

# VENTURING INTO TECHNOLOGY STARTUPS: UNDERSTANDING THE MOTIVES BEHIND THE CREATION OF ENTREPRENEURIAL VENTURES IN THE GREATER SEATTLE AREA

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## Abstract

Entrepreneurship, as classified by all economists, is one of the four factors of production and is a staple in any growing economy. However, when looking at these startup ecosystems, such as Silicon Valley, many companies fail to get past the initial creation stage, potentially from lack of funding, determination, or other issues. Therefore, in order to determine why this failure exists, it is important to know what motivates people to create ventures in the first place. This paper attempts to deal with this issue by looking at variables that contribute to technology entrepreneurship in the Greater Seattle Area. The main purpose of this project was to address the more social aspect of entrepreneurship by looking at them as organization products with connections and experiences. The method used in this paper was a mixed-methods study in which statistical analysis (in the form of descriptive statistics and regression) and thematic analysis was done. Each variable was considered from a scale from 1-10 in which entrepreneurs stated how prominent they found those variables. Thematic analysis was conducted through keywords and concepts in order to condense the responses. This study found that although personality was extremely prominent from a pure statistical standpoint, networking was also extremely prominent from a thematic perspective. For the regression model, there was no direct link between personality and any other variable, indicating that each variable is independent. With this knowledge, further research could look at these variables in a broader sense or be conducted in different cities to see similarities and differences. Additionally, there are paths for the government to propose future legislation or budgeting to determine optimal paths to improve the levels of entrepreneurship in the Greater Seattle Area, and this project could be replicated in other prominent startup locations such as Hong Kong and London.

**Keywords:** *entrepreneurship, personality, technology, ecosystem, network, startup*

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## Definitions:

For the purpose of this paper, the following definitions were used:

**Personality:** Individual differences in characteristic patterns of thinking, feeling and behaving.

These patterns typically stemmed from tests such as the MBTI or the Big Five (APA, 2018).

**Entrepreneur:** An entrepreneur is an individual who, rather than working as an employee, founds and runs a small business. (Investopedia, 2018)

**Technology Startup:** Any company that utilizes new technology or development in their product or service line.

**Ecosystem:** A complex network or interconnected system (Dictionary.com, 2018)

# INTRODUCTION

## 1.1 Background

The Greater Seattle Area, over the past decades, has pushed for stable, economic growth. Numerous people and companies have flocked to Seattle to take advantage of this major economic scaling as a result of the strong presence of Microsoft, Amazon, and Expedia as multinational corporations based in Seattle (Seattle Technology, 2015). As a result, the ecosystem of Seattle has started to blossom with the growth of new startups, new talent, and innovative ideas. Flanders Investment, a Flemish government agency, rated Seattle as #4 in their top startup ecosystems and #7 in technology startup investments (Wisniewski, 2015). Because of this growth and development, Seattle seemed to be an optimal location to study considering the burgeoning growth and talent that is flooding the streets.

Since entrepreneurs function as the basis of the growth of economies by inventing goods and services which results in employment, they play a significant role in the expansion of the Seattle economy (Investopedia, 2018). But with this boom came problems in rent, copyrights, intellectual property, and problems with funding. As a result, the rates of startups have been decreasing over the past decades (Small Business Profile, 2016). Therefore, people became more creative in cultivating their products and services. When combining this creativity with numerous large venture capital firms, more technology startups are being founded as a result of large investments being made from these wealthy companies. As a result, it seems significant to study the development of technology startups due to the massive growth in consumer interest in technology, machine learning, biotechnology, and A.I.

Technology has been the focus for many startups as a result of innovations. Not only is the technology beneficial in the development of new drugs, faster software, or new developments in processing, but is also causing fluctuations in the industry. Junfu Zhang, a professor at Santa Clara University, illustrated three main points in response to the growth of the technology market: technology is changing the industry and the way consumers perceive of it, the job market is constantly in flux as a result of the new developments, and that because of this, the number of startups is in constant decline (Zhang, 2003). Therefore, resolving these issues by examining social variables that contribute to entrepreneurship and potentially find logical solutions seems to be the next step in order to improve the prospering ecosystem.

## 1.2 Literature Review

In order to understand why this paper focuses on the industry and background of the entrepreneur as explanatory variables as drivers of startups, it is necessary to understand the pre-existing body of research on entrepreneurship. A substantial amount of research focuses on the idea that personality traits are intertwined with entrepreneurship. Hao Zhao and Scott E. Seibert, professors from the University of Chicago and Melbourne Business School, conducted a meta-analysis on personality traits of entrepreneurs by asking them to complete the Big five personality test. In their study, they discovered that entrepreneurs scored lower on “Neuroticism” and “Agreeableness” and higher on “Conscientiousness” and “Open to Experience” than traditional managers which essentially means that entrepreneurs are less emotional and aggressive and tend to be socially aware (Zhao, 2006). This point of view that personality plays a significant role has been rapidly gaining support. Sjoerd Beugelsdijk and Niels Noorderhaven, professors at the University of Netherlands, corroborates the notion that personality is important by studying the characteristics of self-employed workers and entrepreneurs. They discovered that people who are self-employed place high emphasis on the individual over the collective and believe that they themselves are hardworking and dedicated individuals (Beugelsdijk, 2005). However, it is important to recognize that this body of research focuses solely on personality. In Malcolm Gladwell’s book, *Outliers*, he agrees that entrepreneurs have certain innate qualities that lead them to entrepreneurship, such as IQ and personality, but also notes that people who are ultimately successful follow the 10,000-hour rule (Gladwell, 2008). This rule essentially dictates that to “master” a subject, one must work for 10,000 hours (Gladwell, 2008). Although this book is limited because it focuses on older entrepreneurs, it ultimately questions the importance of innate talent and personality. Therefore, looking at other factors is crucial in gaining a more holistic understanding of entrepreneurship.

Some research indicates that the entrepreneur’s background, such as their education, network, and peers, contributes to entrepreneurial ventures. Jesper Sørensen and Magali Fassiotto, professors at Stanford Business School, looked at four “fonts” of entrepreneurship, defined as knowledge, opportunities, social capital, and values (Sørensen, 2005). Robert Baron and Gideon Markman address one of the variables found in Sørensen, arguing that social capital is the most significant. They discuss how socialization in networks leads to better investments from outside investors and greater collaboration within the company (Baron, 2000). However,

these studies only look at these variables individually and do not look at them in context to other potential variables that contribute to entrepreneurship.

