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IMPACT OF COVID-19 ON INFORMAL SECTOR OF THE ECONOMY OF PAKISTAN

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Abstract

The objective of this research paper is to explore the impact of Covid-19 on informal sector through primary data to be collected from a sample 275 persons who were selected randomly both from rural and urban areas of District Multan, Pakistan during 2021-2022. The data was analyzed through Ordinary Least Square (OLS) technique. The findings of the study show that the gender, marital status, family status, and assets were negatively related to working hours whereas the covid-19, age, area, education, experience, income per day and health had positive association with working hours. It was also noted that during COVID-19 workers served long hours but received low wages.

Key Words: COVID-19; Informal sector; labor supply; daily wages.

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1.Introduction

1.1 Background of study

The word informal economy is as ancient as the formal economy concept. In 1971, UK anthropologist Keith Hart coined the term "informal business" to define the uncontrolled system coexisting with a centralized economy. In 1972, the (ILO) published an official overview of the illicit economy, which distinguished it from the unauthorized or subterranean economy. The informal sector contributes significantly to the absorption of massive unemployment. The most significant feature of the informal economy that encourages women to participate is its ease of entry. Furthermore, low-skilled and uneducated workers can easily make their living by working in the informal sector. Poor women are more likely than men to work in the informal economy, according to an ILO (2002) study. Small-scale enterprises typically operate intensively; easy access, dysfunctional employer-employee ties, uncertain working hours, a low degree of technology characterize the informal economy.

Due to the formal sector's inability to generate sufficient job opportunities, Pakistan's informal economy is rapidly expanding. In Pakistan there is reportedly 35% of GDP size of   informal economy, the largest number in the developing countries. However, due to data limitations, supply of labor especially in the informal economy has received little attention. In this micro-level study, the authors have   made an effort to fill this study gap.

Human capital is crucial to a country's economic development. It is a method of increasing a country's productive potential. More job opportunities are made, resulting in higher income levels and a higher standard of living for the people. Human capital, according to T.W. Shultz (1980), is distinct from

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other physical or marketable assets. A higher rate of growth can be gained by investing in both human and physical resources. The key focus of Mincer & Gary Becker was on human capital accumulation as a means of calculating individual profits. Gary Becker, Shultz, and Mincer all contributed significantly to the development of labor economic theory. They agree that expertise, schooling and training are the means to improve human resources, which contributes to higher revenue generation (Romer (1986), Burki & Abbas (1991)). There is a lot of analytical work in Pakistan to estimate the positive link between spending on human resources and income. Persons with a higher degree are more likely to receive higher wages (Afzal, (2011); Tansel, (2000). Many other studies were carried out to examine the effect of various factors on individual income.

Covid-19 pandemic is one of the world's most significant threats in recent years. The actual cost of human lives has yet to be determined. Along with the high cost of lives and a serious health crisis, the world is experiencing an economic slowdown that will have a significant effect on the well-being of large segments of the population in the coming years. Some of the latest policy initiatives taken to combat the pandemic may have a significant effect on lives of human lives in the future.

International financial institutions, on the other hand, are often justified in their reservations about Pakistan's economy. For example, the FATF's concerns about Pakistan's broad informal economic base are backed up by the fact that informality accounts for at least 35 percent of the country's GDP. The spatial proliferation of encroachments in the country is a key component of this. On the one hand, this unregulated environment facilitates money laundering and terrorist funding, but it also stifles much-needed structured

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economic development. Remittances, which account for 7% of Pakistan's GDP, are a valuable asset for the country, and it relies heavily on them for foreign exchange. Many expatriates, however, prefer to send money via this channel due to the inconvenient banking procedure and fluctuating exchange rates.

In Pakistan, 64 percent males and 36 percent of females are infected by Covid-19 pandemic and faced multi-dimensional hardships. Unemployment fell to dangerously low levels. As per International Labor Organization (ILO) report, (2019). Pakistan has 8.5 million domestic employees, which makes it one of the major providers of employment in an informal economy,

With the COVID-19 epidemic, Pakistan's gross domestic product (GDP) is predicted to fall from 3.20% to 2.40%, although global GDP growth is predicted to fall from 3.10% to 2.80%. Similarly, GDP growth for G-20 developed is projected to be 1.90 percent in 2020, but after the COVID-19 split, it is expected to fall to 1.30 percent. Likewise, there is a lack of revenue in direct income taxes, VAT tax and other indirect taxes. Furthermore, a decrease in trust between private and international investment would contribute to increase funding deficits. The well-being and life of the working class would be at stake seriously in this abnormal situation.

The fear of the coronavirus has triggered a 60-70 percent drop tourists' arrival in Pakistan, and the country's tourism industry is predicted to lose US$ 5.8 million in the worst-case scenario. If the world recovers from the coronavirus in the near future, global supply chains will be disrupted, and it is feared that factories will concentrate in one region, such as China, in our neighborhood. Similarly, China is expected to build opportunities for some of

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its industries to relocate to developing countries such as Pakistan. HRM in the Global Supply Chain (GSC) will be in hot water as well.

The lodging and food sectors have seen a 10% drop in production so far as a result of inadequate measures; the entertainment and leisure sector has seen a 60 percent drop in production, and the printing, communication, and information sectors are forecasted to drop by 20.3 percent. Transportation and storage would be cut by 70%, while wholesale and retail would be cut by 28.6%, and power and air conditioning would be cut by 60.9 percent. Similarly, industries with a large proportion of transient employment (such as the restaurant, lodging, and recreation industries) will be disproportionately affected by outbreaks, but would result in labor shortages, putting a strain on human resources (HR).

According to Evansa (2020), import duties on 16 medical items have been waived for a three-month (20 March 2020 to 20 June 2020) and the export of anti-malaria drugs and personal life saving drugs are restricted, but masks (except N95 and PPE) and sanitizers are permitted to export. To compensate for lost sales, export sectors have earned about US$ 290 million in cash subsidies. More than 237 export units were allowed to work under protective government-enforced SOPs.

