Profile of Educational Outcomes by Gender: An Age Cohort Analysis

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ABSTRACT

How do we achieve target of universal primary education in Pakistan and how do we keep students that have enrolled to continue with schooling to higher levels are the most important policy questions which can only be effectively answered if one is well-informed about the trends in educational outcomes and of proportion of students indulging in continuation or discontinuation of schooling at critical transitions say from primary to secondary benchmark and higher. Hence an accurate description of patterns in educational achievements is crucial for both understanding the dynamic of low human capital stock build up and also for finding ways of getting out of such low-educational trap. In this context gender discrepancy in human capital building process plays an important role and in this paper an attempt is made to examine in-depth how gap in attained schooling measures for males and females at different levels of education have evolved in Pakistan through analysing the varying behaviour over age cohorts by gender. Further not only patterns of gender gap in achieved education are formulated for overall economy and across rural-urban divide both at national and provincial level but a rough estimate for attrition or continuation in studies as one move from lower to higher educational level for males and females within age cohort 15–19 are also evaluated so as to capture in totality the gender dynamics in education sector. Our findings show that though there is conspicuous deviations in percentage shares of population with completed grades by gender in favour of the males and against females at all levels of education from basic to higher studies within each province (only exception to this trend is at tertiary level of education within urban Punjab where females are in slightly higher proportion), however the analysis by age cohort show that as one move from oldest to youngest age group with individuals belonging to attained education from primary to tertiary level of education, there is a present a tilt towards university level of education for females within their own attainment distribution indicating that there is emerging a tendency of break in patriarchal force against female education. Further such tendencies are more apparent in urban parts of Pakistan and that too from mainly Province Punjab.

JEL Classification: I21, J16
Keywords: Schooling Attainment, Gender, Age Cohort Analysis, Pakistan

1. INTRODUCTION

The real wealth of any nation is its people. How well are its citizens placed in terms of their health and educational capabilities is what fundamentally move any states towards its favourable developmental trajectory of high growth with social equity. In this context the most important developmental target for any developing country is how to equip its present and future workforce with most human capital. However in case of Pakistan not only do we find low levels of literacy with overall literacy rate of only 57 percent but stark discrepancies in educational outcomes by gender as is evident from figures of 57 percent, 82 percent and 76 percent for adult literacy rate of females as percentage of males (2007-2011), gross enrolment ratio at primary and secondary level of female population as percentage of males (2008-2011) as reported by UNICEF respectively. Such patterns of education by gender are disturbing not only from equity perspective but also for its intergenerational consequences since policy focus on gender equalisation in educational outcomes today can translate into more conducive conditions for growth take-off and its sustainability in a decade or so of such investments.[1]

However before we start to understand how gender inequality manifests itself in varied forms and magnitudes in a society we need to recognise that gender does not reflect merely the biological differences between men and women but is fundamentally a social mechanism through which individuals both

Author's Note: To see the Appendix Tables mentioned in the text hereafter please contact the author at <madeeha.qureshi@pide.org.pk>

[1]This can be safely inferred as today's girl-child will be a mother in future and given that there has emerged a strong empirical consensus among developmental economists globally that education of a mother has much pronounced impact as compared to a father on the child's welfare by changing expenditure tendencies within a household in a way that enhances the educational and health status of children implies that a policy action of increasing the educational opportunities for a girl child (especially those in their youth) will materialise into much more productive workforce within few years of such initiative [Qureshi (2014); Schultz (2001)]. Moreover, women empowerment that comes through females' education can be serve as effective impetus towards more growth through curtailing the overall fertility rate and hence population growth of the economy as a whole adds another element of significance to policy of gender equalisation in educational outcomes [Schultz (1973, 2001); Cochrane (1979); Moursund and Kravdal (2003)].

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males and females see themselves in light of what society feels appropriate for them and recognise the rules of their interaction which are socially accepted. Such rules are even more binding in patriarchal societies such as Pakistan where there is inherent built in concept of shame. In such communities anyone defying such socially constructed rules is subject to social isolation and considered more of a taboo and this provides an informal though a strong enforcement tool for implementation of gender roles in traditional societies. Hence male and female differences in context of gender is much more than the differences in their physical attributes but rather defines their relational status in terms of role and power sharing among them by emphasising their societal identities into women and men. For example child rearing and housekeeping may be assigned primarily as a female responsibility in such communities while bread earner obligation may rest largely with males of the household and hence role division in line of intergenerational reproduction of children in terms of their upbringing and production of material means to raise them, may very well have prior gender dimensions. And within such social constructs one as a male and as a female learns that within a certain task who society see as dominant and who as subordinate.

Hence in developing understanding of as to why female under perform in human capital indicators in patriarchal societies there is need to place the female exclusion by exploring deeper into extensive channels within the society so as to identify the cultural rigidities that restrict a girl child's education. Such an analysis requires a broader perspective on schooling outcomes beside the current enrolment likelihood by gender as has been largely done in study of education outcomes by gender in Pakistan.[2] In above context a useful approach that will be followed in this paper in understanding the gender differential within the education sector is to study not just the enrolment patterns for males and females for younger age cohort of school-going ages but to take a wider view to problem by mapping the trends of attained education by gender over different age cohorts for overall economy and across rural-urban divide both at national and provincial level. This will help us gauge into deeper mechanism of gender gaps in educational outcomes by revealing the historical trends of the issue in hand and not just the dynamics for current population of school-going age. Hence such patterns over wide-ranging view over individuals of different age cohorts will provide us with much more comprehensive depiction of patriarchal severities on one hand and on the other will also form a base for understanding how inflexibilities by gender exist in both the transition from lower to higher

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[2]A few such studies that estimate demand functions for schooling and try to capture the impact of child's gender on likelihood of his or her school enrolment controlling for determinants other than gender that may impact demand of schooling include Chishti and Lodhi (1988), Burney and Irfan (1991), Sathar and Lloyd (1994), Alderman, *et al.* (1996), Arif, Saqib, and Zahid (1999), Sathar, Lloyd, and Haque (2000), Hamid and Siddiqui (2001), Saqib (2004), Qureshi (2012).

levels of education say primary to secondary level and above both in attained levels from age cohort 10-14 to 60-64 and in current enrolment patterns in younger cohorts. Further not only patterns of gender gap in achieved education are formulated in this study for overall economy and across rural-urban divide both at national and provincial level but a rough trend of attrition or continuation in studies as one move from lower to higher educational level for males and females are also evaluated so as to capture in totality the gender dynamics in education sector. So far only on such study Mahmood (1997) employing above methodology can be found in context of Pakistan in literature, however this work not only updates the estimates to recent context but also extends the analysis of trends to disaggregation by provinces.

The lay out of the paper is as follows. The following section provides us with description of data and empirical methodology employed. Sections 3 and 4 describe our findings on patterns related to educational attainment by gender without and with division across age cohorts respectively. A discussion on current enrolment patterns by gender across age cohort and transition in school attendance from lower to higher levels of education within age group 15-19 are discussed in Sections 5 and 6 respectively. Final section concludes the paper.

2. DATA AND EMPIRICAL METHODOLOGY

Pakistan Integrated Household Survey 2010 (PIHS 2010) which has been used in this present work provides us with opportunity not just to analyse the current enrolment behaviour of the school-going age groups but also through giving information of the highest grade completed for individuals who have ever attended school or are currently attending school allows us to make a profile of whole educational attainment for given sample in hand. Moreover through using the information regarding year of birth in which one is born and hence one's age, we can map the patterns in level of attained education over different birth cohorts by gender and hence can analyse the behaviour of gender gaps in final completed grades across groups of individuals that are part of different generations. This methodology is fruitful for many reasons. Firstly it gives us opportunity to study the human capital building process through formal schooling by gender with much wider coverage of the problem through investigation of individuals from ages of 10 to 64 years than being confined to one particular age group with limited history by using information about educational performance beyond the current enrolment status to much more comprehensive and a richer perspective of achieved educational grades over birth cohorts. Secondly such age cohort analysis of educational attainment by gender makes it feasible for us to compare how patriarchal tendencies in educational outcomes are evolving over population in different age groups so as to examine whether such social forces are losing their grip in terms of the

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rigidities within the society among population of younger age groups in Pakistan or not.[3]

　　Further through restricting the analysis of highest completed grade for both those individuals who had attended school or are currently enrolled in school for age cohort of 15-19 years we can calculate percentages of not just those who ever attended or are currently attending school but also percentages for those who have completed at least grade 5 or above from the total population that ever attended school, of those who have completed at least matric level of education (Secondary level Grade 10) or above from pool of those who had completed at least primary education (Grade 5 and above) and proportion of completed intermediate (Higher Secondary level Grade 12) among those who have achieved matric level degree. The above analysis is an extremely useful resources since it can be utilised to measure a rough estimate of the transition proportions from lower to higher level of education by gender to generate what percentages of population of males and females in birth cohort 15-19 who completed primary school and moved to complete matric level and above and also of those who achieved matriculation how much proceeded to intermediate levels. This quantification can help us identify what portion of male and female children gets dropped out of the educational system at crucial transitions matric to intermediate level an insight that can be of crucial significance in policy debate [Holmes (2003)] at one level and at other also generate an assessment of the presence or absence of population that have attained education representing either completed primary (Grade 5) or having completed education within middle school categorisation (Grades 6-7) or with achieved middle level (Grades 8-9) within age cohort 15-19 through calculation of percentages by gender of those with completed matric and above among those individuals with at least completed grade 5 education or above. If we find that these percentage are lower than hundred percent, then this means that we have a portion of individuals that achieved education between grade 5-9 but did not move on to achieve higher level of education and such presence within this age cohort of 15-19 years could be representation of proportion of those individuals who either got dropped after primary or within or after middle school educational level or of those who are repeating grades or started very late in acquiring education because of which they are coming out to be at much lower level of attained education of primary and middle school in an age cohort where ideally a student should have completed his or her matriculation if they had started school in grade 1 at official designated age of 5 years and successfully passed all grades in right ages. Further the percentages with achieved education of at least primary Grade

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[3]Individuals of younger age cohort may be more gender neutral than those of older age groups is a plausible testable hypothesis given them being raised relatively with much more awareness and globally integrated culture than their elders may be more prone to changes in value system.

5 and above among population of those who ever attended school if comes out to be less than 100 for age cohort 15 to 19 years can be taken as evidence of presence of pool of individuals in ever attended school category with attained educations of less than primary level and this can again be help in assessing the educational gaps within the population.

Finally the dataset being used for the study gives out information with disaggregation not just by age and gender but also by place of residence that generates an avenue to trace not only the historical trends in gender gaps in attained schooling through cohort wise analysis but also makes it feasible for us to assess differences across rural and urban settings both at national and provincial level which adds another deeper layer to analysis. Accounting for varied behaviour across such regional demarcations is important for socio-economic dynamics could be considerably different across such divisions which may cause marked divergence in the gross enrolment ratios pattern [Arif, *et al.* (1999); Hussain (2003)].

Though focusing on trends in completed level of education through comparison across birth cohorts by gender is extremely useful technique both in statistical and conceptual dimensions. Statistically in the sense that use of this framework avoids the problem of accounting for the percentage of students that may repeat or skip grades that being more of a concern with current enrolment indicator [Mahmood (2004)]. And conceptually since representation of the problem of differential behaviour by gender within this methodology requires extraction of information from data encompassing the historical evolution across individuals at different life cycle with varied histories as compared to concentration on just younger cohort of individuals that could be possibly enrolled or not enrolled which if focused in isolation through constraining the behaviour within one particular social setting and time frame can be considered as being rather of restricted scope in understanding a social phenomenon with patriarchal source. However such an analysis has its own shortcomings as attained educational information for individuals will not reveal the eventual completed grade for those individual who are currently enrolled. Beside this if objective of research is also to make an assessment of how the socio-economic, demographic and parental background characteristics of the individuals relates to schooling behaviour of individuals so as to identify the policy tools from the findings then a study of current enrolment behaviour in the younger cohorts of school going ages can be a more fruitful exercise given that such a group may be much better depiction of the problem in hand that is "does there exist a shortfall in educational demand of females versus males in a household in today's generation which should ideally be in school and if so then what factors are causing such discrepancies?". Hence a focus on completed education is important tool since it provides us leverage to understand the historical trends of the matter but it by no means undermine the significance of research based on the current enrolment proxy of educational outcomes; use of which has its own merits.

