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Non-farm work decisions in Rural Areas of Pakistan: Motivation, Magnitude and Profitability of Non-Farm Work

Dominance

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ABSTRACT

The global shift from agrarian to industrial economies has driven a structural transformation of the workforce, with labor transitioning from agricultural to non-agricultural sectors worldwide. While traditional economic theories have long associated rural development with agricultural growth, due to its historical dominance in rural areas, recent decades have witnessed a significant shift. Surveys conducted in developing countries since the 1980s have highlighted the growing reliance of rural populations on the non-farm sector, underscoring a significant socio-demographic and economic transformation in rural economies [Malik (2008)]. Despite over half of rural Pakistani laborers engaging in non-farm activities, the country's dominant development paradigm has traditionally focused on agricultural growth as a means of alleviating rural poverty. However, non-farm activities offer a vital opportunity for rural households to diversify their income streams and mitigate the impact of agricultural shocks, such as price fluctuations, droughts, and floods. In the face of growing landlessness, poor households increasingly rely on non-farm earnings as a crucial means of survival, highlighting the need for a more inclusive development approach that acknowledges the importance of non-farm livelihoods in rural Pakistan [Stifel (2010)]. The objectives of the study are (i) to assess the magnitude of Non-farm Enterprises by Region, Province and Sector and (ii) to

explore the factors influencing the individual decision to operate a Non-farm Enterprises in the rural economy

Introduction

Like everywhere in rural areas, especially in Pakistan, the work is when attached to agrarian-based or agriculture, the majority of people are employed as labour on farms or the activities related to farms, making them tenants, reducing their freedom to work, not letting them do their own-account work. This dependency restricts productivity and financial freedom. Due to this dependence, some people opted to have their own small-scale business. The home-based economic activities in countries like Pakistan are blooming with time. For the past few years, there has been a constantly increasing trend. The own-account work not only helps provide income but also contributes to the bigger picture, i.e., the country's GDP, by engendering small-scale income-generating activities. The dynamics of small and medium industries are significantly important as they are the engine for employment at the micro level, not only in urban areas but in rural areas as well. Although a general perception regarding the presence and significance of the Micro and Small enterprises (MSEs) is that they are informal, unregulated, and unorganised residuals of the formal sector, though these are constantly turning into generating an income stream and increasing self-employment. The informal sector's assistance provides a more comprehensive range of income-generating avenues at a smaller scale with wealth creation and innovation development.

The argument of the informal sector providing employment has been in the limelight since the early seventies. The issue was first raised by the ILO World Employment Program with the publication of the Report on Kenya in 1972, and after the pivotal contribution of Hart (1973). Almost 50 years later, the discussion related to the measurement elaborates briefly on the informal sector (Mead, D. C., & Morrisson, C. 1996). This caught attention while considering the existence and informality of the informal sector and its importance for policymakers (Maloney, W. F. 2004). The policymakers have taken great interest in understanding the

relationship between employment, development, and poverty elevation (Jütting, et al. 2008). The presence of informal business is significantly essential as it generates employment, which ultimately benefits in raising the standard of living of both employees and employers, especially in rural areas. For the nation, it contributes to accompanying the large-scale modern sector enterprises, which utilize the raw materials of agriculture and plays the role of intermediaries, that deal only with small-scale producers and helps in mobilizing the resources (Kamunge, et al. 2014).

Nevertheless, there is another side that looks towards those impediments any individual has to face while doing own-account work, which drags them into a situation that leads them to a position where many perform miserably and fail to grow their businesses (Kamunge, et al. 2014). The fact and a common mindset recognised by the majority is that only the big businesses are the providers of income prospects and hence considered as the foundations of the nation's economic activities; but small businesses have also enhanced giant economies such as the USA and UK (Agyapong, D. 2010). Small and medium-scale businesses are the ones, that place a significant impact at the mass level; thus, in many economies, the authorities took the initiative to take strategic and financial counselling programs that uplift and support small businesses.

Further, the hub of the majority of world economies relies on SMEs, which account for a substantial share of the GDP and employment (Fredrick, 2005). However, the fact is undeniable that doing own-account work is not easy. Small entrepreneurs' main constraints are a lack of working capital and marketing difficulties (Tambunan, T. 2007). Another essential factor we cannot ignore is the presence of the Government to promote such small businesses for growth. The Government's support in facilitating, such as giving subsidies on basic amenities or helping them provide small funds, can play a pivotal role for small business owners to help them initiate their business (Adeusi, SO, & Aluko, OA 2014) especially in areas where employment opportunities are limited such as in rural areas.