The government has also stated that electricity bills for SMEs have been exempted for three months since they opened, as well as cash support for skilled employees who have lost their employment as a result of the lockdown. Pakistan has requested to "G-20" for debt relief, which would enable it to delay a $ 1.8 billion yearly payments. In the month of April 2020, an Asian Development Bank (ADB) loan of US$ 305 million has been dispersed, and

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the social sector received US$ 200 million and the health infrastructure received US$10 million aid. Pakistan's exports dropped by 1 billion dollars (-54%) and imports dropped by 3.1 billion dollars (-34.4 percent). The worst locust infestation in over two decades is wreaking havoc on cotton, wheat, and other major crops, so agriculture is expected to grow slowly. The government has declared a state of emergency to combat the infestation. Some export-oriented industries, for example leather and textiles, are projected to grow modestly. Multinational donors have pledged funds to Pakistan, including Asian Development Bank ($ 2 billion), International Monetary Fund ($ 1.38 billion), the Islamic Development Bank ($ 650 millions), and the European Union ($ 12.5 million). The government has introduced a US$ 6.7 billion support program to help the country's poorest citizens (mainly unskilled labour). In the first half of FY2020, FDI inflows increased by 62.5 percent year on year basis. Short-term money has spilled easily to buy government securities named Pakistan's Euro Bonds that have lucrative returns. Foreign reserves due to these inflows are predicted to rise due to investment in Treasury. According to Ahmad (2020) with the exception of food processing, export-oriented sectors, and those associated with the construction industry, all other forms of businesses will face massive layoffs and employment disruptions totaling 21 million job loss. The condition characterized by cheap and redundant HR but squeezed market potential for firms acutely engaged in HRM would be paradoxical. While the government has started providing social transfers worth PKR 12,000 per month to over 18 million families, the only way to keep jobs is through administrative orders and a refinancing

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scheme for businesses (for wage payment). An aid package worth PKR 200 billion has been set aside to support daily wage employees.

It was noted that Pakistan's economy grew at a negative rate of 1.3 percent in 2019-20, with just 1% growth in 2020-2021. In other words, drop in exports, private investment, and household consumption may be the other side of the coin. The current lockdown, as well as the resulting drop-in economic activity, could result in the layoff of over 5 million people. This would drive the unemployment rate to an all-time high of 4%, suffocating the poor below the poverty line by millions, ultimately raising the total number of poor to 100 million.

The lockdown has had a mixed impact on students, according to HR managers working in the-education sector. For example, some elite English-medium schools are creating virtual schools and Chromebooks, while public and low-income private schools seem oblivious. One solution could be cellular phones, which 89 percent of Pakistanis have access to, according to the 2018-19 Economic Survey, but connectivity remains a problem. Pakistani students' struggles are exacerbated by their lack of access to television and the internet, according to Hassan and Attique (2020). the availability of widespread internet is a simple choice. Out-of-school children total 6.5 million, 5 million, and 6.3 million at the middle, high, and higher secondary levels, respectively. Dropouts, particularly girls, rarely return to school. Female students in the age group 10 to 14 years spend more time studying on weekends than boys, while the relationship reverses in the age group 15 to 19 years. Moreover, about half of all girls in both age groups spend between 0 and 3.5 hours a day on studies, with a median of 1.75 hours. Boys in the age group 10-14 spend 50 percent of

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their time studying, and boys in the age group 15-19 spend 0 to 4 hours a day, but the median value is much lower at 1.5 hours.

1.2 Objectives of Research

The objectives of this study are enlisted below: -

● To analyze the effects of Covid-19 on informal sector in district Multan, Pakistan.

● To investigate the effect of Covid-19 on employment in informal sector in Multan, Pakistan.

● To examine the impact of Covid-19 on poverty in informal sector in Multan , Pakistan.

● To assess the impact of Covid-19 pandemic on daily income of workers in informal sector and well-being of workers.

2. Literature Review

Khan et al. (2020) examined the effect of the lockdown on Pakistan's wheat harvesting season, food prices, and agriculture supply chain management of vegetables, fruits, and pulses during the COVID-19 outbreak. They discovered that approximately 70% of Pakistan's labour force is employed in the agriculture sector, and as a result of the country's prolonged and partial lockdown in all remote and industrial areas, they were unable to earn the necessary income for their living. They recommended that the government review food policy to safeguard the poor people from hungerness and reduce the impact of lock-down and analyzed how market forces react to imbalances in supply and demand, storage and capacities, and commodity pricing regulation. Rehman et al. (2018) found that educational disparities between men and women have a negative effect on household poverty. The likelihood

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of household poverty decreases as the number of females enrolled in primary, secondary, and tertiary education rises. The increase in female-to-male literacy also reduces the risk of a low-income household. Empowering women, developing sustainable employment opportunities in both the formal and informal sectors as well as reducing poverty all benefit from reducing gender inequalities in education at all levels. Hassan and Farooq (2015) concentrated primarily on the society's gendered work ideology and other discrimination that women employees face at workplace. They used a mixed mode approach to gather primary data from four different industries. The results showed the worst state of gender biased practices against home-based women employees, such as exploitation (93.3 percent), behavioral issues (67 percent), and limited mobility (73 percent), due to the society's specific socio-cultural build-up. The study proved that men and women are not only exposed to different types of threats, but are also affected differently by the same risks (structural adjustment policies). Mughal et al. (2020) found that the informal sector interacts with the formal economy Pakistan. They also illustrated per capita impact contribution of the revised GDP if the informal sector is integrated by complex simulations into official statistics. They believed that reforming institutional framework should come first before tackling the informal sector. Shaikh & Mishra (2020) analyzed informal sector which has been effected by lockdown in India. This study examined how sales and profits varied across various types of businesses during the country's lockdown. The impact of lockdown is enormous. The consequences of business are not only financial, but also psychologically distressing to the business owner due to a lack of income and high expenditures. Khuong et al. (2020) investigated the effect of Pakistan's informal economy on economic development. They disclosed that