3. EDUCATIONAL ATTAINMENT PATTERN

An overview of the educational attainment profile for Pakistan can be obtained by evaluating the percentage distribution of population (aged 10 years and above) who completed various levels of education from the total of those who ever attended school by gender and by rural-urban divide as presented in Table 1 below. It is evident from Table 1 that only 60.31 percent of population aged 10 years and above has been exposed to formal schooling with about almost 40 percent of the population in excluded category of being among those who have "never attended" school. Of those who have attended school, majority have completed levels within secondary education (54.39 percent) followed by those with completed grades within primary level of education by proportion of 36.28 percent and tertiary level of education by amount of 8.57 percent signifying massive gaps in education sector in terms of concentration of bulk of population within range of low levels for attained human capital. Also among those with completed grades within secondary level of education from total population of those who ever attended school, the share of individuals with completed grades in middle school amounts to figure of 22.05 percent and those within matric level come out to be at 23.34 percent while proportion reaching

Table 1

% of Population (Aged 10 Years and above) who Completed Various Levels of Education within Male and Female Attainment Distribution by Rural-Urban Divide (Pakistan)

Gender	% of Pop. that Ever Attended School (10+)	Primary Level			Secondary Level				Tertiary Level				
		Below Grade 5	Grade 5	Overall Prim.	Middle	Matric	Inter*	Overall Sec.	Bachelor	Masters	MPhil. /PHD	Prof. **	Overall Tertiary
Pakistan													
Both	60.31	18.39	17.89	36.28	22.05	23.34	9	54.39	5.51	2.36	0.05	0.65	8.57
Male	72.72	18.00	16.06	34.06	22.78	24.55	9.14	56.47	5.20	2.50	0.06	0.88	8.64
Female	47.51	18.99	20.78	39.77	20.9	21.42	8.74	51.06	6.00	2.14	0.05	0.31	8.5
% Gap		−5.21	−22.7	−14.35	8.99	14.6	4.58	10.59	−13.33	16.82	20	183.8	1.64
Urban													
Both	73.33	13.47	13.99	27.46	21.31	25.78	12.14	59.23	8.06	3.49	0.1	1.14	12.79
Male	81.75	13.87	12.74	26.61	21.33	26.23	12.22	59.78	7.55	3.71	0.11	1.61	12.98
Female	64.53	12.94	15.65	28.59	21.28	25.18	12.04	58.5	8.72	3.19	0.09	0.52	12.52
% Gap		7.18	−18.59	−6.9	0.235	4.17	1.49	2.18	−13.417	16.3	22.2	209.6	3.67
Rural													
Both	51.10	23.38	21.85	45.23	22.81	20.86	5.81	49.48	2.93	1.22	0.01	0.17	4.33
Male	66.27	21.65	18.99	40.64	24.07	23.07	6.43	53.57	3.13	1.44	0.01	0.24	4.82
Female	35.58	26.68	27.30	53.98	20.4	16.65	4.61	41.66	2.54	0.81	0	0.04	3.39
% Gap		−18.85	−30.44	−24.71	17.99	38.55	39.48	28.58	23.22	77.77	100*	500	42.18

Note: Above percentage distribution across educational progression from primary to tertiary level do not give out % of those with highest completed grades categorised as other in the data;*Here individuals with diplomas related to training of technical skills has been grouped with intermediate level given that both these qualification may allow person to look for jobs with more or less similar level of socio-economic status, ** Prof. category is sum of all those individuals who have degrees related to profession of engineering, medicine, law, or agricultural sector; *Data Source:* Pakistan Integrated Household Survey (2010-11).

intermediate is estimated at only 9 percent which is indicative of substantial attrition from matric to intermediate level of education with much lower attainment successively at higher educational levels as is evident from low percentages of 5.51 percent and 2.36 percent for graduates at bachelors and masters levels respectively and mere 0.65 percent and 0.05 percent of total educated population being equipped with professional skills pertaining to fields such as engineering, medicine, law and university education related to agriculture field and MPhil/PhD degrees respectively.

The findings from Table 1 above also reveal an obvious pattern of differential behaviour in educational attainment by gender among those that have been trained in formal system of schooling whereby female backwardness in terms of completed education is evident not only in having much lower proportion among those who got exposed in some form to schooling experience (47.51 percent for females as compared to 72.72 percent of males among the population of 10 years and above that have ever attended school) but also because of much denser concentration of females towards lower educational level among the population of educated females compared to the distribution of educated males across educational divisions. Of the total educated females, almost 40 percent of females have attained education that fall within the primary level (with almost half of this proportion with completed grades below primary grade 5), about 51.06 percent have completed grades that fall within the secondary educational categorisation of being either with completed middle, matric or intermediate degrees and only 8.5 percent are among those that seek higher education beyond the secondary level. However important point to take away from pattern in attainment spread by gender is that compared to educated females, the percentage distribution of educated males by educational categorisation reveal that among the educated males there is found to be less presence of those that have completed grades that fall within primary educational range compared to their female counterpart (34.06 percent for males and 39.77 percent for females) and higher proportion that have attained grades both within secondary categorisation (56.47 percent for males and 51.06 percent for females) and within tertiary educational grouping (8.64 percent for males and 8.5 percent for females) indicating that among the much smaller pool of educated females compared to educated males a larger proportion of females have obtained primary grade 5 or less level of education while higher percentages of males than females have completed higher studies both at secondary and tertiary level of education among their respective population by gender of those who have exposure to schooling. In terms of percentage gender gap across educational classes, above observed patterns are translated into prevalence of negative percentage of magnitude 14.35 percent at primary level of education and positive figures of almost 11 percent and almost 2 percent for secondary and tertiary levels of education respectively again emphasising the disadvantageous position of females in attained education at national level for

Pakistan (Refer to Table 1; Appendix Table B.5).* Moreover this pattern of relative difference in educational attainment of males from females in comparison across the respective educated populations by gender tilting heavily towards females at primary level of education and favouring males for secondary and tertiary levels holds its ground in both rural and urban segments of Pakistan with relative gaps being of noticeable magnitudes in rural societies (corresponding rural and urban estimates of percentage gender gap are –24.7 percent and –6.9 percent for primary level respectively, 28.6 percent and 2.2 percent for secondary level respectively and 42.2 percent and 3.7 percent for tertiary levels respectively (Refer to Table 1; Appendix Table B.5)*).

Fig. 1. Educational Levels Attained by Gender and by Urban-Rural Divide

Urban   (Pakistan)
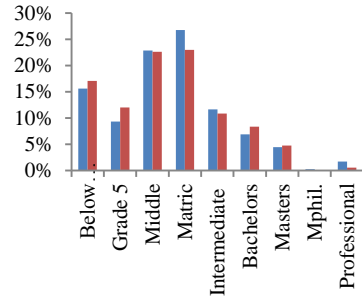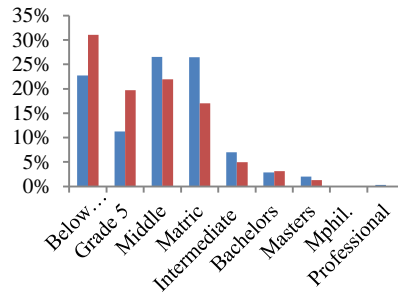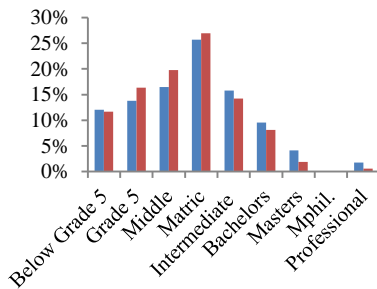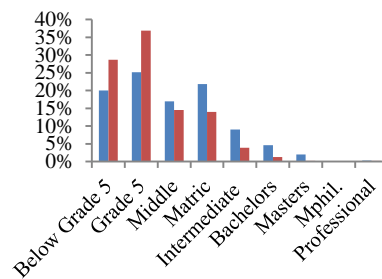

Rural   (Pakistan)
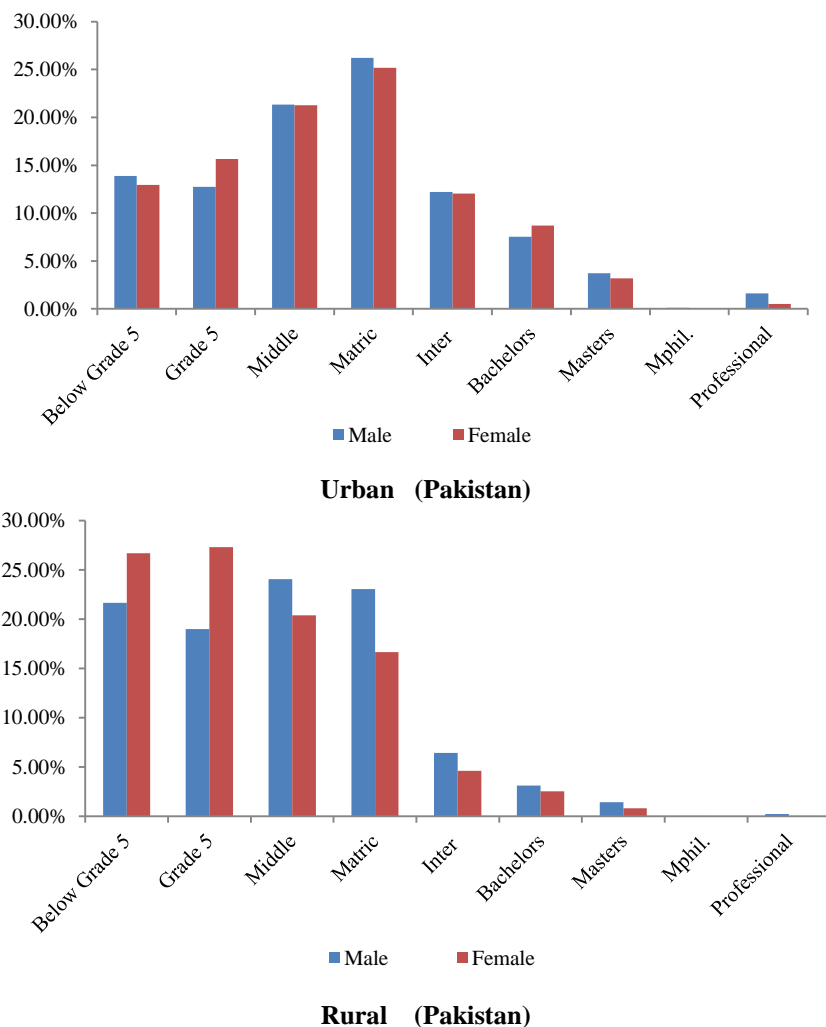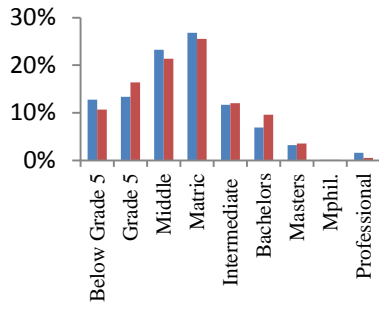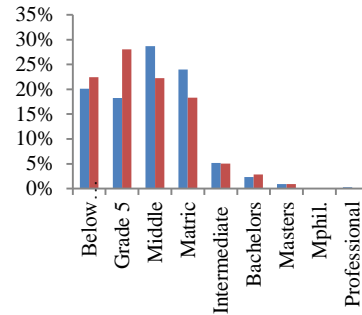
Urban (Punjab)

Rural (Punjab)

Urban (KPK)

Rural (KPK)

Urban (Sindh)

Rural (Sindh)
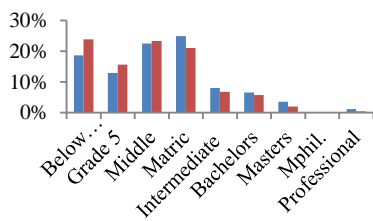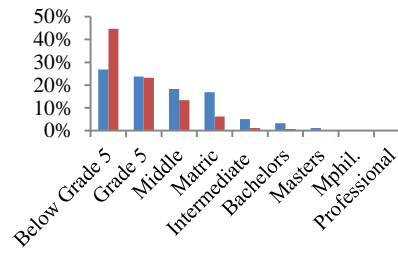
■ Male ■ Female

Urban (Balochistan)

■ Male ■ Female

Rural (Balochistan)

Trends by rural-urban divide as presented in Figure 1 formulated from findings in Table 1 and Appendix Tables B.1-B.5* beside indicating urban sector as expected to be doing much better than rural communities not only in sense of having much higher portion of population that have attended school (73.33 percent for urban sector and 51.10 percent for rural sector) but also in terms of having relatively higher percentage of students with completed grades within the secondary (59.23 percent for urban sector; 49.48 percent for rural sector) and tertiary level of education (12.79 percent for urban sector; 4.33 percent for rural sector) among those who have received education also reveal apparent gender discrepancies across the plots of percentage distributions of educated males and educated females by categorisation of completed educational levels. Such differences in educational attainment profile of males and females are obvious both if one observe the relative distributional patterns across the percentage spreading of students across educational levels by gender across rural and urban division as can be seen in Figure 1 above or if one study the rural and urban estimates of percentage gender gap across education levels for each province as can be seen through Figure 2 (Refer to Appendix Tables B.1-B.5)*. In this context patterns in Figure 1 demonstrate relatively larger proportions of females than males being grouped in completing lower levels of grades against proportionately higher presence of males than females with completed higher studies of secondary level and beyond within their relevant distribution by gender for each province whereby such patterns can be clearly seen within the rural segments of each province and urban parts of Sindh and Balochistan and more or less similar trend for urban parts of Punjab and KPK with some deviations such as females to be in relatively higher proportion than males at bachelors, masters and MPhil/PhD level in urban Punjab and at bachelors and masters levels for urban KPK within their respective distributions by gender. These findings from Figure 1 are also endorsed by trends in Figure 2 which show a clear pattern of negative percentage gender gaps at primary level of education and positive figures of percentage gender difference for secondary and tertiary levels being true for rural segments (only exception to this pattern is prevalence of slight positive and sizable negative percentage gender gaps in rural Balochistan at primary grade 5 and professional degree levels respectively and similarly negative figure of relative difference of male percentages from its female counterparts at bachelors level for rural Punjab and rural KPK being marginal in magnitude for the latter) and relatively narrow percentage gaps at lower educational levels with enormous relative gaps in favour of males at scales within tertiary level for urban sectors with few anomalies as present in case of urban Punjab and urban KPK that we will discuss in detail in coming discussion.

