

# **Effect of Human Capital on the Entrepreneurship Gender Gap**

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## **Abstract**

The presence of a gender gap in entrepreneurship has been well studied in previous literature. There are various contributing factors, including differences in human capital, which has been reviewed less so than social capital. Through a career survey of Wharton MBAs, this research paper 1) examines the presence of an entrepreneurship gender gap; 2) identifies human capital variables that predict entry into entrepreneurship; and 3) determines whether or not there is a human capital gender gap. The results showed both an entrepreneurship and human capital gender gap. Furthermore, experience working at small companies, more years of experience, and experience in finance-related industries were found to be good predictors of entry. Overall, the human capital predictor model explained 6.4% of the variability of entry into entrepreneurship. Though applicability is limited due to the biases of the sample, there are tangible implications for decreasing the entrepreneurship gender gap.

## **INTRODUCTION**

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In the past few years, news channels have been buzzing about the rapidly growing list of technology “unicorns,” startups valued at over one billion dollars. It is hard to ignore how Uber grew astronomically from a simple car service to an integral part of our daily lives, or how Airbnb completely disrupted the well-established hospitality industry. These technology companies are admirable, particularly in how the founders pursued their visions relentlessly to get where they are today. These founders have been described as visionaries, geniuses, disruptors and revolutionaries. In looking at the founders of these remarkable companies, however, it is incredibly disappointing to discover that the vast majority are men. Of the top twenty U.S. technology unicorns (CB Insights 2015), only one was founded by a woman. The lack of visibility of women entrepreneurs in this sector is rather disturbing and thus I wanted to seek out the reasons for the discrepancy.

First, I wanted to know if this anecdotal sample was representative of the rest of the entrepreneurship space. I began to research whether or not there was a significant gender gap in entrepreneurship, and found that this is a real and pervasive problem. According to a recent study (Brush et al. 2014), women account for only 35% of total entrepreneurial activity, almost half that of men. 97% of venture-funded businesses have male CEOs (Brush et al. 2014). As I read similar statistic after statistic, I wondered what exactly was preventing women from becoming entrepreneurs – internal factors, external factors, or both?

It is well known that gender inequities continue to pervade in the workforce, and the entrepreneurship path is no different than other industries. This research project will focus on gender inequality in the context of entrepreneurship, empirically investigating the reasons for the gender gap and offering recommendations for ways to close the gap.

## **LITERATURE REVIEW**

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Women are underrepresented in the entrepreneurial field at all stages, and scholars have offered various explanations of this phenomenon. Many argue that there are social constructions of gender and entrepreneurship that influence women's disposition to the career path, while others see the main culprit as barriers in obtaining social, cultural, human, and financial capital that may limit women's access to investors and funding (Carter and Rosa 1998; Gatewood et al. 2003; Marlow and Patton 2005).

### **Becoming an Entrepreneur**

In general, entrepreneurs tend to be a jack of all trades; that is, those who become entrepreneurs are generalists and study a more varied curriculum (Lazear 2004). Furthermore, people are more likely to enter entrepreneurship, as opposed to switching to another job in paid employment, when their options for external job mobility are limited by how well-suited they are for their current employer (Sorensen and Sharkey 2014). Human capital factors such as formal education and previous startup experience were also good predictors of entry into entrepreneurship (Davidsson and Honig 2003).

The large gender gap in entrepreneurship has been well studied by various researchers (Gatewood et al. 2003; Reynolds et al. 2004). Though the number of women entrepreneurs has improved in recent years (De Bruin et al. 2006), it is nowhere near equitable. Empirical studies have found that men are twice as likely as women to become entrepreneurs, a result that is consistent even across countries (Acs et al. 2005). Even after correcting for sector, startup capital, and growth rates, which will be discussed in further detail below, women own significantly fewer businesses than men (Koellinger et al. 2013). This indicates that women have a lower propensity to start businesses, which can be explained by low exposure to other entrepreneurs and lower

entrepreneurial self-confidence (Koellinger et al. 2013). Women also have higher fear of failure than men and thus higher levels of risk aversion (Wagner 2007).

Reasons for underrepresentation may be related to societal constructions of gender. Entrepreneurs are perceived to have predominantly masculine characteristics by both males and females (Gupta et al., 2009). Examples of masculine characteristics include independence, aggressiveness and courage. However, females also perceive entrepreneurs to have some feminine characteristics such as kindness, supportiveness, connectedness. Those with high male-gender identification have higher intentions of starting a business, which suggests that differences in entrepreneurial activity between men and women may be related to the notion of a socially constructed gender identity (Gupta et al. 2009). For this reason, perceptions of women entrepreneurs are enhanced by attributional augmenting, since women entrepreneurs pursue their careers even in the face of many obstacles, more obstacles than men entrepreneurs face (Baron et al. 2001). A more recent study found that the traditional view of “entrepreneur as male” is fading in the U.S., which holds promise for the future of a more equitable distribution of gender in entrepreneurship (Mueller and Daton-on 2011).

### **Venture Ideas**

Research shows that many women do not have the right educational background to start large businesses in industries attractive to venture capitalists (Menzies et al. 2004). Women entrepreneurs tend to devise venture ideas related to products and services that focus on the female consumer, such as cosmetics, fashion, and cooking (Brush et al. 1992). These ventures in the service and retail sectors tend to be smaller, slower-growing, and less profitable, which may serve to reinforce the gender stereotype of entrepreneurship and also affect women entrepreneurs’ ability to obtain external financing (Carter and Williams 2003).

## **New Venture Financing**

Women entrepreneurs face a “second glass ceiling” in trying to access financial capital to start businesses and fuel the growth of existing businesses (Bosse and Taylor 2012). Women entrepreneurs tend to start their business with significantly less financial capital when compared to male entrepreneurs, and also raise lower amounts of incremental financing in later rounds (Coleman and Robb 2009). One explanation of this phenomenon is that female entrepreneurial activity, concentrated in retail, tends to be less capital intensive (Pines and Schwartz 2007).

Graduate education increased the likelihood of women entrepreneurs using outside equity financing (Carter et al. 2003). Women entrepreneurs seek angel capital less frequently than men entrepreneurs (Becker-Blease and Sohl 2007), but gender is not a significant factor in receiving capital from an angel investor (Becker-Blease and Sohl 2007; Harrison and Mason 2007).

When it comes to obtaining venture capital funding, there is an apparent and significant gender gap, though it has improved in recent years (Brush et al. 2014; Greene et al. 2001). Studies have suggested that women entrepreneurs have restricted access because the venture capital industry is largely male (Brush et al. 2004), a number that has not changed significantly (Brush et al. 2014). Indeed, human capital factors such as experience and previous employment seem to be essential in building networks to secure financing (Madsen et al. 2003), and women were less likely to gain human capital through experience in executive or technical management (Watkins and Watkins 1984; Stevenson 1986). However, women have a higher payoff than men from having a close contact in venture capital (Tinkler et al. 2014).

