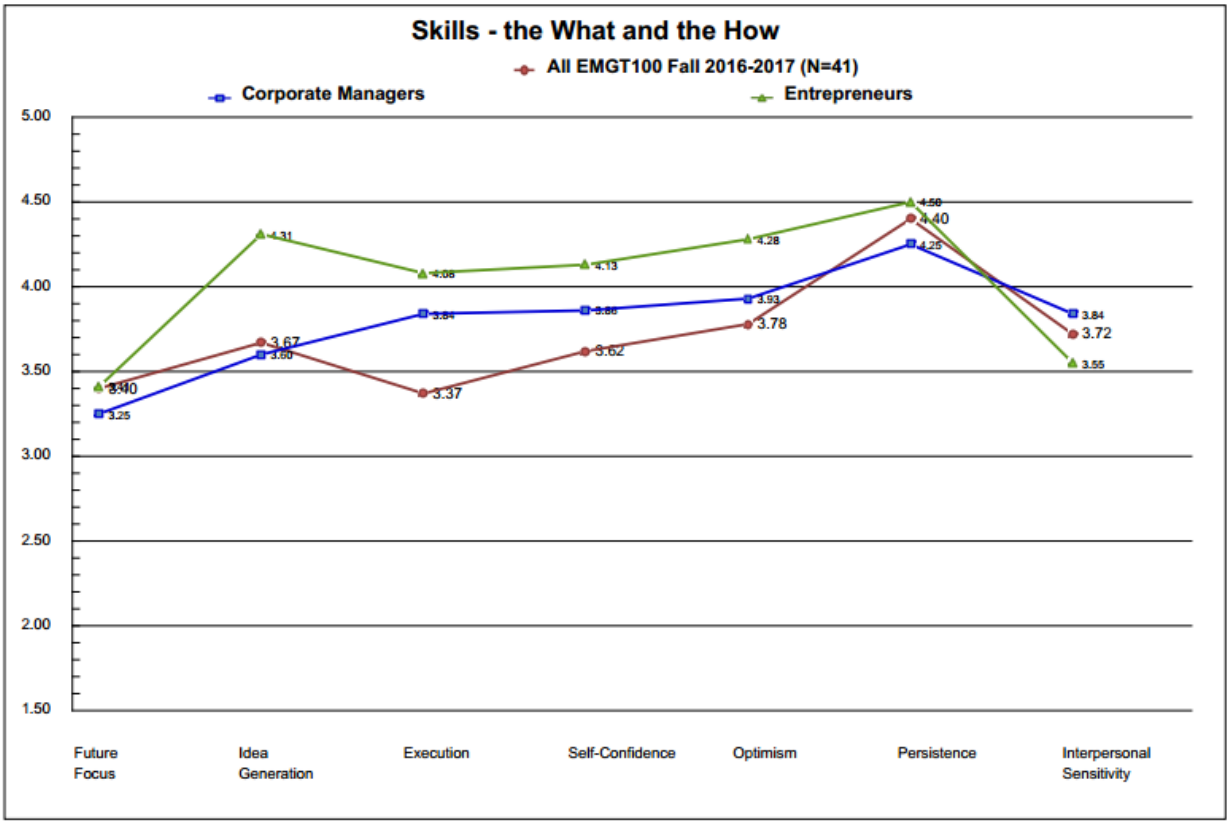

Figure 1: A graph from an EMP group report showing the seven scales associated with Skills. Participants (N=41) were first-year students taking an introduction to entrepreneurship course. The brown line (circles) represents the averages determined from student responses. For reference, the green line (triangles) represents baseline validation data for "entrepreneurs," and the blue line (squares) represents baseline validation data for "managers," i.e., non-entrepreneurs.

The EMP has a two-tier system for pricing. The retail price is $45 for participants outside of academia, but for students, the EMP cost is $25. The online EMP takes approximately 30 minutes to complete. The report is emailed to students immediately upon completion of the instrument.

Builder Profile 10 Index (BP10)

Gallup used a web-based survey to find 1,188 primary business owners to participate in BP10 validation. The instrument was not developed to distinguish entrepreneurs from non-entrepreneurs, but rather to indicate the likelihood the entrepreneur will seek high growth opportunities. The BP10 focuses on traits, leading to a list of ten *Talents* that drive entrepreneurial behavior. The ten talents are then grouped into three *Styles*, Table 2.

