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SOCIOECONOMIC AND DEMOGRAPHIC DETERMINANTS OF CHILD LABOUR ACROSS OCCUPATIONAL CATEGORIES: EVIDENCE FROM DISTRICT BHAKKAR, PAKISTAN

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ABSTRACT

This study looks at the demographic factors linked to different types of child labour in District Bhakkar, Pakistan. Data was collected from 700 children aged 7 to 14 years who were working in both urban areas of the district. A structured questionnaire was used to gather cross-sectional data. The data were analyzed using SPSS 25.0. A multinomial logistic regression model was applied to explore how children's job types relate to selected demographic traits. Auto shop employment such as mechanics, auto workshops and denting shops–was used as the reference category. The results show that family size, age, working hours, number of brothers number of sisters child's income, residential area, holidays, access to help home ownership and father's income are all statistically significant in relation to some occupational categories. Family size has an consistent effect across most types of child work. The number of brothers is particularly significant for children working in brick kilns, fruit trolleys and lube shops. Child's income is also important in occupations except for needle work. Urban residence is strongly linked to brick kiln jobs and home maid work. Father's income plays a role in fruit trolley, home maid and lube shop employment. On the hand gender and whether a child is currently enrolled in school do not show any significant connection, with the type of job they hold. These findings emphasize how household characteristics, economic conditions, working patterns and where a family lives shape the kind of work children take on in this area.

Keywords:

Child labour; multinomial logistic regression; socioeconomic factors; family size; occupational categories; District Bhakkar; Pakistan.

INTRODUCTION

Child labour is a social and economic issue where children take part in work that can hurt their education, health and long-term chances in life. The thesis looks at factors that are linked to children working. These include how money the household earns, the traits of parents the size of the family demographic conditions and the job market in the area. Becker's (1965) theory of time allocation gives a way to understand how families decide how to use time and resources which can affect what

children do. Studies from Pakistan and other developing countries have shown that poverty, household traits and children's work are connected (Ray, 2000; Khalid & Shahnaz 2004; Hussain, Saud, & Khattak 2017). In Pakistan child labour happens in informal and low-skill jobs. These include workshops, brick kilns, domestic work, small businesses and other types of jobs. The thesis notes differences between urban areas. It says that children in District Bhakkar work in types of jobs. Like mechanics and auto workshops, brick kilns, fruit trolleys, home maid work, needle work and other things. Earlier research also looked at children working in auto workshops and farming in Pakistan (Khan, Khan, Sadozae, & Khan 2018; Ahmad, Huifang, Akhtar, Maqsood, & Imran 2020).Descriptive and association-based studies can find patterns between child labour and personal traits.

A parametric model lets us look at many traits at once. This paper uses the logistic regression analysis from the thesis. It leaves out the - parametric or descriptive tables so the focus stays on the estimated effects and significance levels from the regression. This study matters because it uses detailed data on 700 working children. It also looks at types of jobs instead of only measuring whether a child works or not. This allows a precise question: are socioeconomic and demographic traits linked to specific types of child labour compared to a clear reference job? The multinomial model fits well with the paper's goal of studying job types. From a view how a family chooses to spend a child's time. Between school, home tasks and work. Depends on the household's resources and the cost of the child's time. Becker's (1965) time-allocation theory helps explain these choices. When adult income is low or unstable a child's earnings can become more important.. Poverty is not the only reason. Family structure, parent traits, access to school and local job options also shape what kind of work children do.

The type of job is important because children do not go into one kind of labour market. The conditions and rewards in work, brick kilns, fruit selling, workshops and small shops can be very different. Evidence from Pakistan shows differences in the sectors and ways children work. Older national data found major differences between urban areas in job types and hours worked. More recent surveys in Pakistan still show differences in working conditions. Why child labour happens across provinces and areas.

Child labour should also be seen in the context of the job market. In areas children may join informal jobs because they need little education and employers want flexible low-cost workers. Recent findings from Pakistan show that both household conditions and job market demand matter. Fatima (2023) for example finds that the need, for child labour is linked to adult wages, adult joblessness and the size of the farming sectors. Also child labour supply increases when adults are unemployed. This idea fits District Bhakkar, where the jobs observed're mostly informal and easy to reach.

2. Objective of the Study

The objective of this paper is to examine the socioeconomic and demographic factors associated with the occupational category of working children in District Bhakkar, Pakistan, using the multinomial logistic regression analysis reported in the original study.

3. Literature Review

The existing literature shows that child labour is linked to household conditions, demographic factors and parental resources. Khalid and Shahnaz (2004) looked at the situation of child labourers in Pakistan and stressed how household circumstances play a key role. Ray (2000) in a study comparing child labour in Peru and Pakistan explored how child work connects to the status of families. Karim (1995) also highlighted poverty, household conditions and parental factors as important in understanding child labour in Pakistan.