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informal economy of Pakistan accounts for 56% of the country's gross domestic product (GDP). They proposed that the government should impose taxes on the agriculture sector, citing the fact that agriculture employs roughly 70% of Pakistan's population and paying very low tax as well as wages to farm workers. Mehmood et al. (2019) investigated the urban informal sector with the aim of determining how to ascertain individuals' monthly earnings dynamics. The findings revealed that education, age, working hours, and experience all have an important and positive effect on monthly income. They recommend future research investments in the urban informal sector to increase the amount of work prospects and labor income in the urban informal sector using a broad data collection method. Singhari and Madheswaran (2018) investigated how wage structures and differentials in controlled and unregulated industries affected by gender, religion, and caste. Data from the National Sample Survey Organization (NSSO) of India for the ages of 15-65 years were collected from 2004-2005 and 2011-12. These surveys were conducted to collect information on jobs, demography and characteristics of human resources. Wage inequalities based on caste and religion were found in both the formal and informal sectors of India. Hochberg and Lay (2015) examined the impact of minimum wages on profits and jobs in both Indonesia's formal and informal sectors. The study indicated that the minimum income law has a positive effect on formal salaries and jobs, but essential factors contributing to income increases and prosperity were expanded expenditures in schooling and facilities for both formal and non-formal workers. Gillani et al. (2015) examined factors affecting self-employment and wage rate in Southern Punjab's uncontrolled economy. So, higher educational

attainment reduced the likelihood of entering wage jobs as well as self-employment. Faridi & Rashid (2014) investigated the factors that affected educated women's participation in the labor force, as well as their wage earnings and working hours. They found that women get less job opportunities and low wages both in private and public sectors of Pakistan. Ali and Hamid (1989) looked at the role and involvement of women in the rural informal sector of Punjab, highlighting the issues that women face. They gathered information by conducting surveys in various villages of Punjab. They discovered that women in Pakistan's rural areas not only work in agriculture but also play an important role in the country's rural informal sector. As a result, they should operate in a more pleasant atmosphere and demonstrate their commitment to the country's growth to the fullest extent possible.

2.1 Distinction of this Study

Generally, there are limited conclusive results relating to empirical studies of the impacts of informal sector on different health issues but no study is available on impact of covid-19 health issue on informal sector. In this way, this study is distinguished from above quoted studies and created a research gap for further research. So the authors availed this opportunity to conduct research to measure the impact of Covid-19 pandemic on the employment and wages of workers serving in informal sector of Pakistan.

3. Data and Methodology

3.1 Area of study

Multan City is located in the Punjab province of Pakistan. It is located on the eastern side of the Chenab River. Multan is renowned for the abundance of shrines and Sufi saints known as the "City of Soufi", the "City of Saints"

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and "Madinah-Tul-AUleyah". In the town there are many bazaars, mosques, sanctuaries and ornate tombs. It is separated from "Bahawalpur" by the "Sutlej River" and from "Muzaffargarh" by the "Chenab River". Owing to its dry port and good transportation, the city has become a significant political and economic center for the region. Multan is also a big hub of agriculture. Wheat, cotton and sugar cane are the major crops produced in the city. Small numbers, including rape, mustard, sunflower, corn, tobacco, bajra, lentils and oil seeds are also cultivated there. Mangoes, guavas, citrus fruits and grenades are the most popular fruits grown in Multan. District Multan population is around three million and it is main economic Centre of Southern Punjab of Pakistan. Its sixty percent population lives in the rural areas. There are five Public and private universities in the city of Multan.

3.3 Type of data

For the purposes of this research, primary data was collected through field survey in 2021-2022 A questionnaire was developed for this purpose.

3.4 Sample of Study

The sample size of this study was consisted of 275 respondents having aged between 15 to 65 who were working in the informal sector in rural and urban areas of District Multan of Pakistan. In this study, Tehsil headquarter is considered as urban areas, while villages are considered as rural areas.

3.5 Development of Questionnaire

To obtain reliable data, a questionnaire was developed and direct interview approach was adopted. This research used a method called "purposive sampling" for collection of data. The questionnaire asks about place, marital

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status, income, age, education, family income and expenditure, health, and the COVID-19 from selected respondents.

3.6 Specification of Model

The Model is specified in the following equation.

$$IF= f \left[\begin{array}{c} GEN, Area, AGE, \ MRS, EDU, EXP, CH, FS, AST, IPD, \\ Health, COVID-19 \end{array} \right]$$

where;

IF=Informal Sector (Working hours per day)

Gend = Gender

Area= Area

Age= Age

MRS= Marital Status

Edu=Education

Exp= Expenditure

CH= Children

FS=Family Setup

AST= Assets

IPD= Income Per Day

Health= Health

Covid-19= Covid-19

3.7 Conceptual Model

The conceptual Model having independent and dependent variables is shown in Figure 1

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Fig 1: Conceptual Model

Independent variables

| Gender |
| Area |
| Age |
| Marital Status |
| Education |

| Expenditure |
| Children |
| Assets |
| Income Per Day |

| Health |
| Covid-19 |

| Family Setup |

Dependent variable

| Informal Sector |
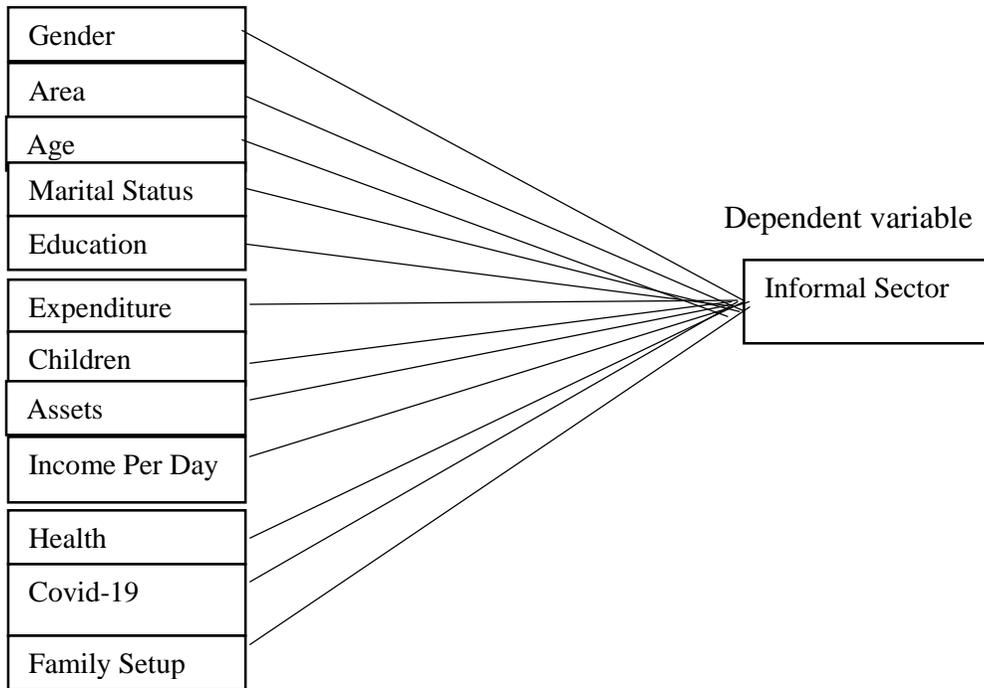
3.8 Analytical Techniques

