

# IMPACT OF PARENTAL OCCUPATION ON CAREER ASPIRATIONS\*

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## ABSTRACT

This paper seeks to identify the relationship between parental occupations and gender-specific career aspirations of undergraduate students. To do this, we conducted surveys with fourth-year undergraduate students in eight universities of Lahore, Pakistan. These surveys have collected data on demographic characteristics, parental occupations, and career aspirations. The results show that a high mother's skill level is associated with higher career aspirations for children especially females. Father's higher skill level has a negative impact on a child's career aspiration and this does not differ across genders. Furthermore, as career aspirations are determinant of one's career choices and attitude, therefore, the obtained results are beneficial in understanding and analyzing the prevailing gender gap in labor market.

**Keywords:** Aspirations, Career, Parents, Students, Occupation, Skill Level

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## Abbreviations

FOSL	Father's Occupational Skill Level
MOSL	Mother's Occupational Skill Level
FEL	Father's Education Level
MEL	Mother's Education Level
PGFEL	Paternal Grandfather's Education Level
PGMEL	Paternal Grandmother's Education Level
MGFEL	Maternal Grandfather's Education Level
MGMEL	Maternal Grandmother's Education Level
OP	Ordered Probit
OLS	Ordinary Least Square
CGPA	Cumulative Grade Point Average
FOPS	Father's Occupation Prestige Score
MOPS	Mother's Occupation Prestige Score
WF	Working Status of Father
WM	Working Status of Mother

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## **1. Introduction**

Women have greater educational returns as compared to men. An additional year of completed education gives 7 to 11% return on men's educations while this return ranges between 13 to 18% for women (Aslam, 2009). Despite this fact there is lower spending on female education as compared to men within a household. According to World Bank data (2017), 4.5% of male are unemployed in Pakistan while around 10.7% of female are unemployed. Similarly, literacy rate of men is 69% while for female it is 44%. One possible reason for gender difference in educational (Buchmann et al. 2008) and career achievements (Marini & Fan, 1997) is difference in gender specific career aspirations.

An individual takes his characteristics from their surroundings and people around them such as their schools, colleges, clubs, homes, parents, siblings and peers. Therefore, the focus of this analysis is to identify how does parents occupations or the skill level that is associated with their job can affect one's career aspiration; and whether parental aspirations are transferred to their offspring or not. Another motive is to identify what role gender has to play in transfer of these aspirations from one generation to another. Thus, we aim to analyze whether transfer of aspirations differ with gender of both parents and their descendants; and also if there is any heterogeneity in transfer of these aspirations from one generation to another.

This analysis is fundamental, as obtained results are helpful in analyzing prevailing gender gaps in labor market, and hence related policies can be designed to overcome the underrepresentation of women due to aspirations. If we are able to find any evidence of intergenerational transfer of aspirations, then investing in increasing girls' aspirations promises improvement in labor market

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outcomes of women in the future by ensuring greater female labor force participation of future generations. This study will be a significant contribution to existing literature as there is no study in Pakistan that identifies intergenerational transfer of career aspirations specifically. Therefore, this paper will address a substantial gap in literature.

Section 2 of this paper gives review of previous literature, Section 3 shows methodology, Section 4 discusses empirical strategy, Section 5 presents results and Section 6 discusses conclusion of our paper.

## 2. Literature Review

Aspirations can be defined as one's future orientation towards life. This paper looks at the educational and career aspirations of undergraduate students. Preferred career goals that one targets to achieve for their future under ideal conditions are said to be career aspirations. (Domenico & Jones, 2006). While educational aspirations are educational goals that one wants to achieve. (Fraser & Garg, 2014).

When marginal benefits are equal to marginal cost, investment in education is optimal, as per human capital theory (Rampino & Taylor, 2015). It is important to make people realize the benefits of education and employment. Especially, while they are evaluating their marginal benefit they must keep in mind the benefit they can obtain by spending (time and money) on education and employment. We find evidence of such realizations from experiment in India where by introducing Business Process Outsourcing Industry (BPO) in India increased women paid employment by 2.4% and there was an increase in women employment by 5% in treatment villages. Thus spending on female child was increased without reducing any investment in male child (Jensen, 2010). This shows that parents were spending less on their female child not because they cannot afford it but because expected return on girls' education was lessor as compared to boys. Another experiment in Oaxaca Mexico shows that aspirations and future orientation can be increased through motivation and encouragement by presentation inspirational video of four most successful microfinance borrowers to current borrowers (Lybbert & Wydick, 2016). Furthermore, Beaman, Duflo, Pande & Topalova (2011) by using a natural experiment in India analyze the impact of presence of female Pradhan (leader) in a district on parental and adolescents' aspirations. Results show that parental aspirations in districts where there was a female Pradhan, changed for the female child whereas these were unchanged for the male child. However educational attainment

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for girls was increased which led to decline in gender gap in educational attainment. This shows a role model effect on aspirations. An evidence from Pakistan suggests that Natural disaster can be a potential source of diminishing aspirations as it happened after floods of 2010. However, welfare policies from government can play a significant role in improving a victim's aspirations (Kosec & Hyujung Mo, 2015). These investigations reveal successful interventions in boosting aspirations and enhancing total welfare, therefore, we can perceive that policies by the state for encouraging ambitions may prove to be fruitful.

A question arises here, that what actually determines one's aspirations. There are several determinants of aspirations in literature. Koul et.al (2011) discuss that males prefer mathematics and science subjects because they consider themselves more suitable for professions related to these subjects. Whereas, women consider those jobs more suitable for themselves that provide them opportunity in which they can simultaneously gain benefit from their occupation as well as not compromise on their family life. Thus, the authors provide evidence for motivational differences between male and females in Thai high school students. Similarly, Marini & Fan (1997) shows that determining gender gap in wages, gender aspirations have the most significant role.

However, another determinant of aspirations is parental involvement, which is found to be a significant indicator of post-secondary educational aspirations of a student (McCarron & Inkelas, 2006). Another study conducted by Buchman & Dalton (2002), by utilizing data from TIMSS gathered by International Association for the Evaluation of Educational Achievement (IEA) in 1995, shows that parental and peer influences have a significant affect when there is a different schooling system. Christofides et.al (2005) shows that aspirations and student grades are affected both directly and indirectly by peer influences and parental expectations.



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Domene, Socholotiuk & Woitowicz (2011) discusses that educational motivation can be benefitted through ones increasing expectations from a successful career outcome. Both educational and career aspirations are determined by socio-economic status. (Solorzano, 1992; Reisman & Banuelos, 1984).

There is also increasing evidence that a child's career aspirations are determined by their parental occupational choice, specifically their mother's career choice (Thrice & Knapp, 1922). Similarly, while determining child's career and educational aspirations same gender parent have a greater impact on one's career choices (Lomax & Gammill, 1984).

Meier (1972) and Vogel et.al (1970) show that children of working mothers have more liberal view for women in society than children of non-working mothers. Parental occupation affects child aspiration through several channels, namely, role model affect, parental transfer, efficiency, favoritism, genetic transfer, parental investment, ability, attitude and nepotism. (Scoppa, 2009). These channels are identified in several other studies such as Marini (1978) who identified that same-sex parent serve as a role model to child.

Also, child aspirations are influenced by parental attitude as asserted by Dhar et. al (2016). This was further noted by Mullins (1980) who conducted surveys on university (female) students and analyzed the impact of parental satisfaction on their aspirations. Findings suggest that greater the dissatisfaction of parents as perceived by a child, more a female child will develop nontraditional attitude (i.e. desire to have atypical educational occupational and marital roles). Another evidence suggests that parental involvement is found to be a significant indicator of post-secondary educational aspirations of a student (McCarron & Inkelas, 2006). Meier (1972) and Vogel et.al (1970) discusses children of working mothers have more liberal views for women in society than

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children of non-working mothers. Socioeconomic status decreases the impact of single-parent family on child's achievements. While this effect is less visible in children living with both parents (Kurian,2006).

Ones aspirations are also sensitive to gender. There are several studies that seek to identify the channels through which gender differences prevail in aspirations. Such as Regan & Roland, 1985 posit that women are stereotyped in their traditional roles i.e. as a mother and a housewife which then becomes a possible reason for hindrance in their career and future goals. A study that captures aspirations of graduating students during 1970's and 80's shows that career aspirations of women graduating in the 1980's have taken flight as compared to those of 1970's (Regan & Roland, 1985). Females became more career oriented during this era. Additionally, another study by Domenico & Jones (2006) shows that women face several obstacles in their work life such as looking after children, discrimination at their workplace, lack of vocational training, transportation constraints which adversely affects their career aspirations.

Competition aversion plays a significant role in determination of aspirations. Niederle & Vesterlund (2011) through a laboratory experiment show that men are more competitive as compared to women. Even in a natural setting, as shown by Garratt et.al (2013), women are less competitive as compared to men. Additionally, women are unable to estimate their true ability while young men perfectly estimate their ability. Marini (1990) discusses that the distinction between the genders occurs either because of nature or surroundings. Nature refers to biological setup whereas surroundings are the environmental influences that shape one's ideology towards life. Females mostly go for mid-level jobs and their participation in high and low level is lesser due to which the average level jobs of both genders is same (Spaeth, 1977).