Family size and household composition matter a lot because the number of people in a household can influence how resources are shared and whether extra income is needed. The thesis literature also refers to Ali and Khan (2004) who studied how families in Pakistan make decisions at the same time about sending their children to school or letting them work. Research from areas also looks at household and environmental factors that affect children's work (Webbink, Smits, & Eelke 2013).

The kind of work children do can vary depending on where they live how they work and what job opportunities are available locally. Ahmad et al. (2020) Studied child labour in farming in central Punjab while Khan et al. (2018) Looked at the reasons behind child labour and working conditions for children in automobile workshops, in Khyber Pakhtunkhwa. These studies support the idea that child labour should not be treated as one issue but rather examined by the different types of jobs children do.

This current analysis builds on research by focusing on how occupational groups relate to a set of socioeconomic and demographic factors. The main goal is to see if these factors are statistically linked to types of jobs using mechanics, auto workshops or denting shops as the reference group.

3.8 Research Gap and Contribution

The literature offers evidence on what drives child labour in Pakistan.. Most studies treat child labour as one single outcome or look only at the chance or level of participation. Those studies use methods like probit, stepwise regression and other tools to find that household income, family size, parental characteristics, education, unemployment and other socioeconomic factors are correlates. In contrast the present analysis focuses on which job categories children in Pakistan choose. By using a logistic regression model and comparing job categories such as brick kiln, fruit trolley, home maid, needle work and lube shop, with the reference category of mechanics, auto workshop and denting shops the study asks whether the same socioeconomic characteristics are linked to different forms of child labour. This job-specific view is the new idea of the paper.

3.7 Gender, Disability and Occupational Differentiation

Gender and individual characteristics can influence the kinds of work that children can do. Traditional roles in the home social norms and how jobs are divided can decide if children work inside or outside the home and what activities are seen as okay. Earlier national studies showed differences in the types of jobs based on sex and where people live. Disability can also affect the jobs that're available but there is not much research on this. The current study includes gender and disability information so it can check if these factors are linked to types of jobs, in District Bhakkar.

3.6 Education, Family Characteristics and the Wider Determinants

Although the current regression table does not show every variable that was mentioned in the original conceptual model education is still a key part of the larger child-labour research. Studies in Pakistan have connected child labor to a lack of schooling opportunities the level of education and the economic conditions of the household. Evidence from South Punjab for example shows that family duties, poverty and a lack of education opportunities are reasons why children take part in labor. Recent research, from Pakistan also highlights the importance of parental literacy, school enrollment, working hours and household conditions. These studies show that child labor must be looked at within a household and human-capital approach.

3.5 Working Hours, Employment Arrangements and Working Conditions

Working hours are a part of child labour because the amount of work can vary a lot depending on the job. In Pakistan studies have shown that many children who work often go beyond working hour limits. These patterns differ based on where they live and the kind of work they do. Jalil and Alam (2022) who looked at data from Khyber Pakhtunkhwa found that longer working hours were linked to lower well-being among child workers. On the hand higher child wages, better safety measures more time for leisure, older age and more education were all connected to better well-being. These results show that working hours and employment status should be considered when looking at differences in occupations, among working children.

3.4 Child Income, Adult Income and Labour-Market Conditions

Income variables can work in ways. A childs own earnings may show the kind and how much work the child does while the fathers income can show how money the adults in the house can make. Ray (2000) gives information about child labor in Peru and Pakistan while

Khalid and Shahnaz (2004) look at the living conditions of children who work in Pakistan. More recent studies have expanded the discussion by focusing on the demand for labor in the market well as the supply from the household. Fatima (2023) says that adult wages, adult unemployment and the size of the agricultural sectors are important for understanding child labor demand in Pakistan. A 2024 review of shocks also shows that the link, between household financial conditions and child labor can be different depending on the type of shock and the situation warning that the poverty link should not be seen as the same everywhere.

3.3 Rural and Urban Context

The spatial dimension of child labour is important because rural and urban households face different employment opportunities, schooling access and labour-market structures. Research on Pakistan has reported differences in child labour between rural and urban locations, while studies of Punjab have emphasized the role of household conditions, parental education, school enrolment and working hours. The present study incorporates region as an explanatory variable and therefore permits an assessment of whether occupational categories differ between urban and rural children after other characteristics are considered.

