Perception of Founders' Education in Startups

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Abstract

I look at the perception of educational background of startup founders. I find a difference between the estimated probability of success for startups driven by school educated female founders versus those driven by highly educated female founders(higher). The difference is driven more by female respondents. We dont find any statistically significant difference in the estimated probability of abandoning the startup between males and female founders. There is a difference in the estimated probability of school educated male founders abandoning the startup in case of female respondents vs male respondents(higher). This is also driven by female respondents. This research suggests specific steps for founders while pitching to customers/buyers.

1 Introduction

I Look at the perception of founder education measured by the probability of funding, probability of success and probability of abandonment of the startup. I find that there is no difference in ABC. I look at the gender of the respondents as well and find that there is a difference in BCD between male and female respondents. Perception is important because it leads to ABC [1]. #EDIT THIS

2 Literature Review

ADD CONTENT

2.1 Education

Education should mitigate the differences of gender, at least in terms of ability. If someone is technically qualified, then their gender should not be of concern. Therefore we expect no difference between Male and Female co-founders who

[1] CITE LITERATURE HERE

are technically qualified. Similarly, management education would obliterate any disparity in the ability of male and female founders. Since management education in our study is proxied with a degree from IIMs which offer only post graduate courses, it indicates a higher level of education. In case we do not find any differences, we would be able to say that education, technical or management does extinguish perceived differences between males and females.

3 Data and Method

3.1 Variables

3.1.1 Success

Success is not defined. The definition is nebulous because it is based on long term perception of the participants.

3.1.2 Funding

Hot stuff. News captures. How others/investors would perceive the founders and the startup.

3.1.3 Abandonment

Associated with females that they might leave the startup due to societal pressure, matrimony or family needs.

3.1.4 IIT IIM

IIT and IIM refer to Indian Institute of Technology and Indian Institute of Management respectively. They are highly coveted in India and are globally ranked among the top institutes. While IIT is famous for producing engineers, IIMs produce managers. To give a small example, Sundar Pichai[2] is from IIT Kharagpur. Ajay Banga, ex-CEO of Master Card, was from IIM Ahmedabad.

3.2 Method

We administered a survey to (Length of filtered stuff) 100 participants. Half the participants we given a case involving CASE A. Others were given CASE B. All other details were the same. The participants were asked their estimate of the

[2] current CEO of Google

probability of Success, probability of Funding and Probability of Abandonment of the startup.

3.3 Data Summary

Summary of the data and read out. We name the cases as follows: Case 1: Female founders, school educated Case 2: Male founders, school educated Case 3: Male founders, IIT IIM educated Case 4: Female founders, IIT IIM educated

Table 1: This tables shows the summary of responses in the case where the startup founders were females who had only completed school.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Success	51	0.643	0.210	0.200	0.500	0.800	1.000
Funding	51	0.620	0.232	0.200	0.450	0.800	1.000
Abandon	51	0.412	0.288	0.000	0.200	0.550	1.000

Table 2: This tables shows the summary of responses in the case where the startup founders were males who had only completed school.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Success	51	0.612	0.256	0.100	0.400	0.800	1.000
Funding	48	0.608	0.222	0.100	0.500	0.700	1.000
Abandon	50	0.416	0.279	0.000	0.200	0.500	1.000

Table 3: This tables shows the summary of responses in the case where the startup founders were male and studied from IIT and IIM.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Success	50	0.652	0.257	0.000	0.500	0.875	1.000
Funding	50	0.608	0.228	0.000	0.500	0.800	1.000
Abandon	50	0.358	0.289	0.000	0.100	0.575	1.000

3.4 Results

Graph on average results. This could be those box plots.

Table 4: This tables shows the summary of responses in the case where the startup founders were females and studied from IIT and IIM.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Success	51	0.716	0.195	0.300	0.600	0.850	1.000
Funding	50	0.640	0.209	0.000	0.500	0.800	1.000
Abandon	51	0.341	0.279	0.000	0.100	0.500	1.000

