‘Preparing’ Women of Substance? Education, Training and Labour Market Outcomes for Women in Pakistan

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Introduction

- Individuals and firms undertake education and training as an investment to increase their earnings and productivity. These are the basic tenets of Human Capital Theory (Becker, 1964).
- Returns to **general education** measuring the benefit (measured as increased earnings) of each additional year (or level) of schooling, have been the focus of immense research scrutiny.

Education improves labour market outcomes…

- Several recent studies in Pakistan have shown that the labour market benefits of education and skills may accrue by facilitating entry to more lucrative occupations and, within occupations, by raising earnings.
- These associations, for example, have been investigated by Aslam, Kingdon and Soderbom (2008) and more recently by Aslam, De, Kingdon and Kumar (2012) who analyse the relationship between schooling and cognitive skills on the one hand, and occupational choice and earnings on the other.
- The authors find education and skills to significantly enhance individuals' chances of entering the more 'rewarding' occupations and also raising their earnings within them. This is especially true for women suggesting that education can play a critical role in enhancing labour market outcomes for women in the country.
- But women's LFP remains especially low in the region…

What does ‘skills’ generation do?

- Research also indicates that human capital is embedded in an individual’s *ability to perform specific tasks* (Johnson and Keane, 2007; Kambourov and Manovskii, 2008).
- Labour market outcomes are likely to be highly dependent on the skills individuals’ have learnt variously through general education and through any technical and vocational schooling, apprenticeship training or on-the-job training.
- There is no agreed consensus on *how best these skills are conferred* and debates abound about alternative routes through which labour market entrants’ skills can be best developed.
- From the perspective of a country as a whole increasing the skill base of the labour force is crucial in ensuring efficiency and international economic competitiveness particularly as the rate of increase of human capital formation is arguably more important than that of physical capital. In many developing countries a large proportion of the workforce remains unskilled and many have skills that are not valued by employers. Therefore skill development has attracted policy maker’s attention internationally over the last few decades.

What do we know from international evidence? RCT literature

- Developing country research into the impact of training has looked at the role of vocational training and has been based in Latin America. Evaluations there have shown that *vocational training linked with apprenticeships* can improve earning and employment outcomes of individuals. Providing skills training also found to improve women's entry into 'male dominated' jobs.
- Research in Asia is limited and findings not very encouraging; World Bank in (2008) found that the labour market outcomes of those with vocational training in India were not good and that high proportions of those with VET remain unemployed long after the completion of their courses. Similarly discouraging results were found by the ILO (2003) efficiency/ impact study of Industry Training Institutes and Industrial Training Centres in three Indian states. This evidence is often also combined with the **perception** that vocational educational training is a 'second tier education' associated with low paid/status jobs and for those who cannot gain admission to perceived higher quality academic institutions and education.

Other evidence

- Agarwal (2012) on vocational education in India – VET graduates compared with general secondary education graduates; former have lower unemployment rates;
- Newhouse and Suryadarma (2009) in Indonesia find that private vocational school graduates fare at least as well as private general graduates, despite coming from more disadvantaged SES background;
- UK evidence: hints at benefits of skills training; Galindo-Rueda, Vignoles and Feinstein (2004); positive impact of 'training' on wage growth for males only.
- Macro level – overall hints at countries with stronger general education background to grow faster.
- Evidence in Pakistan – limited; only hints at very poor quality of TVET in the country.
- OVERALL: very mixed bag of evidence.

Aims of this study…

- Aims to investigate the **economic outcomes of training in Pakistan**. In particular, we wish to address the question: are women who enter the labour market prepared with the skills that can not only benefit them through improving their occupational choices but also eventually their earnings.
- **Major aims:**

- Firstly, while there are many studies that estimate economic rates of return to *education* in order to examine how much education is rewarded in the labour market (eg. Aslam, 2009; Aslam, Bari and Kingdon, 2012), we are not aware of any such studies that look comparatively at the economic return to *training*.
- Additionally, this is the first study we are aware of that investigates whether acquiring training promotes an individuals' entry into certain occupations.
- We are also able to distinguish whether training has differential returns among the self-employed and wage employed.

Methodology

Q1: Does skills training promote men/women's entry into certain occupations?

- MNL used;
- All sampled labour market classified into either: out of the labour force (OLF), unemployed, unpaid family workers, self-employed or wage employees.

Q2: does having acquired skills improve earnings?