The BP10 results are communicated in a report where talents are ranked from 1 to 10, where a 1 represents the strongest talent, and a 10 represents the weakest talent. On the cover page of the report, the top four talents are listed, in addition to one of three styles based on a grouping of

talents. Each style category includes two summary paragraphs, with one describing "Your Talent" and the other noting "Using Your Talent." Table 3 contains an example of the text related to the Strategic style category.

Table 2: Grouping of talents into three groups called Styles

Style	Talent
Activation	Delegator Determination Independence Risk
Relational	Disruptor Knowledge Relationship
Strategic	Confidence Profitability Selling

Table 3: Description provided for Strategic style

Style	Description
Strategic	Your Talent: You have an extremely clear growth strategy. You tend to take a long-term approach and a big picture perspective. You focus on goals, and you measure success by profitability. Using Your Talent: Aggressively pursue growth strategies. Energize customers and employees by painting a vision for the future. Be the voice and face of your organization or activity.

The retail price for the BP10 is $12 per participant. The online BP10 takes approximately 30 minutes to complete. The report is emailed to students immediately upon completion of the instrument.

Description of Entrepreneurship Simulation (Game)

The New Venture Simulation: The Food Truck Challenge is an electronically mediated simulation authored by Michael A. Roberto and hosted by Harvard Business Publishing. The simulation is designed for students to test their entrepreneurial skills. More specifically, the simulation hopes to highlight the value of learning by doing, experimentation, product development, and market research. The simulation is designed for individuals or team play. Typically, students will spend 30 minutes or less to complete the simulation.

The online simulation allows students to test the entrepreneurial acumen to design a business approach to maximize revenue during a five-week timeframe while operating in the city of Boomtown. Each week, students must determine the best combination of menu offering (ice cream, frozen yogurt, or smoothies) and location (arts district, beach, city market, downtown, train station, or university) to generate revenue. Students can only choose one menu item and location per week.

To assist students in their decision-making process, they are provided initial information about four primary variables: traffic at the location, willingness to buy a frozen treat at the location, frozen treat preferences by demographics, and demographic distribution by location. In addition to the variables of menu and location, students can choose to perform additional market research on any of the four variables. When performing the additional research, students will obtain more useful and detailed information. However, students will not earn revenue during that week.

During the online simulation, students work individually to achieve maximum revenue over five weeks, with the opportunity each week to pursue one of three options: (i) conduct business research and analysis, (ii) prospect a new location with a low-capacity pushcart, or (iii) commit to full scale by parking the food truck in a specific location. To achieve the highest revenue and "win the game," i.e., earn the most revenue in five weeks of gameplay, students can only afford one week of prospecting with the pushcart before committing to the food truck. If students pursue research the first week, they cannot catch up to the revenue earned by students that either used the pushcart for one week or committed to the food truck for all five weeks.

Methodology

Over the past two academic years, students (N = 143) taking one of three courses were exposed to the entrepreneurial mindset profiles and the food truck simulation: (i) Introduction to Entrepreneurship, (ii) Technical Entrepreneurship, and (iii) Introduction to Engineering Management. The class year for each of the three cohorts is shown in Table 4.

Table 4: Class year for students across three courses participating in the research study

Course	Freshmen	Sophomore	Junior	Senior	Graduate
Intro. to Entrepreneurship	68	0	0	0	0
Technical Entrepreneurship	0	0	1	12	3
Intro. Engineering Management	0	0	9	49	1
Totals:	68	0	10	61	4

For the purpose of statistical analysis on class year, students were split into two groups: freshmen (N = 68; 47.6%) and upperclassmen (N = 75; 52.4%). The upperclassmen group consisted of

juniors, seniors, and graduate students according to Table 4. For statistical analysis related to gender, students self-identified and were grouped according to female (N = 41; 28.7%) and male (N = 102; 71.3%), Table 5.