Three analytical techniques are used to analyze the primary data:

3.8.1 Descriptive Analysis

Gender, location, age, marital status, education, experience, children, family system, properties, working hours, daily income, health problems, and Covid-19 were all subjected to descriptive review. Descriptive statistics are used to provide quantitative explanations in a practical way. In descriptive analysis, the minimum, maximum, and mean values, as well as the standard deviation, were determined. The lowest score in the value set is the minimum,

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and the highest score in the value set is the maximum. The average or medium is probably the most common way to represent the main trends. Simply add the mean and divide by the number of observations to determine the mean. The Standard Deviation (SD) measures the degree to which data values are dispersed or differed as compared to the mean.

3.8.2 Correlation Analysis

Correlation analysis is a mathematical technique, which is used for assessing the strength of relationship between two variables. A strong correlation shows that two variables are closely connected, while a weak correlation suggests that the variables are not very closely related. In other words, it examines the strength of the relationship with the available information. Correlation may be positive or negative.

3.8.3 Regression Analysis

Regression analysis is used to estimate the relationship between one or more independent and dependent variables. The most widely used regression analysis approach is linear regression. The aim of regression analysis is to determine whether independent variables are fairly important for workers who were effected by covid-19. Working hours and wage/income per day associated with informal sector as predictors of the dependent variable. Covid-19, health issues and assets are variables that are independent in regression equations, five demographic variables (age, gender, education, marital status, and family system) were used as control variables.

4. Results and Discussion

The method of converting raw data into a valuable data set, which allows the extraction of beneficial knowledge and final observations for improved decision-making, is called the analyzing of data. Both categorical and

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quantitative variables are included for the purpose of analyzing the impact of covid-19 pandemic on informal sector. Working Hours (WH), Education (EDU), Experience (EXP), Assets (AST), Income per Day (IPD) & Covid-19 are quantitative variables while Health problem (Health), Marital Status (MRS), Family status (FS), Gender (GEN), Children (CH) & Area (Area) are included as categorical variables in this study.

4.1 Descriptive Analysis

A comprehensive overview and interpretation of the key facets of the results are provided by descriptive statistics. The research variables are organized in tables to assess the effect of Covid-19 on the informal sector in the selected region (District Multan). The result of descriptive statistics is shown in Table 1.

Table 1: Result of Descriptive Statistics

Descriptive Statistics				
Variables	**Mean**	**Std. Deviation**	**Maximum**	**Minimum**
GEN	1.349	0.477	2.00	1.00
AGE	2.029	0.622	3.00	1.00
Area	1.716	0.456	2.00	1.00
MRS	1.062	0.242	2.00	1.00
EDU	1.793	0.457	3.00	1.00
EXP	2.462	0.816	4.00	1.00
CH	1.080	0.272	2.00	1.00
FS	1.804	0.398	2.00	1.00
AST	1.575	0.495	2.00	1.00

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WH	1.618	0.487	2.00	1.00
IPD	1.131	0.338	2.00	1.00
Health	1.789	0.408	2.00	1.00
COVID-19	1.105	0.308	2.00	1.00

4.2 Correlation Analysis

A matrix of correlations allows one to sum up data for further study. It can be used to analyze relationships and interdependence between variables. The magnitude of the correlation coefficients reflects the intensity of the association between the two variables. The coefficients sign only show the nature of the relationship between the two variables. Each component is perfectly linked to itself, as shown by 1 main correlation matrix diagonal. There is a positively or negatively correlation among variables. The coefficient of differentiation is from - I and +1. When the value is ± 0 to 0.29 the fewer, the more from ± 0.30 to 0.69 is considered moderate while and the higher correlation between the variables is deemed from ± 0.700 and 1. The results are shown in Table 2.

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Table 2: - Results of Correlation Analysis

	GEN	Area	AGE	MRS	EDU	EXP	CH	FS	AST	WH	IPD	Health	Covid-19
GEN	1												
Area	0.021	1											
AGE	-0.047	-0.01	1										
MRS	-0.061	0.095	-.426**	1									
EDU	0.015	-0.091	-0.056	0.017	1								
EXP	-0.003	-0.059	.614**	-.164**	-0.016	1							
CH	-0.019	0.126*	-.424**	.870**	.134*	-.217**	1						
FS	-0.022	-0.006	.141*	-.405**	0.117	.202**	-.495**	1					
AST	-0.049	0.209**	-0.019	0.007	-.149*	-0.054	0.064	-.129*	1				
WH	-0.194**	0.203**	.133*	-.202**	.217**	.161**	-.127*	.120*	-.162**	1			

IPD	-0.149*	0.029	-0.088	-0.01	.176**	-0.022	0.084	-0.025	-0.059	.150*	1		
Health	-0.07	0.149*	-.393**	.133*	.234**	-.506**	.152*	-.121*	-0.066	0.052	.148*	1	
COVID-19	0.096	0.032	-.226**	-0.088	0.078	-.151*	-0.101	.170**	-0.04	0.051	-0.028	0.061	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.3 Regression Analysis