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This paper aims to analyze the prevailing gap in aspiration both educational and career due to parental occupation and gender. This analysis will be helpful to determine the gaps prevailing in labor market and understanding to what extent job creation is necessary for fresh graduates. As every year we expect new graduates to enter labor market which means that labor supply will increase. Alternatively, there are people who are leaving labor force for number of reasons such as retirement. This means labor market equilibrium is expected to be disrupted, for which if we make precautionary measures by estimating expected labor supply and labor demand, we can overcome these disruptions. This analysis will provide us the vision for further analysis that from the graduating batch how many individuals are expected to enter and fit in the labor market. Therefore, measures can be taken for job creation in accordance with the supply and demand conditions of the labor market so that burden on the economy can be minimized.

### **2.1 Research Questions**

Following are the research questions that this paper aims to investigate.

- 1: Are there any gender differences in career aspirations?
- 2: Does father's occupation affect career aspirations of sons?
- 3: Does father's occupation affect career aspirations of daughters?
- 4: Does mother's occupation affect career aspirations of sons?
- 5: Does mother's occupation affect career aspirations of daughters?

## 3. Data

### 3.1. Sampling and Data Collection

In order to do this analysis, we conducted surveys in eight universities of Lahore. Targeted population for this study was final year undergraduate students who are expected to graduate in 2019 and hence anticipated entrants of labor force in near future. Therefore, we were able to collect data of 1031 individuals, which includes 520 female students and 511 male students. Universities were selected on the basis of their HEC ranking and location in Lahore.

In order to validate this data, it was assured that data was collected from at least three of these four disciplines (i.e. Faculty of Social Sciences, Faculty of Pure Sciences, Faculty of Arts and Faculty of Professional Studies) from each university and one randomly selected major was surveyed in each of these departments. On average we were able to target 35 students from each department which made 130 students from each university. Data was collected during fall semester, 2018. However, these are broader categories of disciplines in which almost all universities divide their majors under these 4 disciplines. However there can be selection bias in our analysis because of following reasons:

- i. Each university allocate majors under departments differently for instant in some universities economics comes under business faculty while other considers it as a part of social sciences or humanities group. Similarly political science is consider as part on a social science in one university, in other university it is a part of arts courses. Consequently, being a part of different faculty can effect ones aspirations and expectations differently.
- ii. As we considered majors that offer 4 year undergraduate program, because there were some instances where 4 year program was offered for one major and 2 year program for

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other. But we considered only 4 year undergraduate programs even in universities that offered both type of undergraduate programs. This could be a reason for biasness in selection of majors.

- iii. Our data does not include students from medical universities. As medical is being offered in separate universities in Lahore, therefore, it is an exception to our analysis.
- iv. Our data also does not included student from male only and female only universities because that would have led to increase in cost of our analysis and with limited time and resources available we did not included these universities in our analysis.

All universities and students were assured confidentiality and so that any bias in their responses can be controlled. However, privacy of collected data was maintained by assigning a random code to each university and within each university a random code was assigned to each students.

In order to collect data for this research, detailed questionnaires were used. This was a strategy similar to Mullins (1990); Angrist (1970); Beaman et.al (2011); Sojkin et.al (2012) and Gaultney (2010). These questionnaires collected data along 3 dimension i.e. demographic characteristics, parental occupation and aspiration. First section of this questionnaire was based on general questions about demographic characteristics such as age, income group, area of residence etc.

**Measure of Career Aspirations:** In order to measure career aspirations we used questions that were established by counseling psychology research center. These captured data along three dimensions of aspirations i.e. Leadership Aspirations, Achievement Aspirations and Education Aspirations.

Career aspiration scale (CAS) was developed in 1996 which was based on 10 questions incorporating only two features of aspirations i.e. education and leadership aspirations (Gray &

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O'Brien, 2007). Due to limitation of this scale i.e. correlation of self-efficacy of occupational with other roles and low to moderated reliability of coefficients CAS-R was developed. CAS-R included third dimension of aspirations i.e. achievement aspirations and was based on 24 items. Reliability and validity of psychometric properties of Career Aspirations Scale Revised (CAS-R) is tested and accepted on young men (Gregor, O'Brien & Sauber, 2017) women (Gregor & O'Brien, 2015).

**Measure of Parents Occupation:** To collect data for parent's occupation, questions suggested by Vereecken & Vandegehuchte (2003) were used. This measure of parental occupation is also validated in other studies such as Vereecken, Maes & Bacquer, 2004.

After identifying parents' occupation, these occupations were coded according to "Pakistan Standard Classification of Occupations" (PSCO 2015). This classification is provided by Pakistan Bureau of Statistics for Pakistan and replicates "International Standard Classification of Occupations" (ISCO-08) provided by International Labor Organization (ILO). According to this classification, occupations are divided into 10 Major groups which are further grouped into 4 skill Levels. Higher the skill level, more skillful the job is considered. As a robustness check for parental occupation, parents' occupations are also coded according to prestige score provided by National Opinion Research Center (NORC) at University of Chicago. This scoring is developed by Davis et.al (1989) and is internationally used to measure occupation level. Occupations measured through this method are ranked on a scale of 0 to 100 where 100 means highest level of occupation and 0 reflect lowest level of occupation.

**Measure of Education Levels:** In order to measure parents and grandparents education levels we divide education into 10 levels, where 0 means no education obtained and 9 means highest level of education.

### 3.2. Descriptive Statistics

**Table 1: Sample Composition**

	<b>Sample Size</b>	<b>Percentage</b>
Total Population	733	100%
Female	365	50.20%
Male	368	49.80%

**Source: Author's own calculations**

Our instrument for data collection was questionnaires which were manually filled by students, therefore, our sample size number declined to 727 observation from 1031 because every student did not responded each question. And our sample is comprised of students for whom data is available for all variables included in regressions.

Table 1 displays sample compositions for our regression. Our total sample was composed of 365 females and 368 male which made total of 733 students from all universities. Almost 50% of the sample is male and 50% is female.

**Table 2 Individual And Household Level Characteristics**

<b>Variables</b>	<b>Total Sample</b>	<b>Male</b>	<b>Female</b>
Average Household Income	150,000 PKR	155,142PKR	144,857 PKR
Average Career Aspirations	87.43	88.27	86.6
Average education level of Mothers	Undergraduate	Undergraduate	Undergraduate
Average education level of Fathers	Graduate (Masters)	Graduate (Masters)	Graduate (Masters)
Average Skill level of Mothers	3.77	3.8	3.78
Average Skill level of Fathers	3.36	3.37	3.43
Lahore Hometown	44.70%	39.60%	49.80%
CGPA	3.22	3.09	3.35
Scholarship/ Financial Aid	29.88%	24.73%	35.07%
Age	22 years	---	---
Working Mother	26.86%	---	---
Working Fathers	99.86%	---	---
Average Siblings	3	---	---
Ancestral/ Family Business	38.30%	---	---
Role Model	66.50%	---	---
Uneducated Fathers	1.50%	---	---
Uneducated Mothers	6.96%	---	---

**Source: Author's own calculations**

Table 2 summarizes characteristics of our regression sample. This table shows us that mean income of households of our sample is 150,000 PKR which is 155,142 PKR for males and 144,857 PKR for females. This reflects that on average males belong to higher income household than females in our sample. However, average career aspirations of our sample are 87.43. Average education of mothers in our sample is undergrad which is same for both males and females. Similarly, average education level of fathers is graduate level (masters), and this too, is same for both males and females. An interesting thing to notice here is that average skill level of mothers is 3.77 which are greater than average skill level of fathers of 3.36. Nearly 45% of sample belongs to Lahore. Percentage of female sample i.e. almost 50% that belongs to Lahore is greater than percentage of male sample of 39.6%. This reflects that parents generally do not prefer for female child to move outside their hometown for education (even in case of higher education). However, average CGPA



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of men is 3.09 which is lessor than average CGPA for females of 3.34. We also see that females (35.07%) obtain more scholarship than male (24.73%) sample. Hence, it can be said that women are more inclined towards education than men.

We also see that average age of our sample is 22. Percentage of working mothers is 26.86% and working fathers is 99.86%. Also, average number of siblings for our sample is 3. Sample who had any ancestral or family business are on average 38.3%. Average people in our sample who had any role model are 66.5%. An interesting thing to note from table 2 is that on average 1.50 percentage of fathers have not obtained any education while 6.96 percentage of mothers are uneducated this reflects difference in difference in school enrollment between males and females of former generation.

As we do not see much difference in male and female aspirations in Table 2, therefore, we analyzed aspirations across different levels of parents' education and occupational level (using both PSCO skill level and Prestige score) between genders. We see that at both top and bottom 20 percent of father's education levels there exists significant difference across genders in their aspirations. However, occupation when measured through PSCO skill level, we only see significant difference between male and female at bottom 20% of mothers' occupational skill level. While, when occupation is measured through prestige score, this variation exists for bottom 20% of father's skill level and at both top and bottom 20% of mother's skill level.