Table 5: Student gender across three courses participating in the research study

Course	Male	Female
Intro. to Entrepreneurship	51	17
Technical Entrepreneurship	10	6
Intro. Engineering Management	41	18
Totals:	102	41

All students completed the food truck simulation in class, but depending on the section and course term, some students completed the online entrepreneurial mindset assessments as homework outside of class, while some students completed the assessments during class. There was no additional academic risk, negative consequences, for students participating in the simulation. The exercise was one of many activities required for the course and their financial performance did not influence their grade in the class.

In general, students in the Introduction to Entrepreneurship and Technical Entrepreneurship courses have overtly communicated their entrepreneurial inclination by enrolling in the class, but as a group, they had no more real-world entrepreneurial experience than students did in the Introduction to Engineering Management.

The first step in the statistical analysis was to hand transfer student assessment results from the two instruments into MS Excel®, along with data from the food truck challenge. Raw data from the assessments included mean scores on the fourteen skills and traits for the EMP and the 1-10 ranking of ten talents for the BP10. The BP10 data also included the style category. The food truck simulation data included the total revenue earned, number of weeks for research, pushcart and food truck. Next, the spreadsheet data was imported into Minitab 18® for analysis.

All aspects of the project were reviewed and approved by the Institutional Review Board (IRB) for research involving human subjects. Additionally, students gave signed permission to use data from the two instruments and survey in this paper. Under no circumstances were student mindset profile scores shared with other students. Total revenue for the food truck simulation was displayed on a projector screen for all students to see during gameplay, i.e., leaderboard.

Results

We first examined the data to determine if there was a correlation between class year (freshmen versus upperclassmen) and how well the students performed on the Food Truck Challenge. Although there turned out to be no significant correlation between revenue earned and class year, there were some other interesting results worth discussing.

This first set of results consider students' first week choices and a comparison of those made by freshmen versus upperclassmen. In the first week of the challenge,

- 49 (34.3%) students chose to do research, 51 (35.7%) chose the pushcart, and 44 (30.8%) chose the food truck,
- 32 out of 68 (46.4%) freshmen chose to do research and 17 out of 75 (22.7%) upperclassmen chose to do research. There is a statistically significant difference in these proportions (p-value = 0.001) suggesting that the proportion of freshmen choosing to do research in their first week was greater than the proportion of upperclassmen choosing to do research.
- 21 out of 68 (30.4%) freshmen chose the pushcart and 30 out of 75 (40.0%) upperclassmen chose the pushcart. There is not a statistically significant difference in these proportions at significance level $\alpha = 0.05$.
- 16 out of 68 (23.2%) freshmen chose the food truck, while 28 out of 75 (37.3%) upperclassmen chose the truck. There is a statistically significant difference in these proportions (p-value = 0.035) suggesting that the proportion of upperclassmen choosing the truck in their first week was greater than the proportion of freshmen choosing the truck in their first week.

Although a greater proportion of the upperclassmen chose the food truck at the onset compared to the freshmen, surprisingly there is not a significant difference in the mean revenue or the variance in the revenues generated by freshmen versus upperclassmen at the end of the challenge. A summary of statistical results and graphics for the revenue generated by freshmen is presented in Figure 2 and revenue generated by upperclassmen is shown in Figure 3. Finally, in order to see a direct comparison of their revenues in one graphic, a comparison boxplot is displayed in Figure 4.