Considering all the pros and cons, this study focuses on the factors motivating individuals to undertake self-employment in rural areas of Pakistan. The socio-economic causes and constraints faced by the individuals willing to do own-account work are explored in the analysis part. The study presents both descriptive and empirical analysis to dive deep into the issue, and identify how one gets motivated to work for his/her own self instead of working for anyone else. Although it gives prodigious pride and independence for doing business, not to get paid by someone else, yet the fixed salary which one gets at the end of the month is a great attraction that encourages individuals not to risk leaving a fixed salary job. This is why most prefer to get hired, while a few reject it and take the risk of doing their own-account work. Specifically, for this study, we will keep our objectives limited to exploring (i) the magnitude of the non-farm work and its profitability, and (ii) exploring the factors motivating individuals to undertake self-employment, mainly socio-economic causes and constraints faced by individuals, which are focused on while proceeding with own-account work.

The study is organised as follows: In the next section, limited but valuable literature is evaluated, whereas, section three describes the methodology and economic model employed in the study. Section four discuss both the descriptive and empirical results

Literature Review

Economists have presented the picture of self-employment from different perspectives. Many have encouraged the rising demand for self-employment as it reduces the dependency of individuals by enabling them to not only create earnings for themselves but also provide new avenues of income generating esteems for others. This study will specifically shed light on those factors that work as driving forces for individuals who encourage them to opt for a different path of self-employment and highlight those constraints and socio-economic factors that work as barriers to their self-employment. It is well-established that "Micro and Small enterprises" (MSEs) are widespread in many

developing countries. Even though they exist in large numbers, MSEs are often seen as low-income activities that do not contribute to the economy.

Expanding small businesses at the individual level, helping them from authorities for their sustainability, and giving them incentives to boost the process of generating mass-level income-generating activities was discussed in a study performed by Larsson, E., Hedelin, L., & Gärling, T. (2003). They highlighted the issue of rural regions facing the declining rate of population and the shortage of employment opportunities as the inspiring reason for the expansion of persisting small businesses. The study highlights the importance of small businesses and considers it an instrumental factor that helps expand other small businesses; hence, their presence is considered essential for the regional economic growth policy.

Naudé, W. (2010) examined the significance of development economics and its connection with entrepreneurship. They highlight how both have gained swift development in the past 50 years as a subsidiary field within their respective fields of economics and management. The study highlighted the critical factor that they grow in somewhat isolated conditions as entrepreneurship stays only within touch to the entrepreneurship and development economics field focuses on global and country-level determinants of economic performance. The study also gives importance to the fact that how millions of people live in absolute poverty. Globally, it is time to understand if entrepreneurship is binding a constraint on economic development and helping developing countries catch up with developed economies. The study proposed that this sort of analysis needs profound theoretical modeling of the entrepreneur in developing economies. The study shed light on the importance of entrepreneurs in significant areas such as development economics, structural change, economic growth, income and wealth inequalities, welfare, poverty traps, and market failures.

In another study performed by North, D, & Smallbone, D (1996), the rising interest and the potential contribution of small and medium-sized enterprises (SMEs) to

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economic development affirm the more outstanding contribution of rural SMEs.

Adeusi, SO, & Aluko, OA (2014) discussed the role of Government in promoting small businesses. The study was performed in Kogi state of Nigeria with a specific focus on Kabba/Bunu's local government area by taking primary data from forty small business owners. The data were selected randomly; the analysis was performed by regressing the ANOVA analysis method. The study confirms the significant impact of the correlation of the Government's role in promoting small business; moreover, it was recommended in the conclusion of the study that banks should promote the small business owner by landing loans and considering the size of the business while imposing tax on it.

Chreneková et al. (2015) debated the informal economy and considered it challenging to explain for determining the impact of the informal economy on the development of the rural region of Ukraine. In 2003, the international conference of labour statisticians approved a guideline that defines the statistical categories of informal employment and includes unregistered/own-account workers, contributors in family work and persons who work based on an oral agreement. The study points out that informal eonomy and its assessment are difficult to evaluate. However, in some countries, the informal sector is considered a negative occurrence to be tolerated as a the issues of fiscal implication especially linked with tax revenue loss are associated with it. However, it helped in the development of the rural regions and communities. The study evaluates the informal sector's role in Ukraine's regional structure by confronting the findings with the regional divergence by the concerned indicator of the development and quality of life. The study highlights that there are noteworthy differences in the size of the informal sector's employment and different types of Ukrainian regions by rural-urban typology. The study also noted that the increasing contribution of informal employment in the regions is causing the household income level to diminish even though they consider the unemployment level.