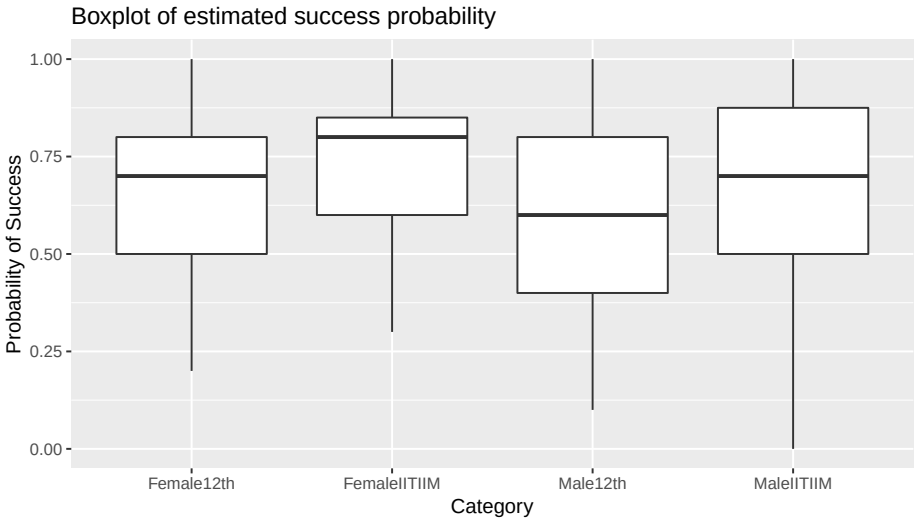

Figure 1: This box plot shows the probablity of success as estimated across males and females and different education levels.

3.5 Success

3.5.1 Gender

In figure 1 we can see how people perceive the probability of success for a startup founded by males versus that founded by females, when they have only completed schooling. While the mean value of success for a startup founded by school educated females at 0.64 is higher than that of males at the same educated level at 0.61 , the difference is not statistically significant at a p-value of 0.5.

In figure 1 we can also see how people perceive the probability of success for a startup founded by males versus that founded by females, when they have studied at premier institutes at undergrad as well as post graduate level. While the mean value of success for a startup founded by IIT-IIM educated females at 0.72 is higher than that of males at the same educated level at 0.65, the difference is not statistically significant at a p-value of 0.16.

3.5.2 Education

The mean value of success for a startup founded by school educated females at 0.64 and the mean value of success for a startup founded by IIT-IIM educated females at 0.72. The p-value of the difference is 0.07.

The mean value of success for a startup founded by school educated males at 0.61 and the mean value of success for a startup founded by IIT-IIM educated males at 0.65. The p-value of the difference is 0.43.

It is worth noting that in both cases, the mean value of probability of success is surprisingly higher for female led statups in both cases.

3.6 Funding

3.6.1 Gender

In figure 2 we can see how people perceive the probability of funding for a startup founded by males versus that founded by females, when they have only completed schooling. While the mean value of funding for a startup founded by school educated females at 0.62 is higher than that of males at the same educated level at NA , the difference is not statistically significant at a p-value of 0.81.

In figure 2 we can also see how people perceive the probability of funding for a startup founded by males versus that founded by females, when they have studied at premier institutes at undergrad as well as post graduate level. While the mean value of funding for a startup founded by IIT-IIM educated females at

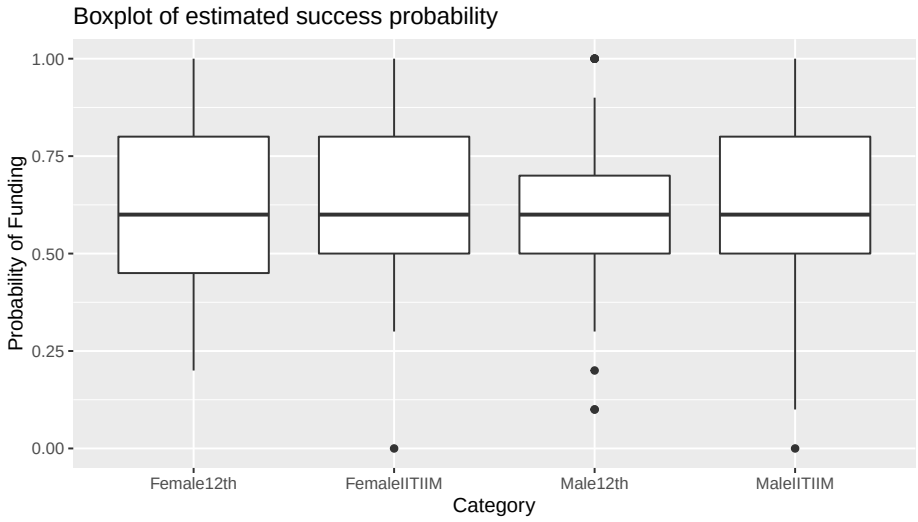

Figure 2: This box plot shows the probablity of funding as estimated across males and females and different education levels.