In this model the authors have used working hours as a dependent variable which is proxy of informal sector as labour supply, while gender, area, age, marital status, education, experience, children, family status, assets, working hours, income per day, health and covid-19 have been used as independent variables. The results of regression analysis are shown in Table 3

Table 3: Results of Regression Analysis

Dependent Variable:	Informal Sector				
	Coefficient	**S.E.**	**Wald**	**df**	**Sig.**
GEN	-12.73	0.327	15.194	1	0.000
Area	16.69	0.355	22.071	1	0.000
AGE	-25.56	0.380	10.090	1	0.001
MRS	-22.728	17801.041	2.789	1	0.095
EDU	10.58	0.356	8.862	1	0.003
EXP	83.8	0.288	8.248	1	0.004

CH	20.60	17801.041	3.445	1	0.063
FS	-3.64	0.434	0.702	1	0.402
AST	-11.55	0.334	11.939	1	0.001
IPD	3.86	0.514	0.563	1	0.453
Health	33.1	0.470	3.496	1	0.081
COVID_19	60.9	0.550	6.846	1	0.009
Constant	-3.25	2.364	0.019	1	0.891

5. Discussion of results

The regression results in the table 3 show that variables gender, marital status, family size, age assets have negative association with informal sector (labour supply) during Covid-19 pandemic period, which means that Corona virus negatively affected gender, marital status, family size and assets. The expenditures of big family increased while assets were decreased due to high expenditures due lockdown. Females and even males could not earn for their living. The aged persons were effected more by Corona virus pandemic as they could neither move nor earn sufficiently. However, the area, education, experience, children, health and income per day (daily wages) have positive impact on supply of labour in informal sector. If the people are living in urban areas, they have multiple working opportunities in informal sector as compared to the people living in rural areas where earning opportunities are limited. Similarly, education has positive association with informal sector (labour supply) because educated persons can work from homes and can enhance their earning through free lancing and other online jobs including online teaching. Experience has substantial impact on labour supply during Covid-19 pandemic because the employers and private sector retained their

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experienced workers, fearing that they might get employment in other sector and in this way they might have suffered in future due to their unavailability. Similarly, health also had positive relation with labour supply during pandemic because healthy persons can perform any job efficiently as compared to sick persons who could do nothing due to their physical inability. Health has positive significant effect on labor supply in informal sector. Covid-19 pandemic has also positive effect on labor supply in the sense and due to lockdown and uncertainty about survival there will be ample labor supply vis-à-vis opportunities. Workers are ready to provide any kind of services in order to reduce their vulnerability and to ensure their own and their family members survival. Daily earning also has positive association with labour supply in informal sector because the workers can meet their daily expenses through their daily earning. So daily income/earning has played significant role in the survival of workers during pandemic.

6. Findings of Study

Our analysis is based on the primary data collected during 2021-2022 through a structure questionnaire from the District Multan. The selected respondents were interviewed in informal sectors. These respondents' age limits were between 15 and 55 years. The statistical technique Ordinary Least Square method was used to measure the effect of Covid-19 in the informal sector of District Multan in the context of working-hour. Working hours, as proxy of informal sector was used as the dependent variable while gender, area, age, marital status, education, experience, children, family status, assets, income per day, health and covid-19 were taken as independent variables. The sample size of the study was 275.

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From the results, it is found that the gender, marital status, family status, and assets are negatively related with the proxy variable of informal sectors working hours. It means when marital status increased in the sense of married then financial responsibilities of marries persons are increased in general and during Pandemic in particular. Similarly, when gender discrimination is increased then female labor workers would suffer more than male workers due to low demand of workers. In this way, supply of labor increase in the labor market and working hours of the labor is decreased. When family status increases in the nuclear family system it will also increase the supply of the labor and decrease the working hours of the labor. It means the workers having more family responsibilities will devote less hours for work because they have no time for extra work.

While the covid-19, age, area, education, experience, income per day and health shows the positive relationship. When covid-19 increase it will decrease supply of labour and demand for labor will increase. When age of workers increases, they would be retired from work, and due to this reason the supply of labour is decreased so, this gap is filled by increasing working hours from available workers. Area also directly influences the working hours because urban area is more developed than rural so, urban area enhanced the supply of labour. The same influence is for the education, experience, income per day and health on working hours of the labour in the labour market during pandemic.

7. Conclusion and Policy implications

The analysis of the impact of covid-19 on informal sector in the District Multan of Pakistan was the main objective of this study. The most important

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factor is human capital means supply of labour in informal and formal sectors. Pakistan is an emerging nation and its current population is projected by the UN is 204,90 million in 2019. These estimates suggest that population growth rate is higher than the pace of growth in natural resources, as Pakistan has an expenditure rate of 164 on simple human resource indices in the world (health & education). Covid-19 directly affected the supply of labour in the labour market due to lockdowns. High death ratio was noted in the areas where treatment facilities were not available. Working hours were increased due to non-availability of workers due to lockdown and employers preferred to used existing human resources rather than hiring new workers from the labour market. However, it was also noted during the course of this study that employers exploited the workers by paying low wages and taking extra work during Covid-19 pandemic period particularly in informal sector. Thus, we can conclude that pandemic like Covid-19 is harmful for the economy and the society and therefore the government should improve health care system in the country to provide quick treatment to the patients so that they can recover immediately from the effects and start earning both for him and for his family. Thousands of young and old persons effected by Corona virus were lost their lives due to non-availability of treatment or mishandling of non-technical medical staff. Even a large number of medical doctors performing Corona duties at hospitals lost their lives.

The policy implications of the study are given below: -

● The findings of the study show that well-educated labour in the informal rural sector has low working hours, because of the lack of relevant job opportunities that correlate to its qualifications. So, the education should be enhanced in rural areas so that workers can get better jobs and excess labour

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can be utilized.

● As the empirical results of this study reveal that well-experienced workers provide better working hours. It is therefore essential to develop more and more training institutes. It means skill is as important as is education. relevant skill and experience save the workers from layoff. Thus, the policy initiatives should be taken to enhance skill of workers through education and training so that they would continue to serve even in abnormal period like Covid-19 pandemic. This policy option would benefit both to the workers whether they are working in formal or informal sector.