3.2 Family Size and Household Composition

Family size plays a role in how household resources are shared. When a family grows larger the number of dependants often goes up compared to what the household can support. This can make childrens work more valuable from a point of view. In Khyber Pakhtunkhwa studies show that family size is a factor when it comes to child labour. Sikandar and colleagues found that family size was the powerful predictor in their regression analysis. Other factors like occupation, how many adults live in the house family income and parents education levels also helped explain differences in child labour. These results make it clear why family size, along, with the number of brothers and sisters should be included in this study's regression model.

3.1 Poverty, Household Income and Child Labour

Poverty and household economic insecurity are often cited as reasons for child labour in developing countries. In Pakistan, Chaudhary and Khan (2002) showed that poverty played a role in driving child labour in Dera Ismail Khan. They also found that factors like fertility, family size, adult illiteracy and the quality of the schooling system contributed to the number of children working. Their findings matter for this study because they come from a place in Pakistan where direct data, about working children was collected. This shows that income alone doesn't explain everything. It's better to look at household structure and economic conditions when trying to understand why children work.

4. Methodology

4.1 Study Area

The study was conducted in District Bhakkar, Punjab, Pakistan. The district is located in the western part of Punjab and is bordered by Layyah, Jhang, Dera Ismail Khan, Khushab and Mianwali. The district is divided into four tehsils: Bhakkar, Darya Khan, Kallur Kot and Mankera. The thesis reports that child labour in these areas includes miscellaneous work, home maid work, workshops and shops.

4.2 Data Collection

The study used a cross-sectional survey with a predesigned structured questionnaire. The unit of analysis was working children between 7 and 14 years old. Random sampling was used. Data were collected from urban areas of Bhakkar, Darya Khan, Kallur Kot and Mankera. The total sample had 700 children.

4.3 Data Processing and Analysis

The data that were collected were. Coded in Microsoft Excel. Then they were moved to SPSS. Statistical analysis was done using SPSS version 25.0. The current paper takes the parametric regression analysis from the thesis. It does not include the -parametric association tables.

4.4 Econometric Model

The thesis uses a logistic regression model to estimate the relationship between the type of child labour and socioeconomic characteristics. The original model is written as:

Type of Child Labour (TC) = α + β_1*(Child Y)* + β_2*(Child X)* + β_3*(Father Y)* + β_4*(Child E)* + β_5*(Father E)* + β_6*(Parents O)* + β_7*(Family Size)* + β_8*(Mother E)*

In the estimated regression table occupational categories are compared with Mechanics/Auto workshop/Denting shops, as the reference category. The predictors that are reported include family size, age, working hours, number of brothers number of sisters income of the child, region, gender, employment status, disability, holidays, medical aid, residential ownership, total family expenditure and father's income.

5. Results

5.1 Multinomial Logistic Regression Results

Table 1 presents the coefficients and significance values reported in the thesis for the multinomial logistic regression of occupational category on socioeconomic and demographic characteristics. Statistical significance is interpreted at the 5 percent level ($p<0.05$), consistent with the thesis.

Variables	Bricks kiln B	Sig.	Fruit trolley B	Sig.	Home maid B	Sig.	Needle work B	Sig.	Lube shop B	Sig.
Intercept	-27.255	0.936	-10.014	0.98	-0.746	0.997	149.09	0.875	6.95	0.97
Family size	0.688	0.029	1.672	0	1.086	0.001	-7.916	0.901	0.96	0.00
Age	0.939	0	-0.211	0.296	0.175	0.374	-6.262	0.801	-0.23	0.19
Working hours	0.309	0.458	2.798	0	2.259	0	-8.583	0.927	2.49	0
Brothers	-1.359	0.009	-3.008	0	-0.684	0.215	10.784	0.926	-1.71	0
Sisters	0.857	0.079	-2.144	0.001	0.059	0.907	8.357	0.931	-0.89	0.08
Total income of child	0.001	0.01	0.001	0	0.001	0.019	0.002	0.984	0.00	0
Region (urban)	1.165	0.036	0.052	0.938	1.111	0.042	-5.338	0.969	-0.87	0.09
Male	1.641	0.995	-1.569	0.997	-19.215	0.902	-31.866	0.906	-16.07	0.92
Employment (part time)	-0.409	0.999	-28.675	0.837	-28.533	0.837	7.622	0.982	-27.33	0.84
Employment (daily wages)	-1.542	0.995	-25.388	0.855	-23.701	0.865	6.403	0.989	-24.89	0.86
Disability (arm)	-17.493	0.998	-17.251	0.998	-13.058	0.998	30.141	.	-15.75	0.99
Disability (deaf)	0.501	0.467	0.898	0.37	1.005	0.246	1.219	0.989	1.45	0.04
Holiday (no)	2.477	0	4.575	0	3.19	0	-17.884	0.834	3.25	0
Medical aid (yes)	0.259	0.738	-0.27	0.83	3.09	0.002	-1.323	0.983	-1.11	0.15
Resident (own)	1.371	0.009	0.045	0.946	2.502	0.002	-2.774	0.992	2.15	0
Total family expenditure	0	0.136	0	0.976	0	0.903	0	0.964	0	0.00
Income of father	0	0.093	0	0.02	0	0.01	0	0.982	0	0