**Table 3a: T-test of difference in Male and Female Aspirations across Parental Education Levels**

	<b>Father Education Level</b>	<b>Mother Education Level</b>
<b>Low Level</b>	0.0159***	0.1327
<b>High Level</b>	0.0492***	0.5835

**Note: Each value in this table represents p-value for difference in gender aspirations.**

**Source: Authors own calculation**

Table 3a represents significance test at high and low level of parent’s education level. Hence it can be seen that there exist a difference in male and female aspirations at high and low levels of father’s education. Where, there was no significant difference between male and female aspirations were identified at any level of mother’s education.

**Table 3b: T-test of difference in Male and Female Aspirations across different Parental Occupation Level according to ISCO-Skill Level**

	<b>ISCO-Skill Level</b>	
	<b>Father ISCO-Skill Level</b>	<b>Mother ISCO-Skill Level</b>
<b>Low Level</b>	0.3453	0.0316***
<b>High Level</b>	0.3128	0.7373

**Note: Each value in this table represents p-value for difference in gender aspirations.**

**Source: Authors own calculation**

Table 3b illustration significance test at high and low level of parent’s occupation measure through ISCO-Skill Level. We cannot find any significant difference in gendered aspirations at any level of parent’s occupation level when measured through ISCO-Skill Level except at low level of mother’s education.

**Table 3c: T-test of difference in Male and Female Aspirations across distribution of students according to Prestige score**

	<b>Father Prestige score</b>	<b>Mother Prestige score</b>
<b>Low Level</b>	0.0564**	0.0119***
<b>High Level</b>	0.6406	0.077**

**Note: Each value in this table represents p-value for difference in gender aspirations.**

**Source: Authors own calculation**

Table 3c displays significance test at high and low level of parent’s occupation measure through prestige score. Career aspirations at higher level of father’s occupation level is found to be insignificant whereas low level of father’s occupation and both high and low levels of mother’s occupation levels were found significant.

## 4. Empirical Strategy

### 4.1. Average effect of parental occupational skill level on career aspirations

Data collected from surveys aims to investigate research questions highlighted in section 2.2. We estimate equation 1 to analyze the average impact of parental occupation and gender on one's career aspirations.

$$CareerAsp_i = \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 MotherOcp_i + \beta_5 Z_i + \varepsilon \quad (1)$$

Where  $CareerAsp_i$  is career aspirations score of an individual  $i$ . This is a categorical variable whose value ranges from 24 to 120. Where, 120 means highest level of aspirations and 24 means lowest level of aspirations.

Our dependent variable  $Male_i$  is a dummy variable which assumes 1 for males and 0 for females.  $MotherOcp_i$  is mother's occupational skill level (MOSL) of an individual  $i$ , it is a categorical variable whose value ranges from 1 to 4. Higher the skill level more prestigious the job is considered.  $FatherOcp_i$  is father's occupational skill level (FOSL) of an individual  $i$ , value ranging from 1 to 4, 4 means highest skill level and 1 means lowest skill level. As a robustness check prestige score is also used to measure occupation and its value ranges between 0 and 100 where 0 means lowest level of occupation level and 100 signifies highest skill level.

However,  $Z$  is a vector of control variables, which is classified into three categories i.e. individual level, parental level and university level.

Individual level controls are child rank, weight, height, age, Lahore hometown and role model. Where, child rank is a ranking variable which takes value of child rank amongst siblings. Highest level of child rank observed for this variable is 9 and lowest level of child rank is 1. Weight and

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height are continuous variable whose value differs for each individual. Lahore Hometown is a dummy variable which takes values of 1 if respondent belonged to Lahore otherwise 0. Similarly, role model is also dummy variable which has a value of 1 if an individual has any role model who they look up to and 0 if they do not have any role model.

While parental level controls include fathers' education level (FEL), mothers' education level (MEL), aim for father's occupation, aim for mother's occupation, parents' marital status, ancestral family business. FEL and MEL are ranking variables which takes 0 value for lowest level of education obtained i.e. no education and 8 for highest level of education which is PHD (doctor of philosophy), aim for father's occupation and aim for mother's occupation are dummy variable which has a value of 1 if respondents aims for mother or father's occupation. Mother being more inspiring parent is also a dummy variable which takes a value of 1 if mother inspires more to respondent than father. Similarly, father being more inspiring parent is a dummy variable which takes a value of 1 if father inspires more to respondent than mother. Parents marital status is also a dummy variable which has a value of 1 if parents' marital status is married and otherwise 0.

And university level controls are HEC ranking, scholarship and CGPA (Cumulative Grade Point Average). HEC ranking is a continuous variable whose value ranges from 0 to 100. Scholarship is a dummy variable whose value is 1 if respondent is getting scholarship and 0 if not getting any scholarship. CGPA is also a continuous variable whose value ranges from 1 to 4.

### **4.2. Heterogeneity in Career Aspirations by Childs and Parents Gender**

Parental attitude can determine child's aspirations (Mullins, 1980; McCarron and Inkelas, 2006; Hearn 1987). Same gender parent serve as a role model to his/ her child (Marini, 1978; Marini, 1980). For instance, mothers tend to have greater influence on their daughters than sons (Pearson,

1983: 213) and determines intergenerational mobility of occupation for female child (Rosenfeld, 1978; Stevens and Boyd, 1980 ; Hayes, 1987). And, fathers influence sons more than their daughters (Treiman and Terrell, 1975; Featherman and Hauser, 1976 ;Marini, 1980). Trice and Knapp (1992) show that regardless of gender, a child tends to have similar occupational aspiration as their mother. Hence, to analyze if aspirations differ with gender of both parents and their children, we modify equation 1 by interacting our main variable i.e.  $FatherOcp_i$  and  $MotherOcp_i$  with gender variable which is  $Male_i$  to determine the combined effect of FOSL and MOSL with gender on aspirations. Therefore, we estimate equation 2:

$$CareerAsp_i = \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 FatherOcp_i * Male_i + \beta_5 MotherOcp_i + \beta_6 MotherOcp_i * Male_i + \beta_7 Z_i + \varepsilon \quad (2)$$

In equation 2 interaction term  $FatherOcp_i * Male_i$  explains the impact of higher father occupation skill on male child's aspirations for an individual  $i$ . While interaction term  $MotherOcp_i * Male_i$  shows the impact of higher MOSL on male child's aspirations for an individual  $i$ .

### 4.3. Difference in Aspirations across Universities

Education institute plays a vital role in determining future prospects of an individual. It has been seen that generally high school students have higher plans for education than students of vocational high school (Won et. al, 1977; Boyle, 1966). However, there are certain factors that contribute towards selection of university such as knowledge exposure, university tradition, satisfaction from university and family expectations and opinions (Sojkin et. al, 2011). Education institute can affect ones aspirations due to difference in educational standards and peer influence (Boyle, 1966). Thus, to verify difference in aspirations with difference in education institute, university level fixed

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effects are added to equation 2 and equation 3 is estimated. This will also help us to control for bias in results with difference in universities.

$$\begin{aligned} CareerAsp_i = & \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 MotherOcp_i + \beta_5 FatherOcp_i * Male_i \\ & + \beta_6 MotherOcp_i * Male_i + \beta_7 Z_i + \delta_d + \varepsilon \end{aligned} \quad (3)$$

The term  $\delta_u$  in equation 3 represents university level fixed effects. We added a dummy variable for each university and analyzed if aspirations differ across universities or not.

### 4.4. Intergenerational Transmission of Career Aspirations

Presence of a grandparent in a household can influence one's characteristics. They can effect occupational choices (Warren & Hauser, 1997) and social class (Chan and Boliver 2013). Grandparents can also be source of encouragement for their grandchild's education, income and aspirations (Moulton, Flouri & Alice Sullivan, 2017). Also, presence of grandparent signifies a healthy household (Duflo, 2003). However, Becker and Tomes (1986) discuss that the effect of social advantage or disadvantage of having a grandparent disappears in three generations. Transfer of their inheritance (Coall and Hertwig, 2011), providing them social linkages and financial support, and involvement in their grandchild's formal and informal childcare (Hawkes and Joshi 2007) are the channels through with grandparent can influence their grandchild. Therefore, to investigate if aspirations vary with grandparents' education level and gender we added grandparents' education levels and interact these education levels with gender in equation 2. This will help us to identify intergeneration transfer of career aspirations.