Scholars hypothesize that there are structural barriers constructed by the male-dominated venture capital industry in which women are perceived as less legitimate; social network barriers in which women lie outside of the venture capital industry’s network; human capital barriers that

arise because women tend to be more limited in their leadership and managerial experience; and social learning barriers due to the lack of professional female role models (Greene et al. 2001). Women account for only 10% of venture capitalists in the U.S. (Brush et al. 2004), which can have a negative effect on entrepreneurship and economic activity (Blum 2014). Without links to venture capitalists, women are less likely to obtain venture financing (Brush et al. 2004).

Furthermore, there may be gender biases inherent in venture capitalists' evaluation of women-led startups, especially when the entrepreneur, rather than the venture, is the target of evaluation (Tinkler et al. 2014).

### **Venture Performance**

Studies traditionally found that female-owned firms underperform male-owned firms (Du Rietz and Henrekson 2000; Fasci and Valdez 1998). However, newer studies have looked at this issue after controlling for additional factors besides industry, age of business, and size of business. For instance, after controlling for risk, there is actually no significant difference between the performances of male and female controlled SMEs (Robb and Watson 2011; Watson & Robinson 2001). Other studies have controlled for sector and size and found that failure rates of women-owned businesses do not differ significantly from those of male-owned businesses (Perry 2002; Kepler and Shane 2007).

### **Economic Impact**

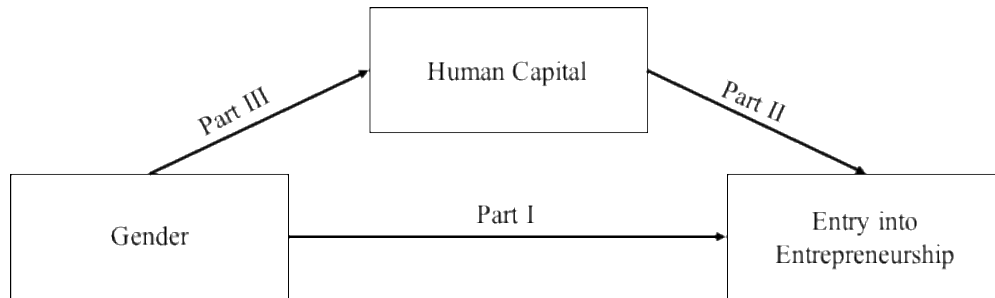
The issue extends beyond gender equality. Entrepreneurship is an important activity to the U.S. economy, creating jobs in new industries (Kane 2010). Women constitute over half of the U.S. population (U.S. Census Bureau 2014) but women founded only 3% of technology firms between 2004 and 2007 (Robb and Coleman 2009). This disparity seems to indicate that women entrepreneurs may be an underutilized resource for economic growth (Mitchell 2011).

## RESEARCH QUESTIONS

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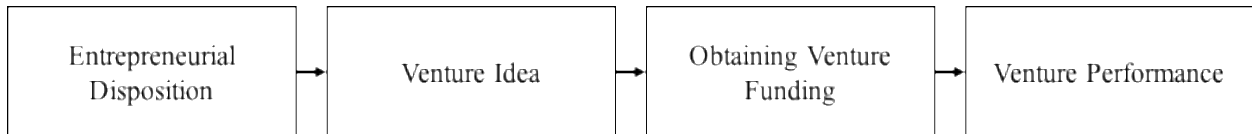
The existing literature focuses heavily on the social barriers for female entrepreneurs and offers some general insights on human capital and entrepreneurship, with less gender-specific analysis. Human capital is defined as the skills, knowledge, and experience possessed by an individual or population (Oxford Dictionaries). While human capital has been studied before in the context of entrepreneurship, a novel data set will provide insights on extremely specific human capital characteristics. This paper will examine the effect of gender on the entry of a person becoming an entrepreneur, and how this is mediated by human capital. See *Figure 1* for an illustration of the scope of this paper.

*Figure 1: Research Paper Scope*



It is useful to think of entrepreneurship as a process, illustrated in *Figure 2*. The conception of this diagram is based off the literature review, representing the various stages where a gender gap or difference has been discovered in previous studies.

*Figure 2: Stages of Entrepreneurship Framework*



The entrepreneurial disposition stage concerns the likelihood that someone is interested in becoming an entrepreneur based on personality characteristics, life circumstances, career choices and other related factors. The venture idea stage determines whether or not a person has an idea

for a business, and if so, what industry or function the startup aims to serve. Venture funding is another important stage and assesses whether or not the founder can obtain external funding from angel investors or venture capital investors. The venture performance stage measures the economic performance of the startup, in both the short-term and long-term. Existing literature has found that women are less inclined to become entrepreneurs, have venture ideas in sectors that grow at slower rates, have trouble obtaining external financing from venture capitalists, but have startups that on average perform the same compared to those of their male counterparts. This paper will also empirically examine how the presence of male and female entrepreneurs differs at each stage. The project is divided into three parts:

***Part I:*** How do the proportions of male and females differ throughout the stages of the entrepreneurship process? (Entrepreneurship Gender Gap)

***Part II:*** What human capital characteristics predict entry into entrepreneurship?

***Part III:*** How do males and females differ in these human capital characteristics?  
(Human Capital Gender Gap)

## **HYPOTHESES**

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### **Part I**

The existing literature presents a clear consensus on the prevalence of a gender gap in entering entrepreneurship as well as a gender gap in obtaining venture capital funding. However, there is no significant gender gap in obtaining angel investor funding. The literature also showed that there was an industry gap between the types of startups male entrepreneurs founded and the types of startups females founded. Thus, we expect this data set to reflect similar trends.

Hypothesis 1a: The proportion of male entrepreneurs to total male MBAs is higher than the proportion of female entrepreneurs to total female MBAs.



Hypothesis 1b: The proportion of male entrepreneurs who received venture capital funding is higher than the proportion of female entrepreneurs who received venture capital funding.

Hypothesis 1c: The proportion of entrepreneurs who receive funding from themselves or cofounders, banks, angel investors, and family/friends is the same for males and females.

Hypothesis 1d: The proportion of entrepreneurs who have founded startups in high-growth industries such as healthcare and technology is higher for males. The proportion of entrepreneurs who have founded startups in consumer-related sectors is higher for females.

## **Part II**

Previous scholars found human capital factors like education and experience are good predictors of entry into entrepreneurship. Thus, we predict that higher levels of the human capital variables identified in this study will similarly be positively correlated with entry into entrepreneurship.

Hypothesis 2: In the multi-variable regression equation correlating human capital factors with entrepreneurship entry ( $Y = ax_1 + bx_2 + cx_3 + dx_4 + \dots jx_9$ ), the following patterns will be discovered:

- Quantitative variables: The coefficients for number of previous employers, number of people managed, salary, hours worked, and years of experience will be positive.
- Qualitative variables: Experience in high-growth industries such as technology or healthcare and experience in smaller companies will be positively correlated with entry into entrepreneurship.