- Earnings functions estimated on wage and self-employed individuals

$$\ln Y_i = \beta_0 + \beta_1 S_i + \beta_2 \mathbf{X}_i + \beta_3 \mathbf{Training}_i + \varepsilon_i$$

Data and descriptive statistics

- Data from two main sources used: to document the status of men and women in the labour force, Labour Force Status (LFS) data from two points in time – 2000 and 2008.
- These data allow us to provide a nationally representative overview of how men and women aged 15-60 are distributed across activity status (labour force participants versus non-participants) and within the labour force across different occupational categories (unemployed, unpaid workers, self-employed or wage workers).
- The LFS data also allow us to investigate the 'incidence of technical and vocational training' at the national level

RECOUP

- RECOUP (Research Consortium on Educational Outcomes and Poverty) household survey conducted in Pakistan between November 2006 to March 2007.
- The survey was administered to 1194 urban and rural households. Households were selected randomly through stratified sampling from 9 districts in two provinces – Punjab and Khyber Pakhtunkhwah (KP).
- The RECOUP survey collected basic demographic, anthropometric, education and labour market status information on *all* resident household members in the sampled households (more than 8000 individuals), detailed individual-level questionnaires were administered only to those aged between 15 and 60 years.
- Some 4907 individual-level questionnaires were thus filled. Tests were also administered to assess these individuals' skills of literacy, numeracy, health knowledge and English language. In Punjab the following districts were sampled Sargodha, Kasur, Attock, Chakwal, Rahim Yar Khan and Khanewal,and in KP (then NWFP): Charsadda, Swat and Haripur.

Data on ‘skills’ training

- One section of the questionnaire was dedicated entirely to asking detailed questions about the incidence of technical/vocational schooling, apprenticeship training and any on-the-job training received.
- The instruments allowed for a very nuanced version of ‘training’ to include apprenticeship training and although the drawback of the RECOUP data is that they are not nationally representative, the very rich information available allows us to define ‘training’ to include the three different types defined above.
- Additionally, the RECOUP data set also includes information on earnings of self-employed individuals (not available is most household data sets including the LFS) and this allows us to distinguish whether returns to training are different among wage and self-employed men and women in Pakistan’s labour markets.

Distribution of the Labour Force (ages 15-60) in Pakistan, by gender (percentages)

	LFS 2000			LFS 2008			RECOUP 2007+		
	All	**Male**	**Female**	**All**	**Male**	**Female**	**All**	**Male**	**Female**
Pakistan									
Out of the Labour Force	54.0	20.1	88.7	49.3	18.4	81.2	39.0	8.0	69.0
In the Labour Force	46.0	79.9	11.3	40.7	81.6	18.7	61.0	92.0	31.0
Among those in the LF:									
Unemployed	1.6	1.7	1.5	1.2	1.1	1.9	13.0	7.0	31.0
Unpaid Family Worker	18.1	14.4	44.9	26.7	18.7	62.4	18.0	12.0	34.0
Agriculture*							8.0	11.0	0.3
Self Employed	39.8	43.3	14.9	34.3	39.1	12.9	20.0	22.0	15.0
Wage Worker	40.4	40.7	38.7	37.9	41.3	22.8	41.0	48.0	20.0

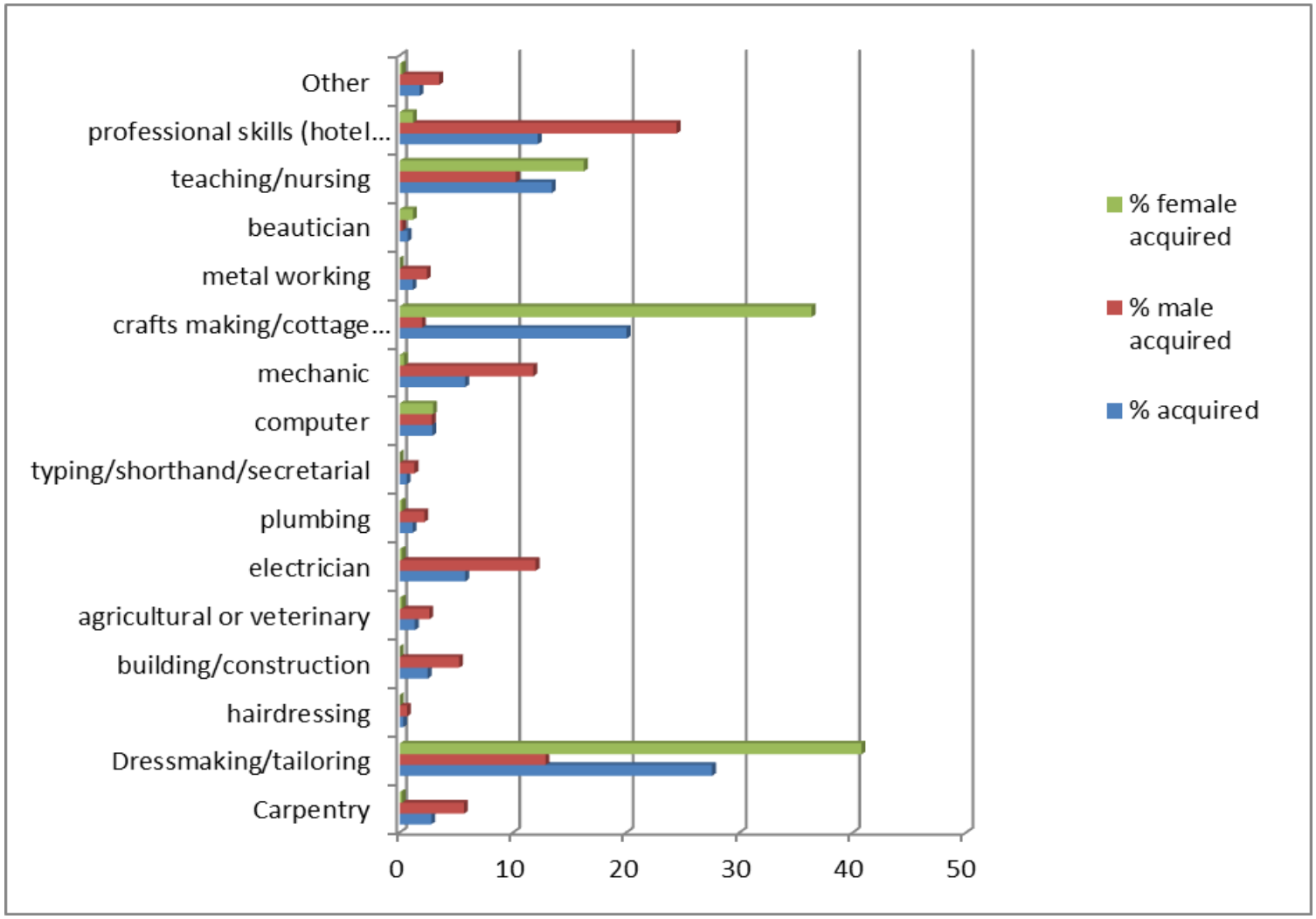
Incidence of 'training' by age, gender and year in Pakistan, Labour Force Surveys (2000 and 2008)