NA is higher than that of males at the same educated level at 0.61, the difference is not statistically significant at a p-value of 0.47.

3.6.2 Education

The mean value of funding for a startup founded by school educated females at 0.62 and the mean value of funding for a startup founded by IIT-IIM educated females at 0.64. The p-value of the difference is 0.64.

The mean value of funding for a startup founded by school educated males at 0.61 and the mean value of funding for a startup founded by IIT-IIM educated males at 0.61. The p-value of the difference is 0.99.

It is worth noting that in both cases, the mean value of probability of funding is surprisingly higher for female led statups in both cases.

3.7 Abandonment

3.7.1 Gender

In figure 3 we can see how people perceive the probability of abandoning for a startup founded by males versus that founded by females, when they have only completed schooling. While the mean value of abandoning for a startup founded by school educated females at 0.41 is higher than that of males at the

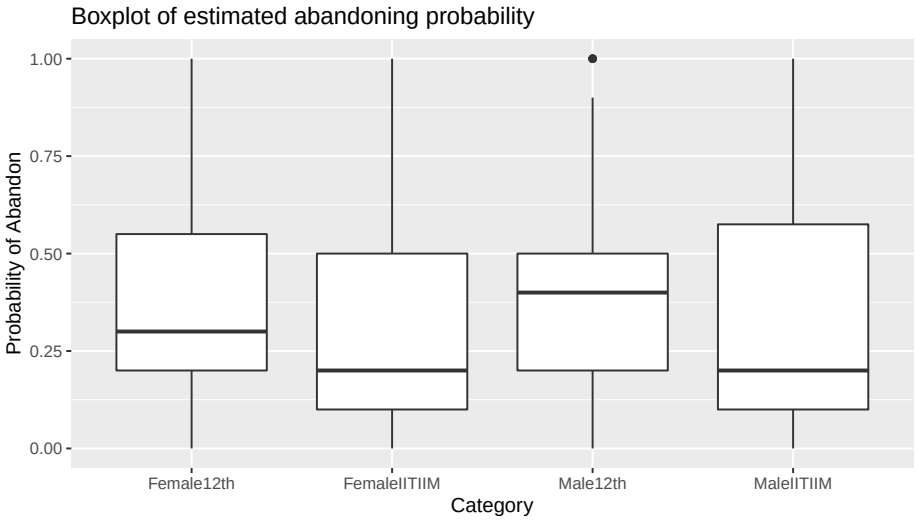

Figure 3: This box plot shows the probablity of abandoning as estimated across males and females and different education levels.

same educated level at NA , the difference is not statistically significant at a p-value of 0.94.

In figure 3 we can also see how people perceive the probability of abandoning for a startup founded by males versus that founded by females, when they have studied at premier institutes at undergrad as well as post graduate level. While the mean value of abandoning for a startup founded by IIT-IIM educated females at 0.34 is higher than that of males at the same educated level at 0.36, the difference is not statistically significant at a p-value of 0.77.

3.7.2 Education

The mean value of abandoning for a startup founded by school educated females at 0.41 and the mean value of abandoning for a startup founded by IIT-IIM educated females at 0.34. The p-value of the difference is 0.21.

The mean value of abandoning for a startup founded by school educated males at NA and the mean value of abandoning for a startup founded by IIT-IIM educated males at 0.36. The p-value of the difference is 0.31.

It is worth noting that in both cases, the mean value of probability of abandoning is surprisingly higher for female led statups in both cases.