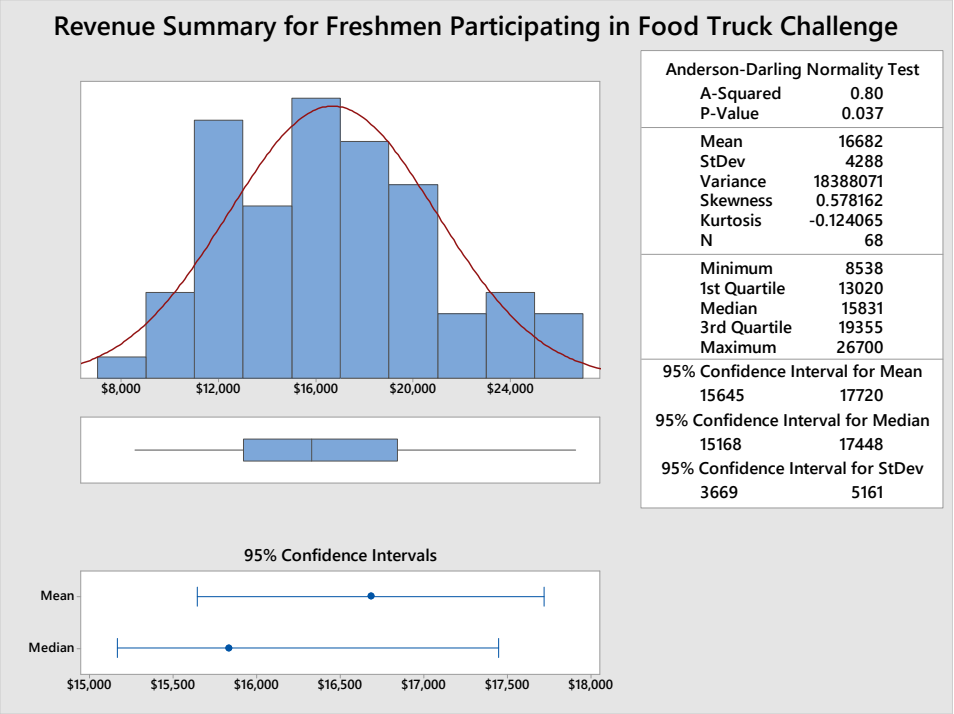

Figure 2. A summary of revenue statistics for freshmen.

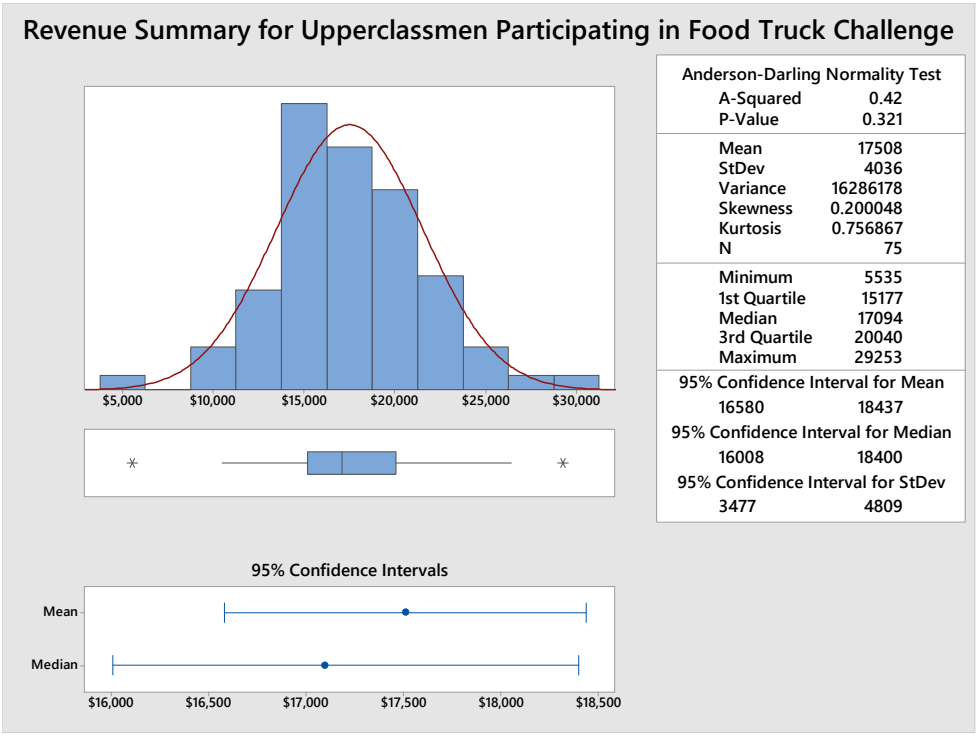

Figure 3. A summary of revenue statistics for upperclassmen.