● Together with the reform of the informal economy, a detailed policy framework must be drawn   to strengthen social and economic working conditions in the informal sector. Marriage, family structure and children involve more responsibility of workers. So adequate basic facilities such as sui-gas, water supplies, drainage systems and day-care centers must be set up on the rural areas. This would reduce the stress of household jobs.

● As it was noted during the study that most of the deaths were occurred due to non-availability of treatment facilities particularly in the remote areas. Even in the urban areas available health facilities were costly and the patients were unable to avail them due to lack of financial resources. The Government should establish more medical centers with sufficient medical personnel in the rural areas to control covid-19 pandemic like situation. Proper measures should be taken to enhance connectivity between rural and urban areas of Pakistan.

● As education and skill are two core need for job prospectus of the workers and their continued earning for a long period of time. So it is necessary to

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establish technical education institutions should adjacent to rural areas.

8. Contribution of Study

This study contributes in the body of knowledge in many ways. It highlighted the fact that Pakistan like all other countries equally effected by Covid-19 pandemic and hundreds of thousands of persons became its victim. So Pakistan should coordinate with other countries for prevention of such pandemic and will have a well-prepared contingency plan to counter such situation in future. This study focused on informal sector of which size is large and it provides employment to millions of people. But the people working in this sector are paid low wages and due to this reason their living standard is not improved. The same situation is in almost all developing countries where the size of informal sector is large. So an international policy framework may be developed to reduce the size of informal sector and ensure the payment of market wages to the workers working in this sector in all countries. This study also highlighted the fact that education and experience are provided to be vital factors that affect current and future job security of the workers. So the raw and unskilled workers cannot lift national income of a country due to receiving low wages. It is an imperative need to focus on enhancement of high education and skill development of workers in the countries like Pakistan. This study emphasizes that informal sector should not be ignored because it has large share in undocumented economy. If this sector is brought under documented economy the Government will get sufficient revenue and the workers will receive competitive wages. So this sector should not be left unattended more and quick policy measures should be taken to bring it to tax net.

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9. Limitations and direction for future research

The sample size of this study was consisted of 275 respondents and it is very small to draw the results having broad impact. So it is necessary to expand sample size to broaden research. Moreover, this research was conducted in the specific urban and rural areas of District Multan. As District Multan is one of many districts of Pakistan, the results of this study cannot be considered as representative of the whole of Pakistan. In the future studies, other districts of Pakistan may be included into the sample of the study. The respondents of this study particularly those living in the rural areas were reluctant to provide correct information and to understand questions due to low education, which makes the results biased to some an extent. The respondents were not aware of the medical facilities being provided by the Government of Pakistan during Covid-19 pandemic and as such they were confused to respond quickly and accurately. It is necessary to conduct survey to be based on both verbal and written but its accuracy will depend upon the understanding capability, knowledge of local language and expertise. Purposive sampling technique was used in this study. The future researchers may use random sampling technique to remove the possibility of biasedness. This study analyzed the impact of Covid-19 on informal sector of the economy and did not touch formal sector. Other researchers can include informal and formal sectors of the economy and compare impact of Covid-19 on them. The comparative study will be more interesting for the readers to understand the large impact of Corvid-19 pandemic on the whole economy of Pakistan and then its results can be generalizing to enable the policy makers of other countries to take effective preventive measures to control such fatal disease.

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Data Availability statement

The data that supports the findings of this study will be available on request by corresponding author.

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Notes on Contribution of Authors

Both authors jointly carried out this research study and collaborated each other. The author 1 collected data, conducted its statistical analysis. She prepared initial draft of manuscript. The Author 2 guided to Author 1 in selection of title of research, guided in conducting statistical analysis and formatted final draft of manuscript. Both authors carefully read final draft of manuscript and find it fit for publishing. Both authors followed ethical values during the course of this research study.

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References

Ali, L. & Naveed, A. (2014). An analysis of the gender earning differentials in Pakistan. *Research Journal of Applied Sciences, Engineering and Technology 7(13):2772-2784, 2014*. (Google Scholar)

_____

Ali & Hamid et al., (1989). Problems of Working Women in Rural Informal Sector of Punjab (Pakistan), *The Lahore Journal of Economics.*

(Google Scholar)

_____

Aslam, S. et al., (1998). The Underground Economy and Tax evasion in Pakistan: Annual Estimates (1960-1998) and the Impact of Dollarization of the Economy, *The Pakistan Development Review* 37(4) Part II:.37.4, 621-631. (Google Scholar)

_____

Asghar, et al., (2020). COVID-19 Pandemic and Pakistan Economy: A Preliminary Survey. *Review of Economics and Development Studies*. 6 (2).

(Google Scholar)

_____

Atieno, R. (2006). Female participation in the labour market: The case of the informal sector in Kenya. *AERC Research paper* 157. (Google Scholar)

_____

Awan, Abdul Ghafoor (2012). Diverging Trends of Human Capital in BRIC countries, *International Journal of Asian Social Science,* 2 (12): 2195-2219. (Google Scholar)

_____

_____

Awan, Abdul Ghafoor (2012) Human Capital: Driving Force of Economic Growth in Selected Emerging Economies, *Global Disclosure of Economic and Business,* 1 (1): 09-30 (Google Scholar)

_____

Awan, Abdul Ghafoor (2016). Wave of Anti-Globalization and capitalism and its impact on world Economy, *Global Journal of Management and Social Sciences*, 2 (4): 1-21. (Google Scholar)

_____

Awan, Abdul Ghafoor (2015). Analysis of the impact of 2008 financial crisis on economic, political and health systems and societies of Advanced countries, *Global Journal of Management and Social Sciences* 1 (1): 1-16. (Google Scholar)

_____

Awan, Abdul Ghafoor (2015). State Versus Free Market Capitalism: A comparative Analysis. *Journal of Economics and Sustainable Development*, 6 (1): 166-176 (Google Scholar)

_____

Awan, Abdul Ghafoor, Mukhtaar, Sheeza Sadia (2019). Causes of trade deficit and its impact on Pakistan's Economic growth. *Global Journal of Management, Social Sciences and Humanities,* 5 (3): 480-498.