### **Part III**

The literature indicated that in many scenarios, women were less likely than men to gain human capital even through the same experience, or gravitated to industries and functions that yield less human capital. Thus, we predict a human capital gender gap.

Hypothesis 3a: On average, male MBAs will earn more than female MBAs.

Hypothesis 3b: On average, male MBAs will work more hours than female MBAs.

Hypothesis 3c: On average, male MBAs will manage more people than female MBAs.

Hypothesis 3d: A higher proportion of male MBAs will have worked in high-growth industries such as technology or healthcare.

Hypothesis 3e: A higher proportion of male MBAs will have worked at smaller companies.

## **METHODOLOGY**

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### **Data**

The data set was gathered by Matthew Bidwell and Ethan Mollick, management professors at the Wharton School of Business. In 2015, they e-mailed and mailed a career survey to Wharton's MBA alumni, a population of approximately 32,000 people.

The survey asked the alumni questions on three levels: demographic questions, career spell questions, and job-specific questions. Demographic questions were related to the respondent, with asking about age, graduation year, gender, marital status, and so on. Career spell questions asked respondents about every career they have held since graduating from Wharton's MBA program. A career spell was defined as the time spent at the same company, meaning that holding different jobs at one company constitutes the same career. Career level data included questions such as the industry the company operated in, the number of employees at the company, the age of the

company, and so on. Job-specific questions were nested within the career level data. These types of questions included data such as salary and hours worked.

The data relevant to entrepreneurship is spread through the three levels. In career spells, respondents were asked whether they were an employee, self-employed, founder of a new business. The entrepreneurship data is fairly nuanced. Beyond basic questions such as the name of the company founded and the industry it operates in, there are detailed facts such as number of employees, operating status, most recent revenue numbers, the types and amount of funding received (including personal sources, bank loans, angel investors and VC investors). These detailed answers can assist in developing an entrepreneurship scale, which will be discussed in further detail in the following section.

Approximately 6,500 respondents filled out part of or all of the survey, while approximately 3,000 respondents completed the entire survey. Based on the relationship between response rate and graduation year, the researchers decided to only look at responses from alumni that graduated from Wharton after 1990, a subset with a response rate of approximately 20%. Responses were fairly equally distributed across graduation year, as shown in *Appendix D*. This resulted in a sample size of 4,512 respondents.

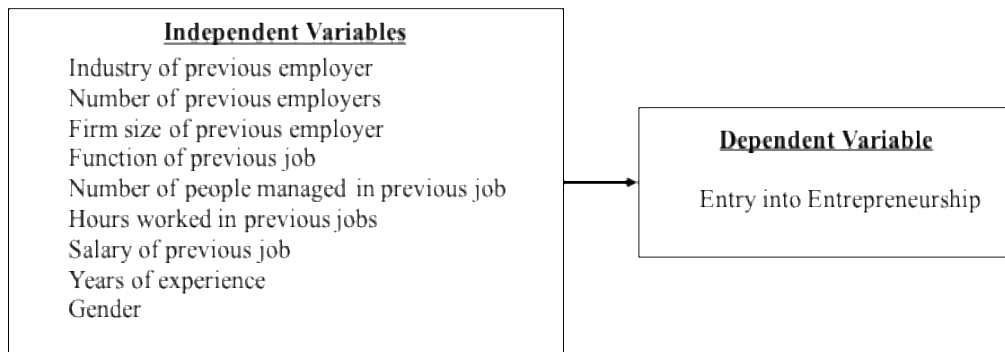
Responses that did not include gender identifiers were excluded due to the importance of this data to the research. This issue was relevant to only 29 respondents. Though it is possible that this exclusion could bias the results, there is no indication that not filling in the gender question is correlated to any of the other factors studied. The demographic questions were placed at the end of the survey; one extremely plausible theory is that some respondents became bored or tired of the survey and neglected to answer the later questions. Thus, the data set was narrowed to a sample size of 4,483 respondents, including 1,379 females and 3,104 males. Of these, 54 were female

entrepreneurs and 376 were male entrepreneurs. On average, MBAs had 2.1 career spells since graduation.

## Analysis

The analysis for Part I and Part III will be accomplished by conducting hypothesis tests as well as through qualitative analysis of the data. Part II will involve construction of a multi-variable regression model, correlating the human capital characteristics of each career spell with entrepreneurship entry in the next career spell (for all career spells of all MBAs).

*Figure 3: Multi-variable Regression Dependent and Independent Variables*



Qualitative variables (industry, function, size of previous employer, gender) will be coded into dummy variables. The dependent variable of entrepreneurship entry will be modeled in a binary way: 1 if the subsequent career spell is an entrepreneurship career spell and 0 if not. The  $r^2$  of the model and the coefficients of the independent variables will be evaluated for significance.

## RESULTS

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### Part I

There was a significant entrepreneurship gender gap. 12.1% of male MBAs founded their own company, while 3.9% of female MBAs founded their own company. Using a hypothesis test with a difference in proportions, we were able to reject the null hypothesis and accept the alternative hypothesis that the proportion of male entrepreneurs was higher than the proportion of female entrepreneurs at any significance level ( $p = 0$ ).

Furthermore, we examined the sources of funding for MBA entrepreneurs. The only significant differences were that a greater proportion of male entrepreneurs received venture capital funding ( $p < 0.05$ ) and over one round of venture capital funding ( $p < 0.10$ ) when compared to the proportion of female entrepreneurs. The proportion of entrepreneurs that utilized other sources of funding, such as angel investors, banks, or friends and relatives, did not differ between females and males.

Finally, we examined the breakdown of startup industry for both male and female entrepreneurs. A greater proportion of male entrepreneurs started companies in industries such as technology (24.6% for males vs. 7.8% for females) and finance (29.0% for males vs. 17.6% for females), while a greater proportion of female entrepreneurs started businesses related to the consumer sector (15.7% for females vs. 6.4% for males) and the government, education, or non-profit sector (7.8% for females vs. 1.5% for males). See *Appendix A* for detailed results.

### Part II

The regression model proved to be extremely statistically significant ( $p = 0$ ,  $r^2 = 0.0635$ ). For variables that had non-numeric answers, dummy variables were used in the regression. The coefficients that were significant at  $\alpha = 0.1$  include number of people managed at previous job ( $p$

$< 0.05$ ,  $\beta = -0.0000159$ ), previous industry of finance ( $p < 0.10$ ,  $\beta = 0.1543$ ), private wealth management ( $p < 0.05$ ,  $\beta = 0.2639$ ) or real estate ( $p < 0.10$ ,  $\beta = 0.1419$ ), previous company size of 10-49 employees ( $p < 0.10$ ,  $\beta = 0.0895$ ) or less than 10 employees ( $p < 0.10$ ,  $\beta = 0.1002$ ), being male ( $p = 0$ ,  $\beta = 0.0522$ ), and years of experience since MBA graduation ( $p < 0.10$ ,  $\beta = 0.0050$ ). See *Appendix B* for detailed results of the regression and coefficients.