Having the limited availability of the data and

information in hand, the study taken by Tulus, T. (2009) worked on the development of women entrepreneurship in the Asian developing economies, as the issue at hand was quite imperative due to the ongoing national efforts for improving the poverty reduction measures in developing economies in the context of Millennium Development Goals (MDGs). The known fact that better income opportunities for women eventually helped improve the living standard of households and aided in reducing poverty was the key factor behind it. The study was based on data analysis and the latest literature review. The study's core focus was women entrepreneurs in small and medium enterprises. It was revealed in the study results that three main factors influence the decision to be an entrepreneur; first was SMEs are the most crucial factor as they cover almost 95% of all the firms in the sector, hence their importance is undeniable. The second important point was that the presence of women as entrepreneurs is relatively low, which can be caused by a lower level of education, no or little capital availability, and religious culture. The third point was that most of the women entrepreneurs were forced entrepreneurs, indicating that the availability of the better education and paid employment opportunities increase will decrease the chances of women entrepreneurs in SMEs.

Fuller-Love, et al. (2006) evaluate the presence of the policies that support the idea of entrepreneurship in the rural region and support in developing the foresight by using the scenario analysis in Mid Wales. It was found in the study that there is a need to collaborate with the foremost stakeholders for the betterment of small firms and minimize the barriers to the growth of firms in rural economic regeneration.

Henderson, J. (2002) shed light on the fact that the presence of entrepreneurs creates economic growth by establishing new firms that generates economic activity and employment. Due to this fact, the policymakers of the rural economy transfer their focus and give importance to the fact that most entrepreneurs start their work from limited resources in various industries and places, making the policymakers support a wide range of

entrepreneurs. Nevertheless, there is still the chances of policy failure because the benefits of entrepreneurs can vary from one entrepreneur to another depending upon their desire to succeed in building a high-growth business. Keep in mind that rural areas do not possess such high-growth entrepreneurs. The study also highlights a newer perspective of entrepreneurial activity in rural America and discusses new ways of policymaking to encourage high-growth entrepreneurs in the community.

Parameswar, et al. (2019) discoursed that many researchers have explored the presence of general and technological entrepreneurship (TE) but empirically validating the impact of multiple factors on TE and its role in the development in South Asia is rare. The study evaluates the influence of TE and develops a model that works for modeling and utilizing the total interpretive structural modelling (TISM) method to see the factors impacting the TE by utilizing the data collected from the focus group discussion by the founders of TE.

Raj, R. S., & Sen, K. (2015) discusses the limitations associated with finance in determining the lack of transition of firms, particularly in the case of India, from trivial family firms that are the predominant types in the informal sector to larger firms that employ non-family labour. The analysis was performed by the survey of the Indian informal manufacturing sector provided by the national-level survey. The study was disaggregated at the district level to see the impact of the financial constraint in the transition of the informal sector. It highlights the presence of financial issues while the informal sector firms are growing. The study concludes that financial aid provided, the firms will grow from small household enterprises to non-household enterprises.

Methodology

The study has a core focus on individuals doing own-account work. Keeping in mind the aim, the study employs data from PSLM/HIES collected by the Pakistan Bureau of Statistics (PBS) for the period 2019-2020. It is imperative to evaluate the factors that motivate individuals towards doing their own work. The study focuses on evaluating the magnitude of individuals working on their own basis and generating income. In order to evaluate the success/ failure of the non farm work study evaluates the net income generated, gross profit, cost of goods sold, total revenues, interest payments, operating expenses, and tax paid by own-account workers. These indicators will help in identifying the size of the work and are calculated by employing the following formulas:

Gross profit and net income are calculated by employing equations (i) and (ii) respectively,

Gross profit (Entrepreneur Growth) = Total Revenue – Cost of goods sold (i)

Net Income = Gross profit – operating expenses – interest expenses –Taxes (ii)

With the help of evaluating the magnitude of the own account owner or in other words, entrepreneurs who are involved in income-generating activities, we will be able to then move to the other objective, which is exploring the motivation of doing non-farm work. This objective can be achieved by assessing the socio-economic characteristics of the household where that individual resides. The study has examined individuals' socioeconomic conditions and also evaluate their personal characteristics, for instance, education, age, basic utilities are taken into consideration. The personal characteristics of the head of the household where that individual resides are also crucial as they give the basic ground to do their own business. The education of the head of the household, the size of the house, and lastly, whether the region or province has any significant impact are included in the model. The study considers the economic model (equation iii) to evaluate the objective. The econometric techniques use to estimate the model is probit. As the decision to own and operate the non-farm work is dichotomous. This study ran a