(Google Scholar)

_____

Awan, Abdul Ghafoor (2014). Shifting Global Economic Paradigm, Asian *Business Review,* 4 (3): 113-118 (Google Scholar)

_____

Awan, Abdul Ghafoor (2011) Changing World Economic and Financial Scenario, *Asian Accounting and Auditing Advancement*, 1 (1): 146-175

_____

(Google Scholar)

Awan, Abdul Ghafoor, Ramla Hussain (2021) Role of IMF Program in stabilization of Pakistan's   economy, *Global Journal of Management, Social Sciences and Humanities* 7 (2)　　　　　(Google Scholar)

_____

Awan, Abdul Ghafoor (2013). China's Economic Growth-21st Century Puzzle, *Global Disclosure of Economics and Business*, 2 (2):9-29.

(Google Scholar)

_____

Awan, Abdul Ghafoor, Shazad, Ufaq (2021). Impact of trade openness on Economic growth of Pakistan. *Global Journal of Management, Social Sciences and Humanities*, 7 (2)　　　　　(Google Scholar)

_____

 Awan, Abdul Ghafoor, Joyia, Muhammad Javed Iqbal (2026).Role of microfinance in poverty alleviation: Evidence from Pakistan .*American Journal of Trade and Policy*, 2 (1):37-44.　　　(Google Scholar)

_____

Awan, Abdul Ghafoor, Zeshan, Muhammad (2016) Customer preferences in selection of Islamic and conventional banking in Pakistan. Global Journal of Management and Social Sciences, 2 (3): 72-101

(Google Scholar)

_____

Awan, Abdul Ghafoor, Arif, Abdur Rehman (2015). Role of Celebrity Endorsement and Consumers' Perception towards Media Advertisement *New Media and Mass Communication*, 40: 67-75.　　(Google Scholar)

_____

_____

Awan, Abdul Ghafoor, Fatima, Rani (2018). Female Participation in Labor Force and Its Impact on Household and National Income: Evidence from Pakistan, *Global Journal of Management, Social Sciences and Humanities,* 4(4): 773-784   (Google Scholar)

_____

Awan, Abdul Ghafoor, Malik, Asma (2020) Impact of female education on poverty reduction: Sn evidence from Pakistan., *Global Journal of Management, Social Sciences and Humanities,* 6 (2)   (Google Scholar)

_____

Awan, Abdul Ghafoor, Parveen, Zahida,(2019). Impact of Minimum Wage Policies on Poverty Alleviation in Pakistan, *Global Journal of Management, Social Sciences and Humanities*. 5 (2):227-239.

(Google Scholar).

_____

Awan, Abdul Ghafoor, Liaqat, Humaira (2021). Urbanization and depletion of natural resources: A case study of Pakistan. *Global Journal of Management, Social Sciences and Humanities*, 7 (2):   (Google Scholar)

_____

Awan, Abdul Ghafoor,. Siddique, Maryam Fatima (2019). Socio-economic determinants of tourism development in Pakistan. *Global Journal of Management, Social Sciences and Humanities,* 5 (3): 299-520.

(Google Scholar)/

_____

Burki, A. A. & Abbas, Q. (1991). Earning functions in Pakistan's urban informal sector: A case study, *The Pakistan Development Review*. 30(4) 695-700.   (Google Scholar)

_____

Burhan et al. (2021) Crises management in the hospitality sector SME in Pakistan during COVID-19. *International Journal of Hospitality Management* 98, 103037.   *(Google Scholar)*

Blackburn & Capasso et al., (2012). Tax evasion, the underground economy and financial development *Journal of Economic Behavior & Organization, 83,* (2): 243-253.   (Google Scholar)

Cho, J. & Cho, D. (2011). "Gender differences of the informal sector wage gap: a   longitudinal analysis for the Korean Labor market." *Journal of Asia Pacific Economy,* 16, (2): 612-629.   (Google Scholar)

COVID-19 Impact on Farm Households in Punjab, Pakistan: Analysis of Data from a Cross- Sectional Survey. *ADB BRIEFS, NO.149 (2020).*   (Google Scholar)

Faridi, Z. & Rashid, A (2014), The correlates of educated women's labor force participation in Pakistan: A micro study. *The Lahore Journal of Economics*, pp.155-184.   (Google Scholar)

Filipova, L. &Machova, Z. (2011) Wage determination with special reference to role in a family. *Review of Economic perspectives,* 11:37-56.   (Google Scholar)

Gerxhani, K. & Werfhorst (2013), The effect of education in informal sector participation in a post-communist country. *European sociological review.*

29 (13), 464-476. (Google Scholar)

Gillani et al. (2015), Determinants of informal wage-employment and employment in southern Punjab (Pakistan). *Pakistan journal of social sciences (PJSS).* (Google Scholar)

Gillani, D.Q. & Ali, K. (2013). "Employment status and earning functions in urban informal sector: A case of Southern Punjab, Pakistan". *Pakistan Journal of Applied Economics,* 23(2), 97-113. (Google Scholar)

Govt of Pakistan (2019), Economic survey of Pakistan, Ministry of Finance, Islamabad. (Google Scholar)

Hohberg, M. & Lay, J (2015) The impact of minimum wages and formal labor market outcomes: evidence from Indonesia. *IZA Journal of Labor & Development* 4:14. (Google Scholar)

Haque et al., (2011) Underground Economy of Bangladesh, Research *Study Series No – FDRS 01/2013*. (Google Scholar)

Houessou et al., (2021) The Effects of the COVID-19 Pandemic on Food Security in Rural and Urban Settlement (Google Scholar)

Hassan & Farooq., (2015) Gendered Perspective of Informal Sector of the Economy of Pakistan, *Pakistan Journals of Commerce and Social Sciences.* Google Scholar

