

Employees' Perspective for Employment Opportunities Created Under CPEC: Case Study of Coal Fire and Solar Project in Punjab, Pakistan

Ramsha Saleem (✉ ramsha.saleem@lcwu.edu.pk)

Lahore College for Women University <https://orcid.org/0000-0002-9804-7186>

Shahzada M. Naeem Nawaz

Punjab Economic Research Institute

Altaf Hussain

The Islamia University of Bahawalpur Pakistan

Research

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Ramsha Saleem

Assistant Professor of Economics at Lahore College for Women University, Lahore

Email: ramsha.saleem@lcwu.edu.pk

Shahzada M. Naeem Nawaz

Research Fellow at Punjab Economic Research Institute, Lahore

Email: shahzada145@gmail.com

Altaf Hussain

Assistant Professor of Economics at The Islamia University of Bahawalpur

Email: altafhussain@iub.edu.pk

Corresponding author Email: ramsha.saleem@lcwu.edu.pk

ABSTRACT

China Pakistan Economic Corridor is an important milestone which provides opportunity to host strategic investment in Pakistan, primarily in infrastructure and power projects. At the same time, it has shown its potential to directly and indirectly influence the employment. In this perspective, it is significant to understand the perception of employees working in CPEC projects. Accordingly, the aim of the current study is to analyze perception of employees of Sahiwal Power Project and Quaid-e-Azam Solar Power projects. The study employed the descriptive analytical narrative methods at first stage. Then, it adopted OLS estimation procedure to estimate the impact of various relevant indicators on perception of workers about employment opportunities. Primary data is based upon structured questionnaire of employees of the projects on sites whereas the sample selection criterion is statistically rigorous. Using Principal Component Analysis (PCA) and response to relevant questions, four indices are constructed for opportunity in CPEC (CO), social change (SC), coal projects (CP) and employment opportunities (EO). The other determinants of EO are education level and area of belonging. The results suggest that policy makers should focus more on developing the skill level of labor force so that more benefits can be accrued from the investments in various projects. It can be made easy through developing close linkage between the universities and industry.

Keywords: CPEC; employment; employment opportunities; Principal Component Analysis (PCA); solar power; coal power

1. INTRODUCTION

Employment generation is an important route to economic development for any country. The poverty of masses in such countries is closely related to the problem of unemployment whereas poverty, unemployment and non-availability of livelihoods act as serious constraint to economic growth. Although there had been improvements on several fronts at macro level of Pakistan economy, yet unemployment and underemployment remained significantly unchanged for several previous years. The unemployment has fallen from 6.2 percent down to 5.9 percent over last decade (Labour Force Survey, 2014-15). A deeper review depicted 55% population of country is below the age of 30 and is rapidly increasing every year. It is a steeply growing workforce, on average 520,000 unemployed are added in the market annually (BIPP, 2017). During the last decade another 5.2 million unemployed were added and the labour force grew by 11 million, from 50 million in 2005 to 61 million in 2015 (Labour Force Survey, 2014-15). The projects incepted under CPEC will provide opportunity to the local employees and the indirect benefits of these projects will be the provision of employment opportunity to the youth bulge and economic growth in the country. However, power projects under CPEC have addressed an important concern to provide uninterrupted power supply the masses. The study aims to analyzing the perception of workers about employment opportunities both through descriptive analysis and econometric model.