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To do this, we estimate equation 4,

$$\begin{aligned} CareerAsp_i = & \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 FatherOcp_i * Male_i + \beta_5 MotherOcp_i \\ & + \beta_6 MotherOcp_i * Male_i + \beta_7 PGFEduc_i + \beta_8 PGFEduc_i * Male_i \\ & + \beta_9 PGMEduc_i + \beta_{10} PGMEduc_i * Male_i + \beta_{11} MGFEduc_i + \beta_{12} MGFEduc_i \\ & * Male_i + \beta_{13} MGMEduc_i + \beta_{14} PGMEduc_i * Male_i + \beta_{15} Z_i + \varepsilon \end{aligned} \quad (4)$$

Where,  $PGFEduc_i$ ,  $PGMEduc_i$ ,  $MGFEduc_i$  and  $MGMEduc_i$  are paternal grandfathers, paternal grandmother, maternal grandfather and maternal grandmothers' education level for an individual  $i$ . All these 4 variables are categorical variables and their value ranges from 0 to 9. Where, 0 means no education and 8 means highest level of education.

However, the interaction terms  $PGFEduc_i * Male_i$  shows impact of paternal grandfathers,  $PGMEduc_i * Male_i$  shows effect of paternal grandmother,  $MGFEduc_i * Male_i$  illustrates effect of maternal grandfather education levels,  $MGMEduc_i * Male_i$  shows effect of maternal grandmother's education level effect on male child's aspirations.

### 4.5. Average effect of Parents' Occupational Skill Level on different Components of Career Aspirations

We aim to identify if parental occupation skill level has different impact on different components of aspirations. Thus, we will estimate equations 5a, 5b and 5c for this purpose

In order to measure effect of parental occupation on Leadership Aspirations, we estimate:

$$\begin{aligned} LeaderAsp_i = & \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 MotherOcp_i + \beta_5 FatherOcp_i * Male_i \\ & + \beta_6 MotherOcp_i * Male_i + \beta_7 Z_i + \varepsilon \end{aligned} \quad (5a)$$

Where,  $LeaderAsp_i$  is leadership aspirations of an individual.



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Additionally, in order to measure effect of parental occupation on Achievement Aspirations, we estimate:

$$\begin{aligned} AchieveAsp_i = & \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 MotherOcp_i + \beta_5 FatherOcp_i * Male_i \\ & + \beta_6 MotherOcp_i * Male_i + \beta_7 Z_i + \varepsilon \end{aligned} \quad (5b)$$

Where,  $AchieveAsp_i$  is achievement aspirations of an individual  $i$

Furthermore, to measure effect of parental occupation on Education Aspirations, we estimate:

$$\begin{aligned} EduAsp_i = & \beta_1 + \beta_2 Male_i + \beta_3 FatherOcp_i + \beta_4 MotherOcp_i + \beta_5 FatherOcp_i * Male_i \\ & + \beta_6 MotherOcp_i * Male_i + \beta_7 Z_i + \delta_d + \varepsilon \end{aligned} \quad (5c)$$

Where,  $EduAsp_i$  is achievement aspirations of an individual  $i$

### 4.6. Estimation Model and Technique

In each of above equations our dependent variable i.e. career aspirations, achievement aspirations, leadership aspirations and education aspirations, is a categorical variable, therefore, we will apply Ordered Probit (OP) model.

Reason for implementing OP model is that dependent variables here are ordinal, where each higher category represents higher degree of contentment but respondents do not necessarily treat the intervals between adjacent categories as equal. OLS regression can give us values of our dependent variable above and below the desired range and also OLS assumed data to be cardinal while our data is ordinal. So one benefit of using OP here is that it deals data as ordinal which means each higher category represents higher degree of satisfaction but we do not treat interval between each

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adjacent category as equal. However, we will be estimating results by using both OLS and OP to illustrate differences in estimator but our main model will be OP.

In order to account for clustered nature of sampling, standard errors are clustered at university level for all specifications

## 5. Results

### 5.1. Results of Average Impact of Parents Occupational Skill Level on Career Aspirations

In order to analyze the impact of parental occupation on career aspirations, results estimated from equation 1 are shown in table 4. Column (1) of Table 4 represents estimates from simple OLS regression and column (2) shows OP regression with inclusion of marginal effects.

**Table 4: Average Impact of Parental Occupation Skill Level on Career Aspirations**

Dependent Variable= Career Aspirations	OLS (1)	Ordered Probit† (2)
FOSL	-1.612** (0.553)	-0.000435*** (0.0479)
MOSL	0.390 (0.259)	0.00011 (0.0216)
FEL	0.739* (0.315)	0.000215** (0.0263)
MEL	-0.793** (0.321)	-0.000214** (0.0280)
Male	0.303 (0.916)	0.000143 (0.0799)
Ancestral Family Business	-1.945 (1.080)	-0.000595** (0.0870)
Role Model	4.080*** (0.898)	0.00140*** (0.0756)
HEC Ranking Score	0.0233* (0.0108)	5.96e-06* (0.00102)
Scholarship	2.636* (1.122)	0.000699*** (0.0878)
Standard errors in parentheses are clustered at University Level	N=748	N=748
*** p<0.01, ** p<0.05, * p<0.1		

**Note:** †Reported coefficients estimates are not regression estimates from OP regressions and are marginal effects.

**Source:** Authors own calculation

As per both OLS estimates FOSL have a negative and statistically significant sign which implies that father's higher occupation skill level is associated with lower aspirations. These results are robust with OP results, although at higher significance level but with similar signs. Therefore, each

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higher level of fathers' occupational skill leads to have a 0.043% decline in probability of career aspirations according to OP model and OLS model suggests that a level increase in Father's occupation skill leads to a decline in career aspirations by 1.16 points. Becker and Tomes (1986) explains parents try to maximize utility of their children by transferring valuable jobs and material wealth. Also, children usually believe that they will easily get job of their parent (Scoppa, 2009) and they usually desire to do the same job as their parent (Werts and Watley 1972), so this can lead to lower career aspirations. Thus, nepotism can be used as an explanation for this result. To justify this result, we can also say that regardless of gender, the child generally has similar occupational aspirations as their mothers (Trice and Knapp 1992). We can also say that parents' dissatisfaction with their own achievements can have a negative effect on one's future aspirations (Sewell and Shah, 1968; Won et. al, 1977; Mullins, 1980; Barling and Van Bart, 1984). However, father's occupation, when used as socioeconomic indicator, reflects to positive outcomes for a child (Roe, 1956; Treiman and Terrell, 1975; Featherman and Hauser, 1976; Mairini, 1980; Hayes 1986). Our result however, is bit contradictory with previous existing literature. This result is also inconsistent with the findings which suggest that children tend to have higher occupational aspirations than their parents' achievements (Kintrea et. al, 2011).

We can see that MOSL and Male variable are statistically insignificant in Table 4 both column (1) and (2), therefore, we cannot interpret anything from these results.

Results from OLS regression Table 4, column 1 illustrates statistically significant and positive sign of male variable. This verifies the fact that men have higher aspirations than that of women. Nevertheless, this result is not robust with OP results of Table 4, column (2).

Now considering our most important parental level control variables i.e. father's education level and MEL. In line with our expectations, the statistically significant positive sign of fathers'

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education level in column (1) of Table 1 is indicative of the fact that having a more educated father means higher aspirations for an individual. This finding is corroborated with OP result in table 4, column (2). So, OLS model proposes that if father's education level increase by one level there will be 0.739 points decline in career aspirations and OP suggests that there will be almost 0.02% greater probability of career aspiration for students whose fathers have obtained a higher level of education. We see that higher FEL is related to more involvement of a father into child (Harris, 2002), therefore, higher FEL is related higher abilities of a child (Majoribanks, 1976). However, a negative relationship was detected in 7 out of 13 countries for FEL and son education attainment (Shavit and Blossfeld, 1993).

Results reflect MEL has negative and statistically significant impact on career aspirations, in both OLS (table 4, column 1) and OP (table 4, column 2) models. Both these estimations show same level of significance for this variable. Therefore, higher MEL signifies lower aspirations for an individual. Thus, at a higher level of education for a mother there is a probability of career aspirations declines by 0.02% according to OP model and for OLS model if mother's education increases by one level there will be 0.793 decline in career aspirations. Literature generally cites positive outcomes of MEL on child future prospects (e.g. Sewel and Shah, 1968). However, there is barely any evidence found which reflects impact of mother's education on child's career aspirations. Therefore, we interacted MEL with working status and gender of child later in this analysis to explain these findings.

Next, moving on to our main control variables included in all our regressions and presented in Table 4. The statistically significant negative sign of ancestral family business variable reflects that individual who has any ancestral or family business have lower career aspirations as compared to ones with no family or ancestral business. So, probability of aspirations decreases by 0.06% if

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you have any ancestral or family business, suggested by OP findings. However, OLS model suggests that if a student has ancestral or family business he will have lower aspirations by 1.945 points. This finding is consistent in both OLS and OP regression of table 4, column (1) and (2).

Additionally, role model is positive and significant. Consequently, it can be inferred that individuals with role models have greater aspiration than those who do not have any role model. This result is robust in both OLS (column 1) and OP (column 2) regressions in Table 4. We have seen in case of India where presence of a female leader as a role model led to have a positive impact on female aspiration and their parents (Duflo et.al, 2011). Thus, this may reflect that a role model to whom you look up to helps in shaping your future goals and eventually results in increased aspirations. Consequently, we see that career aspirations are 4.08 points higher for students who have any role model according to OLS model. And OP model recommends a 0.14 higher probability of aspirations for students with role models.