Probit model by taking non-Agri Enterprise equal to 1, otherwise zero, as the dependent variable.

$$〖NAGENT〗_{ipt}=\beta_0+\beta_1\ 〖PER〗_{ipt}+\beta_2\ 〖HSC〗_{ipt}+\beta_3\ 〖DMG〗_{ipt}+\beta_4\ 〖CT〗_{ipt}+\varepsilon_{ipt} \quad (iii)$$

Where NAGENT is a dummy variable representing if a person owns/runs an enterprise. PER represents the personal characteristics (age, age square, education of individual doing own-account work). HSC is the representative of household characteristics, includes the availability of electricity, gas, tap water, toilet, and size of the house (represented here as the congestion in the house). DMG is the representative of demographic characteristics. While i, p, and t represent individual, province, and time respectively.

Results and Discussion

The result section is divided into two parts. The first part explores the results of the first objective, mainly using the descriptive statistics while the second part explores the second objective i.e the results of the empirical model by using the probit model.

Descriptive Analysis

Identifying the importance of own-account work as getting a job is significant, especially in rural parts of the country where economic activities are limited only to agrarian and agro-based work is grim. Most people settled in rural regions are associated with work where they rely on the landlord, making them dependent on them. The situation of own-account workers and those individuals who are thriving in the field of doing work own by themselves, the study took the data from PSLM/HIES for the year 2019-20 and performed descriptive analysis.

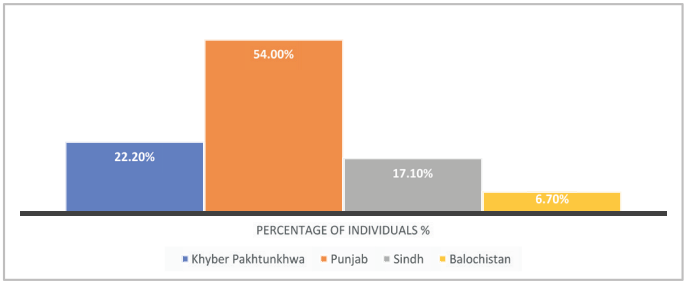
Table-1: Individuals Reporting own work

Province	Count	Column N %
Khyber Pakhtunkhwa	1304	22.20%
Punjab	3167	54.00%
Sindh	1000	17.10%
Baluchistan	390	6.70%
Subtotal	5861	

Author's own estimations based on PSLM/HIES 2019-20

Table 1 and Figure 1 signify the number and percentages of individuals who have reported being actively involved in own-account work. Punjab province is on top with 54% having the highest ratio, while KPK stands in 2nd position and Sindh province in 3rd rank; although the population of Sindh province is higher than KPK, the people living in Sindh province prefer being employee, and this is exactly matched with the findings in hand, and then again it shows how many people are more intended towards doing their work. For Baluchistan province, this number is 390, with a percentage of 6.7% only.

Figure-1: Province-wise data of own-account workers



Author's own estimations based on PSLM/HIES 2019-20

Table 2 has shown the magnitude of the non-farm work with age segregation . If we investigate the Table 2, it is seen through the data that own-account work is prevalent highest in the age category of 46 years and above, indicating that people prefer to do their own work after a certain age as doing a paid job cannot helps in the process of wealth-generation. Moreover, the sense of freedom for being answerable to no one is the crucial motivation behind it; however, the age brackets of 26-35 and 36-45 are also showing a promising picture, indicating that more people have shifted themselves towards their own work.

Table-2: Magnitude of Own Enterprise by Age Group

		Magnitude of Own Enterprise	
Province	**Age 1**	**Count**	**Column N %**
Khyber Pakhtunkhwa	14-25	202	15.5%
	26-35	361	27.7%
	36-45	356	27.3%
	46 & above	383	29.4%
	Subtotal	1302	100.0%
Punjab	14- 25	384	12.1%
	26-35	853	27.0%
	36-45	910	28.8%
	46 & above	1018	32.2%
	Subtotal	3165	100.0%

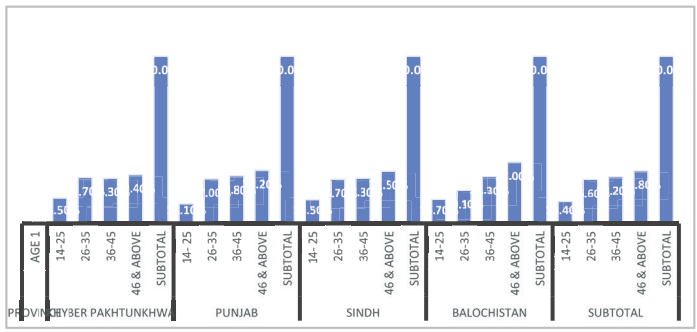
See Figure 2 for graphical representation of percentage of own account workers by Province.