Notes: The reference category is Mechanics (Auto workshop, Denting shops). Reference categories for the categorical predictors include rural, eye problem, rent, and the corresponding Yes/No categories as reported in the thesis. A dot (.) indicates the value was presented as missing/not reported in the thesis table. 5.2

Interpretation of Significant Associations

Family size has a significant effect on employment in brick kiln (p=0.029) fruit trolley (p=0.000) home maid (p=0.001) and lube shop (p=0.000). The coefficients for these categories are positive meaning that as family size increases there is a likelihood of being employed in these occupations compared to the reference category. However family size does not have a significant effect on needle work (p=0.901). Age is statistically significant for brick kiln employment (p=0.000). It does not show an association with fruit trolley, home maid, needle work or lube shop employment. Working hours are statistically significant for fruit trolley, home maid and lube shop employment. The associations for brick kiln and needle work are not statistically significant.

The number of brothers has a significant effect on employment in brick kiln, fruit trolley and lube shop but not in home maid or needle work. The number of sisters is statistically significant for fruit trolley employment. Total income of the child is statistically significant for brick kiln, fruit trolley, home maid and lube shop employment. The association with needle work is not statistically significant.

Region is statistically significant for brick kiln (p=0.036) and home maid (p=0.042) employment. The coefficient for the category is positive in both cases suggesting that urban residents are more likely to be employed in these jobs compared to rural residents. Gender does not show any significant effect across any of the occupational categories. Similarly part-time and daily-wage employment indicators are not statistically significant in any of the categories.

For disability the arm-disability indicator is not statistically significant in the categories where significance values are reported. The deaf-disability indicator is statistically significant for lube shop employment (p=0.040). Holiday status is statistically significant for brick kiln, fruit trolley, home maid and lube shop employment but not for needle work. Medical aid is statistically significant for home maid employment (p=0.002).

Residential ownership is statistically significant for brick kiln (p=0.009) home maid (p=0.002) and lube shop (p=0.000) employment. It is not statistically significant for fruit trolley or needle work. Total family expenditure is not statistically significant for brick kiln, fruit trolley, home maid or needle work. However for lube shop employment the significance value is reported as 0.000 indicating a statistical significance.

Father's income is statistically significant for fruit trolley (p=0.020) home maid (p=0.010) and lube shop (p=0.000) employment. It is not statistically significant, for brick kiln or needle work.

6. Discussion

The results from the regression show that the kind of work that children do is linked to a mix of things about their family, themselves and their job. One of the important things that keeps coming up is how many people are in the family. This matches what other studies have said about family resources and child labor in Pakistan (Karim, 1995; Khalid & Shahnaz 2004). The fact that having brothers and sisters matters in some types of work also shows that the way a family is set up can affect what kind of work a child does. The fact that the money a child makes is important in types of work shows that how much money a child earns is closely linked to what kind of job they have. Also the fact that the fathers money matters for jobs like selling fruits cleaning homes and working at a lube shop suggests that the financial situation of the parents is different depending on the job. These findings match what other studies have found about how family money affects whether children work (Ray, 2000; Ali & Khan 2004).

The fact that living in a city is linked to working at a brick kiln or as a home cleaner shows that where someone lives matters for some kinds of jobs.. The way it matters can be different for each job. The fact that working hours are important for fruit trolley, home maid and lube shop jobs also shows that the way people work isn't the same for every job. At

the time the results don't show any strong links between whether a child is a boy or a girl or if they are working or not. Most of the time being disabled doesn't matter, except for being deaf when it comes to working at a lube shop. These results show that the reasons why children do kinds of work are not the same for all types of child labor.

7. Conclusion

This paper looked at the analysis from the original study of working children in District Bhakkar and studied the reported multinomial logistic regression results. Using mechanics/auto workshop/denting shops as the starting point the analysis shows that several social and economic factors are linked to types of jobs. Family size, the money a child makes how hours they work the number of siblings, where they live whether they have holidays if they own their home and the fathers income are all linked to some jobs.. Being a boy or a girl and whether someone is working or not are not linked to most jobs. The results should be seen as links found by the regression model not as proof of cause and effect. The paper keeps the numbers. How significant they are, from the original thesis and leaves out the non-parametric tables and their results.

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Source basis: Extracted from the original Master's thesis, including the reported multinomial regression analysis (Table 4.21). Non-parametric association tables were intentionally omitted.

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