While some researchers note that the background of an entrepreneur is important, there is remains a widespread belief among researchers and business-school students that entrepreneurship and the notion of self-motivation. According to Beugelsdijk et al., they discovered that people who are self-employed, including entrepreneurs, are more likely to assert that success is linked to hard work, that individuals should bear a greater burden of the responsibility in business failure, and that these individuals developed their work ethic over the course of their lifetime (Beugelsdijk, 2005). This essentially correlates with the American Dream in which people who work hard have the capacity to strike it rich, like an entrepreneur. Similarly, Michael Obschonka and Michael Stuetzer agree that personality and economic success are linked. However, they instead argue that besides hard-work and dedication, people who possess a wide variety of skill sets have the capacity to be more successful (Stuetzer, 2013). Although they discover similar themes to Beugelsdijk et al., it should be noted that Stuetzer et al. highlight a strong connection between previous background or involvement in an industry and entrepreneurial ventures. Ultimately though, these two studies indicate a shift in the research method that deviates from theoretical notions of entrepreneurship and instead focuses on specific examples in the world. Pino Audia and Christopher Rider, professors at UC Berkeley, further this shift in research by conducting historical analysis in looking at the “garage theory” that is prevalent in modern day society (Audia, 2005). Upon finding that people generally believe that entrepreneurs come from small garages or work spaces that function as incubators for startups, Audia et al. argue that there are other factors, such as the background of the entrepreneur and the impact of the number of startups in the industry, more important in determining the success of a startup (Audia, 2005). Therefore, because numerous researchers find that there are various variables, such as garage theory, personality, and networking, that contribute to entrepreneurship, the research found in this paper will be examining the other facts that Audia et al. discovered and will attempt to determine the strength of each factor in contributing to entrepreneurship.

In addition, several researchers have noted that the ecosystem helps contribute to the creation of startups. In Howard Aldrich and Gabriele Wiedenmayer’s study, they approached the founding of organizations from an ecological standpoint by looking specifically at prior dissolutions, density dependence, and prior foundings in determining entrances into markets

(Aldrich, 1993). These all allude to the idea of diverse types of markets but mainly contribute to the notion that different numbers of firms and the varying success of firms in specific industries is significant. In addition, Paul Tracey and Nelson Phillips corroborate with Aldrich et al. on the idea that the success of startups depends on the success of prior companies in the industry, but instead focus on the necessary benefits that the startup brings to the industry. They discovered that when new companies enter the industry, it solidifies the uncertainty in the market, creates more resource opportunity and distribution, and brings in innovations to potentially benefit the market (Tracey, 2011). However, this study is limited in that it looks at emerging markets rather than existing markets which is not as important when looking at the growth of the technology markets.

This study will ultimately want to address the question: *To what extent has the history of the industry and the background of the entrepreneur affected the decision for technology entrepreneurs to create startups in the Greater Seattle Area? And is there any direct correlation between personality and the other variables?* This paper will uniquely look at a specific industry, namely the technology industry, since this has been not done by past papers. This paper will also address the Seattle area since previous papers have not done so. Because of the diverse types of companies in the Seattle area, it will be interesting to note if any themes develop among different types of companies, such as biotechnology firms, financial technology firms, or other specialized corporations. Additionally, since the previous bank of knowledge seemed to focus deeply on personality and variables on an individual basis, this paper will attempt to demonstrate a correlation between personality and other variables, something previous papers failed to discuss. Furthermore, this study will contribute to the existing body of research by adding a case study that could potentially address issues with entering the startup industry.

### **1.3 Hypotheses**

#### **1.3.1 Variable with Largest Impact**

Because the bank of previous works emphasized the “nature” side in the psychological “nature vs. nurture” debate, the general perception on this issue seemed to be that personality played the largest role in determining entrepreneurship. This pulled from papers like Zhao et al., Gladwell, and Beugelsdijk et al. who all discovered that specific parts of personality, such as being more aggressive, risk taking, and social, was significant. Therefore, the following general hypothesis was developed for the purpose of this research:

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***Hypothesis 1: Personality plays the largest role in determining whether a technology entrepreneur pursues an entrepreneurial venture***

Additionally, in accordance with the method, which will be discussed later, this hypothesis will function as a null hypothesis when conducting statistical tests.

### **1.3.2 Direct Correlation with Personality**

Most of the previous literature deals with social variables as independent of each other. Therefore, a second null hypothesis was run in order to look at the dependency of one variable on another to see if there was any correlation between the two in how entrepreneurs perceived their respective effects on each other. This came from Zhao et al.'s study in which he observed the correlation coefficients of the 5 personalities from the Big Five personality test that he conducted. However, since the body of research focused mostly on personality, and there are no general assumptions in the field, the following hypothesis was developed:

***Hypothesis 2: Personality is not linked with any other variable in determining whether a technology entrepreneur pursues an entrepreneurial venture***

# METHOD

## 2.1 Mixed-methods Approach

### 2.1.1 Questionnaires and Interviews

In order to study the background of both the entrepreneur, a mixed-methods approach was conducted through questionnaires, interviews, and thematic analysis. Initially, the idea of an interview was more prevalent to receive necessary info from entrepreneurs. This method came from Celestine Katongole, Wilber Manyisa Ahebwa and Richard Kaweret's study, "Enterprise success and entrepreneur's personality traits: An analysis of micro- and small-scale women-owned enterprises in Uganda's tourism industry" in which they interviewed Ugandan entrepreneurs in the tourism sector to find the values that they found most important and noted the importance of an interview in their method (Katongole, 2013). However, because of the difficulty of getting in contact with entrepreneurs and the extraneous time it required for them to conduct interviews, a questionnaire was substituted and sent out in order to accomplish this task without burdening the entrepreneurs. The questionnaire provided a series of questions (copied from the interview) that asked them to rate variables on a scale from 1-10. A 1-10 scale was used to provide more nuanced result. The number, 5, denoted an answer that had some effect and essentially provided a control point for the rest of the data. The survey can be found in the appendix and was laid out in six sections: basic info, questions about background, questions about the industry, questions about the ecosystem, questions about personality, and other variables. These concepts were drawn from numerous studies, including Howard Aldrich et al.'s "From Traits to Rates: An Ecological perspective on organizational foundings" which dealt with how industry affects founding rates and Pino Audia and Christopher Rider's study, "A Garage and an Idea: What more does an Entrepreneur need?" which looked at the Garage Theory (Aldrich, 1993, Audia, 2005). The personality questions derived from Hao Zhao et al's "The Big Five Personality Dimensions and Entrepreneurial Status: A Meta-Analytical Review" which discussed the prominence of personality in entrepreneurial ventures (Zhao, 2002). At the end of the survey, an optional additional variable section was utilized in order for entrepreneurs to suggest additional variables that they did not find prevalent throughout the study in order to add further depth into this paper.