Similarly, having scholarship for education is a significant indicator for career aspirations in both OLS and OP models of Table 4. This suggests that having scholarship or financial aid can increase one's career aspirations. If you have scholarship or financial aid for your education, there is 0.069% probability of higher aspirations according to OP model and 2.63 points higher aspirations according to OLS model. The HEC score variable is statistically insignificant. This means that HEC score of universities does not affect one's career aspirations

## 5.2. Results on Heterogeneity of Aspiration by Parents and Child Gender

**Table 5: Interaction Between Child and Parents Gender**

Dependent Variable=	OLS	Ordered Probit†	OLS	Ordered Probit†	OLS	Ordered Probit†	OLS	Ordered Probit†	OLS	Ordered Probit†
Career Aspirations	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FOSL	-1.575*	-0.000417**	-1.275	-0.000323	-1.561	-0.000363*	-1.623	-0.000413*	-1.644	-0.000388*
	(0.709)	(0.0596)	(0.852)	(0.0703)	(0.880)	(0.0734)	(0.920)	(0.0780)	(0.934)	(0.0795)
FOSL* Male	0.467	0.000123*	0.0822	1.94E-05	-0.383	-0.000112	-0.0654	-3.86E-05	-0.0341	-2.82E-05
	(0.258)	(0.0220)	(0.826)	(0.0688)	(1.152)	(0.0961)	(1.160)	(0.0988)	(1.215)	(0.104)
MOSL	0.344	9.72E-05	0.852**	0.000217***	0.924**	0.000220***	0.802**	0.000214***	1.929	0.000453
	(0.227)	(0.0194)	(0.255)	(0.0223)	(0.267)	(0.0235)	(0.247)	(0.0213)	(1.708)	(0.148)
MOSL* Male	-0.473	-0.00013	-0.706	-0.000183	-0.795	-0.000185*	-0.911	-0.000238*	2.073	0.000543
	(0.502)	(0.0415)	(0.507)	(0.0418)	(0.437)	(0.0380)	(0.483)	(0.0419)	(2.241)	(0.196)
FEL			0.627**	0.000170***	0.992**	0.000249***	1.120***	0.000314***	1.103***	0.000287***
			(0.256)	(0.0203)	(0.324)	(0.0269)	(0.312)	(0.0261)	(0.312)	(0.0263)
FEL* Male			-0.0270	-1.54E-05	-0.463	-0.000118	-0.664	-0.000186	-0.534	-0.00014
			(0.455)	(0.0364)	(0.496)	(0.0407)	(0.481)	(0.0401)	(0.483)	(0.0409)
MEL			-1.095***	-0.000283***	-1.247**	-0.000297***	-1.400**	-0.000369***	-1.301**	-0.000319***
			(0.207)	(0.0159)	(0.405)	(0.0347)	(0.445)	(0.0379)	(0.457)	(0.0396)
MEL* Male			0.392	0.00011	0.724*	0.000174**	1.059**	0.000282**	1.133**	0.000282**
			(0.421)	(0.0331)	(0.341)	(0.0277)	(0.421)	(0.0354)	(0.473)	(0.0400)
Working Mother* MEL	--	--	--	--	--	--	--	--	-0.723	-0.000164
									(1.068)	(0.0925)
Working Mother* MEL *Male	--	--	--	--	--	--	--	--	-1.841	-0.000472
									(1.419)	(0.121)
Male					1.522	0.000507	0.0238	0.00018	-0.992	-8.98E-05
					(4.810)	(0.392)	(4.594)	(0.376)	(4.366)	(0.359)
Standard errors in parentheses are clustered at University Level	N=977	N=977	N=933	N=933	N=767	N=767	N=747	N=747	N=747	N=747

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Note:** †Reported coefficients estimates are not regression estimates from OP regressions and are marginal effects.

**Source:** Authors own calculation

In order to capture gendered impact on aspirations, we interacted parents' occupation skill level variable (i.e. MOSL and FOSL) and parental level control variables except parental marital status and ancestral family business with our gender variable i.e. male. Table 5 (column 7 and 8) exhibit results of these regressions with their interaction terms.

However, our model includes parameters which may be highly correlated. For example, mother's education and occupational status are likely strongly correlated. In order to account for counterintuitive results, Table 5 displayed results that start with simplest model column (1) (OLS estimates) and 2 (OP estimates) and include parental level controls in Column (3) and (4) displaying OLS and OP estimates. In column (5) and (6) both parental level and individual level control are added to OLS and OP approximations. And, and column (7) and (8) exhibition results for OLS and OP regression results with addition of parental level, individual and university level controls. Number of observations declines after adding each level of controls and this decline is greater when individual level controls are added.

We see that FOSL show negative and statistically significant impact on career aspirations when no controls are added in both OLS and OP models. However with addition of parental level controls FOSL becomes insignificant. But as we add individual level controls with parental level controls FOSL remains insignificant for OLS regressions but becomes statistically significant in OP regression. Similar is the case for this variable when we all parental level individual level and university level controls to our regression. Previous literature signifies father occupational status having greater positive impact on male child than female child. (Rushing, 1964; Treiman and Terrell, 1975; Featherman and Hauser, 1976, Mairini 1980). As our result reflects negative impact of FOSL and literature supports positive effect of FOSL for male and female, so this insignificant result could be due to opposite effect.



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Furthermore the interaction term of FOSL and Male display statistically significant results in OP regressions of column 2 of Table 5 when no controls are added.

We see that FOSL variable becomes statistically insignificant after adding interaction terms in Table 5 (both columns 1 and 2). This variable was statistically significant and positive in our previous regression in Table 4.

Now, we see that MOSL is statistically significant and have positive sign after addition of parental level controls and this sign and significance remains consistent in column (3), (4), (5), (6), (7) and (8) of table 5. We see that this variable was insignificant earlier in Table 4 regressions. Thus, it can be said that higher MOSL is associated with more aspirations. A higher level of mother occupation leads to have 0.02% probability of higher aspirations as per OP model in column (7) of Table 5. And according to OLS model there will be 0.802 points increase in career aspiration with a level increase in mother's occupation. Trice and Knapp, 1992 discuss that child's aspirations are strongly influenced by their mother's occupation.

Furthermore, MOSL interacted with males gives us negative sign with statistical significance in column (8) of Table 5. Hence, it can be inferred that higher MOSL have greater positive impact on girls' aspirations. Thus we can generalize that increase in an occupation level for mother's leads to have 0.02% higher probability of career aspirations for girls, this is shown by OP model results. We see that this variable shows statistically significant sign once parental and individual level controls are introduced in regression in column (6) and parental, individual and university level controls are added in column (8). Intergenerational transfer of career aspirations for girls is generally associated with their mother's occupation. (Rosenfeld, 1978; Hayes, 1987). Impact of mother occupation is considered to be higher than that of father's occupation (Pearson, 1983: 213). However, same gender parent tends to have more effect on child occupation (Marini, 1980). Even

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in case of housework, a girls' aspirations are found to be associated with their mothers (Stevens and Boyd, 1980).

Furthermore, all columns of Table 5 display consistent results for FEL with our finding in Table 4. However, when we interacted FEL with male it gave us statistically insignificant results. Hence, it can be assessed that FEL does not affect male and female aspirations differently.

Also, MEL sign and significance is persistent in all columns of Table 5 with our previous regression in Table 4 i.e. they are negative and statistically significant. This reflects more educated mother can negatively influence one's aspirations. To correct that sign, we interacted MEL with male variable this shows us positive and significant result shown in Table 5, column (9) and (10). This result is confusing because higher MEL is generally associated with more aspirations, especially for girls. But as per our results more the mother is educated, lower aspirations her child will have and this will have greater impact on male child. Therefore, we interacted mother's education with their working status. Addition of this interaction term in OLS regression is shown in Table 5 column (9) and OP regression in column (10). Where, the variable working mother is 1 if mother is working, 0 otherwise. This gives us right sign and intuitive sense too that children of non-working highly educated mothers do not work, their children perceive no benefit of their education and become discouraged for their careers. Nevertheless, this sign is insignificant so we cannot evaluate anything from these results. Also, we interacted MEL with their working status and gender variable i.e. male shown in Table 5 column (9) in OLS regression and column (10) in OP regression. This gives us statistically insignificant results, therefore, nothing can be interpreted from this.

While male variable, which is 1 if respondent is male and 0 for female, is insignificant in all regressions of Table 5. Male variable was positive and significant in OLS regression of Table 4

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column (1) but had insignificant results in OP regression of Table 4 column (2). Thus, we can generalize that there is no statistically significant difference in male and female aspirations.

All other controls show persistent results with Table 4.