	Young (15-30 years)			Older (31-60 years)			All (15-60 years)		
Ever Received:	**Male**	**Female**		**Male**	**Female**		**Male**	**Female**	
Any training (2000)	3.0	1.1	***	3.9	0.1	***	3.4	1.0	***
Any training (2008)	7.5	7.3		8.9	5.9	***	8.2	6.7	***

Incidence of training (%), by gender and age category (RECOUP)

Ever Received:	Young (15-30 years)			Older (31-60 years)			All (15-60 years)		
	Male	Female		Male	Female		Male	Female	
Vocational Training	9.4	10.4	**	10.5	7.1	***	9.9	8.8	
Apprenticeship Training	16.0	19.4	***	15.7	16.7		15.8	18.2	**
On-the-job training	3.8	1.2	*	3.8	2.1	**	3.7	1.5	***
Any training (vocational and/or apprenticeship and/or on-the-job)	23.1	26.2	*	23.6	24.7		23.3	24.3	

Types of skills acquired during training (apprenticeship/vocational), by gender (RECOUP 2007)



Empirical findings: Training and occupational Attainment
Multinomial Logits, marginal effects, men aged 15-60

	probability of being:									
	Out of the labour Force		**Unemployed**		**Unpaid**			**Self employed**			**Wage employed**	
	ME	Z	ME	Z	ME	Z		ME	Z		ME	Z
Ever trained	-0.013	-0.98	-0.016	-1.49	-0.033	-2.95	***	0.069	2.48	**	-0.006	-0.21
N	1866											
Pseudo-R2	0.100											

Multinomial Logits, marginal effects, women aged 15-60

	probability of being:											
	Out of the labour Force			**Unemployed**			**Unpaid**			**Self employed**			**Wage employed**		
	ME	Z		ME	Z		ME	Z		ME	Z		ME	Z	
Ever trained	-0.151	-6.01	***	-0.006	-0.38		0.030	2.69	***	0.089	5.48	***	0.037	3.19	***
N	2043														
Pseudo-R2	0.142														

Education, training and earnings

- This part of the study investigates both the wage increment from each extra year of schooling and whether an individual has acquired any training or not across wage and self-employment.
- This is done by estimating and comparing the marginal rate of return to general education supplemented by 'ever trained' using the familiar Mincerian earnings function approach where the coefficient on 'years of schooling' measures the rate of return to each additional year of schooling acquired and the coefficient on the binary training variable indicates the marginal benefit in terms of additional earnings for someone who has acquired any training as compared to someone who hasn't.