### 2.1.2 Thematic Analysis

Additionally, each scale was followed by an open-ended answer section if the entrepreneur wanted to justify their answer and provide additional info. As a result, both qualitative and quantitative info was received and analyzed. This was done to address the extent that people valued one variable over the other. For example, if one entrepreneur valued their family more, they could provide ample justification which added to create a more nuanced understanding and provide a more accurate study of this subject. The short answer responses were looked at through a thematic lens by looking at keywords and concepts that they used to support their claims about the importance of a variable in their decision to create startups. The same process was done in Gladwell's book, *Outliers*, where he examined the background of the richest 75 people in history and found themes among their adolescent and time period (Gladwell, 2008). These themes were then collected and was used in corroboration with the interviews which were recorded and scanned in the same fashion. This process was done in an attempt to equalize the information between the two types of methods conducted to gather info, and also because thematic analysis helps to categorize qualitative data so that it could be compared to quantitative data. Afterwards, these themes were examined to see if there were any cross-over or underlying themes discovered as a result of this process.

### 2.2 Sampling Method: Disseminating Questionnaires and Conducting Interviews

In order to find technology entrepreneurs, online email-lists, LinkedIn, and family friends were used to come in contact with potential candidates for research. A link to the questionnaire was posted and a link to interview sign-ups was also posted. Additionally, online email lists, such as Seattle Technology Startups, and sites, such as meetups.com, an online networking tool for new entrepreneurs, was used as well. This was done to decrease the potential bias of a convenience sample by increasing the sample size. A total of twenty-nine people was reached, consisting of twenty-six questionnaire responses and three interviews. Nevertheless, only sending emails or reaching out to people within a limited scope results in two main biases. The first, which is more noticeable, is the voluntary response bias which is that people who want to respond to the questionnaire tend to have more extreme opinions and may represent outliers in the general population. The second belongs to the notion that people who are more successful or are in a different network will not be able to see this, resulting in a sample that is not indicative of the true population and only accounts for those still trying to grow. However, an attempt to

mitigate this bias was used by looking thematically, rather than purely statistically, to see overall trends.

## **2.3 Statistical Analysis**

### **2.3.1 Descriptive Statistics**

The quantitative data, after being taken on a 1-10 scale was analyzed through statistical analysis utilizing 1-variable statistics to determine both general perceptions and outliers. Since the data was not random, median and mode were used in order to see the general perception of the sample. Graphs were also taken and utilized in order to address skewedness, outliers, and shape.

### **2.3.2 Multivariable Regression Model**

While the 1-Variable Statistics deals more with *Hypothesis 1*, a multivariable regression model is run in order to answer the second hypothesis. This was done by taking the data from 1-10 and performing statistical analysis using MS Excel program. By running it through the program, the correlation coefficients ( $\beta$ ), standard error bars, t-test values, and p-values of each equation could be calculated. As a result, trends could be identified in responses through p-tests and t-tests, which are tests for statistical significance. The importance of running the t-test was that it allows for significance tests to be taken without knowing the statistics of the population and could be used with non-normal distributions. The t-test is used to determine whether the data found is significant against the  $\alpha=0.05$  significance level. This concept comes from Zhao et al's study which utilizes a multivariable regression model in order to figure out the significance of the Big 5 Personality traits.

# FINDINGS

## 3.1 Statistical Data

### 3.1.1 Descriptive Statistics

After conducting a total of three interviews and twenty-six questionnaires, the data and responses were collected into an Excel spreadsheet. Due to the number of graphs, they will not be listed in the findings section and can be found in Appendix I. Because the sample is not randomly taken, 1-variable descriptive statistics were used to equalize the numbers across all variables in order to have sources of comparison. **Table 1** below shows descriptive statistics for each quantifiable variable on a scale from 1-10:

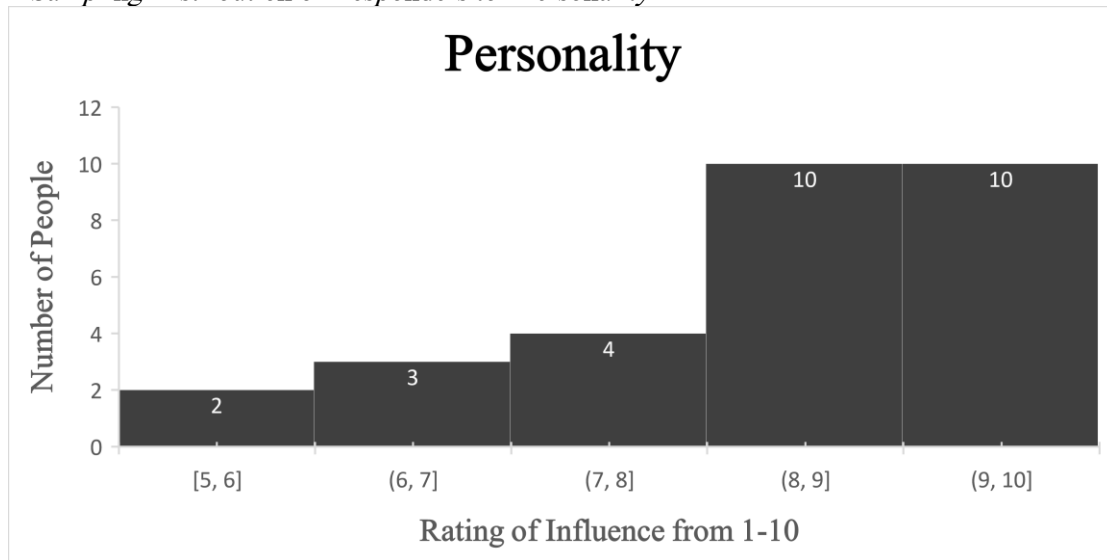
**Table 1**  
*1-Variable Statistics of Questionnaire*

Variable	$\bar{x}$	$SE_{\bar{x}}$	Median	Mode	$s$
Education	5.00	0.55	6.00	1.00	2.98
Previous Jobs	6.81	0.51	8.00	8.00	2.75
Previous Coworkers	4.48	0.58	3.00	1.00	3.11
Family Members/Friends	6.26	0.57	7.00	10.00	3.09
Network	5.83	0.87	7.50	8.00	3.01
Competition	4.07	0.54	3.00	1.00	2.91
Ecosystem	5.83	0.87	7.50	8.00	3.01
<b>Control</b>					
Personality	8.71	0.26	9.00	9.00/10.00	1.40
Garage Theory Belief	5.55	0.58	6.00	1.00	3.11

*Note.* The total sample size is 29 with the exception of the Network which only had 13 responses (due to it being added on the questionnaire late).  $\bar{x}$  = sample mean;  $SE_{\bar{x}}$  = standard error of the mean;  $s$  = sample standard deviation

Since the distributions are skewed, the sample median is a good indicator of general perception from the sample. The skewedness of the distribution comes from the nonrandom sample and the small sample size of less than 30, which is used in approximating a normal distribution. This data illustrates that these technology entrepreneurs generally found the competition in the industry and previous coworkers to be least important variable out of the group with a median of 3. Additionally, both Personality and Family Members/Friends had a mode of 10, indicating that a majority of entrepreneurs found that these two played an extremely large role in this case. However, since the question dealing with personality had the highest sample median and serves as a null hypothesis in this study, the graph should be examined. **Graph 1** below shows the sampling distribution of the personality question:

**Graph 1**  
*Sampling Distribution of Responders to “Personality”*



*Note.* [ ] = inclusive; ( ) = not inclusive. Distribution is skewed to the left, unimodal, and has no visible outliers.