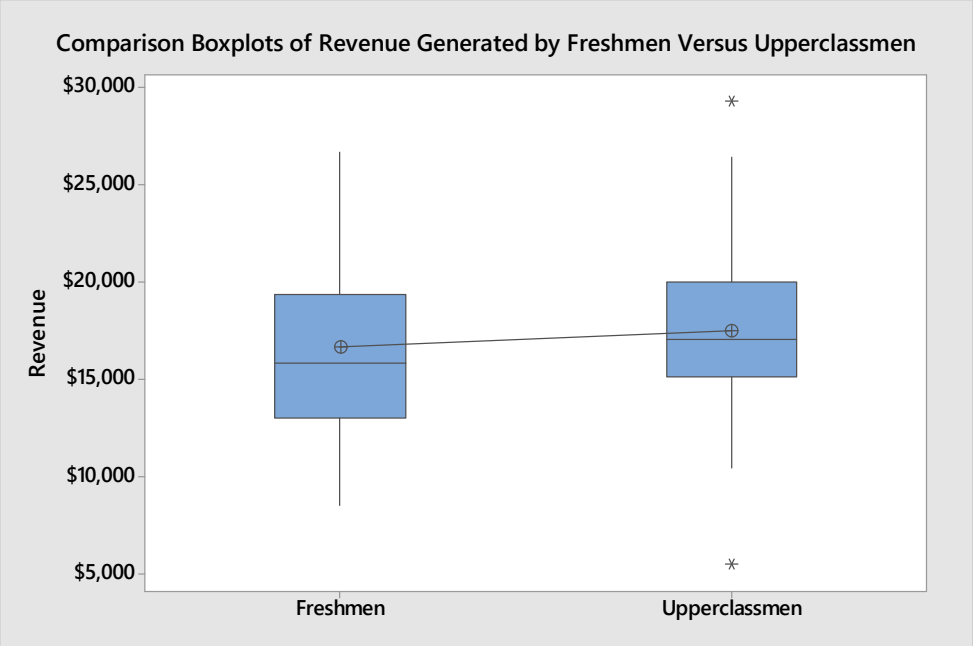

Figure 4. Comparison boxplots of revenue generated by freshmen versus upperclassmen. The upperclassmen boxplot displays two data points that are outliers. The symbol ⊕ in each boxplot represents the sample mean.

After looking at summary statistics and graphics for student revenues separated by class year, we combined all students to determine the overall mean, median, quartiles, and standard deviation of the revenues. We were curious about the two outliers shown in the boxplot, Figure 4. The low revenue outlier is from an upperclassman Engineering Management student who had incomplete data. In one of the weeks, he made no decision. The high revenue outlier is from an upperclassman Entrepreneurship student who chose to use the food truck all five weeks.

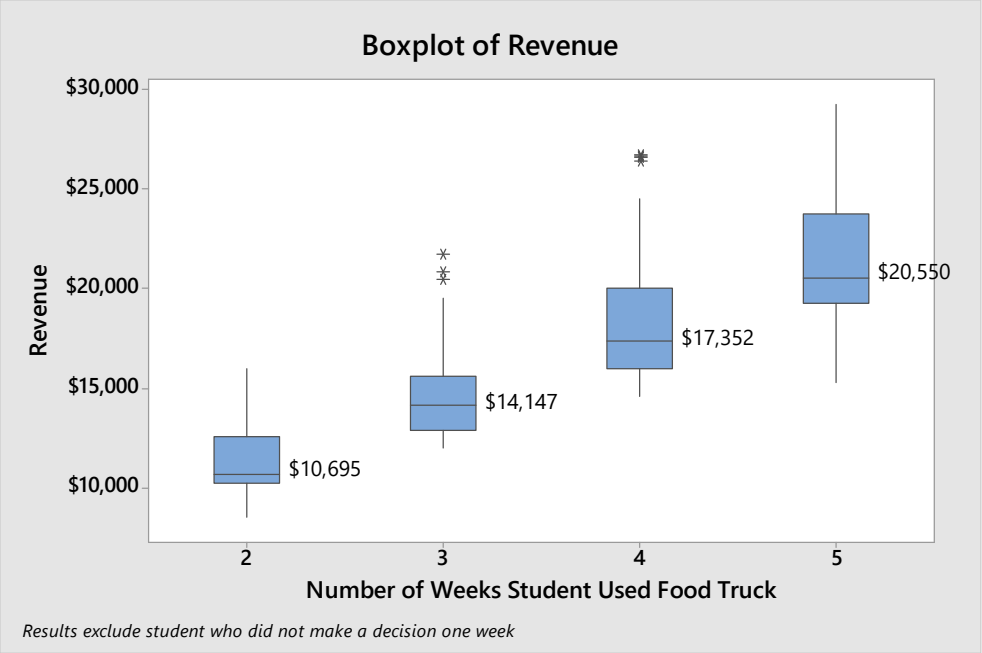

Figure 5. Revenue versus the number of weeks that a student used the food truck. The values next to the boxplots represent median revenues.