### 5.3. Addition of University Fixed Effects to Results

**Table 6: University Level Fixed Effects**

Dependent Variable= Career Aspirations	OLS (1)	Ordered Probit† (2)
FOSL	-1.597 (0.914)	-0.000406* (0.0777)
FOSL* Male	0.0867 (1.164)	6.06E-06 (0.0988)
MOSL	0.747** (0.267)	0.000202*** (0.0232)
MOSL* Male	-0.863 (0.494)	-0.000227* (0.0432)
FEL	1.146*** (0.320)	0.000326*** (0.0274)
FEL* Male	-0.787 (0.552)	-0.000226 (0.0464)
MEL	-1.287** (0.454)	-0.000340*** (0.0394)
MEL* Male	1.057** (0.434)	0.000285** (0.0364)
Male	0.157 (4.500)	0.000226 (0.368)
University Fixed effects		
Standard errors in parentheses are clustered at University Level	N=747	N=747
*** p<0.01, ** p<0.05, * p<0.1		

**Note:** †Reported coefficients estimates are not regression estimates from OP regressions and are marginal effects.

**Source:** Authors own calculation

We added university level fixed effect to regression of Table 6. This is shown in Table 6. All our results remain robust with Table 5.

5.4. Results of Intergenerational transfer of Aspiration (Across 3 generations)

Table 7: Impact of Grand Parents Education Level on Aspirations

Dependent Variable= Career Aspirations	OLS (1)	Ordered Probit† (2)
FOSL	-2.756* (1.214)	-0.000761** (0.0922)
FOSL* Male	0.832 (1.952)	0.000178 (0.153)
MOSL	0.602 (0.363)	0.000169 (0.0313)
MOSL* Male	-0.354 (0.585)	-0.000169 (0.0528)
FEL	0.577 (0.409)	0.000184 (0.0347)
FEL* Male	-0.216 (0.477)	-9.40E-05 (0.0381)
MEL	-2.037** (0.700)	-0.000580*** (0.0592)
MEL* Male	1.864** (0.592)	0.000546*** (0.0517)
PGFEL	0.529 (0.703)	0.000195 (0.0562)
PGFEL* Male	-0.717 (0.570)	-0.000244 (0.0489)
PGMEL	-0.390 (0.595)	-0.000112 (0.0433)
PGMEL* Male	-0.0138 (0.748)	-3.46E-06 (0.0610)
MGFEL	0.982 (0.613)	0.000256 (0.0528)
MGFEL* Male	-0.101 (0.715)	-7.31E-06 (0.0632)
MGMEL	-0.00614 (0.531)	-1.35E-05 (0.0421)
MGMEL* Male	-0.803 (1.120)	-0.000226 (0.0885)
Male	-5.037 (6.177)	-0.00103 (0.458)

Standard errors in parentheses are clustered at University Level

N=403      N=403

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Note:** †Reported coefficients estimates are not regression estimates from ordered probit regressions and are marginal effects.

**Source:** Authors own calculation

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In order to account for intergenerational transfer of career aspirations, we have added grandparents' education level and their interaction terms with male (gender variable) shown in Table 7 (OLS regression in column 1 and OP regression in column 2). We can see that number of observations decline from 727 (Table 6) to 403 (Table 7) due to missing data on grandparents' education level.

We see that in Table 7, where we add grandparents' education level and interaction terms, FOSL is negative and significant in both OLS and OP regressions. This variable was also negative and significant in Table 4, both columns (1) and (2). Interacting FOSL with gender gives insignificant results. This finding is robust with regressions in Table 5.

Furthermore, MOSL is insignificant in both regressions shown in Table 7. This variable was positive and significant in Table 5 regressions but was insignificant in Table 4. While, interaction term of mother's education with male becomes insignificant when grandparents' education levels with gender interaction terms are added shown in Table 6. We observe that this variable was significant earlier in Table 5.

FEL also becomes insignificant in Table 6 regression while it was positive and significant in regressions of Table 5. However, interaction term of FEL with gender is insignificant in Table 5 and this finding is robust with our finding in Table 6.

Also, MEL is negative and statistically significant in Table 6. Where, interaction term of MEL with male is also positive and significant. Both these finding are consistent with results shown in Table 5.

Change in significance after addition of grandparents' education levels and its interaction terms with gender variable (i.e. male) could be because of decline in number of observations.

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However, our variables of concern i.e. paternal grandfather education level (PGFEL), paternal grandfather educations level\* male, paternal grandmother education level (PGMEL), paternal grandmother educations level\* male, maternal grandfather education level (MGFEL), maternal grandfather educations level\* male, maternal grandmother education level (MGMEL) and maternal grandmother educations level\* male in both OLS (column 1) and OP regressions (column 2) and Table 5 are all insignificant. Thus, we cannot generalize anything from these results. However, results of all other controls are consistent with previous regression.

We analyzed the impact of parental occupation on component of aspirations by estimating equation 5a, 5b and 5c.

### 5.5. Analysis of Parental Occupation across different components of Career Aspirations

**Table 8: Impact of Parental Occupation on Leadership Aspirations**

Dependent Variable= Leadership Aspiration	OLS (1)	Ordered Probit <sup>†</sup> (2)
FOSL	-0.269 (0.314)	-0.000905 (0.0664)
FOSL* Male	-0.143 (0.433)	-0.000429 (0.0916)
MOSL	0.286* (0.122)	0.000957** (0.0260)
MOSL* Male	-0.327 (0.212)	-0.00113* (0.0434)
FEL	0.209 (0.145)	0.000691 (0.0315)
FEL* Male	-0.261 (0.177)	-0.000835 (0.0338)
MEL	-0.358** (0.151)	-0.00119** (0.0343)
MEL* Male	0.311 (0.182)	0.00104 (0.0424)
Male	2.003 (1.579)	0.00648 (0.332)
Standard errors in parentheses are clustered at University Level	N=748	N=748
*** p<0.01, ** p<0.05, * p<0.1		

**Note:** <sup>†</sup>Reported coefficients estimates are not regression estimates from ordered probit regressions and are marginal effects.

**Source:** Authors own calculation

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Estimation results from equation 5a for leadership aspirations shows consistent results with results in Table 5. We see that MOSL and MEL significantly affect one's aspirations. MOSL positively affects leadership aspirations and mother's education level is a negative indicator of aspirations. However, interaction term of MOSL and male is positive and significant which means negative impact of MEL is greater for boys. We also see that interaction term of MOSL is statistically significant only for probit regressions and have negative sign, which means this impact is more for girls.

**Table 9: Impact of Parental Occupation on Achievement Aspirations**

Dependent Variable= Achievement Aspiration	OLS (1)	Ordered Probit† (2)
FOSL	-0.527 (0.345)	-0.000412 (0.0746)
FOSL* Male	0.109 (0.510)	2.83E-05 (0.107)
MOSL	0.311*** (0.0823)	0.000255*** (0.0166)
MOSL* Male	-0.288 (0.156)	-0.000230* (0.0359)
FEL	0.408** (0.152)	0.000339*** (0.0334)
FEL* Male	-0.227 (0.234)	-0.000178 (0.0506)
MEL	-0.439** (0.183)	-0.000331** (0.0376)
MEL* Male	0.364* (0.187)	0.000268* (0.0386)
Male	-0.917 (1.959)	-0.000408 (0.412)
Standard errors in parentheses are clustered at University Level	N=747	N=747
*** p<0.01, ** p<0.05, * p<0.1		

**Note:** †Reported coefficients estimates are not regression estimates from ordered probit regressions and are marginal effects.

**Source:** Authors own calculation

We estimated equation 5b, to analyze the impact of parental occupation on one's career aspirations.

All results are consistent with our regression in Table 8, except fathers' education level which was

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insignificant earlier become significant now. This reflects more educated father's child will have more achievement aspirations.

**Table 10: Impact of Parental Occupation on Education Aspirations**

Dependent Variable= Educational Aspirations	OLS (1)	Ordered Probit† (2)
FOSL	-0.858* (0.437)	-0.000429* (0.0809)
FOSL* Male	-0.0853 (0.599)	-0.000113 (0.111)
MOSL	0.245* (0.118)	0.000135** (0.0240)
MOSL* Male	-0.363 (0.207)	-0.000191 (0.0419)
FEL	0.472** (0.153)	0.000277*** (0.0287)
FEL* Male	-0.0938 (0.218)	-6.64E-05 (0.0412)
MEL	-0.696** (0.216)	-0.000381*** (0.0435)
MEL* Male	0.431* (0.216)	0.000252** (0.0434)
Male	-1.440 (2.116)	-0.000561 (0.369)
Standard errors in parentheses are clustered at University Level	N=748	N=748
*** p<0.01, ** p<0.05, * p<0.1		

**Note:** †Reported coefficients estimates are not regression estimates from ordered probit regressions and are marginal effects.

**Source:** Authors own calculation

To examine impact of parental occupation on education aspirations we estimated equation 5c, shown in Table 10 (OLS regression in column 1 and OP regression in column 2). We see that MOSL is significant in Table 10. Which ascertains that mother's occupational skill level does not affect education aspirations. We also see insignificant impact of interaction term of MOSL and male on education aspiration in both OLS and OP regression in Table 10. FOSL becomes statistically significant in OP regression of Table 10 while it was insignificant for leadership and



achievement aspirations in Table 8 and 9 respectively. Mother’s education level as in previous results has positive and statistically significant impact on educational aspirations. This means that more educated mother’s child has lesser education aspirations and this impact is more for boys as interaction term of mother’s education with male is also statistically significant and positive.