### **Part III**

There were some statistically significant gender gaps in the quantitative human capital variables. Hypothesis tests were run to examine the difference of means between all male and all female MBAs for each human capital variable. The significant variables included number of people managed ( $p < 0.01$ ), hours worked ( $p < 0.01$ ), number of employers ( $p < 0.01$ ), and years of experience ( $p < 0.01$ ), all considered extremely statistically significant.

In terms of the qualitative variables, we simply examined the most common responses for male MBAs and for female MBAs. The most popular industries for both female and male MBAs were finance, business and professional services, and technology, media and telecom. The most common functions for female MBAs by far were finance (24.2%), consulting (18.6%), and marketing (15.8%). The most common functions for male MBAs, also by a wide margin, were finance (34.0%), consulting (18.5%), and general management (11.6%). The most common employer sizes for female MBAs were 10,000-49,999 employees (19.4%), 1,000-4,999 employees (12.1%), 100,000+ employees (10.5%), and 5,000-9,999 employees (10.3%). The most common employer sizes for male MBAs were 10,000-49,999 employees (17.6%), 1,000-4,999 employees (15.2%), 100-499 employees (11.2%), and 10-49 employees (10.0%). See *Appendix C* for detailed results.

## DISCUSSION

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Part I results largely reflected what has been found in previous literature, with a significant gender gap in entrepreneurship and obtaining venture capital funding, whereas other sources of funding such as angel investors or banks did not have a significant gender gap. It was also interesting to see the data reflect the industry gap, as a higher proportion of men started companies in high-growth industries such as technology when compared to the proportion of women, who were more likely to have ventures related to the consumer sector.

Though the  $r^2$  of the regression model seems relatively low at 0.0635, the model is significant and explains the variability in the entrepreneurship entry better than the intercept model. Furthermore, given the vast number of confounding variables that could affect entry into entrepreneurship, including the hundreds of other variables included in the data set, this  $r^2$  value is actually fairly reasonable and begins to offer valuable insights on human capital predictors. For instance, experience at a small company (10-49 employees or less than 10 employees) was significantly correlated with entrepreneurship entry. This makes sense given that those who work at a startup or small company are likely to have more entrepreneurial tendencies. Many finance-related fields were also positively correlated with entrepreneurship entry (finance, real estate, private wealth management), which could be partially attributed to the large proportion of finance startups in this Wharton MBA sample. This finding is likely more idiosyncratic than generalizable due to the bias of the sample, which is further discussed in the following section. Surprisingly, experience in the technology industry was not significantly correlated. Years of experience was also positively correlated with entrepreneurship entry, likely due to the accumulation of social and human capital throughout one's career that would provide the expertise and networks to successfully start a business. One interesting, and perhaps odd, finding was that previous people

managed was negatively correlated with entrepreneurship entry, though the coefficient was relatively small when compared to the coefficients of other factors (by a scale of 1,000x – 10,000x) and thus the effect may be close to negligible.

Part III began to uncover reasons behind the entrepreneurship gender gap by unveiling a human capital gender gap, as hypothesized. A smaller proportion of female MBAs worked at smaller companies when compared to the proportion of male MBAs, and this was a significant variable in the previous part. Female MBAs seemed to have less management experience, both reflected in the number of people managed as well as in the most common job functions. (Note that even though the coefficient of this variable was negative, it was not particularly impactful.) Female MBAs also seemed to on average have fewer years of experience and worked fewer hours. It is interesting that almost all of these findings (fewer years of experience, fewer hours, less management experience) can be explained by the presence of children, though of course there are likely many confounding variables.

Overall, the results seemed to indicate the predictions reflected in the hypotheses: human capital factors contribute to entry into entrepreneurship, and there is a human capital gender gap. Thus, it would appear that human capital does mediate the relationship between gender and entry into entrepreneurship. This has important implications for policy. In order to reduce the entrepreneurship gender gap, actions must be taken to reduce the human capital gender gap. Possible actions include encouraging women to pursue opportunities within startups and implementing more unbiased parental leave practices (e.g. paid paternity leave), which may reduce the career interruptions of women, impacting their years of experience and also their hours worked. Women who have entrepreneurial ambitions should also be aware of these factors and make appropriate and strategic career decisions.



However, the applications of this study may be limited. The most apparent limitation of this study is that Wharton MBAs are not a random sample of the population, which limits the generalizability of these results. There are a few ways that the sample set could bias the interpretation of results. First, in order to gain entrance into Wharton both male and female MBA candidates must have significant levels of human capital, and thus the gender gap may not be as pronounced. However, it is interesting to note that even with a non-random sample, a significant gender gap exists in both entrepreneurship as well as various aspects of human capital. Second, the choice of business school could indicate specific intentions for career paths. Wharton is not particularly known for its entrepreneurship programs, though neither is it known specifically for not being an entrepreneurial school – many notable startups have come out of Wharton, such as Warby Parker and Indiegogo. Third, Wharton is known for sending its graduates into consulting and finance, which would significantly bias the regression portion of the study given that a vast majority of MBAs work in or have expertise in at least one of these functions or industries. The results are therefore significantly skewed towards these fields, as evidenced not only in the industries of the startups in the sample, but also the most common functions and industries of all the MBAs. Thus, the outcome of the regression model in determining that some finance-related fields were significantly correlated with entrepreneurship entry is likely limited only to this sample. If this study were to be conducted at a different university, the significant industry variables may prove to be very different.

This paper only addressed a dozen or so human capital factors, but there are many more proxies that have yet to be studied. Future studies could build on this regression model by incorporating more variables that evaluate characteristics over multiple career spells, such as the number of industries a person has worked in or the number of employers a person has had. The

literature review showed that entrepreneurs tend to have a wide variety of skills, so this may be an interesting area in which to investigate a gender gap. Another interesting area of further study is to examine how the presence of children may affect entry into entrepreneurship. While we may speculate that the human capital gender gap may be a result of having children and the societal bias towards women having to take care of them, this could be empirically studied.

Furthermore, future research could make adjustments to the construction of the model. For instance, one could examine how human capital moves an entrepreneur through the stages of entrepreneurship, rather than assuming a binary model of entrepreneurship entry. This would involve construction some sort of entrepreneurship scale to mimic the entrepreneurship process previously mentioned. Future models could also investigate transformations of the data that may produce a more fruitful results rather than assume a linear model.