See Annex 1 for the magnitude of the non-farm work by Industry.

Sindh	14- 25	144	14.5%
	26-35	266	26.7%
	36-45	272	27.3%
	46 & above	314	31.5%
	Subtotal	996	100.0%
Balochistan	14-25	57	14.7%
	26-35	78	20.1%
	36-45	110	28.3%
	46 & above	144	37.0%
	Subtotal	389	100.0%
Subtotal	14-25	787	13.4%
	26-35	1558	26.6%
	36-45	1648	28.2%
	46 & above	1859	31.8%
	Subtotal	5852	100.0%

Author's own estimations based on PSLM/HIES 2019-20

Figure-2: Magnitude of Own Work by Age Group



Author's own estimations based on PSLM/HIES 2019-20

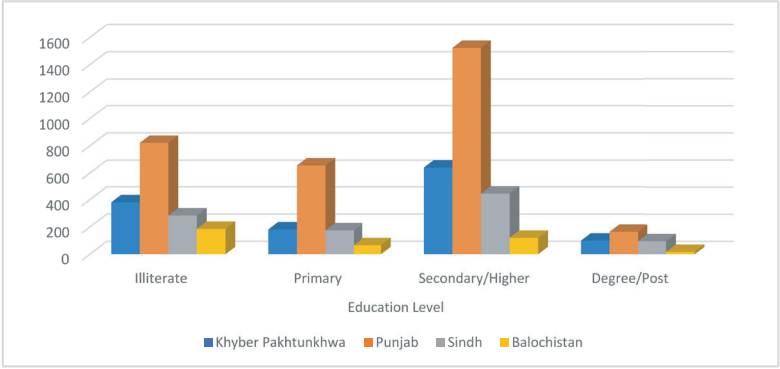
Table-3: Magnitude of Own Enterprise by Education Level

Province	**Education Level**			
	Illiterate	Primary	Secondary/Higher	Degree/Post
	Count	Count	Count	Count
Khyber Pakhtunkhwa	381	182	641	100
Punjab	822	656	1524	165
Sindh	284	175	445	96
Baluchistan	186	66	120	18

Author's own estimations based on PSLM/HIES 2019-20

Education is one of the most significant reasons that either persuade or dissuade the attention of individuals towards doing their own work. The social norms in our society have fixed this mindset that if an individual is educated, he/she should acquire a secure job for a better future. The same is visible from Table 3, showing more people are inclined towards their own-account work with secondary or higher secondary education. Figure 3 also shows that the higher the level of education i.e. graduation or more, the lower the participation or interest in own-account work.

Figure-3: Education level of Own-account workers



Author's own estimations based on PSLM/HIES 2019-20

Table 4 presents the existence of the own-account work with the industry-wise distribution. The data indicates the highest number of owned-account workers in only a few industries, where wholesale and retail work is on top, with the highest number of individuals in all provinces. The second industry with the highest population is transportation and storage, while the third one is the manufacturing sector, mainly related to textiles.

Table-4: Existence of own-account worker industry wise

Industry code with two digit	Province			
	Khyber Pakhtunkhwa	Punjab	Sindh	Baluchistan
Agriculture, forestry and fishing	4	18	12	3
Mining and quarrying	2	0	0	0
Manufacturing	200	485	96	27
Electricity, gas, steam and air conditioning supply	1	0	1	1
Water supply; sewerage, waste management and remediation activities	3	4	3	1
Construction	14	30	5	2
Wholesale and retail trade; repair of motor vehicles and motorcycle	654	1454	579	258
Transportation and storage	264	517	158	57
Accommodation and food service activities	22	141	39	20
Information and communication	6	4	2	0
Financial and insurance activities	0	2	0	0
Real estate activities	21	46	20	5
Professional, scientific and technical activities	16	37	7	1
Administrative and support service activities	11	17	1	1
Public administration and defence; compulsory social security	3	0	0	0
Education	5	43	2	0
Human health and social work activities	21	53	10	2
Arts, entertainment and recreation	4	11	3	0
Other service activities	53	302	62	12
Activities of households as employers; undifferentiated goods	0	3	0	0