This histogram is skewed to the left, indicating that, most people found personality to be viewed as extremely important. Additionally, the range of data was 5, with no score below a 5, indicating that all entrepreneurs who responded found that personality is at least somewhat influential. Juxtaposing this with the rest of the data that had values from 1-10, this extremity highlights that these entrepreneurs believe in the importance of personality.

After conducting 1-Variable statistics, the data can be ranked based purely on medians in order to provide an objective lens at the data. This is seen below in **Table 2**:

**Table 2**  
*Ranking of Variables*

	Competition	Previous Coworkers	Education	Garage Theory Belief	Family Members/Friends	Ecosystem	Network	Previous Jobs	Personality
<b>Median</b>	3.00	3.00	6.00	6.00	7.00	7.50	7.50	8.00	9.00
<b>Rank</b>	8	8	6	6	5	3	3	2	1

*Note.* Median comes from **Table 1**.

### 3.1.2 Multivariable Regression Model

In order to look at the potential relationship between variables, as noted in *Hypothesis 2*, a multivariable regression model was used. This data is summarized in **Table 3**:

**Table 3**  
*Multiple Regression with Personality Scale as the Dependent Variable*

Variable	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Education	0.05	0.09	0.55	0.59
Previous Jobs	-0.10	0.11	-0.91	0.37
Previous Coworkers	-0.13	0.10	-1.34	0.20
Family Members/Friends	0.06	0.09	0.67	0.51
Network	0.16	0.09	1.74	0.10
Competition	-0.03	0.09	-0.29	0.78
Garage Theory Belief	0.18	0.09	1.97	0.06

*Note.*  $\beta$  = regression coefficient; *SE* = standard error; *t* = t-value; *p* = P-value for statistical significance

The  $\beta$  value represents the slope of the regression line, positive indicating upwards and negative indicating downwards. This value would only matter if a p-value of 0.05 or less was seen, indicating that there is significant evidence. The value *SE* represents the standard error of the residuals (distance from actual point to the corresponding calculated point). The p-value represents the probability of getting this exact sample data set given that *Hypothesis 2* is true.

### 3.2 Thematic Analysis

Each quantitative answer had a free-response section below where entrepreneurs could justify their answers. Additionally, there were other questions that could not be quantifiable but could still play a role. These variables were placed in an Excel spreadsheet where they were picked for key words and concepts. **Table 4** provides the various variables and the main theme and sub theme found in the overall sample of technology entrepreneurs. These themes were then analyzed over multiple variables to find cross-over themes or repeated concepts.

The first column contains the variables used in the study. The second column contains the main theme found in the answers. Although paraphrased, these themes or ideas contain key words that were found in numerous answers, which the total number is listed at the bottom of each box. The third column contains the second most common theme. The number in each column corresponds to the number of responses that demonstrated that respective them in its answer. For one variable, ecosystem, there did not appear to be a subtheme considering the generally unanimous response. However, the ecosystem question had a smaller sample size, potentially leading to confounding.

This table essentially will be used in juxtaposition with the previous statistical analysis to address underlying themes within the numbers and try to gain a more nuanced understanding of the perspective of technology entrepreneurs in the Greater Seattle Area.

**Table 4**  
*Thematic Analysis of Free Responses Questions*

	<b>Main Theme</b>	<b>Sub Theme</b>
Education	Courses and school provided no actual preparation  <b>10/29 responses</b>	Graduate School or Entrepreneurship classes  <b>8/29 responses</b>
Previous Jobs	Helped create dreams and visions of what to do in the future  <b>14/29 responses</b>	Hated working for other people/lack of control  <b>6/29 responses</b>
Previous Coworkers	Played little to no role.  <b>10/29 responses</b>	Working with other successful people, founders, or specialists to create ventures  <b>7/29 responses</b>
Family Members/Friends	Parents were important figures in their decision to pursue entrepreneurship  <b>10/29 responses</b>	Little to no support  <b>5/29 responses</b>
Network	Expansion of business, increasing connections, and contact with advisors  <b>10/29 responses</b>	Self-conviction and internal drive  <b>3/29 responses</b>
Competition	Competition is not an issue. Focus on new ways to edge out competitors with an innovative product  <b>13/29 responses</b>	Take advantage of competitor's faults and use them to improve  <b>5/29 responses</b>
Ecosystem	Healthy ecosystem benefits funding and strong networking.  <b>11/13 responses</b>	<i>No sub theme</i>
Personality	Motivated, Risk Taking, Goal-Oriented  <b>13/29 responses</b>	Networking  <b>5/29 responses</b>
Garage Theory	Garage theory is not relevant; more about the people itself  <b>17/29 responses</b>	Being smart with resources  <b>4/29 responses</b>

# DISCUSSION

## 4.1 Discussion of Statistical Analysis

### 4.1.1 Discussion of Descriptive Statistics

When looking at the statistics, the data fails to reject *Hypothesis 1*. The mean, median, and mode of personality all support this claim by having the highest values of 8.71, 9, and 9/10 respectively (found in **Table 1**). Additionally, this factor had the lowest sample standard deviation (1.40) out of all the other variables, indicating that the majority of people in this sample were unanimous in their belief that personality plays an extremely important role in influencing the pursuit of entrepreneurship. No other variable had as high of statistics, corroborating with the idea that personality is important.

Another continuity that was found through this study was the lack of belief in the Garage Theory. In **Table 1**, the median value of how much one believed in the “Garage Theory” was 6.00, a value held lower than numerous other variables such as Personality and Networking which were deemed as of higher importance. This corroborates with Rider et al.’s case study on various companies by finding that in the workforce, entrepreneurs place less emphasis on *where* the company starts up (in terms of office space, rather than physical location) and emphasizes the importance of “psychological and social resources necessary to create new organizations” (Rider, 2005).