3.8 Gender wise break up

3.8.1 Success

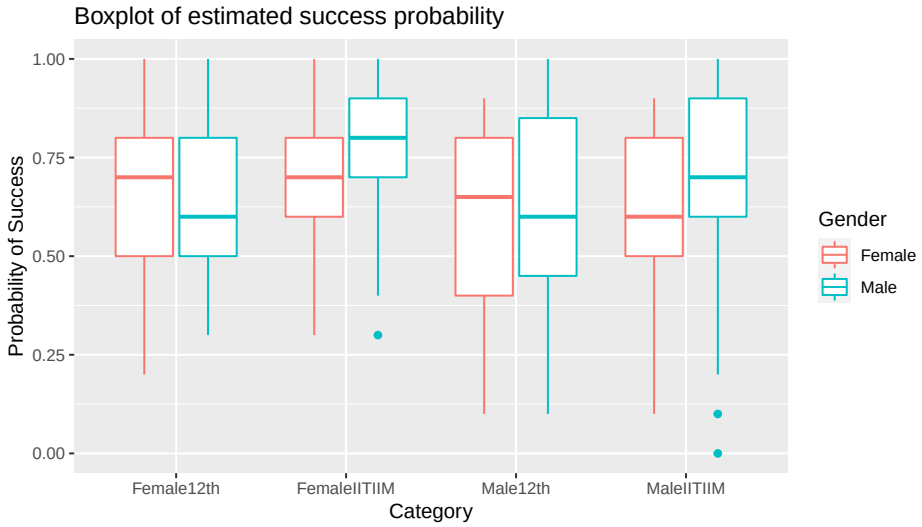

Figure 4: This box plot shows the probablity of success as estimated by males and females across male and female founders with different education levels.

As visible in Figure 4, the estimation of the success of the startup also varies as per the gender of the respondent. The mean probability of success in case of highly educated males, as estimated by female respondents is 0.6. The mean probability of success in case of highly educated males, as estimated by male respondents is 0.67. The p value of the difference between the two is 0.42.

The mean probability of success in case of highly educated females, as estimated by female respondents is 0.67. The mean probability of success in case of highly educated females, as estimated by male respondents is 0.75. The p value of the difference between the two is 0.15.

The mean probability of success in case of school educated males, as estimated by female respondents is 0.58. The mean probability of success in case of school educated males, as estimated by male respondents is 0.63. The p value of the difference between the two is 0.5.

The mean probability of success in case of school educated females, as estimated by female respondents is 0.64. The mean probability of success in case of school educated females, as estimated by male respondents is 0.65. The p value of the difference between the two is 0.86.

I compare how probability of success changes with the background of the founders changes with the gender of the respondents. The p value of the difference between

probability of success estimated by female respondents for startups founded by highly educated female founders and school educated female founders is 0.68.

The p value of the difference between probability of success estimated by female respondents for startups founded by highly educated male founders and school educated male founders is 0.8.

The p value of the difference between probability of success estimated by female respondents for startups founded by school educated female founders and school educated male founders is 0.5.

The p value of the difference between probability of success estimated by female respondents for startups founded by highly educated female founders and highly educated male founders is 0.46.

The p value of the difference between probability of success estimated by male respondents for startups founded by highly educated female founders and school educated female founders is 0.03. We see that the p value is significant at 0.05 level.

The p value of the difference between probability of success estimated by male respondents for startups founded by highly educated male founders and school educated male founders is 0.49.

The p value of the difference between probability of success estimated by male respondents for startups founded by school educated female founders and school educated male founders is 0.74.

The p value of the difference between probability of success estimated by male respondents for startups founded by highly educated female founders and highly educated male founders is 0.13.

3.8.2 Funding

As visible in Figure 5, the estimation of the funding of the startup also varies as per the gender of the respondent. The mean probability of funding in case of highly educated males, as estimated by female respondents is 0.57. The mean probability of funding in case of highly educated males, as estimated by male respondents is 0.62. The p value of the difference between the two is 0.49.

The mean probability of funding in case of highly educated females, as estimated by female respondents is 0.59. The mean probability of funding in case of highly educated females, as estimated by male respondents is 0.67. The p value of the difference between the two is 0.18.

The mean probability of funding in case of school educated males, as estimated by female respondents is 0.59. The mean probability of funding in case of school educated males, as estimated by male respondents is 0.62. The p value of the difference between the two is 0.72.