Entrepreneurship is a vital aspect of our economy, and it is truly a shame that over half of the population may not be able to fulfill their entrepreneurial ambitions. Human capital, at the very least, is something that aspiring women entrepreneurs can control to some extent, as opposed to external factors such as social barriers to venture capital networks. Through recognizing and addressing the human capital discrepancies, hopefully we can begin to close the gender gap in entrepreneurship.

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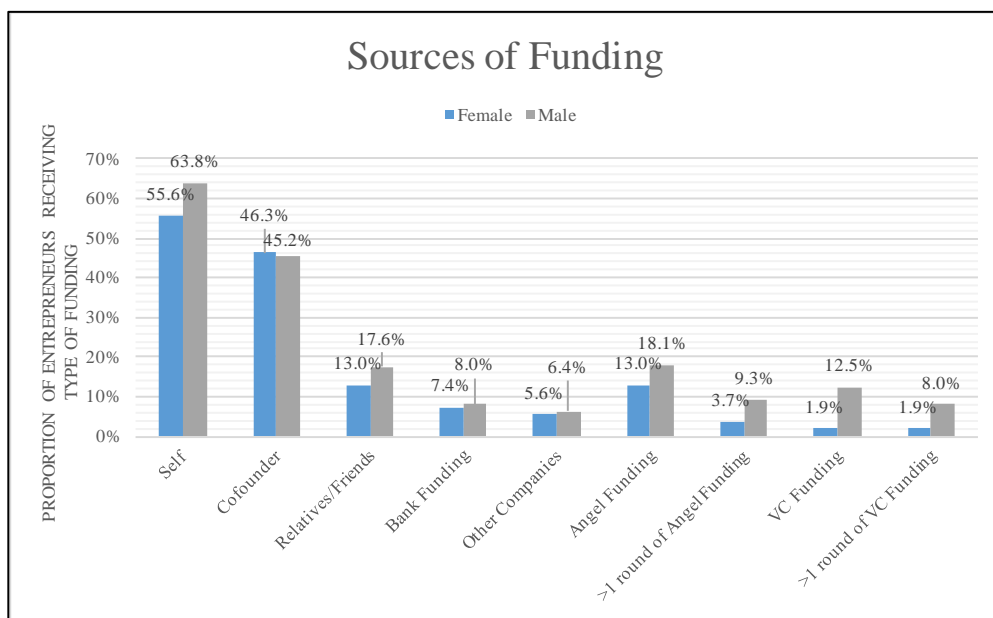
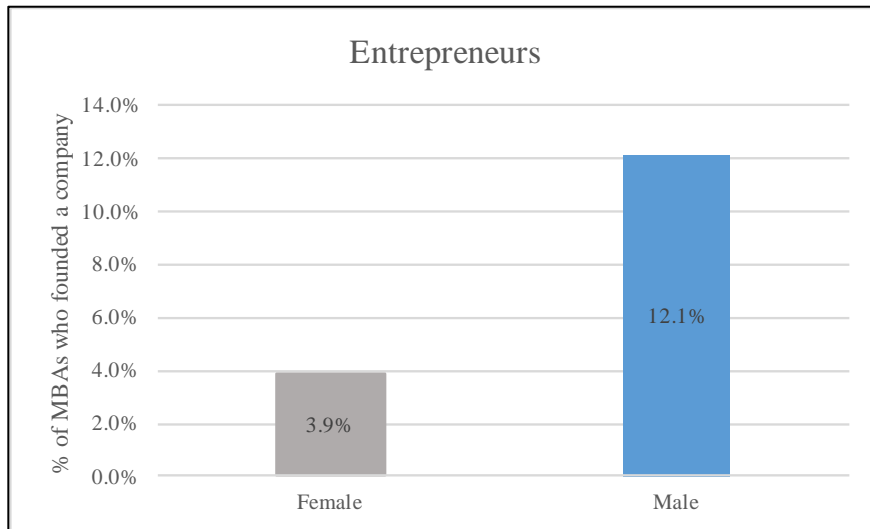
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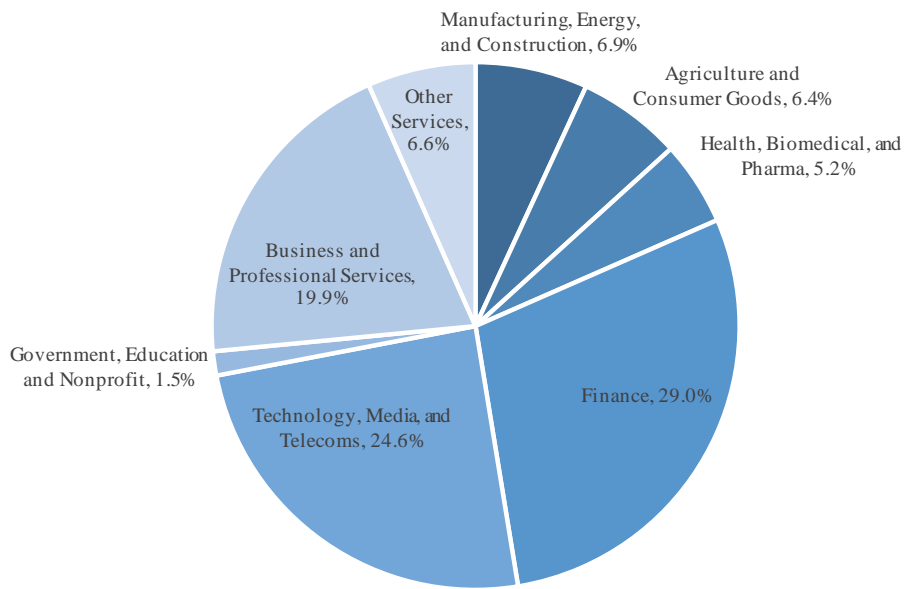
# APPENDIX

## Appendix A: Part I Results

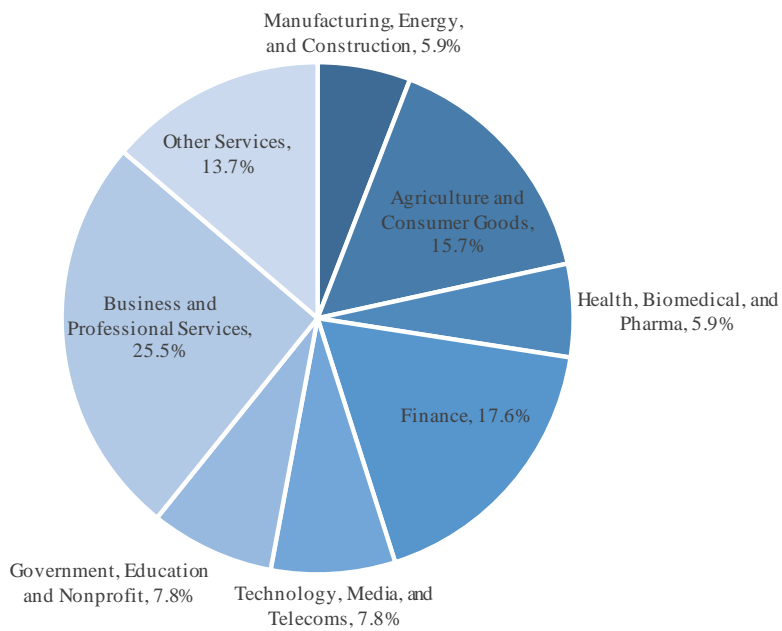
Source of Funding	% Female Entrepreneurs	% Male Entrepreneurs	P <  Z	Significant
Self	55.6%	63.8%	0.2390	No
Cofounder	46.3%	45.2%	0.8810	No
Relatives/Friends	13.0%	17.6%	0.4010	No
Bank Funding	7.4%	8.0%	0.8840	No
Other Companies	5.6%	6.4%	0.8150	No
Angel Funding	13.0%	18.1%	0.3540	No
>1 round of Angel Funding	3.7%	9.3%	0.1700	No
VC Funding	1.9%	12.5%	0.0200	Yes
>1 round of VC Funding	1.9%	8.0%	0.1040	Yes