### 4.1.2 Discussion of Multivariable Regression Model

In regards to the regression line, *Hypothesis 2* fails to be rejected given that the p-value was above the significance level of 0.05 as found in **Table 3**. Therefore, there is no convincing evidence that personality serves as a leading indicator or to see whether these variables were intrinsically interrelated. This serves as a step for potential future investigation considering how compartmentalized the current body of work is on looking at variables that lead to entrepreneurship.

## 4.2 Discussion of Themes

This section will discuss the main themes seen out of **Table 4** which illustrated the main theme found within the conglomeration of the responses and a corresponding sub theme. Firstly, it will illustrate some of the main themes found throughout the variables since it appears that there was some consistent crossover among responses through different themes found in different variables. By looking at these crossovers, it is possible to identify the more significant

variables in order to determine which variables entrepreneurs felt to be extremely important to them in creating a venture.

#### 4.2.1 Cross-over Theme 1: Networking

Although networking was directly asked as one of the main variables, it is interesting to note that it appeared numerous times, specifically as the main theme in Ecosystem and sub theme in Personality. It could be argued, however, that since the same people were answering the question about networking, the data is skewed towards that direction and does not have any direct indication. However, the difference in number of responses and responders disproves this (10/29, 11/13, and 5/29.) Therefore, this contradiction, while somewhat valid, is limited in the fact that the quantitative numbers discredits this idea. In the question about personality, the notion of networking came from a response that discussed the significance of people-skills, such as being “outgoing, curiosity, or problem-solving” or talking about working with others. For example, one responder stated that,

*“It’s essential to be both curious and outgoing. Curiosity leads to recognizing problems and solutions, which propels progress. An outgoing personality enables you to approach a wide variety of individuals, which is necessary to successfully attract talent.”*

**Note:** Sample from Entrepreneur #2, a Founder and CEO at age 20, who started the company in 2017.

This highlights the relevance of personality in networking, that people who have the capability to talk to others and branch out are also some of the ones that are fairly successful. Numerous other entrepreneurs reiterate this idea, emphasizing the fact that a network is extremely important since it functions as a free asset. Since startups constantly struggle in raising financial capital, it seems logical that many entrepreneurs place high importance on networking. This idea corroborates with Karcsics et al. which found that personality, specifically the capacity to exert social influence, plays a significant role on their capacity for success. Therefore, it is important to recognize the underlying importance of networking, especially since numerous entrepreneurs discussed this idea.

#### 4.2.2 Cross-over Theme 2: Self-motivation

Although this theme is a subset of personality, one major theme that was constantly discussed numerous times was the notion of self-motivation. This theme stems from the fact that in numerous responses, the notion of self-reliance or motivation was established as the common factor in all entrepreneurs. These ideas were found in responses to education, previous



coworkers, personality, and the “Garage Theory Belief.” For example, one responder, in the education section stated that,

*“I was an IT Director for a mid-large company for 10 years, and used my off time to start many companies, these eventually made 4x my salary and I got tired of babysitting adults, so I left, sold all the businesses that needed attention (non-passive), and created an investment company that manages passive income assets and crypto/emerging non-correlated assets.”*

**Note:** Sample from Entrepreneur #11, a Founder at age 34, who started the company in 2015

This sample emphasizes the belief that technology entrepreneurs in this area have an inherent drive and determination that essentially pushes them towards ventures. Other responses discuss a similar belief in which they find that they can do the job better or find new ways to improve on products that their previous job had. As a result, they have this inherent belief that they have the capacity to change the market and are motivated enough to do so. Additionally, the difficulty and capacity that this worker had to sell off numerous companies, something that requires time and dedication, while starting up another, indicates his devotion and dedication to running and managing newly created startups. Therefore, among the entrepreneurs, there is a belief that having the capacity to shape their own future is a necessity.

After dealing with these two main themes, *Hypothesis 1* is brought back into question. On one hand, there is the notion that networking is equally as important as personality because its functions as an important asset. However, many of the responses discussed important crossovers such as the fact that in order to network, one must be outgoing, curious, and sociable. This clearly indicates that these could be treated similar or even the same. But, as a result of the multivariable regression model, there is no correlation between the two, indicating their independence from each other. Therefore, *Hypothesis 1* can be rejected which indicates that personality and networking both play important roles in determining whether a technology entrepreneur pursues a venture.

#### **4.3 Limitations**

As mentioned earlier, one of the main limitations of this study is the scope of the questionnaire. Because it was sent out through online databases, meetup groups, and other networking sites, it demonstrates two main issues. The first issue is due to the fact that this is a convenience sample. Although the task of messaging entrepreneurs is difficult as a result of the nature of their schedules, this type of sampling results in a skewed perception of the data. However, one deviation from this issue is the notion that because the sample is technology

entrepreneurs, the use of these networking sites is somewhat indicative of the larger population. This is because people well-versed in technology recognize the projected growth of the market and want to take advantage of this, as seen by the growth in entrepreneurship in the Greater Seattle Area graphs from the SBA reports. The second issue deals with volunteer response bias. Since the questionnaire was posted and sent out to these entrepreneurs, only those that had a vested interest in this topic would respond. However, this issue is not too problematic in the short run since this bias doesn't necessarily lead to any extremities in the sample. In fact, it would likely result in a concentration or centralization of the data considering those that consider themselves unique or outliers will self-select themselves out of the sample.

Regarding the use of thematic analysis, another potential source of error is the fact that the findings were user-generated. Since the themes were attempted to be generated somewhat objectively, there was error in personal bias on what was considered a "keyword." Therefore, since some generalizations were made (see **Sample 1** below), there is a margin of error in the interpretation of the themes between the responses. Additionally, since the timing of each response was not calculated, there is a limitation regarding the depth and scope that each entrepreneur put into their response. While some might have thought about their answer for 3-5 minutes before typing it down, others might respond with the first idea in their mind. This results in two different groups of cognitive thought and perception, further changing the notion of what someone perceived as the most important variable.

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**Sample 1**

*For the variable "Competition," the response, "I took advantage of their fault to better my product to take their market plug my own" and "found that companies were not doing anything similar and that they tailored specifically to a market" were both approximated to connote the notion of innovation and edging out the competition.*

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**4.4 Further Research**

There appear to be three optimal avenues of further research because of this study. The first would be to replicate this study on either a larger scale, such as sampling across the nation, and pull from cities or populations that are more indicative of the U.S., or to pull a more random sample in order to make a more apt generalization about the Greater Seattle population. As a result, true means of the variables could be determined because the data would be randomized. If a study of the Seattle population was chosen, it could provide the

Seattle government with salient data on which variables are most significant in determining whether an entrepreneur creates a venture. As a result, further information is learned on what should be improved in the future (such as improving the ecosystem) which could allow for beneficial legislation policies that further the growing ecosystem. In the case of this paper, the Seattle government could create hubs, accelerators, or other prominent locations that could help fund networking between entrepreneurs and create a greater sense of community.