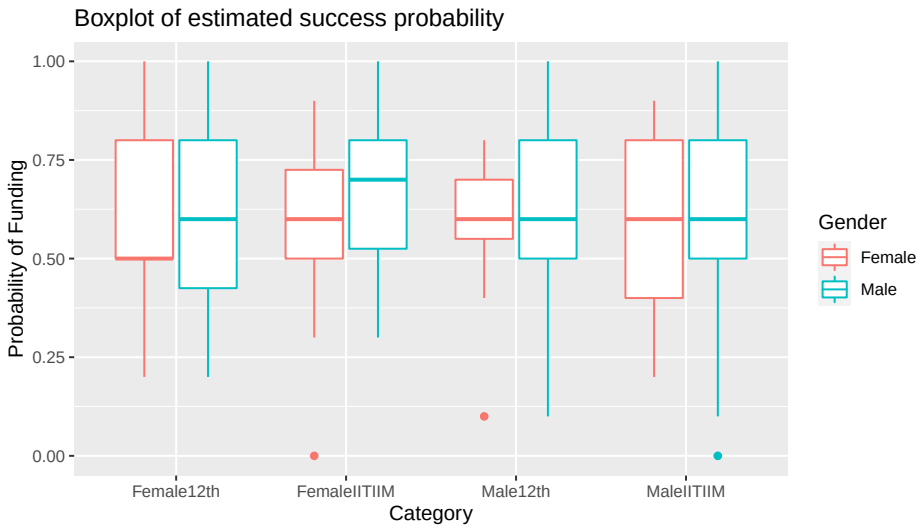

Figure 5: This box plot shows the probablity of funding as estimated by males and females across male and female founders with different education levels.

The mean probability of funding in case of school educated females, as estimated by female respondents is 0.6. The mean probability of funding in case of school educated females, as estimated by male respondents is 0.63. The p value of the difference between the two is 0.67.

I compare how probability of funding changes with the background of the founders changes with the gender of the respondents. The p value of the difference between probability of funding estimated by female respondents for startups founded by highly educated female founders and school educated female founders is 0.89

The p value of the difference between probability of funding estimated by female respondents for startups founded by highly educated male founders and school educated male founders is 0.76

The p value of the difference between probability of funding estimated by female respondents for startups founded by school educated female founders and school educated male founders is 0.92

The p value of the difference between probability of funding estimated by female respondents for startups founded by highly educated female founders and highly educated male founders is 0.8

The p value of the difference between probability of funding estimated by male respondents for startups founded by highly educated female founders and school educated female founders is 0.43

The p value of the difference between probability of funding estimated by male respondents for startups founded by highly educated male founders and school

educated male founders is 0.91

The p value of the difference between probability of funding estimated by male respondents for startups founded by school educated female founders and school educated male founders is 0.81

The p value of the difference between probability of funding estimated by male respondents for startups founded by highly educated female founders and highly educated male founders is 0.33

3.8.3 Abandon

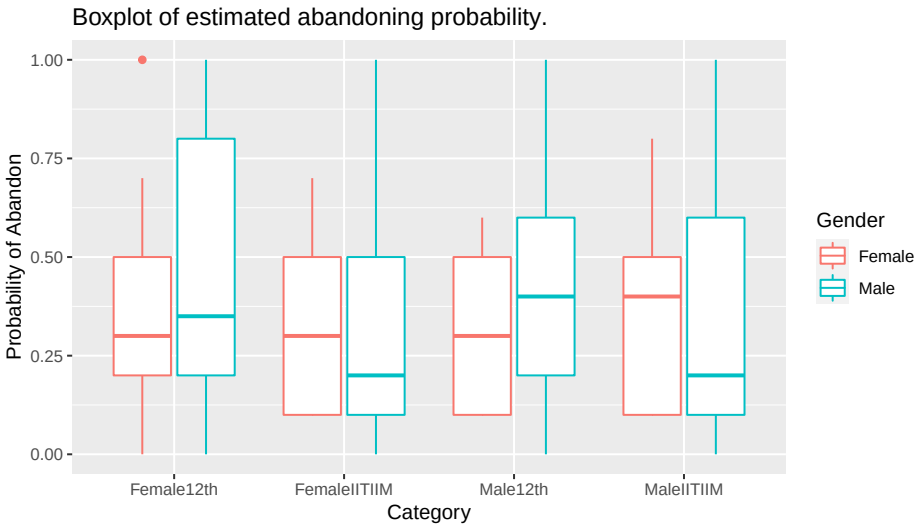

Figure 6: This box plot shows the probablity of abandoning as estimated by males and females across male and female founders with different education levels.