Author's own estimations based on PSLM/HIES 2019-20

The analysis below discloses the findings of the total individuals engaged in own-account work activity. Table 5 has disaggregated the net income, province-wise and findings show that for Khyber Pakhtunkhwa province 1219 individuals having own businesses reported annual income Rs. (16,46,055), for Punjab, it is Rs (19,01,706) with 3006 individuals, Sindh province having 970 individuals with a mean income of Rs (16,16,727) and for Baluchistan province, a total of 366 individuals with the mean income of Rs(16,76,831) recorded. The minimum and maximum values depict that the net income ranges between Rs (3500) to Rs (7008800) for Khyber Pakhtunkhwa, Rs (1600) to Rs (120477000) for Punjab, Rs (12000) to Rs (97824000) for Sindh province and Rs (36000) to Rs (107968800) for Baluchistan.

Table-5: Net Income by Province

Province	Count	Mean	Standard Deviation	Minimum	Maximum
Khyber Pakhtunkhwa	1219	1646055	4553071	3500	70088000
Punjab	3006	1901706	5414709	1600	120477000
Sindh	970	1615727	4333062	12000	97824000
Baluchistan	366	1676381	6189233	36000	107968800
Subtotal	5561	1780953	5117773	1600	120477000

Author's own estimations based on PSLM/HIES 2019-20

Table 6 bestows the Gross Profit. According to the summary statistics, the highest gross profit reported is Rs (18,99,723) for Punjab province. Surprisingly, Balochistan stood in the second-highest position with a gross income of Rs (16,76,381), Khyber Pakhtunkhwa and Sindh reported Rs (16,41,735) and Rs (16,15,727) respectively. The maximum and minimum gross profit for Khyber Pakhtunkhwa is Rs (700,88,000) and Rs (-168,000), for Punjab it is Rs (1204,77,000) and Rs (-261,600) for Sindh it is Rs (978,24,000) and Rs (12,000) and for Baluchistan the range of gross profit was recorded at Rs (1079,68,800) and Rs (36,000) respectively.

Table 6: Gross Profit by Province

Province	Count	Mean	Standard Deviation	Minimum	Maximum
Khyber Pakhtunkhwa	1222	1641735	4548310	-168000	70088000
Punjab	3009	1899723	5412374	-261600	120477000
Sindh	970	1615727	4333062	12000	97824000
Baluchistan	366	1676381	6189233	36000	107968800
Subtotal	5567	1778925	5115388	-261600	120477000

Author's own estimations based on PSLM/HIES 2019-20

The analysis presented in Table 4 demonstrates a more precise picture of the magnitude of non-farm work by industry, while Table 7 illustrates the Net income province-wise with the disaggregation of sectors. The analysis shows an outstanding contribution of wholesale and retail business for all provinces, while human, health and social activities stood in 2nd position, and agriculture, forestry, and fishing in 3rd position collectively.

Table 6: Gross Profit by Province

Industry code with two digits	Province				Subtotal
	Khyber Pakhtunkhwa	Punjab	Sindh	Baluchistan	
	Mean	Mean	Mean	Mean	Mean
Agriculture, forestry and fishing	-220750	4555389	116000	1730800	2370227
Mining and quarrying	145500	.	.	.	145500
Manufacturing	-277158	-259054	1585371	4012800	98352
Electricity, gas, steam and air conditioning supply	252000	.	814996	1731000	932665
Water supply; sewerage, waste management and remediation activities	372000	568500	612864	630000	532599
Construction	389314	-77793	686760	330000	141380
Wholesale and retail trade; repair of motor vehicles and motorcycle	2517607	3371819	2229999	1511372	2794650
Transportation and storage	262533	299289	219231	258086	274488
Accommodation and food service activities	-680066	558944	310831	-2176818	146107
Information and communication	293233	702000	811800	.	515917
Financial and insurance activities	.	4716000	.	.	4716000
Real estate activities	-1036533	719717	537180	2455484	373487
Professional, scientific and technical activities	347413	846898	481929	900080	674875
Administrative and support service activities	550728	380588	1116000	1220040	495468
Public administration and defense; compulsory social security	639933	.	.	.	639933
Education	248796	174240	364000	.	189286
Human health and social work activities	6382876	578793	311400	702000	1967842
Arts, entertainment and recreation	369999	253891	156000	.	263378
Other service activities	377058	234852	248862	281800	255759
Activities of households as employers; undifferentiated goods	.	203600	.	.	203600
Total	1381851	1669755	1534201	1273976	1556236

Author's own estimations based on PSLM/HIES 2019-20

Empirical Results

This section of the study presents the result of the empirical model illustrated above to explore the factors motivating individuals to engage in account work. Table 8 presents the results, while the following paragraphs discuss the findings.