The second avenue would be to isolate the variables and perform regression analysis across two variables, rather than a large array. This would increase the validity and accuracy of the tests by focusing on the relationships in a more microcosmic scale by increasing the population of just those variables. By increasing the population, this, in turn, decreases the sample standard deviation, and potentially allowing the researcher to conduct a 95% confidence interval in which the true regression line can be discovered.

The last path would be to replicate this study in other cities that have different or weaker startup cultures. For example, pulling from the same source by Wisniewski, there are numerous other cities that have strong startup cultures such as Hong Kong, Tel Aviv, Chicago, and Silicon Valley. By looking at those places, it would be interesting to compare and contrast how they foster entrepreneurship and to see if any of the other variables are more prevalent than the ones found in this study. For example, if education was found to be extremely prominent, the government in the area could host classes for said entrepreneurs or provide funding for nearby universities to increase graduate school classes in these related fields. There could also be room to look at why certain startup ecosystems arise and the reasons that they prosper, such as potentially conducting a historical analysis of the startup environment over numerous decades and determining which variables have been determined to be the most important and finding how these ecosystems have changed. Additionally, there could be room to look at places that are significantly less successful, such as Albuquerque, Honolulu, and other locations, and compare to see the variables that govern that ecosystem. This could potentially lead to the government seizing an opportunity to improve certain aspects, either through legislation or funding, that could help spur these areas to become more successful.

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# Appendix I: Interview Questions

## Basic Information

1. *Name of Company*
2. *Type of Company*
3. *Official Position Title:*
4. *Year when company formed:*
5. *Number of years working in this industry:*
6. *How big was your company's first office space?*

## Questions about Background

7. *To what extent has your previous education from high school, college, university, or other institutions, affected your decision to pursue entrepreneurship?*
  - a. *Were there any specific classes that influenced your decision?*
8. *To what extent have your previous jobs affected your decision to pursue entrepreneurship?*
9. *To what extent have your previous coworkers affected your decision to pursue entrepreneurship?*
10. *To what extent have your family members or friends affected your decision to pursue entrepreneurship?*
11. *To what extent have you utilized previous networks or connections in forming your decision to create a venture?*

## Questions about Industry

12. *To what extent did the number of firms in your industry affect your decision to create a venture?*
13. *If you recognized that your industry was competitive, what strategies did you utilize in order to effectively enter the market?*

## Questions about Ecosystem

14. *Were you aware of previous foundings or dissolutions of companies similar to yours when you decided on creating your entrepreneurial venture? If so, how did it affect your decision?*
15. *To what extent has the ecosystem (venture capital, Y combinator, and other seed ventures) helped you create your startup?*
16. *Were there any issues in trying to gather resources? If so, what were they?*

## Questions about Personality

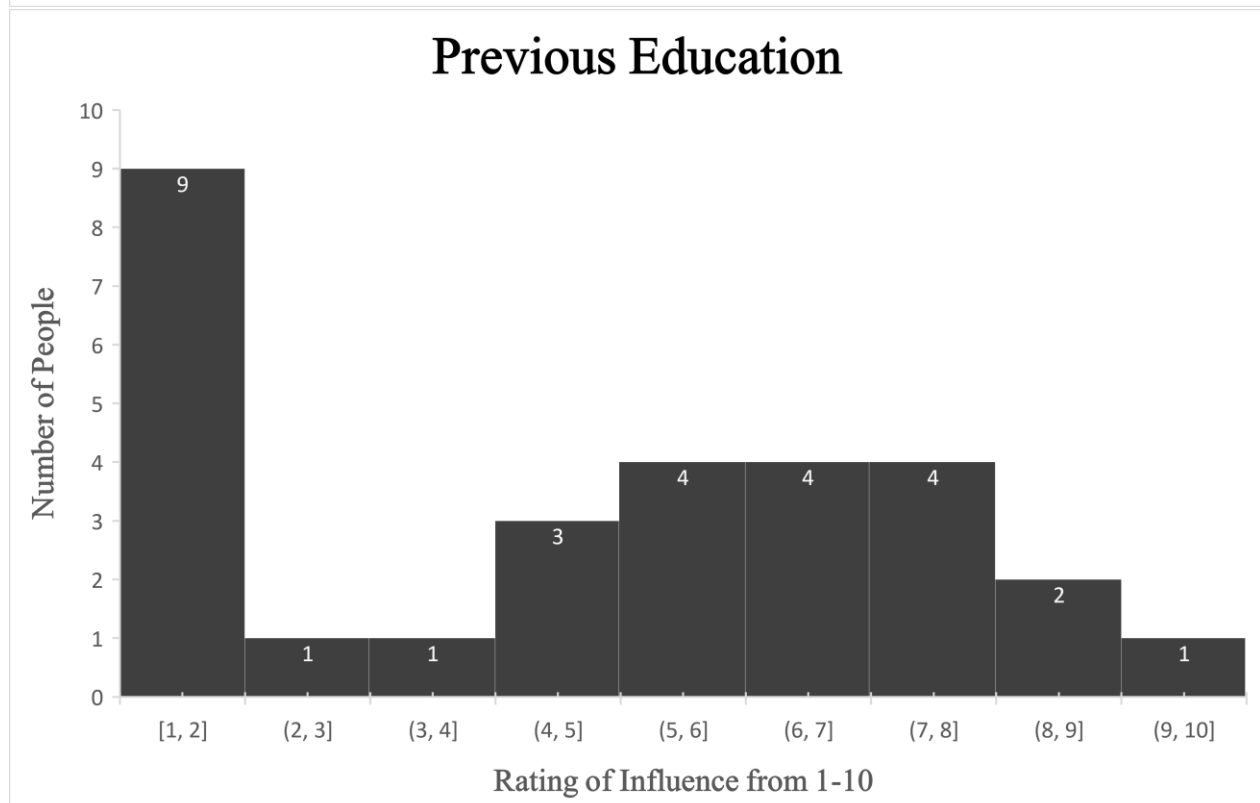
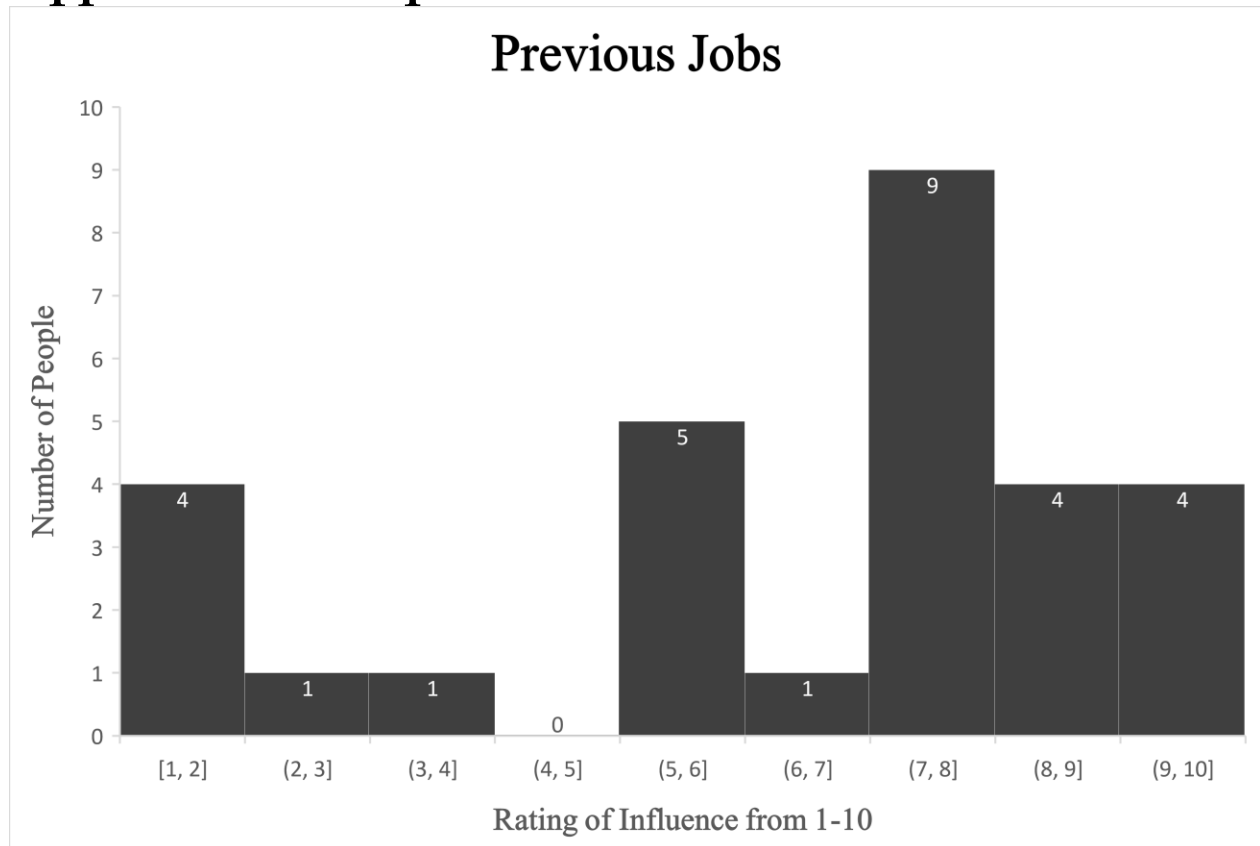
17. *To what extent do you believe your personality (and perhaps the personality of other entrepreneurs) helps in deciding on creating a startup?*
18. *What is your Myers-Briggs Type?*