### Industries of Male Startups



### Industries of Female Startups





## Appendix B: Part II Results

Linear regression			
Number of obs =	3283	F(132, 1846) =	2.12
Dependent variable: Entrepreneurship entry in next career spell (0 for no entry or 1 for entry)		Prob > F =	0.0000
		R-squared =	0.0635
(Std. Err. adjusted for 1847 clusters in respnum)		Root MSE =	.26772

Independent variables	Coefficient	Robust Std. Error	t	P>t	[95% CI]	
<b>People managed at previous job</b>	-0.0000159	7.30E-06	-2.18	0.029	-0.0000303	-1.63E-06
<b>Hours worked at previous job</b>	0.0001059	0.0004168	0.25	0.799	-0.0007115	0.0009233
<b>Salary at previous job</b>	1.98E-09	8.30E-09	0.24	0.812	-1.43E-08	1.83E-08
<b>Number of employers</b>	-0.0004706	0.0068241	-0.07	0.945	-0.0138544	0.0129131
<b>Years of experience</b>	0.0049677	0.0027605	1.8	0.072	-0.0004463	0.0103816
<b>Gender</b>						
Male ..	0.0522218	0.0094181	5.54	0	0.0337506	0.070693
<b>Function of previous job</b>						
Accounting	-0.0943508	0.0853069	-1.11	0.269	-0.261659	0.0729573
Administrative	0.1068132	0.1354142	0.79	0.43	-0.1587679	0.3723944
Advertising	-0.0798823	0.1416503	-0.56	0.573	-0.3576939	0.1979293
Business Development	-0.0245597	0.0852901	-0.29	0.773	-0.1918348	0.1427154
Consulting	0.0114804	0.0821512	0.14	0.889	-0.1496387	0.1725995
Corporate Finance	0.0070835	0.0891144	0.08	0.937	-0.1676921	0.181859
Education/Training	0.0832738	0.1365661	0.61	0.542	-0.1845665	0.3511141
Engineering	0.0963309	0.1426984	0.68	0.5	-0.1835364	0.3761982
Finance	-0.0271322	0.0880214	-0.31	0.758	-0.1997641	0.1454997
__Corporate Finance	-0.0638584	0.0838501	-0.76	0.446	-0.2283093	0.1005925
__Financial Advisor	0.0488479	0.1320528	0.37	0.711	-0.2101407	0.3078364
__Financial Research	-0.073465	0.0845942	-0.87	0.385	-0.2393755	0.0924454
__Investment Banking	-0.0361306	0.0843748	-0.43	0.669	-0.2016107	0.1293494
__Investment Management	-0.0303708	0.0928008	-0.33	0.744	-0.2123763	0.1516347
__Private Equity/Venture Capital	0.0212092	0.0940488	0.23	0.822	-0.1632441	0.2056624
__Research	-0.0289643	0.0903538	-0.32	0.749	-0.2061708	0.1482421
__Restructuring	-0.0934926	0.0829622	-1.13	0.26	-0.2562023	0.0692171
__Risk Management	-0.0861066	0.083482	-1.03	0.302	-0.2498357	0.0776225
__Trading	-0.0350361	0.0896581	-0.39	0.696	-0.2108781	0.1408058
General Management	-0.0305953	0.0846883	-0.36	0.718	-0.1966902	0.1354996
Healthcare/Healthcare Provision	0.1357468	0.1255306	1.08	0.28	-0.1104502	0.3819437
Human Resource Management	-0.0789611	0.0859274	-0.92	0.358	-0.2474862	0.089564
Information Technology	-0.0158116	0.094508	-0.17	0.867	-0.2011653	0.1695422
Legal	-0.0609743	0.0880844	-0.69	0.489	-0.2337299	0.1117813
Marketing	-0.0116598	0.0848015	-0.14	0.891	-0.1779766	0.1546571
Operations	0.0074196	0.0917479	0.08	0.936	-0.172521	0.1873603
Other	0.0318487	0.0904015	0.35	0.725	-0.1454512	0.2091485
Private Equity/Venture Capital	0.1786002	0.11385	1.57	0.117	-0.044688	0.4018885
Product Development	-0.0079188	0.0886798	-0.09	0.929	-0.1818421	0.1660044
Production Management	0.0121152	0.1048189	0.12	0.908	-0.1934608	0.2176913
Public Relations	-0.1141746	0.1356501	-0.84	0.4	-0.3802184	0.1518691
Purchasing	-0.082984	0.0866808	-0.96	0.339	-0.2529867	0.0870186
Real Estate	-0.0767188	0.0899826	-0.85	0.394	-0.2531972	0.0997596
Research	0.0975593	0.1317912	0.74	0.459	-0.1609161	0.3560348
Sales	-0.0570129	0.0894694	-0.64	0.524	-0.2324847	0.118459
Transportation and Logistics	-0.1150894	0.0962083	-1.2	0.232	-0.3037779	0.073599