Further a second clear observation that comes out from distributional patterns in Figure1 is that the percentage distribution in rural societies for both males and females being much more positively skewed as compared to their

urban counterparts in each province reveal that besides having overall low input in those who completed education from rural segments in contrast to higher urban share, overall rural sector is making relatively more contribution in educational attainment profile towards the lower levels of education say primary and secondary levels of education with much less presence of individuals with tertiary level of education within the rural attainment spreads by provinces while urban distributions being much more symmetric show relatively much more balanced contributions to attained education among those that got educated at each level of education from primary to tertiary levels for both male and female populations. Hence the above pattern reveal that in rural societies within each province there is a tendency to not only seek education in lower proportion but also to stay through at lower levels of education and this patterns hold for both male and female populations that have gotten exposed to schooling whereas in urban sector not only there are more propensities due to perhaps more avenues towards acquiring education but also relatively more possibilities for continuing education to higher levels for both gender as compared to rural settings. However before indulging into the finer details for looking into patterns such as how there is variability in points of shift in these distributions by gender between levels with resulting deviations in evolution of percentage gender gap in educational attainment with school grade progression across rural-urban divide both within and across provinces we need to first assess how total number of individuals with exposure to education are distributed in percentage terms across provinces so as to assess of the four provinces which one has the most share and which one has the least in educated pool of the accumulated human capital of Pakistan and how much differentiability there exists in absolute percentages of ever attended school groupings across gender in each provinces.

In terms of absolute percentage comparison of how proportions from total population aged 10 years and above with some exposure to schooling is distributed across completed grades within primary, secondary and tertiary levels of education by provinces and for overall Pakistan as presented in Table 2 below we find that males are in higher percentages than females at each completed level of education and this pattern holds both at national level and is also reflected in estimates for each province which again emphasise the significance of issue at hand. Further in provincial comparison we find that Province Punjab has the highest percentage in the ever-attended group and Province Balochistan has the lowest while Province Sindh comes out to be second highest and Province KPK on third number in evaluation of provincial population shares as percentage of those who are attending or had attended school in Pakistan and this ordering remains intact even when partitioning of attained education is done into primary, secondary and tertiary levels of education. This sequencing of provinces in their respective shares in the educated population of Pakistan that come out from evidence in Table 2 can be

reflection of mix of factors such as variation in population densities across provinces, non-uniformity of educational strategies opted by provincial administrations and finally due to variability in hold of patriarchal norms across different ethnicities being present within each province of Pakistan. However the key point that we need to take away from above analysis of findings in Table 2 as a background in upcoming comparisons of percentage gender gaps across educational levels by provinces both with and without rural-urban partitioning as can be seen in patterns in Figures 2 and 3 is that there is conspicuous deviations in percentage shares of population with completed grades by gender in favour of the males and against females at all levels of education from basic to higher studies within each province (only exception to this trend is at tertiary level of education within urban Punjab where females are in slightly higher proportion) and hence it can be safely inferred that females are marginalised group compared to males in education sector at all levels of education in Pakistan in each segment of society.

Now moving on to the representation of findings in Table 1 and Appendix Tables B.1-B.5* in form of percentage gender gaps as can be seen in Figure 2 and Figure 3 which gives out pictorial illustration of how percentage gender gaps are evolving for the educated pool with increase in educational levels through which one can get an idea of how much higher or lower the educated males are doing in terms of percentage comparison from their educated females' counterpart at each level of education within their corresponding distributions across provinces and for overall Pakistan economy as a whole with and without rural-urban dynamics. This framework is extremely useful since through this analysis not only can we assess the percentage difference in completed grades of educated males from educated females at a certain level of education through using information within their respective distributions but can also identify the transition points in such dynamics more easily at which the percentage gender gap turns from negative to positive whereby negative figure indicates that within the male distribution males are doing worse at a particular educational category in terms of having relatively less percentages with attained grades representing that level in contrast to relatively higher percentage of females within their own distribution at that very educational position and positive figure indicate the reverse. Further within this examination we can also make relative assessment of percentage deviations of males from females at different stages within schooling system across provinces with more ease so as to get an idea that in domain of educational achievements of the four provinces which one show gender differentiation against females with much stronger force. Hence this framework gives us opportunity to evaluate more closely how distributions of males and females that are attending or had attended school in past are behaving differently from each other in terms of varied patterns of percentage spreading of highest completed grades across educational levels within their own respective distributions both across rural-urban and provincial divisions.

Table 2

Percentage of Population (Aged 10 Years and above) who Completed
Various Levels of Education from Total Population of those
*who Ever Attended School in Pakistan across Provinces*

	Gender	Primary Level			Secondary Level				Tertiary Level				
		Below Grade 5	Grade 5	Overall Prim.	Middle	Matric	Inter*	Overall Sec.	Bachelor	Masters	MPhil. /PHD	Prof. **	Overall Tertiary
						Pakistan							
Overall	Both	18.38	17.89	**36.27**	22.05	23.34	8.99	**54.39**	5.51	2.36	0.054	0.659	**8.58**
	Male	11.02	9.83	**20.86**	13.95	15.03	5.59	**34.58**	3.18	1.53	0.035	0.538	**5.29**
	Female	7.36	8.05	**15.41**	8.10	8.30	3.39	**19.80**	2.32	0.83	0.019	0.12	**3.29**
Urban	Both	6.78	7.04	**13.83**	10.73	12.98	6.11	**29.83**	4.05	1.75	0.05	0.57	**6.44**
	Male	3.97	3.65	**7.63**	6.11	7.52	3.5	**17.14**	2.16	1.06	0.03	0.46	**3.72**
	Female	2.80	3.39	**6.20**	4.61	5.46	2.61	**12.69**	1.89	0.69	0.019	0.11	**2.71**
Rural	Both	11.60	10.84	**22.44**	11.31	10.35	2.88	**24.55**	1.45	0.60	0.002	0.083	**2.14**
	Male	7.04	6.18	**13.22**	7.83	7.51	2.09	**17.44**	1.01	0.46	0.002	0.076	**1.56**
	Female	4.55	4.65	**9.21**	3.48	2.84	0.78	**7.11**	0.43	0.13	0	0.006	**0.57**
						Province Punjab							
Overall	Both	7.51	8.5	**16.02**	11.08	10.99	3.90	**25.99**	2.48	0.99	0.028	0.286	**3.79**
	Male	4.19	4.02	**8.22**	6.61	6.43	2.10	**15.15**	1.16	0.51	0.013	0.227	**1.91**
	Female	3.32	4.47	**7.8**	4.47	4.56	1.80	**10.38**	1.32	0.47	0.015	0.059	**1.87**
Urban	Both	2.74	3.45	**6.19**	5.21	6.11	2.75	**14.09**	1.90	0.78	0.028	0.25	**2.98**
	Male	1.57	1.65	**3.22**	2.87	3.31	1.44	**7.61**	0.85	0.39	0.013	0.19	**1.46**
	Female	1.17	1.8	**2.97**	2.34	2.80	1.32	**6.47**	1.05	0.39	0.015	0.059	**1.52**
Rural	Both	4.76	5.05	**9.82**	5.86	4.88	1.15	**11.89**	0.58	0.20	0	0.03	**0.81**
	Male	2.62	2.37	**4.99**	3.74	3.13	0.66	**7.54**	0.30	0.11	0	0.03	**0.45**
	Female	2.14	2.67	**4.82**	2.12	1.75	0.48	**4.35**	0.27	0.085	0	0	**0.003**
						Province KPK							
Overall	Both	4.21	2.44	**6.66**	4.68	4.69	1.63	**11.02**	0.94	0.57	0.017	0.124	**1.65**
	Male	2.46	1.30	**3.77**	3.10	3.28	1.09	**7.48**	0.54	0.36	0.015	0.107	**1.03**
	Female	1.74	1.14	**2.89**	1.58	1.40	0.54	**3.53**	0.39	0.20	0.002	0.017	**0.61**
Urban	Both	1.32	0.84	**2.17**	1.85	2.05	0.92	**4.83**	0.60	0.37	0.015	0.10	**1.09**
	Male	0.75	0.45	**1.20**	1.10	1.29	0.56	**2.96**	0.33	0.21	0.013	0.083	**0.64**
	Female	0.56	0.39	**0.96**	0.74	0.76	0.35	**1.86**	0.27	0.15	0.002	0.017	**0.45**
Rural	Both	2.89	1.59	**4.49**	2.83	2.63	0.71	**6.18**	0.33	0.19	0.002	0.02	**0.56**
	Male	1.71	0.84	**2.56**	1.99	1.99	0.52	**4.51**	0.21	69	0.002	0.02	**0.39**
	Female	1.18	0.74	**1.93**	0.83	0.64	0.18	**1.67**	0.118	0.048	0	0	**0.166**
						Province Sindh							
Overall	Both	**3.83**	**4.83**	**8.66**	**4.01**	**5.46**	**2.77**	**12.25**	**1.56**	**0.56**	**0.008**	**0.26**	**2.40**
	Male	2.38	2.9	**5.28**	2.49	3.53	1.84	**7.87**	1.06	0.45	0.006	0.23	**1.75**
	Female	1.44	1.93	**3.38**	1.52	1.92	0.92	**4.3**	0.50	0.11	0.002	0.035	**0.65**
Urban	Both	**1.56**	**1.97**	**3.54**	**2.36**	**3.46**	**1.99**	**7.83**	**1.18**	**0.41**	**0.008**	**0.16**	**1.77**
	Male	0.90	1.03	**1.93**	1.23	1.92	1.18	**4.33**	0.71	0.30	0.006	0.13	**1.17**
	Female	0.66	0.93	**1.60**	1.13	1.54	0.81	**3.49**	0.46	0.10	0.002	0.03	**0.61**
Rural	Both	2.26	2.86	**5.12**	1.64	1.99	0.77	**4.41**	0.37	0.15	0	0.024	**0.55**
	Male	1.48	1.86	**3.35**	1.26	1.61	0.66	**3.54**	0.34	0.14	0	0.01	**0.51**
	Female	0.77	0.99	**1.77**	0.39	0.37	0.11	**0.87**	0.035	0.004	0	0.004	**0.043**
						Province Balochistan							
Overall	Both	**2.82**	**2.09**	**4.92**	**2.06**	**2.18**	**0.67**	**4.92**	**0.517**	**0.23**	**0**	**0.059**	**0.80**
	Male	1.97	1.60	**3.58**	1.54	1.77	0.55	**3.8**	0.41	0.19	0	0.05	**0.66**
	Female	0.84	0.49	**1.33**	0.52	0.41	0.12	**1.06**	0.102	0.03	0	0.008	**0.14**
Urban	Both	**1.14**	**0.77**	**1.92**	**1.29**	**1.34**	**0.43**	**3.08**	**0.35**	**0.17**	**0**	**0.05**	**0.59**
	Male	0.74	0.52	**1.26**	0.90	0.99	0.32	**2.22**	0.26	0.14	0	0.04	**0.45**
	Female	0.39	0.26	**0.65**	0.38	0.35	0.11	**0.85**	0.09	0.03	0	0.006	**0.13**
Rural	Both	1.67	1.31	**2.99**	0.94	0.83	0.24	**2.02**	0.15	0.05	0	0.004	**0.21**
	Male	1.23	1.08	**2.31**	0.83	0.77	0.23	**1.84**	0.15	0.05	0	0.002	**0.20**
	Female	0.44	0.23	**0.67**	0.11	0.06	0.01	**0.18**	0.006	0	0	0.002	**0.008**

Note: Above percentage distribution across educational progression from primary to tertiary level do not give out % of those with highest completed grades categorised as other in the data;*Here individuals with diplomas related to training of technical skills has been grouped with intermediate level given that both these qualification may allow person to look for jobs with more or less similar level of socio-economic status, ** Prof. category is sum of all those individuals who have degrees related to profession of engineering, medicine, law, or agricultural sector; *Data Source:* Pakistan Integrated Household Survey (2010-11).

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Keeping with the continuity of discussion so far, within the structure of analysis by percentage gender gaps let us first assess the relative position of provinces in terms of how each is contributing towards differential accomplishments in education sector for males and females in the overall dynamics of Pakistan economy. This will help us firstly in identifying where does the root cause of the problem of gender differentiability in attained education lay for Pakistan in terms of which province shows much higher relative gender gaps at different levels within the attainment profiles and further within this analysis we will also evaluate the shift points in evolution of percentage gender gap within each distribution both for national and provincial estimates with and without segregation by regional divisions such as rural versus urban settings. By examination of distributional trends in percentage gender gap series in Figure 2 and Figure 3 above for estimates with and without regional partition we can see that the differential patterns in attained education is primarily originating from Province Balochistan and Province Sindh and that too from their rural segments mostly whereby there is found to be positive gender gap for both secondary and tertiary level of education by proportions close to almost 95 percent and 411 percent in the rural parts of Balochistan and almost 48 percent and 328 percent for rural Sindh [Appendix Table B.5*].