**5.6. Additional Checks on Sub Samples**

**5.6.1. Working Mothers Sample**

**Table 11: Impact of Parental Occupation on Working Mother's Child**

Dependent Variable= Career Aspirations	OLS (1)	Ordered Probit† (2)
FOSL	-4.615** (1.861)	-0.00953*** (0.134)
FOSL* Male	0.382 (4.128)	0.00124 (0.392)
MOSL	0.555 (2.114)	0.00133 (0.143)
MOSL* Male	-2.014 (4.086)	-0.00172 (0.269)
FEL	1.051 (1.250)	0.00242 (0.112)
FEL* Male	-2.163 (3.939)	-0.00194 (0.330)
MEL	-6.833*** (1.462)	-0.0137*** (0.102)
MEL* Male	6.303* (2.850)	0.0126*** (0.198)
Male	-25.72 (31.48)	-0.482 (2.545)
Standard errors in parentheses are clustered at University Level	N=91	N=91
*** p<0.01, ** p<0.05, * p<0.1		

**Note:** †Reported coefficients estimates are not regression estimates from ordered probit regressions and are marginal effects

**Source:** Authors own calculation

To check robustness of our results we did subsample regression. For first robustness check OLS and ordered probit regressions we done on sample whose mother are currently working. Results of these estimates are shown in Table A. Table 2 shows us that only 26.86% of mothers

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are currently working in our sample, therefore, our sample declines to 91 in Table A. However, we see that interaction terms of FOSL and Male, MOSL, interaction term of MOSL and Male, FEL and interaction term of FEL and male gives statistically insignificant results. One reason for insignificant results could be lesser number of observation. Although, we see that mother's education level shows negative and statistically significant impact on career aspirations. Whereas interaction term of mother education and male gives negative and significant impact. We can deduce that mother's education level negatively affects career aspirations of her child especially male child even if she is working. Also FOSL has negative and statistically significant sign in Table 11.

**5.6.2. Male and Female Sample**

We analyzed male and female sample separately to see check difference in aspirations due to gender.

**Table 12: Male/ Female Sample Aspirations**

Dependent Variable=	Male Sample		Female Sample	
	OLS	Ordered Probit†	OLS	Ordered Probit†
Career Aspirations	(1)	(2)	(1)	(2)
FOSL	-1.635* (0.802)	-0.136** (0.0672)	-1.762 (1.022)	-0.154* (0.0868)
MOSL	-0.0723 (0.549)	-0.00281 (0.0454)	0.862*** (0.232)	0.0758*** (0.0185)
FEL	0.532 (0.556)	0.0457 (0.0456)	1.092** (0.332)	0.105*** (0.0285)
MEL	-0.452 (0.330)	-0.0378 (0.0272)	-1.327** (0.529)	-0.116** (0.0451)
Ancestral Family Business	-1.080 (1.174)	-0.0818 (0.0784)	-2.292 (1.412)	-0.221* (0.123)
Role Model	3.589* (1.591)	0.313** (0.124)	4.600*** (0.942)	0.402*** (0.0825)
HEC Ranking Score	0.00523 (0.0206)	6.41e-05 (0.00176)	0.0433*** (0.00985)	0.00383*** (0.000912)
Scholarship/ Financial Aid	1.103 (1.841)	0.105 (0.134)	4.137*** (0.766)	0.392*** (0.0637)
Standard errors in parentheses are clustered at University Level	N=372	N=372	N=376	N=376
*** p<0.01, ** p<0.05, * p<0.1				

**Note:** †Reported coefficients estimates are not regression estimates from OP regressions and are marginal effects.

**Source:** Authors own calculation

Column (1) and (2) of Table B shows OLS and OP regressions for male sample. Where column (3) and (4) represents OLS and OP regressions for female sample respectively. We see that for male sample only role model and FOSL have statistically significant impact on aspirations. But, for female sample all variables show significant impact on aspirations

### 5.6.3. Disciplines

**Table 13: Aspirations Across Different Disciplines**

Dependent Variable=	Arts		Professional Studies		Sciences		Social Sciences	
	OLS	Ordered Probit†	OLS	Ordered Probit†	OLS	Ordered Probit†	OLS	Ordered Probit†
Career Aspirations	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FOSL	-4.092* (1.678)	-0.00368*** (0.150)	-0.757 (2.603)	-0.000642 (0.210)	-1.373 (1.579)	-0.000811 (0.130)	-2.464 (2.287)	-0.00315 (0.186)
FOSL* Male	5.459 (3.172)	0.00589*** (0.245)	0.307 (2.546)	0.000311 (0.198)	-2.213 (2.686)	-0.216 (0.212)	2.281 (2.246)	0.00257 (0.227)
MOSL	1.345 (0.777)	0.00101** (0.0473)	1.995* (0.996)	0.00128** (0.0866)	-0.178 (0.446)	-6.66E-05 (0.0325)	0.775 (0.782)	0.0011 (0.0683)
MOSL* Male	-2.482 (1.950)	-0.00229 (0.176)	-1.984 (1.140)	-0.00128* (0.101)	-1.325 (0.724)	-0.000755 (0.0731)	-0.00738 (1.209)	-0.000156 (0.111)
FEL	0.278 (1.397)	0.000412 (0.119)	-0.508 (1.125)	-0.000345 (0.104)	2.102*** (0.232)	0.00133*** (0.0343)	0.769 (1.372)	0.00105 (0.111)
FEL* Male	-0.392 (1.241)	-0.000192 (0.111)	1.853 (1.315)	0.00117 (0.123)	-1.882** (0.760)	-0.00110*** (0.0601)	-0.921 (2.223)	-0.00127 (0.178)
MEL	-0.821 (1.459)	-0.000622 (0.121)	-1.484 (2.140)	-0.000922 (0.196)	-1.818* (0.816)	-0.00101** (0.0641)	-0.569 (0.317)	-0.000810*** (0.0212)
MEL* Male	0.0746 (1.680)	0.000121 (0.155)	1.199 (2.466)	0.000769 (0.224)	1.700* (0.779)	0.000987*** (0.0532)	0.107 (1.448)	0.00025 (0.101)
Standard errors in parentheses are clustered at University Level	N=97	N=97	N=256	N=256	N=247	N=247	N=145	N=145
*** p<0.01, ** p<0.05, * p<0.1								

**Note:** †Reported coefficients estimates are not regression estimates from OP regressions and are marginal effects.

**Source:** Authors own calculation

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Table 13 reports impact of parental occupation on career aspirations across different disciplines. Column 1 (OLS) and 2 (OP) shows results for Arts students, column 3 (OLS) and 4 (OP) for Professional Science students, column 5 (OLS) and 6 (OP) for Science Students, and column 7(OLS) and 8(OP) for Social Science students. We see that FOSL is negative and statistically significant only for arts students in both OLS and OP model. These estimates suggest that if there is a level increase in FOSL there will be 0.36% probability of lower career aspirations of arts students. However, MOSL is statistically significant and positive only for professional science students in both OLS and OP models and for Arts students in OP model. Therefore, there is 0.12% higher probability of career aspirations according to OP Model and as per OLS model there is 1.995 points increase in career aspirations with a level increase in MOSL for professional studies students. While for arts students there is 0.101% higher probability of career aspirations according to OP Model . Also, interaction term of MOSL with Male is significant and negative this shows that a level increase in MOSL will lead to have 0.12% higher probability of career aspirations of female student who comes under professional studies shown by OP results. There are 2.294 points higher career aspirations for females of professional science whose MOSL increased by a level as per OLS results. Whereas FEL, MEL, interaction terms FEL and Male and interaction term MEL and Male are statistically significant only for social science students with similar signs in previous regressions.