Noticing the student who generated the greatest revenue used the food truck all five weeks, we examined revenues based on the number of weeks of food truck usage. Since students choosing to do research do not generate any revenue in a given week and pushcarts, on average, generate less revenue than food trucks, the clear increase in revenue due to greater use of the food truck is not surprising. Comparison boxplots of revenue versus the number of weeks a student used the food truck is in Figure 5.

Taking this a step further, we were able to determine that there is a significant difference in mean revenue from the first-week decision of doing research versus choosing the food truck or the pushcart. Using two-sample *t* tests, the data suggest that the mean revenue of students using the food truck or the pushcart in their first week was greater than the mean revenue of students choosing to do research (*p*-value = 0.000 for both).

As noted in the introduction of the paper, we next considered whether the students' data collected from the two survey instruments for entrepreneurial mindset, EMP and BP10, could help us predict their behavior in the Food Truck Challenge. We started by looking at EMP traits and skills to see how they matched up with Food Truck Challenge decisions and results. Considering that choosing the food truck in the first week was risky due to the lack of available research results on placement and food offerings, we started with the EMP trait of Risk Acceptance. If data from the EMP demonstrated a student had a high tolerance for risk taking, would that student's actions in the Food Truck Challenge demonstrate a more risk tolerant action, such as starting with the food truck?

We computed the correlation between students' EMP risk acceptance scores and their revenue from the challenge. There was no significant correlation; in fact, there was no significant correlation between any of the EMP traits or skills and revenue at a level of significance $\alpha = 0.05$. Rather than giving up on an association between the mindset profile and Food Truck Challenge, we broke EMP traits and skills into binary groupings: low/medium and high. For each trait/skill, we determined their quartiles and placed students with scores at or above the third quartile in the "high" category and the rest in the "low/medium" category. Then we compared revenues for students in these two different categories for various traits, skills, and combinations of both. We were able to find one correlation between the EMP trait "Action Orientation" and Food Truck Challenge revenue.

Our data suggested that students in the high category of this trait had a greater mean revenue than students in the alternative category (p-value = 0.028). Since we knew the number of weeks of food truck usage contributed to greater overall revenue, we were able to confirm the proportion of students in the high Action Orientation category using the food truck for 4 or 5 weeks was greater than the proportion of students in the other category using the food truck this same amount of time.

We then turned our focus to BP10 ratings and their possible correlation to students' decisions and performances on the Food Truck Challenge. For each of the ten talents, we broke the ratings 1 through 10 into one of three ordinal categories: low, middle, or high. We assigned the low category to ratings of 8, 9, or 10, the middle category to ratings 4, 5, 6, or 7, and the high category to ratings 1, 2, or 3. If a student received a rating of 1, 2, or 3 for a given talent, this means that this talent is one of the student's main strengths.

The first significant result we observed was that students who were in the high category for the BP10 talent "Confidence" had a greater mean revenue than students did in the low category for this talent. This type of relationship did not exist across the other talents.

We next compared student decisions and revenue results based on their BP10 styles: Activation (Delegator, Determination, Independence, Risk), Relational (Disruptor, Knowledge, Relationship), and Strategic (Confidence, Profitability, Selling). Given that the Relational style includes Knowledge (i.e. research) and the Strategic style includes Profitability, it followed that the mean revenue for students with the Strategic style was greater than the mean revenue for students with the Relational style (p-value = 0.030). Again, knowing that increased use of the food truck yields higher revenues, the data suggested that the proportion of students with the Strategic style using the food truck for 4 or 5 weeks was greater than the proportion of students with the Relational style using the food truck for 4 or 5 weeks (p-value = 0.066). We did not determine other relationships between BP10 styles and Food Challenge decisions or revenue.