The demographic characteristics associated with the person willing to work or establish their own-account work are crucial, as they will be helpful to define the grounds for starting their own enterprise. Considering this fact, the study regresses personal and demographic characteristics to assess the feasibility of starting a small

enterprise, preferably to examine the relationship between own-account work and existing household facilities. The analysis presented in Table 8 expresses the relationship. In the beginning, personal characteristics such as age and education are considered.

The coefficient for years of education shows a significant positive relation. Precisely, for one unit increase in the years of education, the probability of doing own-account work upsurges by 0.006 (in terms of coefficient). Age is negatively related to it; as age increases, the likelihood of moving towards doing own-account work is reduced.

The most imperative indicators this study has included in the model are household characteristics, as they are crucial determinants when considering starting an enterprise. It is a well-known fact that one cannot work on ideas without having a meal. The same goes when it comes to household conditions. The study has taken congestion as a proxy for assessing household size. While following the same rule in mind, the study has taken into account the amenities (Gas, Electricity, tap water, toilet) to judge how well-off an individual is when he/she makes up his/her mind for initiating own-account work as it is almost impossible to think out of the box when one occupied to perform the hassle of a day-to-day task. The variable of gas_hh shows the availability of gas in a given household. The coefficient of gas has the value of 0.222, indicating that for every one unit increase in gas, the dependent variable (here in our case is the probability of doing own-account work) increases by 0.222; the standard error for gas_hh has the value of 0.009, demonstrating that the coefficient of the gas has a positive and significant impact on the dependent variable. The electricity variable has a coefficient of 0.256 with a standard error of 0.013, signifying that the dependent variable will rise by 0.013 units for every one-unit increase in electricity. For tap water and toilet availability in a household, the variables are labelled as toiled_hh and piped_water_hh, respectively. The coefficient for the toilet is 0.069 with a standard error of 0.008, representing an increase in one unit of the availability of toilet; the chances for doing own-account work upsurges by 0.069.

Moving ahead, a key role while letting an individual decide to pursue their career as an entrepreneur is access to basic facilities, which creates feasibility for its residents to think beyond boundaries. Where an individual resides is an influential factor, as that is precisely what our findings show. The variable to see the size of an individual's house is congestion. This variable has to have a negative sign. The coefficient of congestion has the value of -0.363, portraying that with one unit decrease in the size of the house, the probability of doing own-account work reduces by -0.363, with a standard error of 0.016. The value for both congestion and piped water is aligned with the findings of a study conducted (Sultana et al. 2020). i.e. the household where an individual resides must have a size that lets him start the household enterprise within house premises.

Moving further, another critical indicator to gauge the probability of starting own-account work is associated with the personal characteristics of the head of the household. The age and education of the head of the household are decisive variables in our model because they define how achievable it is for that person who is an entrepreneur and doing or willing to do his/ her own-account work. The coefficient value for the years of education of the head of the household is 0.007. It depicts that with a one-unit increase in the education of the head of the household, the chances of doing own-account work will increase by 0.007. Likewise, the coefficient value for the age of the head of the household is 0.003, portraying a one unit increase in the age of the head of the household, the chances of doing non-farm work are augmented by 0.003.

The provincial and region-wise participation indicates the residents of which province have higher chances to start their own-account work. The analysis (kept the Khyber Pakhtunkhwa as a benchmark) shows that Punjab, Sindh, and Baluchistan have a significant negative impact on starting own-account.