*19. To what extent do you believe in the garage theory, defined as the notion that successful startups come out of garages or workshops?*

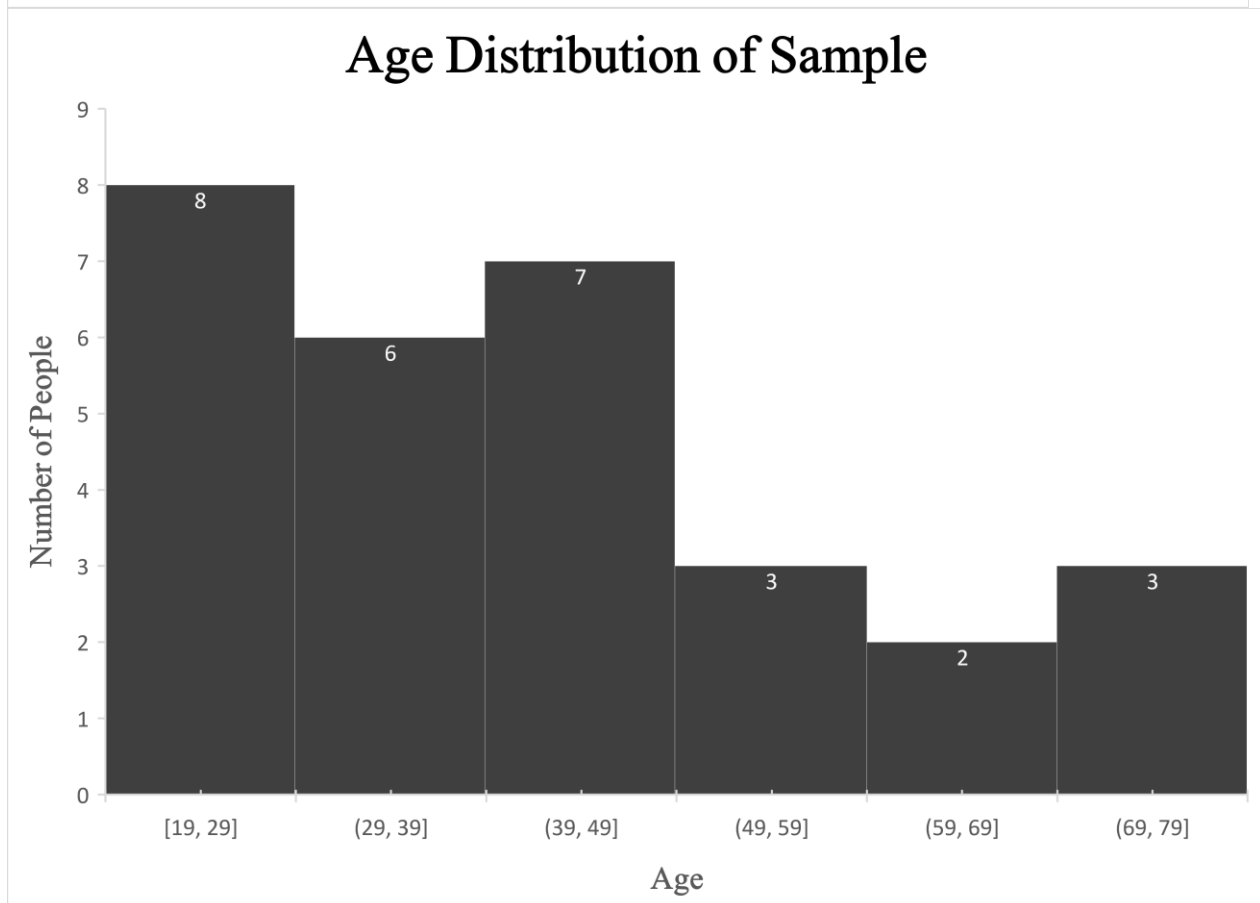
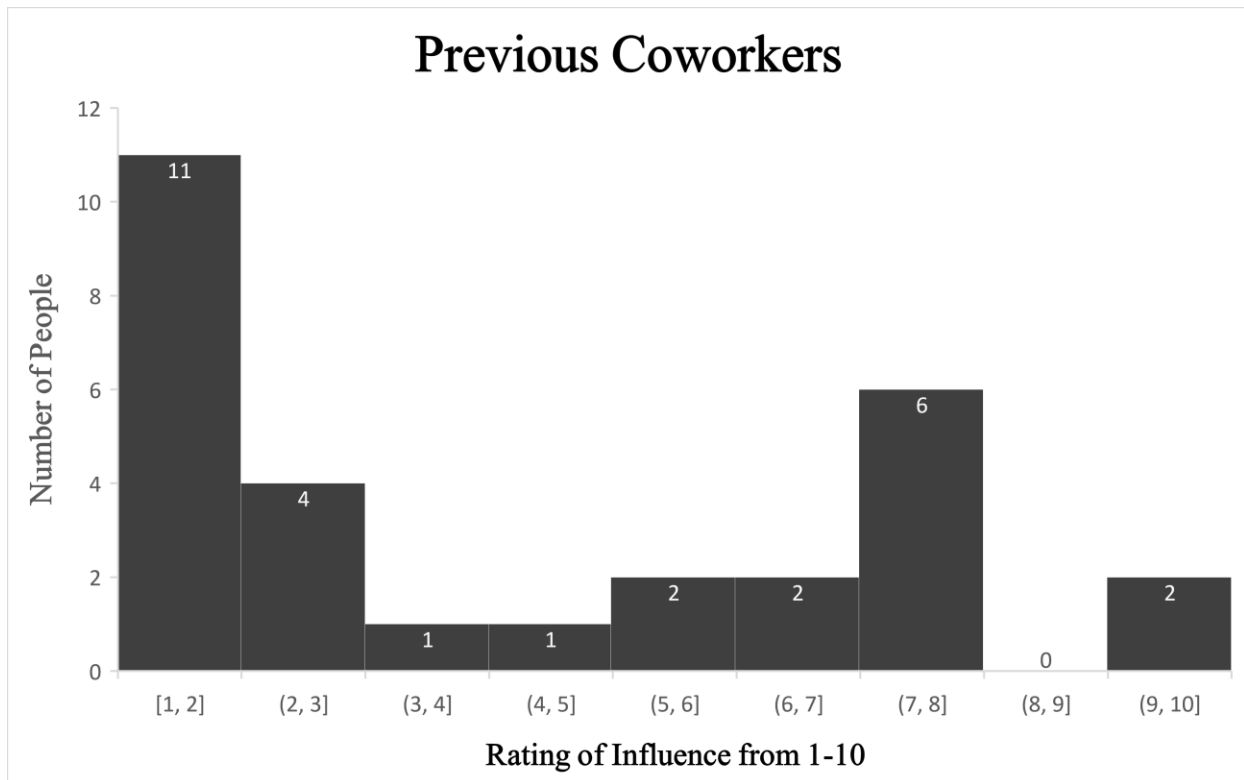
**Other Variables**