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### 5.7 Robustness Check with Different Occupation Measure

#### 5.7.1. Prestige Score

**Table 14: Prestige Score as Parental Occupation Measure**

Dependent Variable=	OLS	Ordered Probit†	OLS	Ordered Probit†
Career Aspirations	(1)	(2)	(3)	(4)
FOPS	-0.108* (0.0464)	-2.45e-05** (0.00379)	-0.113** (0.0462)	-2.60e-05** (0.00379)
FOPS *Male	-0.0203 (0.0587)	-7.64E-06 (0.00473)	-0.0178 (0.0581)	-7.22E-06 (0.00467)
MOPS	0.0423 (0.0230)	1.01e-05* (0.00204)	0.0261 (0.0291)	6.33E-06 (0.00249)
MOPS *Male	-0.0998 (0.0540)	-2.33e-05* (0.00460)	-0.0982 (0.0719)	-2.34E-05 (0.00607)
FEL	1.224*** (0.325)	0.000303*** (0.0267)	1.187*** (0.310)	0.000299*** (0.0256)
FEL* Male	-0.538 (0.461)	-0.00013 (0.0350)	-0.513 (0.468)	-0.000126 (0.0354)
MEL	-1.229** (0.371)	-0.000288*** (0.0321)	-1.354** (0.430)	-0.000323*** (0.0370)
MEL* Male	1.107* (0.477)	0.000266** (0.0402)	1.169** (0.428)	0.000284*** (0.0365)
Male	0.323 (4.224)	0.000285 (0.343)	-0.169 (4.207)	0.000174 (0.346)
Ancestral Family Business	-1.719 (1.093)	-0.000447* (0.0885)	-1.688 (1.081)	-0.000447* (0.0871)
Role Model	3.983*** (0.983)	0.00118*** (0.0833)	4.021*** (0.986)	0.00121*** (0.0834)
HEC Ranking Score	0.0209 (0.0126)	4.66E-06 (0.00115)	0.0200 (0.0124)	4.51E-06 (0.00113)
Scholarship/ Financial Aid	2.657* (1.140)	0.000601*** (0.0886)	2.603* (1.154)	0.000602*** (0.0898)
Standard errors in parentheses are clustered at University Level	N=751	N=751	N=748	N=748
*** p<0.01, ** p<0.05, * p<0.1				

**Note:** †Reported coefficients estimates are not regression estimates from OP regressions and are marginal effects.

**Source:** Authors own calculation

As a robustness check for parental occupation measure, we have used prestige score instead of occupational skill level by ISCO-08. Prestige score is provided by National opinion research center

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(NORC) at university of Chicago and is internationally used to measure occupation prestige.

Results of this regression are shown in Table 14. We see that, even after changing measure for prestige score our results remain consists with results of Table 4 and 5. Therefore, we can consider that PSCO as a reliable and robust measure to measure occupations.

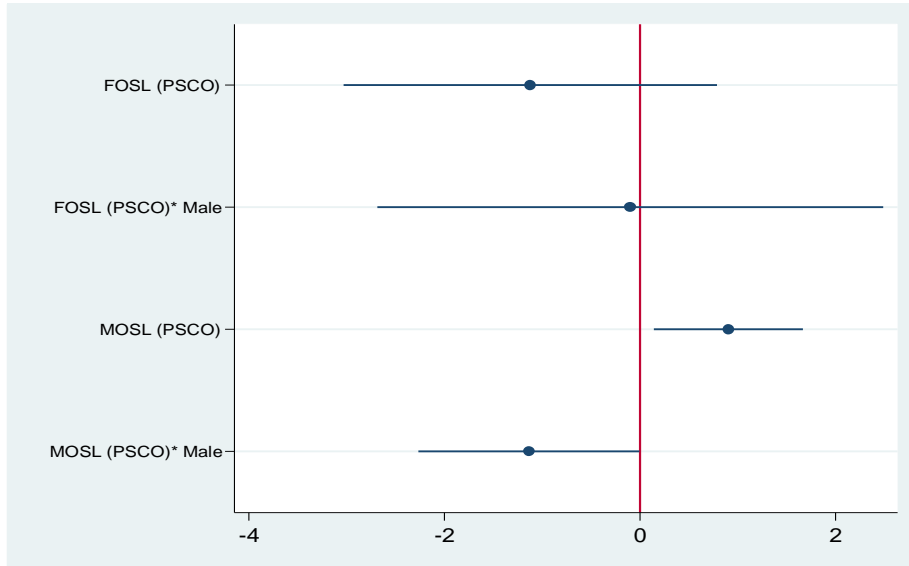


Figure 1: Coefficient Plot of Estimates by using PSCO as measure of Occupation

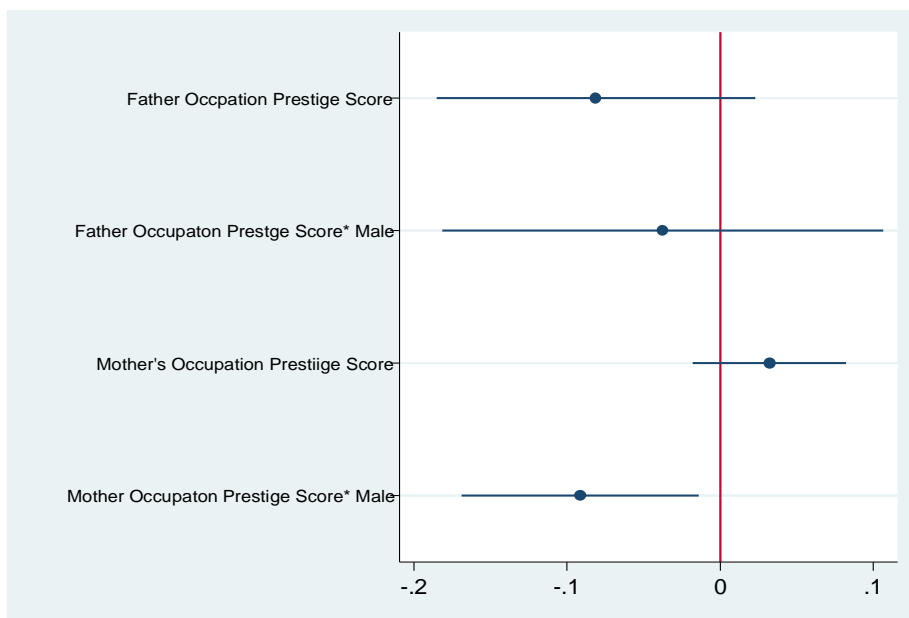


Figure 2: Coefficient Plot of Estimates by using Prestige Score as Measure of Occupation

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Figure 1 is graphical representation of FOSL, MOSL, interaction terms FOSL and MOSL with gender variable Male by using PSCO as occupation measure for these variables. Similarly, figure 2 shows FOPS, MOPS, interaction term of FOPS and MOPS with Male by using prestige score as occupational measure.



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### **6. Conclusion**

This study aims to identify relationship between gender and career aspirations, parents' occupation level and career aspirations of their offspring, and heterogeneity of career aspirations by parents and child's gender. This analysis is fundamental to identify constraints incurring in female's labor force participation. We collected data from different universities of Lahore, including both public and private sector universities, on demographic characteristics, parental occupation and career aspirations by using questionnaires. The results for this study are estimated using an Ordered Probit model.

We see that from our data it can be interpreted that there is an instance of increase in career aspirations are linked to higher level of parental occupation. However, there can be difference in male and female population that is studying in these higher education institutes in Lahore. As we identified that male students are more likely to study out of their home town, for example – so the populations of male and female students will be different. (Female) students who have a mother in a high-level career may be differentially likely to be able to attend certain universities. So to encounter these biases we have added income as control variable and also added university level fixed effects. There can be several unobservable things such as ability, household allocation of resources, preferences and expectations that can affect both parental occupation and ones aspirations. We expected these unobservable factors to be in the error term due to which our results may be affected. However, we can overcome such shortcoming through RCTS and longitudinal data.

Our findings suggest that there is a link between mother's occupation and girls' aspiration level suggesting the mother occupational is fundamental in determining career goals for her daughters.

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Moreover, FEL is also vital in influencing a child's career aspirations; this is however, irrespective of the gender.

Whereas most of the patterns in literature suggest positive influence of mother's education on child's social characteristics our results reports inconsistency by showing negative influence of mother education level on one's career aspirations. In order to justify the findings we interacted mother's education with working status of mother and child's gender to see if these results still prevails, but our results were insignificant. However, our data may help us with some explanations. This could be because only 26.86% of mothers in our sample are working while rest of them is housewives. We also see that around 47.5% of mothers have obtained education at least at undergraduate level and for these mothers only 48% of mothers are currently working.

Perceived parental dissatisfaction of parents from their roles negatively affects one's career aspirations (Won et. al 1977; Mullins, 1980). This reflects even obtaining higher level of education if mother is not utilizing it by working outside home do not influence her child's career. Some other results that can be important are positive affect of scholarship or financial aid on career aspirations. This reflects if a student is obtaining any kind of financial assistance for education will encourage him/ her for his career. Similarly, a role model can also be a source of encouragement for future prospects.

Conclusively, we can suggest that assurance of women in labor market in current time period will encourage presence of females of later generations. Education and employment enable women to have a say in allocation of their household resources (Fatima, 2014) and also in her reproductive decisions (Hou and Ma, 2011). Therefore, women's presence in labor market will not only empower them financially but also give them bargaining power in making household decisions and they can serve as a role model to their child. As there is positive relationship between financial

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assistance and career aspiration, thus, there is some merit in recommending that policy makers by providing monetary support to youth for education can encourage them for their career. We can also suggest that government should initiate subsidize programs for women such as “Job Asaan” which not only help in career development but also encourage and motivate them for better professions. However, other training programs such as TEVTA will not help in development of workforce but will also provide skills necessary for a job. As we see positive affect of role models on career aspirations, therefore, government can also enhance labor force participation by initiating different encouraging programs such as describing career path of influential personalities to youth through seminars in universities or colleges, through television or social media

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