Compared to above estimates percentage gender gaps for rural Punjab and rural KPK show that though the males are doing better than females in terms of acquired education at secondary levels by positive estimates close to almost 27 percent and 37 percent for Punjab and KPK respectively and of almost 20 percent at tertiary level for KPK but relative to the other two provinces these estimates are much lower in magnitude and not only this for rural Punjab we find females to be at an advantage at tertiary level with an estimate of almost –8 percent. So not only Punjab is outnumbering other provinces in terms of percentage number count in the comparative provincial inputs towards the human capital build-up process through schooling investments in Pakistan but is also showing much less relative gender inequalities in attained education whereas Balochistan not only has the least share in those who ever attended school but is also doing worse in terms of relative position of females in educational achievements. However provinces KPK and Sindh show reversal in ordering. As in previous comparison of provincial contributions to the group of people with completed education levels from estimates in Table 2 that revealed Sindh as having higher share than KPK, we find rural segments of Sindh to be hosting much higher gender imbalances as compared to KPK in terms of their relative positions by gender discrepancies as can be seen from patterns in reported percentage gender gaps in Appendix Table B.5*. So from this we can see the that disparities in educational sector across gender are manifesting in different ways in all provinces being present with varied degrees across educational levels however the intensity of the problem varies from province to province being the most severe for the rural societies in Province Balochistan and Province Sindh.
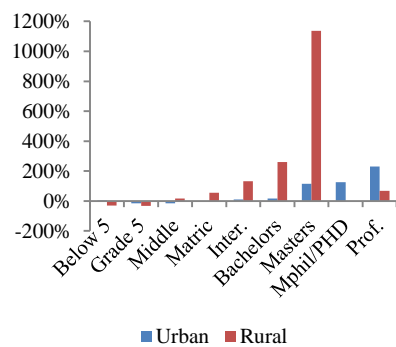
Fig. 2. Percentage Gender Gap in Completing Different Educational Categories by Rural- Urban Divide
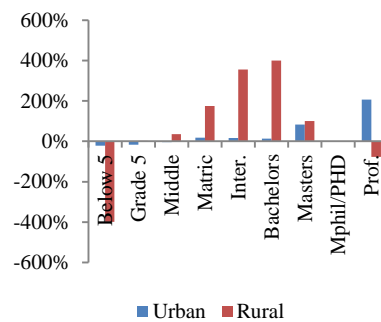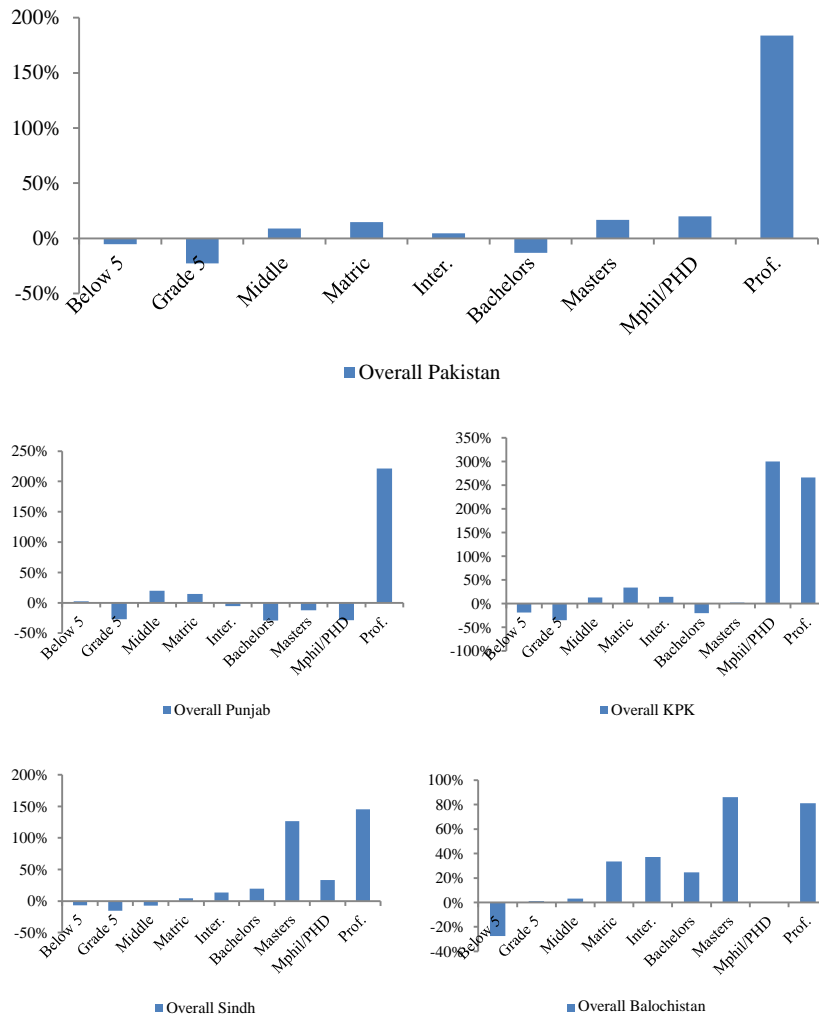

Pakistan

Punjab

KPK
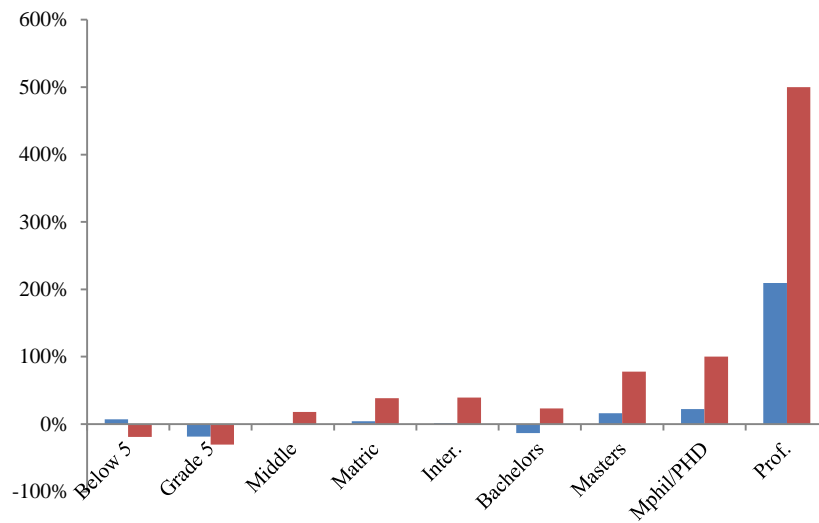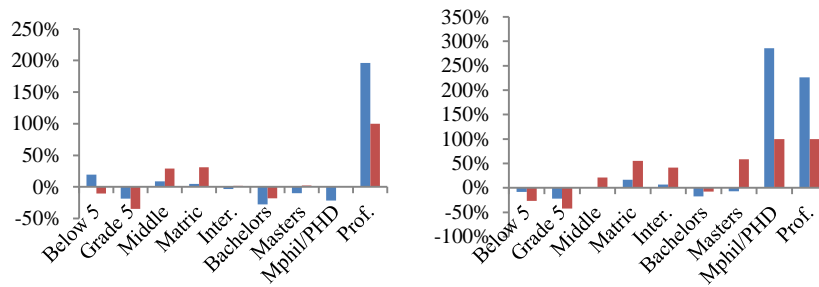
Sindh

Balochistan

Fig. 3. Percentage Gender Gap in Completing Different Educational Categories at National and Provincial Levels

Overall Pakistan

Overall Punjab

Overall KPK

Overall Sindh

Overall Balochistan

The comparative patterns of gender deviations across provinces that emerge from relative assessment of the estimates for rural parts of each province are also valid for urban societies with minute divergence. However urban societies in each province seem much more open to female education than rural societies. This we can infer since compared to rural Balochistan the urban counterpart again show relatively more inclination of males towards completion of higher studies than females within their corresponding educated pool by gender but with much less magnitude of almost 9 percent and 40 percent for

secondary and tertiary levels of education compared to corresponding relative values of almost 95 percent and 411 percent for rural segments of Balochistan [Appendix Table B.5*]. Similarly for province Sindh we see a drop in percentage gender gap estimates at secondary and tertiary levels of education from almost 48 percent and 328 percent for rural parts to almost –5 percent and 48 percent for urban segments showing again that rise in both awareness and access to education with urban exposure is playing its due role in decreasing the cultural and socioeconomic inclinations of not educating a female child in Sindh. Likewise patterns stands for urban regions of Provinces Punjab and KPK whereby there is decline in percentage gender gap at secondary benchmark as we move from rural to urban estimates from figure of almost 27 percent to 5 percent for Punjab and from almost 37 percent to 8 percent for KPK and a much favourable positioning towards higher female attainment at tertiary level in magnitude of almost 14 percent from earlier magnitude of 8 percent for Punjab and shift from positive value of almost 20 percent in relative male advantage to negative figure of magnitude 3.2 percent in percentage gender gap in KPK indicating that females are achieving more success than males in completing university education than males in urban segments of these provinces.

Moreover a deeper look into rural urban dynamics within and across each province and how they eventually get translated into overall patterns for Pakistan economy brings to forefront few noteworthy points that raise interesting queries which needs to be mentioned here. Looking into the patterns in Figure 3 that plots the percentage gender gaps without taking into account the variations across rural and urban settings we can see that there is a transition towards positive relative discrepancies in male outcomes from females in Province Sindh from matric onwards and in Province Balochistan from middle and beyond taking up extremely large values for degrees relating to masters level of education and professional skills in both these provinces (Sindh: 126.6 percent for masters and 145.2 percent for professional degrees; Balochistan: 86.2 percent for masters and 81.2 percent for professional degrees). However in province Punjab pattern is more of wave where percentage gender gap take up slightly positive value at middle and matric level from negative values for primary levels of education but turns negative after middle again in favour of female educational outcomes except for education in professional skills in fields of medicine, law and engineering all taken together where there is a sizable positive tilt towards males with percentage gender gap of almost 221 percent. Similarly in province KPK we also find relatively marginal positive percentage difference at middle (12.76 percent), matric (34.11 percent) and intermediate (14.27 percent) levels as compared to marked positive differences for MPhil/PhD and professional degrees of amount 300 percent and 266.6 percent respectively. Further within patterns of transitions from negative to positive figure for percentage gender gaps there is also an indication of subtle variation

within the levels of education at which such shifts occur across urban parts of the four provinces; whereby within provinces which overall show less patriarchal tendencies such as Punjab and KPK transitions are seem to be taking place at lower level of education than Province Sindh and Province Balochistan which have been found to be more rigid. This result show that in urban Sindh and urban Balochistan females are perhaps not continuing to higher levels much leading to them being concentrated in higher proportions not just at primary but also at secondary level than males as compared to urban parts of other two provinces in which females may be doing comparatively less at secondary level but are doing better relatively at tertiary level indicating that among the educated female population the proportion continuing to university level education is comparatively more in Punjab and KPK.

Finally another interesting result that comes out from evaluation of Figures 2 and 3 is that within each province the dynamics in percentage gender gaps at lower levels of education that is grades relating to primary and secondary educational categories are prominently dominated by percentage gender gaps arising from rural distributions whereas at tertiary levels there is mixed evidence within each province where at some levels urban contributions to overall percentage gender gaps are noticeably more and in other rural segments of the population are taking lead. However the important point to take away from above trends in Figure 2 and Figure 3 is that within dynamics facing provinces Punjab and KPK which show relatively less gender imbalances with favourable percentage gender gaps for females at bachelors, masters and MPhil/PhD levels for the former and at bachelors and masters levels for the latter, in categories encompassing university educations relating to professional skills, not only there is prevalence of enormous positive percentage gender gaps in comparison of those that attended school by gender demonstrating relative edge of males at this level in sense of having higher inclination for university studies relating to professional degrees within male distribution and relatively less tendency within female distribution for moving on to professional fields but also there exist domination of urban elements in these underlying forces as can be seen from plots in Figure 2. This finding need to be evaluated carefully for at one level our data shows that urban societies as compared to rural parts are much more gender neutral social setup as is evident from much smaller percentage gender gaps in urban communities compared to their rural counterparts with more symmetric attainment distributions for both male and female populations across different educational levels (such patterns being valid for Punjab and KPK too), yet we find that overall there is more male presence in attained education at tertiary level of education especially those relating to professional degrees within the male distribution in urban sector as compared to females whose educational attainment is tilted towards relatively lower educational levels within these two provinces.

So question that arise is that can above result be considered as an indication of something structural within Pakistani societies that is causing males compared to females (within their respective attainment distributions) to have much more prominent share in the professions related to much brighter job prospects (being a ticket to stronger socioeconomic status and positioning in future) even in the urban sector of provinces that show comparatively less rigid gender undercurrents among the marginal population of those who moved on to seek and complete tertiary level of education from secondary benchmark. How do we justify above findings. Well to make sense of above results we need to place these patterns within the social order of patriarchal mindset whereby there exists distinct role formation on lines of gender within a household with culturally males having prime responsibility of running the household financially and female requiring to deal mainly with household chores management and child care as their socially prescribed duties [Qureshi (2012)]. And need to analyse how such tendencies can affect educational and occupational aspirations of individuals even in provinces that show much equal educational attainment profile across males and females. Further stringent restriction on female outside work on average being in place in most parts and ethnicities within Pakistan being valid for Punjab and KPK too with dominant social belief of gender segregation through *purdah* in context of honour maintenance and dependence of parents on son than daughters in old age imply that there is high likelihood that in such a society education of female may be valued not for enhancing skills so as to increase earning capacity of that female for household in future but for purpose of finding much better marital match for the females can also be a feasible proposition.