*20. Are there any other factors not mentioned that helped contribute to your decision to create a venture?*

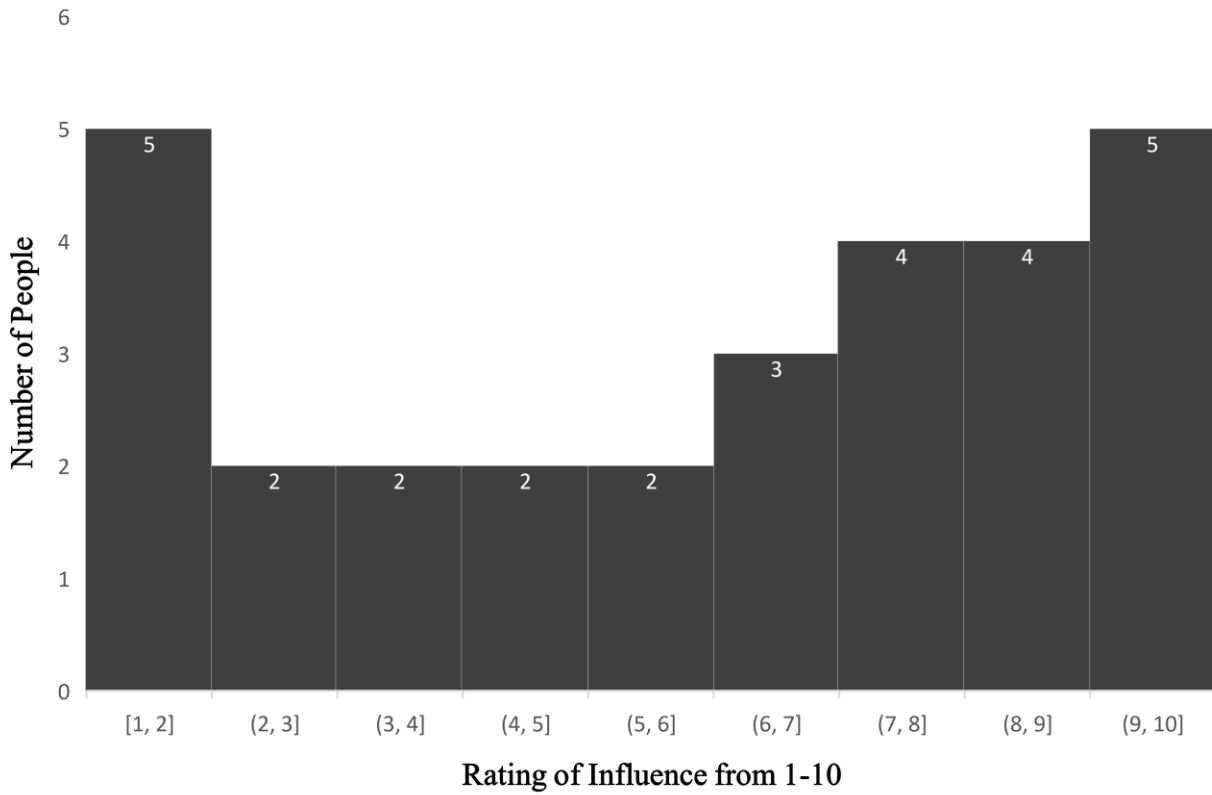
## Appendix II: Graphs of Data







## Previous Family Members and Friends



## Previous Networks