Independent variables	Coefficient	Robust Std. Error	t	P>t	[95% CI]	
<b>Size of previous employer</b>						
1,000-4,999	0.0433733	0.0465829	0.93	0.352	-0.0479874	0.134734
10,000 - 49,999	0.0518974	0.0464931	1.12	0.264	-0.0392872	0.1430821
10 - 49	0.0894904	0.0497939	1.8	0.072	-0.0081679	0.1871487
100,000 +	-0.0035124	0.0465677	-0.08	0.94	-0.0948432	0.0878185
100-499	0.0180542	0.0474541	0.38	0.704	-0.0750152	0.1111235
5,000-9,999	0.0304118	0.047091	0.65	0.518	-0.0619455	0.1227691
50,000 - 100,000	0.0413285	0.0481433	0.86	0.391	-0.0530925	0.1357496
50-99	0.0291138	0.0491459	0.59	0.554	-0.0672737	0.1255012
500-999	0.0509693	0.0495964	1.03	0.304	-0.0463017	0.1482402
Don't Know	0.0291454	0.0504248	0.58	0.563	-0.0697502	0.128041
Less than 10	0.1001533	0.0535643	1.87	0.062	-0.0048997	0.2052064
<b>Previous industry</b>						
Business and Professional Services	0.1372315	0.1240001	1.11	0.269	-0.1059636	0.3804266
Finance	0.1543086	0.0863508	1.79	0.074	-0.0150468	0.323664
Government, Education and Nonprofit	0.4962518	0.4297712	1.15	0.248	-0.346637	1.339141
Health, Biomedical, and Pharma	0.0788538	0.1094091	0.72	0.471	-0.1357247	0.2934324
Manufacturing, Energy, and Construction	0.0098351	0.069098	0.14	0.887	-0.1256833	0.1453536
Other Services	0.034103	0.0730772	0.47	0.641	-0.1092197	0.1774256
Technology, Media and Telecoms	0.0607786	0.0805599	0.75	0.451	-0.0972195	0.2187766
__Accounting	0.0667677	0.0985316	0.68	0.498	-0.1264774	0.2600129
__Advertising	0.1569027	0.1520158	1.03	0.302	-0.1412382	0.4550437
__Aerospace	0.1005841	0.118992	0.85	0.398	-0.132789	0.3339572
__Agriculture	0.0084695	0.0715889	0.12	0.906	-0.1319341	0.1488732
__Architecture	0.4630174	0.354514	1.31	0.192	-0.2322732	1.158308
__Armed Forces	-0.0101796	0.0741785	-0.14	0.891	-0.1556621	0.1353029
__Arts and Design	0.4420551	0.3740828	1.18	0.237	-0.2916147	1.175725
__Automotive	0.1373162	0.0885216	1.55	0.121	-0.0362968	0.3109291
__Biotech	0.0726751	0.0829661	0.88	0.381	-0.0900421	0.2353924
__Brokerage	0.0226654	0.0717932	0.32	0.752	-0.1181391	0.1634698
__Chemicals	0.0986721	0.0979662	1.01	0.314	-0.0934642	0.2908084
__Cinema	0.1073885	0.1273971	0.84	0.399	-0.1424691	0.3572461
__Commercial Banking	0.1109138	0.0765977	1.45	0.148	-0.0393135	0.2611411
__Computers	0.0470022	0.0770065	0.61	0.542	-0.1040268	0.1980311
__Construction	0.0563166	0.0864763	0.65	0.515	-0.113285	0.2259181
__Consulting, Computer/Info Mgmt	-0.0004601	0.0779697	-0.01	0.995	-0.1533782	0.1524579
__Consulting, Financial	0.0031439	0.0855956	0.04	0.971	-0.1647306	0.1710183
__Consulting, Management	0.024156	0.070046	0.34	0.73	-0.1132217	0.1615337
__Consulting, Other	0.0840818	0.0837408	1	0.315	-0.0801549	0.2483185
__Consumer Products	0.0592206	0.0737518	0.8	0.422	-0.0854252	0.2038664
__Education	0.0426069	0.0811067	0.53	0.599	-0.1164637	0.2016774
__Electronics, other	0.1239238	0.1040155	1.19	0.234	-0.0800766	0.3279243
__Energy	0.048118	0.0717765	0.67	0.503	-0.0926537	0.1888896
__Engineering	-0.0534141	0.0740182	-0.72	0.471	-0.1985824	0.0917541
__Environmental Services	0.2037118	0.207684	0.98	0.327	-0.2036084	0.6110321
__Financial Data Services	0.0028581	0.0685641	0.04	0.967	-0.1316131	0.1373294

Independent variables	Coefficient	Robust Std. Error	t	P>t	[95% CI]	
<b>Previous industry (cont.)</b>						
__Food & Beverage	0.0522624	0.075844	0.69	0.491	-0.0964867	0.2010115
__Gaming	0.0086101	0.0720463	0.12	0.905	-0.1326906	0.1499108
__Government, National	0.1629519	0.1453819	1.12	0.262	-0.1221784	0.4480821
__Government, State/Local	-0.0109546	0.0690732	-0.16	0.874	-0.1464244	0.1245153
__HMO/PPO/Health Services	-0.0120825	0.0770241	-0.16	0.875	-0.1631461	0.138981
__HealthCare Products	0.1102708	0.0961329	1.15	0.252	-0.0782699	0.2988115
__Hedge Fund	0.0710176	0.0823238	0.86	0.388	-0.0904399	0.2324751
__Hospital	0.0223773	0.097747	0.23	0.819	-0.169329	0.2140836
__Information Management	0.1883753	0.1474886	1.28	0.202	-0.1008866	0.4776372
__Insurance	0.0800103	0.0997288	0.8	0.422	-0.1155827	0.2756034
__International Development	0.0393353	0.0868748	0.45	0.651	-0.1310479	0.2097185
__Internet Products and services	0.0753459	0.0718824	1.05	0.295	-0.0656334	0.2163253
__Investment Banking	0.0771631	0.067844	1.14	0.256	-0.055896	0.2102222
__Investment Research and Informa..	0.0071897	0.0706551	0.1	0.919	-0.1313826	0.145762
__Investment management - other	0.0973004	0.0829432	1.17	0.241	-0.065372	0.2599729
__Law	0.0097869	0.0749008	0.13	0.896	-0.1371123	0.1566862
__Medical Equipment	0.0229974	0.0769122	0.3	0.765	-0.1278466	0.1738413
__Metals	-0.0193241	0.0704494	-0.27	0.784	-0.1574931	0.1188448
__Mining	0.1968894	0.1961522	1	0.316	-0.1878141	0.581593
__Music	0.2174374	0.1728207	1.26	0.208	-0.1215072	0.5563819
__Mutual Fund	0.1185868	0.0954229	1.24	0.214	-0.0685613	0.305735
__Other	0.0420337	0.0778703	0.54	0.589	-0.1106894	0.1947568
__Other Business services	0.0320676	0.0811384	0.4	0.693	-0.1270652	0.1912003
__Other Financial Services	0.0370508	0.0688575	0.54	0.591	-0.097996	0.1720976
__Other Manufacturing	0.069991	0.0753847	0.93	0.353	-0.0778573	0.2178392
__Other Media	0.0577952	0.105601	0.55	0.584	-0.1493148	0.2649052
__Other Technology	0.0572158	0.08421	0.68	0.497	-0.1079411	0.2223726
__Other non profit	0.0432721	0.0901782	0.48	0.631	-0.1335898	0.220134
__Pharmaceuticals	0.0488461	0.0734816	0.66	0.506	-0.0952696	0.1929619
__Private Equity	0.0617452	0.0787175	0.78	0.433	-0.0926393	0.2161298
__Private Wealth Management	0.2639207	0.1280317	2.06	0.039	0.0128185	0.5150229
__Public Relations	0.0259433	0.1029909	0.25	0.801	-0.1760476	0.2279342
__Publishing / Printing	0.0163427	0.0683821	0.24	0.811	-0.1177717	0.1504571
__Ratings Agencies	0.0135311	0.0691237	0.2	0.845	-0.1220378	0.1491001
__Real Estate	0.1418947	0.0794504	1.79	0.074	-0.0139273	0.2977167
__Retail Sales	0.0601934	0.0729667	0.82	0.41	-0.0829125	0.2032994
__Semiconductors and components	0.0419927	0.0880828	0.48	0.634	-0.1307598	0.2147451
__Software	0.04082	0.0703709	0.58	0.562	-0.097195	0.178835
__TV	0.0509572	0.0981531	0.52	0.604	-0.1415456	0.2434599
__Telecoms	0.1023974	0.0756298	1.35	0.176	-0.0459315	0.2507263
__Textiles/Apparel	0.3491362	0.2836617	1.23	0.219	-0.2071952	0.9054676
__Transportation/Shipping	0.0960901	0.1059939	0.91	0.365	-0.1117904	0.3039706
__Travel	0.1661125	0.1129701	1.47	0.142	-0.0554502	0.3876752
__VC	-0.0120806	0.0899829	-0.13	0.893	-0.1885595	0.1643984
__Wholesale	0.0031224	0.0724445	0.04	0.966	-0.1389594	0.1452042
__Wholesale Banking	0.0419908	0.078309	0.54	0.592	-0.1115927	0.1955742
__cons	-0.0671327	0.1018643	-0.66	0.51	-0.266914	0.1326486