Conclusion

Over a two-year period, math, science, and engineering students (N = 143) completed two online entrepreneurial mindset assessments, EMP and BP10, and an online business simulation, Food Truck Challenge. The authors looked at differences in gameplay based on the student's class year and conducted correlation analysis to determine significance between gameplay behavior and skills and traits identified on the mindset profiles.

Significant findings from analysis of gameplay by student's class year include:

- Freshmen are more inclined to conduct research during the first week of gameplay, whereas upperclassmen are more inclined to pursue immediate revenue by foregoing research and investing time to prospect markets directly with a food truck.

A follow-on study could probe this difference in behavior to determine if in general freshmen take a more cautious approach to new ventures, "testing the water," whereas upperclassmen are more inclined to "jump into the deep end of the pool." In general, the academic environment at our home institution promotes risk-taking as faculty expound the belief that failure is a learning experience and an academic setting is a safe place to stretch and experience failure in pursuit of higher achievements. In the simulation, there was no upfront investment to use a food truck so prospecting with a food truck did not have much downside risk.

Upperclassmen may be more pragmatic in their actions, having greater experience with academic simulations and greater confidence in general with academic exercises. There is also a competitive nature to the simulation as the leaderboard is exhibited for the entire class to see during gameplay. Upperclassmen may have developed a more competitive posture over their time at the institution, as opposed to first-term freshmen that are trying to establish identity and get their bearings.

Significant findings from correlation studies between gameplay behavior and entrepreneurial mindset profiles include:

- There is no significant correlation between any of the 14 skill and trait categories on the EMP and game playing behavior directed at maximizing revenue.
- Students ranking high in the "Confidence" category on the BP10 were more likely to earn higher revenue in gameplay than students ranking low in this category, but there was no correlation between the remaining nine categories and gameplay behavior.
- Considering the three BP10 style categories, a significant difference in gameplay revenue was noted when comparing students in the "Strategic" and "Relational" styles.

It would seem reasonable to assume that risk-taking behavior in the simulation would correlate to responses on the EMP and BP10, but in general, this was not the case. A student may rank low for risk-taking behavior on the profiles and then take considerable risk during gameplay, meaning they avoided research on product-market fit and prospecting with a pushcart, in favor of parking a food truck at locations to see how much they could earn, thereby maximizing revenue based primarily on luck and intuition. Alternatively, a student may exhibit risk-taking tendencies according to their responses on the mindset profiles and then act quite conservatively during gameplay.

Correlation between the BP10 strength "Confident" and revenue potential is the type of outcome we hypothesized when constructing the research. A student that exudes confidence in a business setting is more likely to leap before they look, or at least to look a bit less than a person lacking confidence. While this correlation gives some credence to the idea that student behavior on a

simulation correlates to their mindset profile, it is hard to ignore the overwhelming evidence that the other nine strengths had no correlation to gameplay behavior. At the onset, we hypothesized that in addition to Confidence, strengths such as Profitability, Knowledge, and Risk would be statistically significant as well. The research did not support this conjecture.

The experience curve may be an important and confounding element in our research. It may not be obvious to some students that conducting research in the first week, which we have noted here as "less risky behavior," is related to risk because they do not perceive that a week of research eliminates the potential to earn a week of revenue. In other words, their actions may be completely different during a second chance to play the game after they have deduced the rules that govern maximizing revenue. Alternatively, students experienced with gameplay may immediately recognize the strategy to earn revenue, and this may mask their actual tendencies identified on the entrepreneurial mindset profiles.

An additional issue with the research approach is that a small change to the game structure is likely to have a significant impact on behavior. For example, if during the first week of gameplay, there was a revenue penalty for prospecting with a food truck, it is likely that more students would pursue research during the first week or prospecting with a less costly pushcart. Given that a small change in game structure can likely have a significant impact on gameplay behavior, the prospect of using simulations to correlate behavior with entrepreneurial mindset profiles may not be robust.

We continue to collect data from our students with the intent to explore gender differences in a future paper and to expand upon our approach by considering a more complex simulation and strategies to minimize the effect of game structure and game playing experience.

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