As visible in Figure 6, the estimation of the abandoning of the startup also varies as per the gender of the respondent. The mean probability of abandoning in case of highly educated males, as estimated by female respondents is 0.35. The mean probability of abandoning in case of highly educated males, as estimated by male respondents is 0.36. The p value of the difference between the two is 0.85.

The mean probability of abandoning in case of highly educated females, as estimated by female respondents is 0.35. The mean probability of abandoning in case of highly educated females, as estimated by male respondents is 0.33. The p value of the difference between the two is 0.8.

The mean probability of abandoning in case of school educated males, as estimated by female respondents is 0.32. The mean probability of abandoning in

case of school educated males, as estimated by male respondents is 0.46. The p value of the difference between the two is 0.06.

The mean probability of abandoning in case of school educated females, as estimated by female respondents is 0.38. The mean probability of abandoning in case of school educated females, as estimated by male respondents is 0.43. The p value of the difference between the two is 0.51.

I compare how probability of abandoning changes with the background of the founders changes with the gender of the respondents. The p value of the difference between probability of abandoning estimated by female respondents for startups founded by highly educated female founders and school educated female founders is 0.75

The p value of the difference between probability of abandoning estimated by female respondents for startups founded by highly educated male founders and school educated male founders is 0.8

The p value of the difference between probability of abandoning estimated by female respondents for startups founded by school educated female founders and school educated male founders is 0.49

The p value of the difference between probability of abandoning estimated by female respondents for startups founded by highly educated female founders and highly educated male founders is 0.94

The p value of the difference between probability of abandoning estimated by male respondents for startups founded by highly educated female founders and school educated female founders is 0.23

The p value of the difference between probability of abandoning estimated by male respondents for startups founded by highly educated male founders and school educated male founders is 0.19

The p value of the difference between probability of abandoning estimated by male respondents for startups founded by school educated female founders and school educated male founders is 0.7

The p value of the difference between probability of abandoning estimated by male respondents for startups founded by highly educated female founders and highly educated male founders is 0.71

4 Conclusion

The mean value of success for a startup founded by school educated females at 0.64 and the mean value of success for a startup founded by IIT-IIM educated females at 0.72. The p-value of the difference is 0.07.

The p value of the difference between probability of success estimated by male respondents for startups founded by highly educated female founders and school educated female founders is 0.03. We see that the p value is significant at 0.05 level.

The mean probability of abandoning in case of school educated males, as estimated by female respondents is 0.32. The mean probability of abandoning in case of school educated males, as estimated by male respondents is 0.46. The p value of the difference between the two is 0.06.

We see a clear difference between the estimated probability of success for startups driven by school educated female founders versus those driven by IIT-IIM educated female founders. The difference is driven more by female respondents. We also see that there is no statistically significant difference in the estimated probability of abandoning the startup between highly educated males and female founders. There is a difference in the estimated probability of abandoning the startup in case of school educated male founders. This is also driven by female respondents.

1. Female founders= Education plays a role more, than in the case of males. This is also driven by female respondents. This means if a product is targetted towards
2. Abandoning is not a problem in the case of females, as was being expected earlier. Good signal, social change.
3. Abandoning by school educated males was considered a risk, especially by female respondents. This means a B2C product focussed on women, sold by a startup founded by school educated males, is less likely to work if it involves a longevity assumption on the part of the customer. Similarly in case of a B2B product, if the person on the buyer's side is a female, the startup founders should invest in signalling longevity, stability and their intent to stay along with a plan to sustain.

We see that while there is no difference in the perception of succcess, funding or abandonment of a startup based on whether the founders are CASE 1 or CASE 2, we see that the perception of males and females varies. A practical import of this would be * If the product is targetted towards females, Vs males * If the investor who is evaluating the startup for funding is a male Vs Female * (IN case of abandon), then the founders should spend time showing commitment * This could explain some difference between the funding obtained by women

5 Limitations

- Situation is dynamic
- Investors might be more sophisticated and not be biased though extant research has shown otherwise [3]

[3] ADD Literature

##########Older Material ###############

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\section{Limitations}
    We do not analyse the results based on the background of the respondents. We take only c
    We do not look at Foreign education.
    We do not specify the role in government service. It is possible that a bureaucrat is re
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6 ToDO

- Correct Labels
- Write as per plan of View followed by Gender
- Write a separate one on familiarity.