Hence to understand above patterns we need to look into labour force participation behaviour by gender and also of how female education is being valued in context of marital matching process that is do we find evidence of positive assortative match (educated husbands prefer educated spouse) within husband and wife pairing within our dataset making education of daughter for parents as a mere measure to place their daughter with a better life partner in future or not. Both these inquiries are topics of independent research in themselves and their in-depth analysis will be beyond the range of current study's objectives. However a brief analysis of labour force participation rates by gender in age cohort 15-65 across education levels will be presented here with an attempt to relate them to our previous findings. In terms of labour force participation rates we find very low percentage of females that take part in paid employment by amount of 13.1 percent as oppose to a figure of 71.7 percent for males which can be considered as sign of culturally established behaviours by gender where the primary role as a bread earners falls on males and role of females is mainly concerned with household responsibilities and child rearing activities only. Further looking into patterns of paid labour force participation

proportions by schooling levels, we find that males are participating much more than their female equivalent in terms of attained education at all levels whereby males with completed grades within primary, secondary and tertiary level of education have work participation rate of 79.5 percent, 61.6 percent and 76.6 percent respectively with corresponding figures for educated females with attained education within these consecutive levels comes out to be 10.7 percent, 7.7 percent and 27.4 percent showing that overall there is much lower proportion of working females than males. Hence though we find negative gender gap for bachelors, masters and MPhil/PhD levels of education for urban Punjab or at bachelors and masters levels for urban KPK in Figure 2 above, important question for future research would be to analyse how much of this relatively raised inclination of females towards university education within these categorisations in these provinces gets translated in participation into labour force and if evidence show otherwise where female labour force participation rates remain low irrespective of higher propensities in educated females towards completing higher studies, then this may be merely an indication of female education as being valued for finding much better match for them in marriage could be a possible missing link here.

4. AGE COHORT PROFILE OF EDUCATIONAL ATTAINMENT

In resolving the puzzle of why there exists gender differences in educational outcomes and how they can be reduced in Pakistan, it is important to trace the patterns in educational attainment by gender over age cohorts. This is most essential for aggregation without taking into account the variation in educational experience across age by hiding how discrepancies in educational outcomes by gender are evolving from older to younger age cohorts can falsely impose the gender rigidities arising from distant past onto our understanding of current patterns. Hence in relative comparisons it is important to know how patriarchal tendencies are evolving over age cohorts that can be best done if we analyse the profile of educational attainment by age groupings as can be seen in Figures 4, 5 and 6 formulated through estimates presented in Appendix Tables C.1a-C.6c*. Moreover through this analysis not only can we have an idea of historical trends in gender disparities across provinces both with and without capturing the varying behaviour across rural and urban segments within Pakistan but also will be able to judge the validity of patterns that comes out from aggregate estimates as done in preceding discussion against the findings across age cohorts whereby in case the latter analysis endorse the findings from previous section then this will add to their worth further and in case of contradictions will reveal to what extent has aggregation obscured the true picture.

An evaluation of findings across Appendix Tables C.1a to 6c* provides us with trends of how percentage shares within the educational attainment

spread by gender are changing between primary, secondary and tertiary levels of education for males and females within their respective distributions from age cohorts 60-64 to 10-14 at national and provincial levels both for overall regional aggregation and with rural and urban partitioning.[4] The patterns that comes out from percentage distribution across levels by gender for national estimates as reported in Appendix Table C.1a* and in Figure 1 is that as we move from those in age cohort 60-64 (born within years 1946-50) to those in age cohort 15-19 (born within years 1991-1995) among population of those who has schooling experience in some form, there is a profound decrease in share of those with completed grades representing primary grade 5 or less and a substantial increase for those with completed education within secondary levels for both males and females. This trend is evident from drop in estimates of percentage share in overall primary level for males and females from 35.55 percent and 44.66 percent respectively in age cohort 60-64 to values of as low as 21.48 percent for males and 25.64 percent for females and considerable rise in estimates for percentage share within secondary education from 49.11 percent to 77.24 percent for males and from 48 percent to 72.92 percent for females. Further the drop in share of those with completed education within primary level is relatively more for female (–42.6 percent) than males (–39.6 percent) and that of rise in proportions within educated population completing secondary education is comparatively more for males (57.3 percent) than females (51.9 percent) in comparison of percentage distribution of educational attainment across primary and secondary level by gender among those in age group 60-64 years from those in age group 15-19. These findings are also evident in patterns by gender across primary and secondary level in Figure 4 below. These patterns show that in comparison within same periods by gender we find not only that male distribution is relatively more concentrated towards secondary levels of education and less towards those with completed primary in comparison to patterns within the female educational attainment profile across primary and secondary level of education for both age groups of 60-64 and 15-19 endorsing the patterns that had emerged from aggregate estimates in the last section but also the educational attainment distribution for males is relatively more negatively skewed as compared to that of females among primary and secondary levels as we move from older age cohort of 60-64 years of age to much younger population of those in 15-19 age range. The finding that there is drop in percentage share of those with attained education of primary grade 5 or less and

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[4]Here we restrict our analysis of distributional shares between primary and secondary level to age group 15-19 years (as oppose to 10-14) as relevant youngest cohort for within this grouping of 15-19 we will a tangible presence of those with completed middle, matric and intermediate levels besides those with attained education within primary level given the official age by which these levels should ideally be completed is 14, 16 and 18 years of age respectively. Similarly for distributional shares across primary, secondary and tertiary levels of education, we will restrict the age group 20-24 years as youngest relevant cohort.

increase in proportions with completed education within secondary level for both males and females as we look into patterns moving from age grouped 60-64 to those in cohort 15-19 by gender is evident in estimates by age cohort for all four provinces as presented in Appendix Table C.2a, C.3a, C.4a and C.5a*. Moreover analysis by provinces also support that not only within age cohort 15-19 females are more concentrated towards primary level attainment and males towards higher secondary level in all four provinces but analysis by age cohort show that as we move towards figures of age cohort 15-19 from those in 60-64 the drop in percentage share of those with primary level or less attainment and increase in percentage share of those with completed secondary education is much higher in magnitude for males compared to females in provinces KPK, Sindh and Balochistan supporting that as we move from older to younger age groups distribution is relatively more negatively skewed for males than females in these provinces, however pattern in Province Punjab show otherwise where drop in percentage share at primary level is relatively more for females than males with corresponding higher gain at secondary levels for them too indicating that perhaps polices within this Province has been more successful in creating much more favourable environment for female education than the rest over time.

Moving on to comparison of age cohort 20-24 which has educational attainment mix that contains all three levels namely primary, secondary and tertiary in educated pool of males and females within their corresponding distributions by gender with those within age group 60-64 years again endorse the above patterns as can be seen in comparison by gender within 15-19 age group and across 15-19 and 60-64 age groups. Whereby estimates of age cohort 20-24 for overall Pakistan without rural and urban differentiation show that males within their attainment spread are found to be in less proportion at primary level and in higher percentage at secondary levels in percentage comparison with females within their corresponding attainment distribution (females: 23.7 percent for primary and 60.37 percent for secondary level; males: 20.77 percent for primary and 68.98 percent for secondary level). Further comparison of age cohort 20-24 estimates with those of 60-64 again show that as we move down to younger age group from the oldest, there is drop in shares of those with primary attained education and increase of those with secondary attained education for both males and females indicating a plausible shift in both preference and availability of education for both gender over time in Pakistan; however drop at primary level is found to be relatively more for females (−46.93 percent for females and −41.57 percent for males) and rise at secondary level being more for males (40.46 percent for males and 25.77 percent for females). Further in terms of comparison of females with males within their percentage attainment distribution at tertiary level of education, males' fare relatively better within age cohort of 60-64 years (14.53 percent for males and 7.33 percent for

females) and trends revert in favour of females for those within age group 20-24 (15.28 percent for females and 9.34 percent for males). This shows that overall as we move from oldest to youngest age group with individuals belonging to attained education from primary to tertiary level of education, there is a tendency for distribution of females within their attainment profile to be relatively more inclined towards university level of education compared to males. This can considered as sign that the hold of patriarchal values against female education may have somewhat diluted over time.

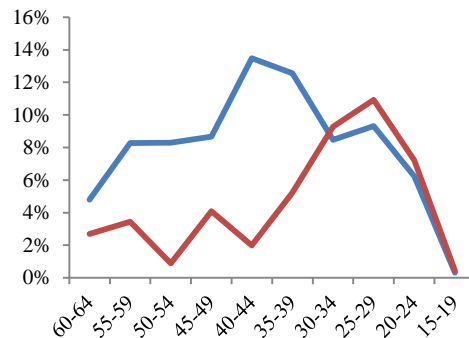**Fig. 4. Percentage Distribution across Levels by Gender Within Male and Female Distributions (Overall Pakistan)**
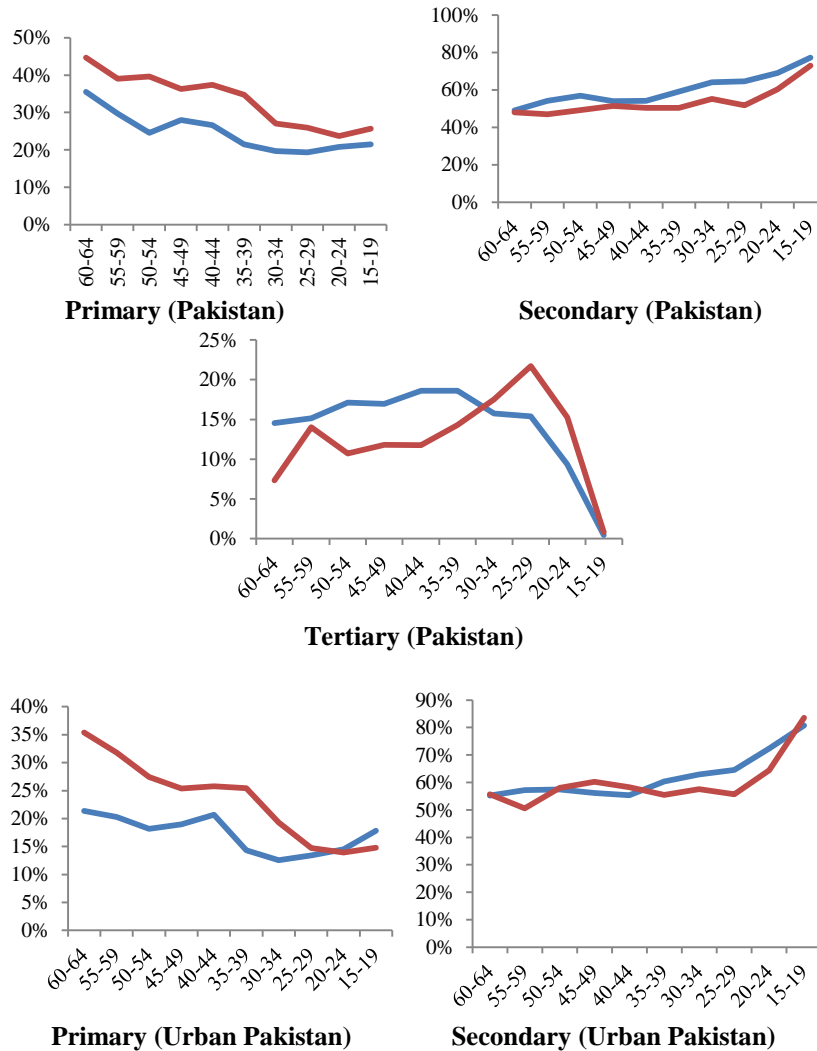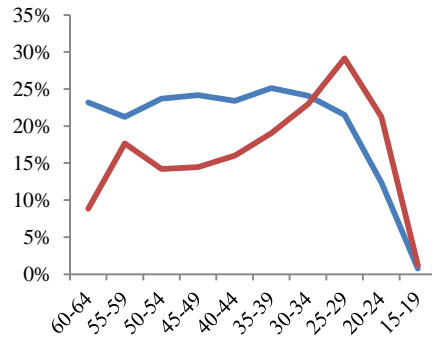
Primary (Pakistan)   **Secondary (Pakistan)**

Tertiary (Pakistan)

Primary (Urban Pakistan)   **Secondary (Urban Pakistan)**

Tertiary (Urban Pakistan)
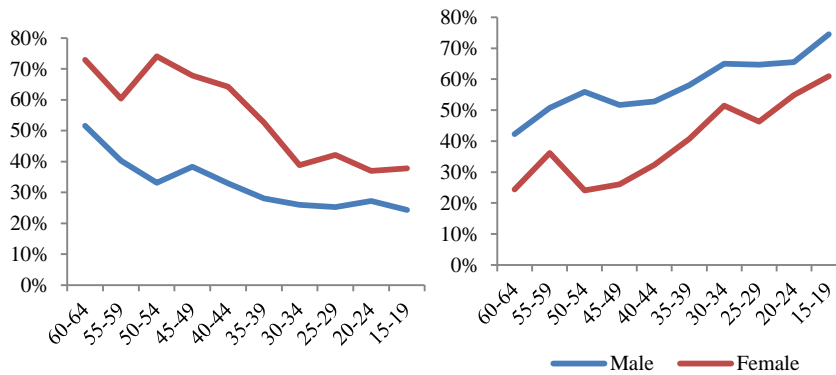
Primary (Rural Pakistan)