Table 8: Empirical Model

hh_ent_dummy	Coef.	Std. Err.	z	P>z
Yrsedu	0.0064	0.0010	6.62	0.00
Age	-0.0011	0.0007	-1.60	0.11
age_sq	-0.000004	0.00001	-0.44	0.66
gas_hh	0.2225	0.0091	24.47	0.00
electricity_hh	0.2560	0.0133	19.21	0.00
toilet_hh	0.0695	0.0085	8.17	0.00
piped_water_hh	-0.0116	0.0092	-1.26	0.21
congestion_hh	-0.3636	0.0166	-21.87	0.00
head_yrsedu_h	0.0073	0.0008	9.25	0.00
head_age_h	0.0032	0.0003	11.65	0.00
province				
2	-0.0806	0.0093	-8.65	0.00
3	-0.5040	0.0114	-44.37	0.00
4	-0.3146	0.0139	-22.68	0.00
2. region	0.3517	0.0089	39.63	0.00
_cons	-1.0548	0.0210	-50.21	0.00

Author's estimations

Conclusions and Policy Recommendations

The rapidly changing world and its demands are diversifying on a daily basis. The rising trends of startups have taken a rise globally. People prefer to work for their startup instead of working for someone else as it gives both self-esteem and a sense of freedom while reducing dependency on anyone else. It is commonly seen that to keep up with the world, just go with the flow. Following the same, a higher increase has been witnessed both globally and domestically to start own-account work on a small scale. Most of the work that individuals prefer to start working on, especially in the country's rural region, is limited to within the premises of their homes. This step saves the initial investment or fixed capital and helps individuals minimize the risk of loss.

Keeping the idea of working from home in mind and assessing the trends and expected future of own-account work, this study has a few suggestions to improve and promote own-account work. The Government should promotes small-scale and own-account work by providing technical and professional training free of cost. This step helps individuals start as freelancers, and with the growth of their business, they will scale it by giving income opportunities to others as well. The Punjab government has taken the initiative, providing skilled-based learning opportunities to the masses with programs like Digiskill , E-rozgar , digiPakistan and many more, promoting education, especially IT-related

skills. The same strategies are required to promote training-related programs for agriculture and the small-scale cottage industries linked with agro-based products. The step will lift not only the employment opportunity for individuals but also helped the Government to employ the labour force associated with the agriculture industry, which are part actually part of disguised unemployment.

The second most imperative step is to give subsidized basic amenities like Gas, Electricity, and tap water to those individuals who have declared themselves associated with own-account work by following the example of China. By doing so, the domestic industry associated with the agro-based industry will be enhanced, helping individuals to put in less capital and get better profits. Like China, Bangladesh adopted the same strategy and encouraged the population to get educated and trained and work in a home-based business. This policy improves the cottage industry in the country and aid in reducing unemployment. The small-scale startups in Bangladesh push the country to achieve the highest GPD growth in the region, leaving Pakistan and even India behind in the race of rapidly growing nations in terms of GDP . Pakistan can learn from the experience of neighboring country like Bangladesh.

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Annex 1: Non-farm work by Industry

Industry code with two digits	province								Total	
	Khyber Pakhtunkhwa		Punjab		Sindh		Baluchistan			
	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Agriculture, forestry and fishing	4	.0	18	.0	12	.0	3	.0	37	.0
Mining and quarrying	2	.0	0	.0	0	.0	0	.0	2	.0
Manufacturing	200	.2	485	.2	96	.1	27	.1	808	.1
Electricity, gas, steam and air conditioning supply	1	.0	0	.0	1	.0	1	.0	3	.0
Water supply; sewerage, waste management and remediation activities	3	.0	4	.0	3	.0	1	.0	11	.0
Construction	14	.0	30	.0	5	.0	2	.0	51	.0
Wholesale and retail trade; repair of motor vehicles and motorcycle	654	.5	1454	.5	579	.6	258	.7	2945	.5
Transportation and storage	264	.2	517	.2	158	.2	57	.1	996	.2
Accommodation and food service activities	22	.0	141	.0	39	.0	20	.1	222	.0
Information and communication	6	.0	4	.0	2	.0	0	.0	12	.0
Financial and insurance activities	0	.0	2	.0	0	.0	0	.0	2	.0
Real estate activities	21	.0	46	.0	20	.0	5	.0	92	.0
Professional, scientific and technical activities	16	.0	37	.0	7	.0	1	.0	61	.0
Administrative and support service activities	11	.0	17	.0	1	.0	1	.0	30	.0
Public administration and defence; compulsory social security	3	.0	0	.0	0	.0	0	.0	3	.0
Education	5	.0	43	.0	2	.0	0	.0	50	.0
Human health and social work activities	21	.0	53	.0	10	.0	2	.0	86	.0
Arts, entertainment and recreation	4	.0	11	.0	3	.0	0	.0	18	.0
Other service activities	53	.0	302	.1	62	.1	12	.0	429	.1
Activities of households as employers; undifferentiated goods	0	.0	3	.0	0	.0	0	.0	3	.0

Author's own estimations based on PSLM/HIES 2019-20