Earning functions for all (wage & self) employed, aged 15-60, by gender

Ln(earnings):	All			Male			Female		
	coefficient	t-value		coefficient	t-value		coefficient	t-value	
Education	0.044	6.15	***	0.025	3.20	***	0.094	6.17	***
Age	0.106	6.53	***	0.094	5.88	***	0.132	2.51	**
Age2	-0.001	-5.74	***	-0.001	-5.32	***	-0.002	-2.02	**
Punjab	-0.068	-0.95		0.018	0.25		-0.110	-0.60	
Urban	0.003	0.05		0.091	1.66	*	-0.158	-1.01	
Ever trained	0.014	0.24		0.190	3.57	***	-0.032	-0.20	
Constant	8.598	30.25	***	8.988	31.79	***	7.118	8.37	***
N	1511			1290			221		
R^2	0.100			0.100			0.228		

Differences among wage and self?

Earning functions for self-employed, aged 15-60, by gender

Ln(earnings):	All			Male			Female		
	coefficient	t-value		coefficient	t-value		coefficient	t-value	
Education	0.042	2.43	**	-0.003	-0.14		0.093	3.44	***
Age	0.133	4.13	***	0.085	2.46	**	0.154	1.85	*
Age2	-0.002	-3.89	***	-0.001	-2.58	***	-0.002	-1.62	
Punjab	-0.064	-0.41		0.075	0.45		-0.276	-0.83	
Urban	0.125	1.06		0.240	1.93	*	0.370	1.46	
Ever trained	0.042	0.41		0.332	3.24	***	-0.083	-0.34	
Constant	7.901	12.90	***	9.140	13.54	***	6.762	5.14	***
N	616			516			100		
R^2	0.100			0.100			0.260		

Earning functions for wage-employed, aged 15-60, by gender

Ln(earnings):	All			Male			Female		
	coefficient	t-value		coefficient	t-value		coefficient	t-value	
Education	0.040	7.76	***	0.039	8.34	***	0.060	2.81	***
Age	0.088	6.30	***	0.086	6.85	***	0.095	1.40	
Age2	-0.001	-5.29	***	-0.001	-5.82	***	-0.001	-1.08	
Punjab	-0.083	-1.64		-0.031	-0.64		0.071	0.34	
Urban	-0.080	-1.56		0.012	0.27		-0.406	-2.09	**
Ever trained	0.033	0.66		0.061	1.34		0.352	1.66	*
Constant	9.007	39.23	***	9.073	42.47	***	7.945	7.24	***
N	895			774			121		
R^2	0.150			0.183			0.200		

What do these results mean?

- In order to delve further into this issue, earnings equations were re-estimated with 'training' differentiated into its different component parts – whether a person **ever acquired any technical/vocational training, trained as an apprentice or was exposed to any on-the-job training**.
- *the large positive returns to 'training' among men (both in the wage & self-employed and self-employed category) are due to high positive returns to 'apprenticeship training*'.
- Among women, on the other hand, *the large positive returns (35 per cent) among wage-workers are captured entirely in training acquired through technical/vocational schooling.*
- Therefore, the **channels** through which the benefits from training accrue in the form of raised earnings differ by gender; for men the benefits are entirely through apprenticeship programs and for men it is entirely through technical/vocational schooling.

Discussion and conclusion

- study has corroborated what we know very well about the Pakistani labour market: a large majority of women are out of the labour force and, hence, economically inactive. Among those who *are* in the labour market, very few are represented in the more lucrative and rewarding occupations (wage work followed by self-employment). This is contrary to how men are distributed in the labour market.
- Asked: does 'training' confer any labour market benefits to individuals who undertake it and are the benefits differentiated by gender?

- Previous evidence has shown that *education* can be equality inducing;
- We find that both men and women benefit significantly from having acquired any **training**.
- Women in particular are not only significantly less likely to be out of the labour force but are also significantly more likely to be self-employed or in wage work. Thus, acquiring training promotes men's and women's entry into more lucrative occupations.

- the return to an **additional year of schooling** for women is significantly more than for men suggesting that the labour market rewards to additional schooling for women are substantial.
- while training aided women's entry into more lucrative occupations, earnings-benefits are also differentiated by gender – training increases men's earnings substantially when they are self-employed and women's earnings when they are wage-employed.
- A clue to this difference lies in the fact that self-employed men's returns are deriving entirely from having acquired apprenticeship training while the beneficial effects to women in the form of higher wages occur through their acquisition of technical/vocational schooling.

Policy?

- need to effectively **develop the institutions** that undertake this important mechanism of skills training.
- providing **quality training at different exit points from general education** can improve labour market outcomes and this is especially true for women.
- However, this should not detract us from the fact that **more quality empirical research** is needed to understand the optimal mix between general schooling and 'occupation specific' training in order to better evaluate the relative advantages of the different types of skills acquisition.
- As Fasih (2008) points out, while improving the quality and quantity of skills should be part of a good educational policy package, this needs to be combined with **effective labour market policies** that address the issue of job creation; unless there is a supply of an adequate number of quality jobs that match the skills created with job needs, educational packages, no matter how comprehensive and dynamic, will not succeed.