Secondary (Rural Pakistan)
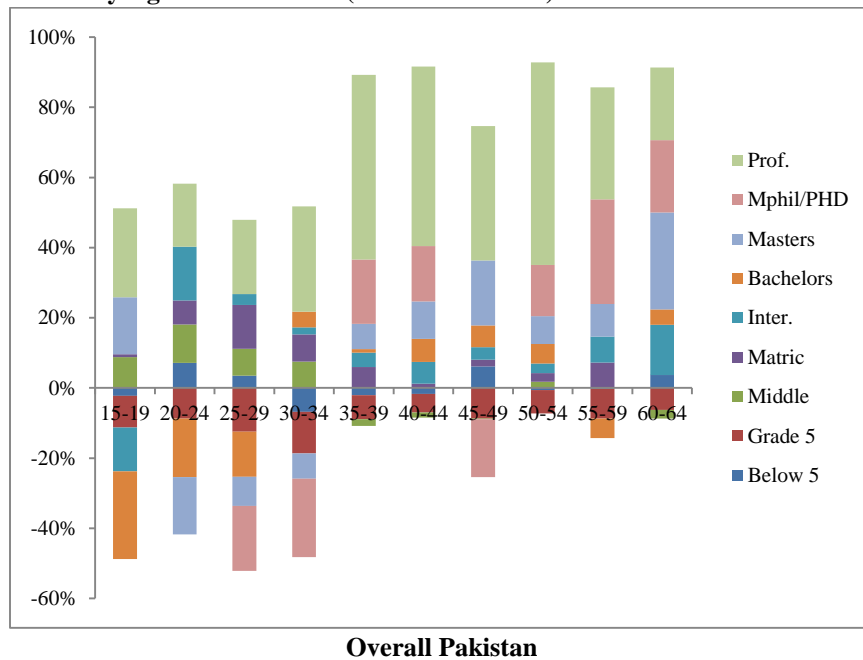

Tertiary (Rural Pakistan)

Further disaggregation of trends across cohorts over longer and shorter generation gaps as we go from age groups 60-64 to 35-39 and 35-39 to 20-24 for primary and secondary levels again confirms our previous findings in analysis

across age cohorts 60-64 and 15-19 where we find that as we move down towards 20-24 birth group from relatively younger age cohort of 35-39 years or from oldest age group of 60-64 years or from age group 60-64 to those within 35-39 age bracket, there is drop in share of individuals with acquired education of primary level for both males and females within their respective distribution by gender and increase in that of individuals with completed education within secondary categorisation for estimates at national level as can be also be seen in Figure 4, however the rate at which there is drop within females and males percentage shares across cohorts varies between these two comparison. For example as one compare across 60-64 and 35-39 age groups the relative decline in percentage share for males comes out to be –39.6 percent being higher than –22.16 percent for females at primary level. In comparison to these figures as one move from age group 35-39 towards 20-24 the drop in share is more for females than males (–31.81 percent for females and –3.2 percent for males). Similarly at secondary level of education there is increase in percentage share of those with attained secondary education for both males and females however we find a discrepancy in patterns in sense the rise in percentage shares being higher for males as one compare across 60-64 and 35-39 age groups (20.5 percent for males and 4.89 percent for females) and relatively greater for females as one moves from estimates for 35-39 to 20-24 age cohort (19 percent for females and 16.53 percent for males). Similar deviations in patterns are observed in patterns at tertiary level of education as there is marked increase in shares for both males and females across 60-64 and 35-39 cohorts being much higher for females (94.9 percent for females and 28.1 percent for males); however across 35-39 and 20-24 cohorts there is relative decrease in percentage share by –49.83 percent for males and increase for females by amount of 6.92 percent.

The above patterns reflects gap in history of these two generation (60-64 to 35-39 and 35-39 to 20-24) are being translated at varying degree in shifts in patriarchal tendencies across these longer and shorter views to generational difference. For example overall we do find that position of females within its attainment profile is improving overtime tilting relatively more towards university education compared to males within their own distribution, however in comparison across 60-64 age groups and 35-39 with that across younger age cohorts of 35-39 and 20-24, one find that transition towards tertiary education is happening with much stronger force in the former. Further a close evaluation of educational attainment patterns by gender at tertiary level of education by age cohorts indicate an interesting finding that there is present positive gender gaps with relatively larger presence of males towards higher graduate levels studies within their distribution compared to corresponding distributional share of females at older age cohorts and as we go towards younger cohorts these dynamics change in favour for females making overall negative gender gap for tertiary level of education indicating that the situation of females in accessing

higher education has improved relatively over time. However important question as pointed in previous section is that how much of this improved condition of female is being translated in to work force and how much is because of finding a better marital arrangement for females within society for if it this increase in tertiary level education for females is not leading them to seek paid employment then this may not be a direct contributor to growth but will impact the social and economic development indirectly through positive intergenerational externalities of female education only since educated mother has positive effects on human capital buildup of their children both in terms of their education and also health. The patterns in Figure 5 show that in older cohorts bachelors have positive percentage gender gaps but in younger cohorts we finding that at this level of education the percentage gender gaps are becoming negative. However for professional level the percentage gender gap remains almost positive for all cohorts. Hence as discussed in previous section this could be an indication that increased females education at tertiary level could be sign of cultural inclination of females to be educated for marriage purpose and not for jobs as is evident from patterns in Figure 5 that there can be seen much less contribution of females in career-oriented fields. However this remains an open question that need more research so as to come to definite answer which is beyond the scope of current study.

Fig. 5. Percentage Gender Gap in Completing Different Educational Levels by Age/Birth Cohorts (Overall Pakistan)


Overall Pakistan
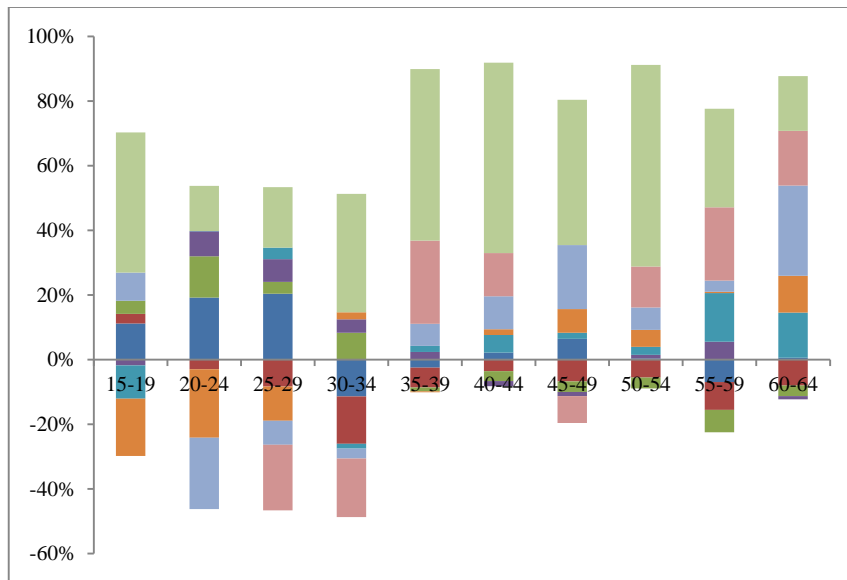
Urban Pakistan
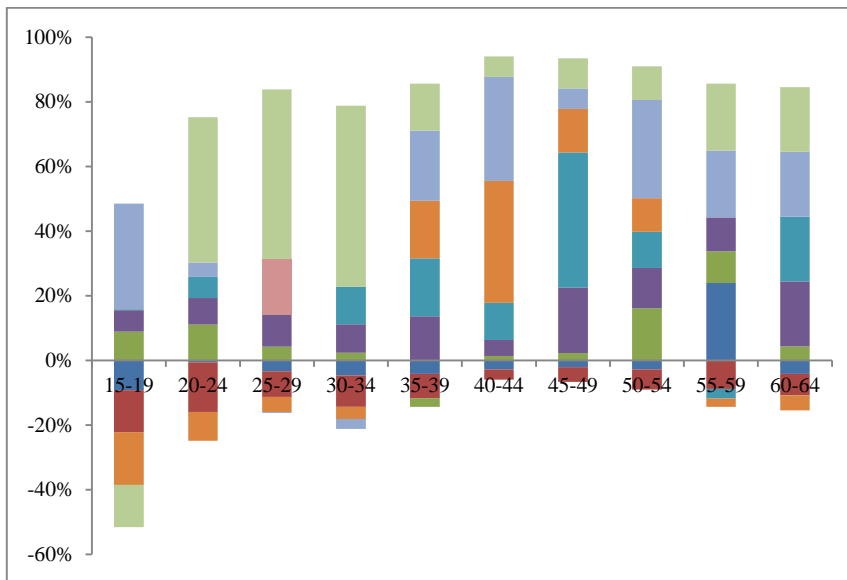
Rural Pakistan

The above findings from Figure 4 and Figure 5 can be reflected as an indication of reduction in patriarchal hold over time at one level in the sense among males and females who get opportunity of education, females are accessing tertiary education in relatively higher proportions than males within their relevant attainment spreading across educational levels by gender, however

it should not be mistakenly considered as sign of elimination of differential treatment across gender in attained education. This is so the most we can infer from above patterns is that in which direction has the distributional shares changed across different educational benchmarks over cohorts within the marginal population of females who got educated as oppose to males who have comparatively much larger representation in total population of those who attended and completed school. But if comparison are made in terms of how the relative percentage of males and females in total profile of educational attainment have evolved overtime, we still find that though gaps may have narrowed a bit over time as we move from older to younger age cohorts but still there is marked gender differences in terms of having much lower access for females to education than males even in younger cohorts as can be seen in findings in Table C.7 and patterns in Figure 6 below. However in comparison across rural urban divide we can see both in Figure 4 and Figure 6 that gaps between males and female patterns are narrow at all levels for urban population as compared to rural parts of Pakistan endorsing findings of previous section that gender differentiation in education in more of problem of rural societies and relatively subsides within urban centres.