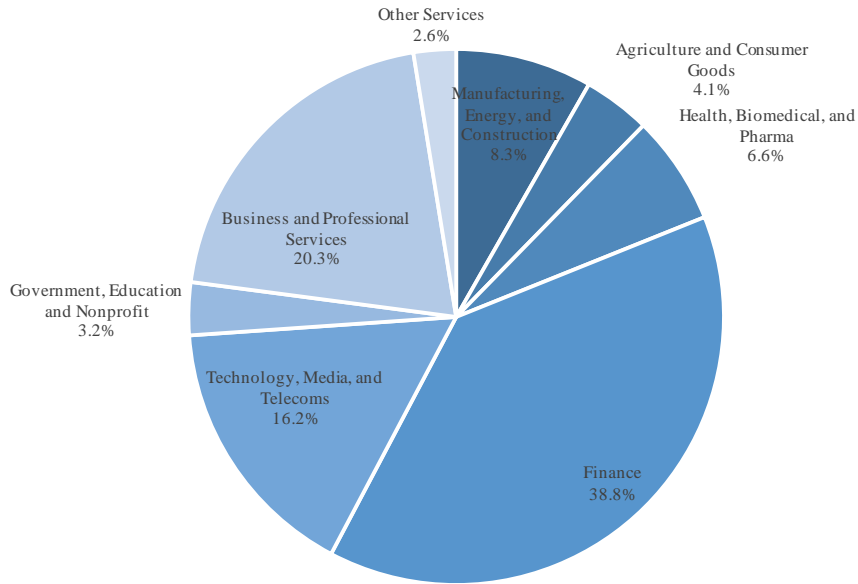
## Appendix C: Part III Results

Variable	Mean (M)	Mean (F)	t	P(t)	Significant
Salary	\$320,986	\$250,385	0.96	0.3361	No
People managed	82.59	18.29	3.51	0.0005	Yes
Hours worked	60.55	57.01	9.41	0.0001	Yes
Number of employers	1.13	1.04	2.79	0.0053	Yes
Years of experience	3.11	2.69	3.80	0.0001	Yes

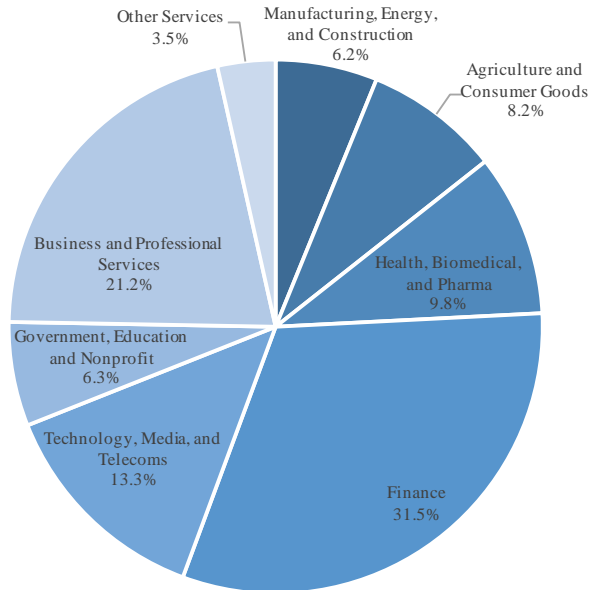
Employer Size	% Female MBAs	% Male MBAs
0	1.57%	1.06%
Less than 10	4.28%	5.08%
10 - 49	7.69%	10.00%
50 - 99	3.76%	4.80%
100 - 499	9.30%	11.24%
500 - 999	4.59%	5.25%
1,000 - 4,999	12.10%	15.17%
5,000 - 9,999	10.35%	9.73%
10,000 - 49,999	19.39%	17.59%
50,000 - 100,000	10.31%	8.73%
100,000 +	10.52%	9.45%
Don't know	6.16%	1.89%

Function	% Female MBAs	% Male MBAs
Accounting	0.7%	0.6%
Administrative	0.9%	0.6%
Advertising	0.5%	0.2%
Business Development	7.2%	6.9%
Consulting	18.6%	18.5%
Corporate Finance	2.7%	2.0%
Education/Training	0.7%	0.5%
Engineering	0.2%	0.7%
Finance	24.2%	34.0%
General Management	7.2%	11.6%
Healthcare/Healthcare Provision	1.2%	0.8%
Human Resource Management	1.4%	0.3%
Legal	0.2%	0.5%
Information Technology	0.7%	1.7%
Operations	2.1%	2.4%
Private Equity/Venture Capital	0.8%	1.3%
Product Development	3.0%	2.5%
Marketing	15.8%	6.6%
Production Management	0.6%	0.6%
Public Relations	0.1%	0.1%
Purchasing	0.5%	0.2%
Real Estate	2.7%	2.4%
Research	0.5%	0.4%
Sales	2.3%	2.2%
Transportation and Logistics	0.0%	0.2%
Writing/Editing	0.0%	0.0%
Other	4.9%	2.2%

Breakdown of Industries - Male MBAs



Breakdown of Industries - Female MBAs



**Appendix D: Characteristics of the Sample**