_____

Haq et al. (2012) Determinants of wage growth: An empirical analysis of private formal sector in Bahawalpur division. https://www.researchgate.net/publication/272664569.   (Google Scholar)

_____

Khan, Khurshid Ahmad., Uul Haq, Ikram,. Khan, Jamal Muhammad (2020). Impact of Covid-19 Lockdown on Agriculture, Food Security and livelihoods in Pakistan, *International Journal of Agriculture and Biological Sciences.* DOI: 10.13140/RG.2.2.22553.44641

(Google Scholar)

_____

Khan, A. U.; Khan, J.; Khan, F. A.; Khan, R.; Khan, R. U.; Shah, L. A.; Khan, Z.; Badrashi, Y. I. (2021). The effect of COVID-19 on the air pollution in urban areas of Pakistan *Environmental Health Engineering and Management Journal* 8(2):141-150.   (Google Scholar

_____

Khan, Usman, Awan, Abdul Ghafoor (2010). Informal economy and its impact on economic development in Pakistan. *Global Journal of Management, Social Sciences and Humanities*   6 (4):585-874.

(Google Scholar)

_____

Kemal, M. Ali (2007). Fresh Assessment of the Underground Economy and Tax Evasion in Pakistan: Causes, Consequences, and Linkages with the Formal Economy. *PIDE working paper* No.:13.   (Google Scholar)

_____

_____

Kozel, V. & H. Alderman (1990), Formal and informal sector wage determination in urban low income neighborhoods in Pakistan. *LSMS working paper number* 65. (Google Scholar)

_____

Khuong (2020) Does informal economy impede economic growth? Evidence from an emerging economy, *Journal of Sustainable Finance & Investment.* 11 (2) (Google Scholar)

_____

Khilji, Khalid & Ahmad et al (2020). Development in Time of Coronavirus, Annual Report. *Sustainable Development Policy Institute.*

(Google Scholar)

Mehmood et al., (2021), Youth Unemployment and its Origins: An Analyses of Multan District. *Pakistan Social Sciences Reviews,* 5, (1) 85-9|.

(Google Scholar)

_____

Meng, X. (1998) Male-female wage determination and gender wage discrimination in China's rural industrial sector. *Labour Economics* 5:67-89 (Google Scholar)

_____

Meo et al., (2021) Addressing the challenges of COVID-19 Pandemic outbreak *Pakistan preparations and response*, 21(4) (Google Scholar)

_____

Mubarak. M, Awan, Abdul Ghafoor (2021) Impact of COVID-19 on human, economic well-being and living standard in Pakistan. *Global Journal of Management, Social Sciences and Humanities* 7 (4): 757-783.

(Google Scholar).

Mughal et al., (2020) How Informal Sector Affects the Formal Economy of Pakistan? A Lesson for Developing Countries, *South Asian Journal of Macroeconomics Countries.* : 9 (1,) : 7-21   (Google Scholar)

Nasir, Z.M. (1998), Determinants of personal earnings in Pakistan: Findings from the Labour Force Survey 1993-94. *The Pakistan Development Review* 37:3: 251-274.   (Google Scholar)

Nosheen et al., (2021) The COVID-19 outbreak, a Failure of Social Protection System: A Policy Perspective of Energy and Economic Recovery *Review of Economics and Development Studies.*7 (2)   (Google Scholar)

Nicodemo, C. (2007), Participation and wage equations for married women in European Countries. https://www.semanticscholar.org   (Google Scholar)

Parveen, Abida (2019) Effect of organizational justice, job satisfaction and trust on managers on employee performance. Global Journal of Management, Social Sciences and Humanities 4 (2).   (Google Scholar)

Rad et al., (2021), Effects of the COVID-19 Pandemic on Food Security and Agricultural in Iran: A Survey. *Sustainable Agricultural, Biological, and Environmental Engineering Applications, Sustainability* 13(18), 10103
                    (Google Scholar)

Richard, S. (2007), Wage determination and gender discrimination in Uganda.

EPRC: Research Series No.50.   (Google Scholar)

_____

Rahman et al., (2018) Gender Inequality in Education and Household Poverty in Pakistan: A Case of Multan District, *Review of Economics and Development Studies.* 4(1): DOI: https://doi.org/10.26710/reads.v4i1.286
(Google Scholar)

_____

Sargana, M. A. (1998). The urban informal sector in an adjusting economy: The case of Pakistan. *The Pakistan Development Review.* 37:4 part II: 977-994.   (Google Scholar)

_____

Shaikh & Mishra et al., (2020) The Impact of Lockdown on India's Informal Sector, *UCG CARE Journal.*   (Google Scholar)

_____

Singhari, S. &Madheswaran, S. (2018), Wage structure and wage differentials in formal and informal sectors in India. *Indian-J. Labour Econ. (2017) 60:389-414.*   (Google Scholar)

_____

Staneva, A.V. &Arabsheibani, G.R. (2014), Is there an informal wage premium? Evidence from Tajikistan. *Journal of Labor & Development 2014, 3:1.*   (Google Scholar)

_____

Shabsigh, Ghiath (1995). The Underground Economy: Estimation, and Economic and Policy Implications, The Case of Pakistan. *IMF Working Papers, WP/95/101.*   (Google Scholar)

_____

_____

Traore. J.A. (2013), Revisiting the determinants of informal sector in Burkino
     Faso, *The Economic Research Guardian*, 3(2).   (Google Scholar).

_____

Tanzi, Vito (1980). The Underground Economy in the United States:
     Estimates and Implications. *Quarterly Review,* 35, 427-53.

                                                    (Google Scholar)

Tansel, A. (2000), Wage earners, self-employment and gender in the informal
     sector in Turkey. *Working paper series No.24*   (Google Scholar)

Vecchio et al. (2013), Difference sector: a consideration of unpaid overtime to
     decompose the gender wage gap. https://www.academia.edu.

                                                    (Google Scholar)

_____

Wamuthenya, W.R. (2009), Gender differences in the determinants of formal
     informal sector employment in the urban areas of Kenya across time,
     Paper presented at the 18h LAFFE Conference in Boston, June 25-28

                                                    (Google Scholar)

_____