Fig. 6. Percentage Distribution across Levels by Gender from Total Population of Those who Attended and Completed School (Overall Pakistan)
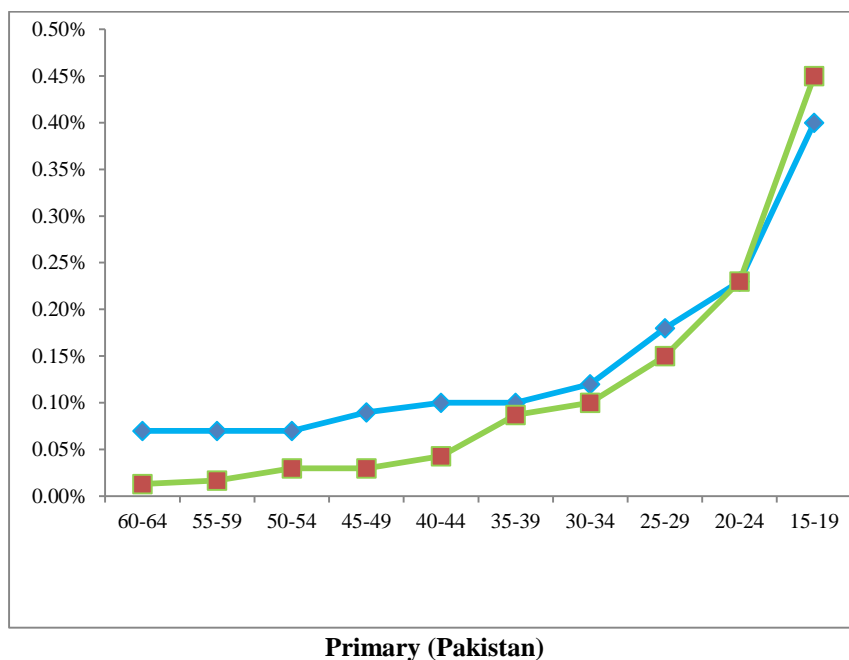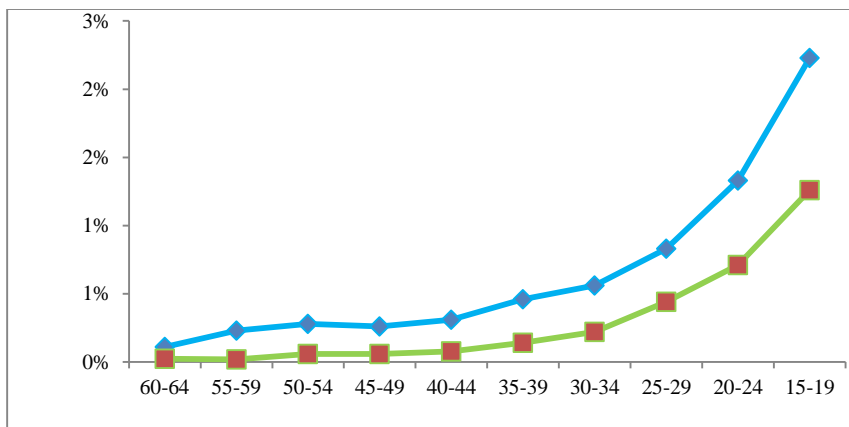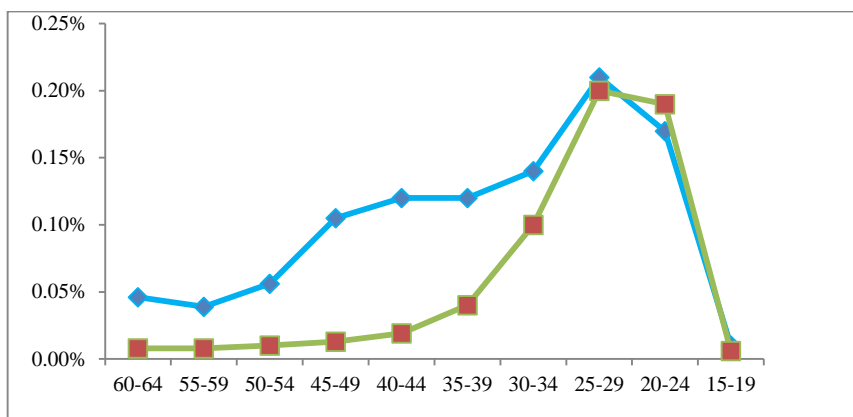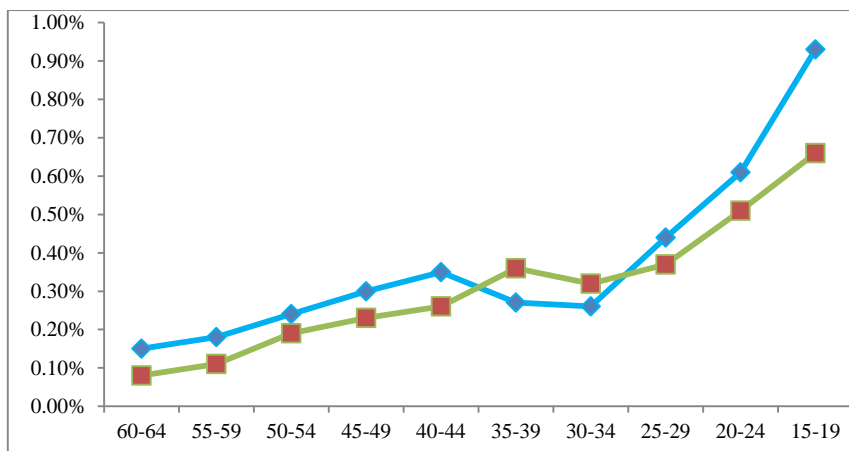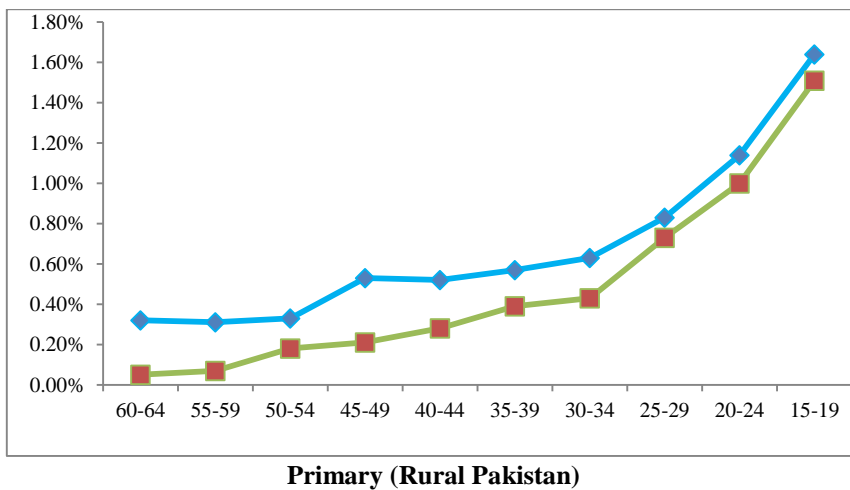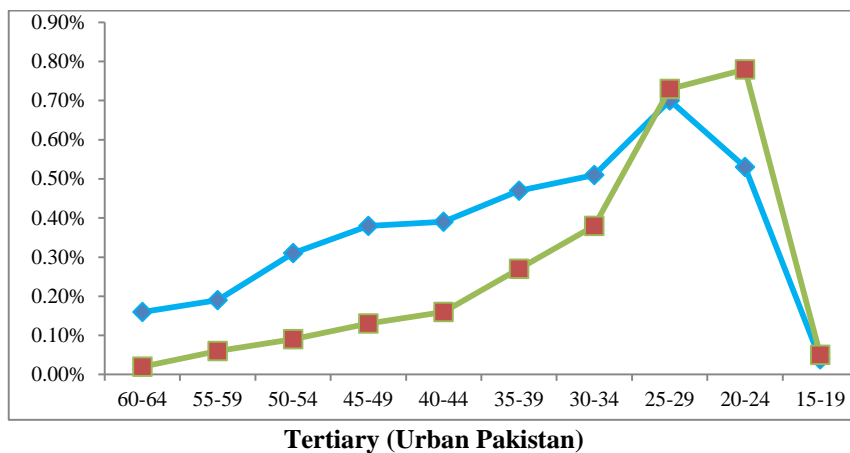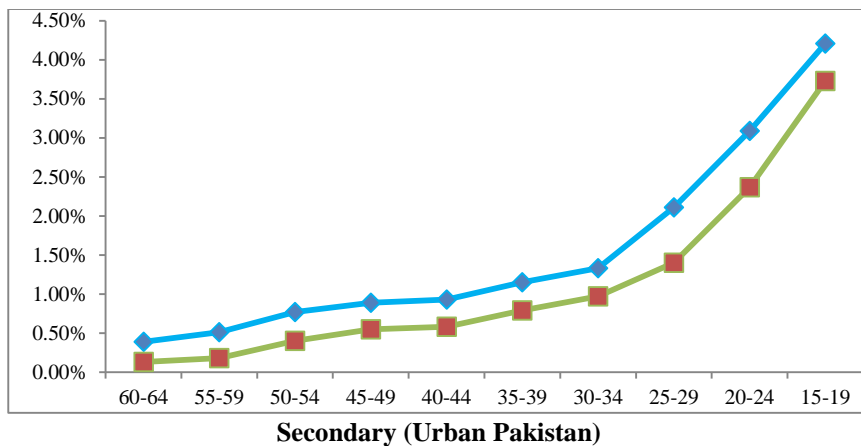

Primary (Pakistan)

Secondary (Pakistan)

Tertiary (Pakistan)

Primary (Urban Pakistan)

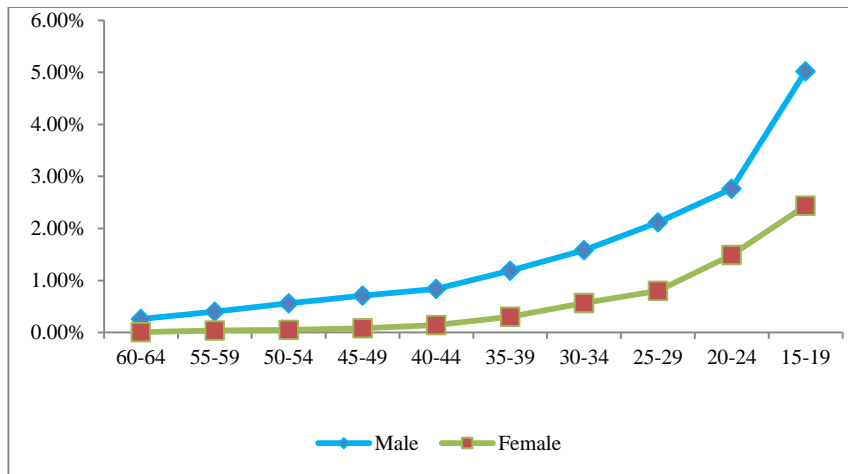**Secondary (Urban Pakistan)**
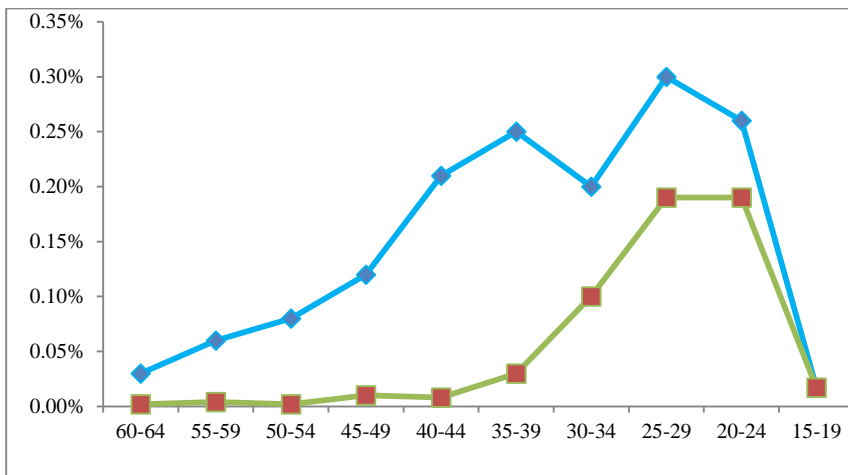

Tertiary (Urban Pakistan)

Primary (Rural Pakistan)

Secondary (Rural Pakistan)

Tertiary (Rural Pakistan)

5. AGE COHORT PROFILE OF CURRENT ENROLMENT

Looking in the current enrolment pattern by age cohort in Table 3 few important findings stand out. Firstly in aggregate estimates at national levels males are always enrolled in higher proportion than females at each age group a pattern that is consistent with trends in rural segments of Pakistan both at national and provincial level. However the only inconsistency to above pattern is found in urban Punjab whereby within age cohorts 10-14 and 15-19 males are enrolled in slightly higher percentage than females. Further not only the overall enrolment ratio for both males and females are relatively lower within rural segments compared to urban areas but also show relatively higher gender gaps

Table 3

Percentage Currently Enrolled for Total and Urban Rural
Divide by Age Cohorts and by Gender at
*National Level and Provincial Level*

| Age Group | Pakistan | | | | | | | | |
| | Total | | | Urban | | | Rural | | |
	Both Gender	Male	Female	Both Gender	Male	Female	Both Gender	Male	Female
5-9	66.39	71.34	60.95	77.60	80.87	74.05	60.54	66.41	54.07
10-14	70.04	77.28	61.64	81.34	84.10	78.21	63.26	73.25	51.58
15-19	41.41	47.60	34.39	52.08	54.84	49.10	33.78	42.63	23.38
20-24	14.22	17.19	11.29	20.50	22.50	18.43	9.06	12.62	5.68
25-29	3.22	4.11	2.35	4.80	5.82	3.70	2.04	2.73	1.40
Punjab									
5-9	79.03	81.34	76.59	87.76	89.51	85.88	73.93	76.51	71.24
10-14	77.54	79.54	75.41	85.68	84.29	87.20	72.19	76.36	67.79
15-19	45.11	47.39	42.71	55.18	54.27	56.11	37.14	42.06	31.84
20-24	15.61	17.43	13.99	23.32	24.10	22.58	9.00	11.37	7.00
25-29	3.83	4.87	2.82	6.06	7.42	4.55	1.92	2.38	1.51
KPK									
5-9	70.74	76.92	63.56	80.35	83.17	77.11	66.56	74.23	57.63
10-14	75.98	87.56	63.02	83.61	90.15	75.91	72.37	86.29	57.17
15-19	46.51	58.90	33.51	54.59	60.69	48.48	42.32	58.01	25.47
20-24	16.11	21.00	11.76	20.85	24.35	17.47	13.09	18.71	8.35
25-29	4.28	5.13	3.55	5.14	6.01	4.42	3.71	4.57	2.97
Sindh									
5-9	56.63	61.19	51.50	70.37	73.19	67.29	49.22	54.85	42.80
10-14	60.67	69.19	50.56	74.78	77.31	72.14	51.69	64.50	35.19
15-19	34.55	40.57	27.54	46.15	48.04	44.19	25.23	35.10	12.63
20-24	12.48	15.73	8.68	16.99	19.17	14.55	7.81	12.31	2.25
25-29	2.85	3.75	1.87	3.95	4.53	3.27	1.92	3.04	0.75
Balochistan									
5-9	52.69	61.80	42.93	65.24	72.49	57.60	46.54	56.62	35.65
10-14	60.51	72.57	43.83	78.95	86.55	68.50	49.56	64.30	29.10
15-19	35.41	44.70	21.56	50.80	61.07	35.64	24.70	33.38	11.63
20-24	9.81	14.04	4.83	17.46	22.26	10.85	4.74	7.91	1.36
25-29	0.77	1.51	0	1.33	2.54	0	0.51	1.01	0

*Source:* Pakistan Integrated Household Survey (2010-11).

in favour of males again emphasising that gender differentiation hold its most solid grip within the tradition rural communities. Further official designated age for primary education is 5-9 years of age in which ideally all children should have been enrolled had the target of universal education being met. Not only we find that enrolment level within this age group is way below 100 percent both in urban and rural segment for both males and females but except for Province Punjab there is found to be less proportion enrolled in 5-9 years of age that in 10-14 age group. This is reflection of those children who are either repeating grades or were probably later in joining the school system than the official declared age. This pattern of huge presence of children being enrolled in

primary education beyond the official age limit of 5-9 years for primary level can be seen clearly in Figure 7 for both male and female children. However this problem is of somewhat less magnitude between secondary and tertiary level where portion who are late in joining tertiary level seem relatively low as evident from pattern for secondary level in Figure 7. Finally beyond age group 10-14 there is sharp decline in enrolment percentages with each jump towards older age cohort indicating possible drop out as one move to higher levels of education for both males and females a discussion that will be taken up in detail in next section.

Fig. 7. Age Distribution of Currently Enrolled Students at Primary, Secondary and Tertiary Levels of Education by Gender for Overall Pakistan

Primary (Male)
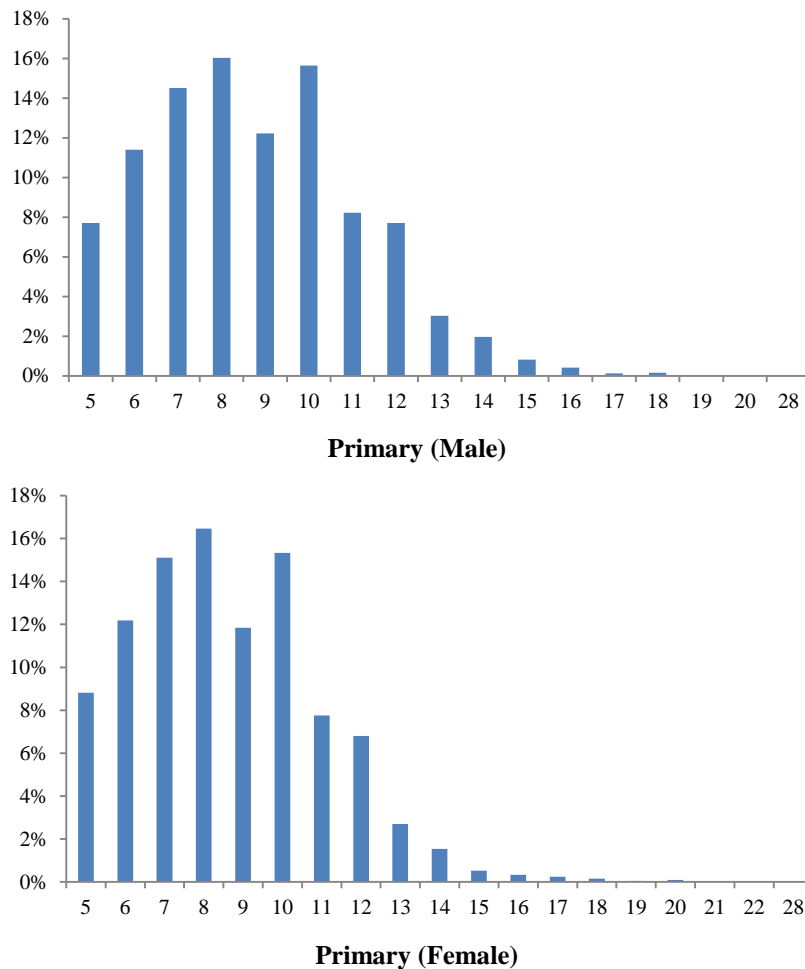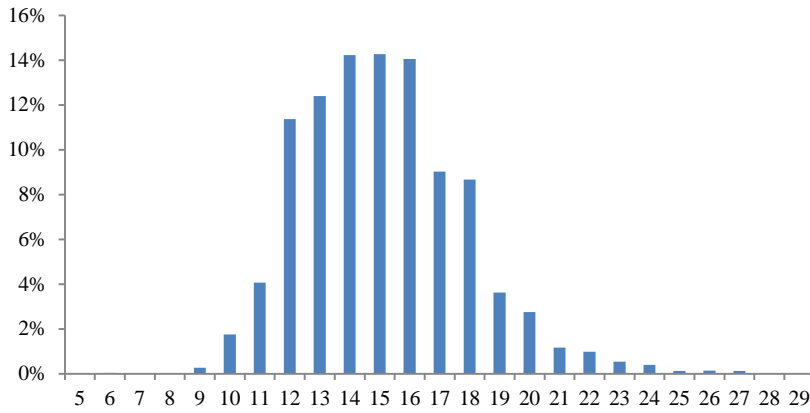
Primary (Female)
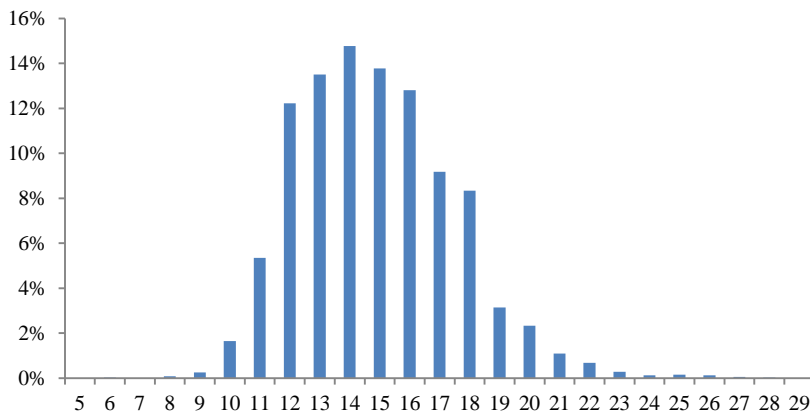
Secondary (Male)

Secondary (Female)
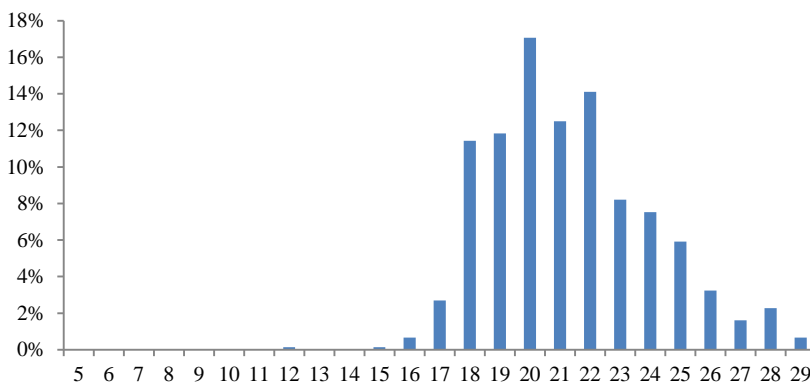
Tertiary (Male)

Tertiary (Female)
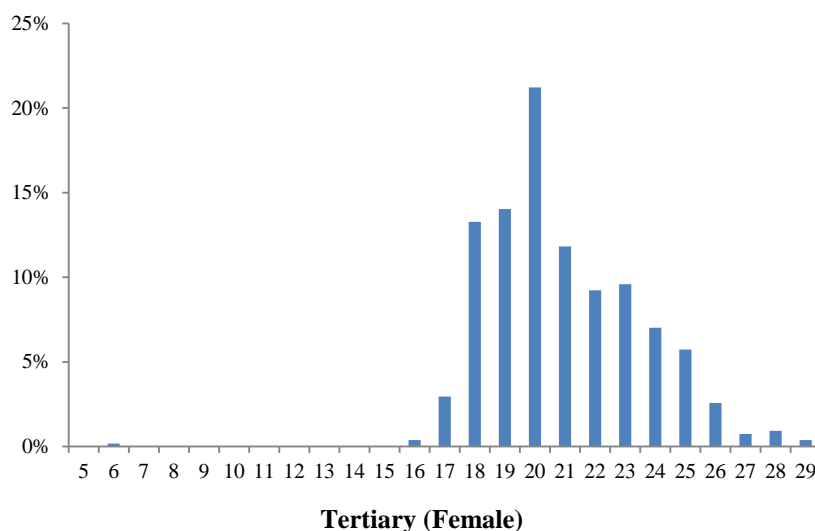
6. TRANSITION IN SCHOOL ATTENDANCE

Table 4 presents percentage of those who complete grade 12 from those who have attained grade 10 within age cohort 15-19 age group. Two striking facts come out from patterns in Table 4 below. Firstly within this age cohort very low proportion of go on to complete intermediate level of education being only of about 20.54 percent for overall Pakistan with corresponding figure of only 18.13 percent for males and 23.52 percent for females. These low levels of transition towards grade 12 in attained education are seen in estimates for each province being 22.07 percent for Punjab, 21.91 percent for Sindh, 18.46 percent for KPK and 14.10 for Balochistan. Part of this low attained education grade 12 from those who have already completed matriculation could be attributed to those who are behind the official age of completion of secondary education and but even accounting for that such estimates seem low. Moreover even more surprising finding is that percentage gender gap except for rural KPK, rural Sindh and rural Balochistan is negative indicating that overall there is trend of more females completing grade 12 among those who have completed grade 10 with 15-19 age group. This is a very crude estimate of transition trends but from these estimates it seems that females are moving on to higher levels of education more than males within this age group especially in urban populations of all provinces and both urban and rural segments of Punjab. So this does indicate a break in patriarchal mindset of educating females less to some extent; however whether these trends are indicating of educating females for purpose of increasing their choice set through taking up career oriented fields or just mere reflection of education for sake of better marriage prospects requires due attention.

Table 4

Proportion Completed Intermediate (Grade 12) of those who
Completed Matric (Grade 10) for Age Cohort 15-19

Area/ Gender	Pakistan	Punjab	KPK	Sindh	Balochistan
Overall					
Both	20.54	22.07	18.46	21.91	14.10
Male	18.13	18.36	17.68	20.05	13.71
Female	23.52	25.19	19.69	24.73	15.25
% Gap	**–22.91**	**–27.11**	**–10.20**	**–18.92**	**–10.09**
Urban					
Both	23.84	25.78	22.34	24.73	15.24
Male	20.80	23.76	20.38	20.26	14.41
Female	26.71	27.17	24.63	29.33	16.98
% Gap	**–22.12**	**–12.55**	**–17.25**	**–30.92**	**–15.13**
Rural					
Both	15.88	16.43	15.32	16.86	11.43
Male	15.30	12.02	15.90	19.80	12.50
Female	16.95	21.40	14.17	6.90	0
% Gap	**–9.73**	**–43.83**	**12.20**	**186.95**	**100**

Source: Pakistan Integrated Household Survey (2010-11).

7. CONCLUSION

How do we achieve target of universal primary education in Pakistan and how do we keep students that have enrolled to continue with schooling to higher levels are the most important policy questions which can only be effectively answered if one is well-informed about the trends in educational outcomes and of proportion of students indulging in continuation or discontinuation of schooling at critical transitions say from primary to secondary benchmark and higher. Hence an accurate description of patterns in educational achievements is crucial for both understanding the dynamic of low human capital stock build up and also for finding ways of getting out of such low-educational trap. In this context gender discrepancy in human capital building process plays an important role and in this paper an attempt is made to examine in-depth how gap in attained schooling measures for males and females at different levels of education have evolved in Pakistan through analysing the varying behaviour over age cohorts by gender. Further not only patterns of gender gap in achieved education are formulated for overall economy and across rural-urban divide both at national and provincial level but a rough estimate for attrition or rather continuation in studies as one move from matric to intermediate level for males and females within age cohort 15-19 is also evaluated so as to capture in totality the gender dynamics in education sector.

Our findings from analysis by age cohort support the patterns that come at aggregate level where it is found that compared to educated females, the percentage distribution of educated males by educational categorisation reveal that among the educated males there is found to be less presence of those that have completed grades that fall within primary educational range compared to their female counterpart and higher proportion that have attained grades both within secondary categorisation and within tertiary educational grouping indicating that among the much smaller pool of educated females compared to educated males a larger proportion of females have obtained primary grade 5 or less level of education while higher percentages of males than females have completed higher studies both at secondary and tertiary level of education among their respective population by gender of those who have exposure to schooling. However we do find that as one move from oldest to youngest age group with individuals belonging to attained education from primary to tertiary level of education, there is a tendency for distribution of females within their attainment profile to be relatively more inclined towards university level of education compared to males. However important question is that how much of this improved condition of female is being translated in to work force and how much is because of finding a better marital arrangement for females within society remains an open question for future research for if this increase in tertiary level education for females is not leading them to seek paid employment then this may not be a direct contributor to growth but will only impact the social and economic development indirectly through positive intergenerational externalities of female education.

Further our findings from aggregate analysis which also hold their ground in analysis by age cohort show that percentage distribution in rural societies for both males and females being much more positively skewed as compared to their urban counterparts in each province reveal that besides having overall low input in those who completed education from rural segments in contrast to higher urban share, overall rural sector is making relatively more contribution in educational attainment profile towards the lower levels of education say primary and secondary levels of education with much less presence of individuals with tertiary level of education within the rural attainment spreads by provinces. Hence the above pattern reveal that in rural societies within each province there is a tendency to not only seek education in lower proportion but also to stay through at lower levels of education and this patterns hold for both male and female populations that have gotten exposed to schooling whereas in urban sector not only there are more propensities due to perhaps more avenues towards acquiring education but also relatively more possibilities for continuing education to higher levels for both gender as compared to rural settings.

Finally in provincial comparison at aggregate level we find that Province Punjab not only has the highest percentage in the ever-attended group in contrast

to Province Balochistan being the lowest, Province Sindh being at second highest and Province KPK on third number in evaluation of provincial population shares as percentage of those who are attending or had attended school in Pakistan but also show much less patriarchal tendencies in distributional shares of males and females within their own respective attainment distributions by gender. This sequencing of provinces in their respective shares in the educated population of Pakistan can be reflection of mix of factors such as variation in population densities across provinces, non-uniformity of educational strategies opted by provincial administrations and finally due to variability in hold of patriarchal norms across different ethnicities being present within each province of Pakistan. However the important point that comes out from percentage of males and females in total pool of those who ever-attended group is that there is conspicuous deviations in percentage shares of population with completed grades by gender in favour of the males and against females at all levels of education from basic to higher studies within each province (only exception to this trend is at tertiary level of education within urban Punjab where females are in slightly higher proportion) and hence it can be safely inferred that females are marginalised group compared to males in education sector at all levels of education in Pakistan in each segment of society.

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