The total amount of investment that Pakistan will expectedly receive under CPEC project is 20 percent of its total annual GDP. Pakistan economy is growing modestly with a five percent range with a steadily growing domestic demand and a rising services sector. The enhancement in growth and further increase in domestic demand are the implicit objectives of CPEC project (World Bank, 2017). Keeping in view the fortunate steady pace of growth of Pakistan economy and growing number of unemployed individuals may result in jobless growth. Generally, developing economies suffer four maladies, which are mass poverty, mass unemployment, mass illiteracy and mass malnutrition. Amongst these four maladies, the key to the rest of three is mass unemployment and underemployment. In other words, unemployment means involuntary idleness. From social point of view, unemployment means wastage of precious labour resources of the country. In the arena of economics, human resources are considered an important component of economic development and different means are globally used to achieve the said goals. Health and education are important means in this regard. These targets need a bridge to transform economic development into improved health, education and vice versa. Employment can also be considered a bridge between these two. Despite contributing in economic development employment is also important from societal point of view. Precisely, employment tends to increase the self-esteem of the individuals in society. This is second time in the history that Pakistan is participating in a large development program that involves foreign funding. The first time this happened in the late 1960s when the country built Indus water replacement works and it is second time now when Pakistan is initiating an infrastructure building plan financed by china.

People have apprehensions and queries in their minds for post construction situation. CPEC is a connection between economic agents along a defined geography (World Bank, 2017). The regional connectivity is expressed as greater south area that includes China, Iran, Afghanistan and stretched till Myanmar (Tiezzi, Shannon 2014). South Asia has experienced a high economic growth since

the turning of this millennium. The region's GDP and GDP per capita are improving for the last many years. The economic pathway is along the transitional route of boom with special focus on Pakistan which in turn is showing its growing demand for energy. This may be in the form of electricity which is expected to increase further for both residential and industrial purposes, as the population of Pakistan is growing fast. Access to modern energy which is defined by household access to electricity and clean cooking facilities are remarkably highlighted as an essential tool for developing countries economic and human development (Shahid S, 2006).

Not with standing, investigating in modern energy sector portray the creation of jobs and improves energy security which reduces the risk of affecting climate badly (SE4ALL, 2016). Globally human population is likely to increase by two to three billion till 2040 (Castellano et al., 2015). Parallel to that several billion people are expected to experience an increase in their per capita income a prerequisite to meet the sustainable development goals agreed in September 2005. Energy investment in Pakistan stands vital for growth and prosperity. Considering this assessment, many countries are now seeking ways to obtain social and economic growth through the development via the advancement in energy and renewable energy sector. The (United Nations 2014) basic aim is universal access to modern energy share in the global energy mine by 2030. It can be realized through multi stakeholder partnership of public, private and civil sector's mobilization of resources for electricity access programs (Sustainable energy for all, 2016). CPEC is perceived to be a driver for connecting south Asia and East Asia. There are many important players in regional integrity which is vital in the era of globalization and in the arena of the paradigm shift from 'security' to 'economics'. It is the era of economic strength and the route to it is economic development through various means and models. (Khan et .al, 2016).

The primary objective of present study is to examine the employability impact of solar power project of Bahawalpur and coal power plant of Sahiwal within the radius of 15km². The secondary objective is to record the change in employment oriented (socio-economic) indicators through the opinion of locals (employees) within the radius of 15km² since the completion and operation of the two energy projects. This study is conducted in the short duration of time (14 to 16 weeks). Another time limitation is regarding the impacts evaluation of CPEC. Since these projects started just before a few years, their far seeking impacts will take few more years to be realized. The both energy projects (Bahawalpur and Sahiwal, solar and coal respectively) are considered in this study, while other energy projects in Pakistan under CPEC may also have pervasive effects etc.

Section 2 provides the methodology whereas section 3 provides analysis of the data collected from employees working in Sahiwal Coal Power and Quaid-e-Azam Solar Power projects under 3 sub-sections each for characteristics of employees, their perception and the econometric analysis. Section 4 concludes the study.

2. METHODOLOGY OF THE STUDY

Since the variability of the elements of the respondents were considered to give the representation to all the sampling units. The population and variability of the population has not been determined through basic survey. Consequently, the guessed variability which is considered 50 percent to have maximum sample size, the following statistical formula to have representative sample from the large population is

$$n = \frac{Z^2 V^2}{e^2} \quad \text{where:}$$

Z = normal variate (1.96)

V = guest variability of sampling units which 50 percent for maximum sample size

e = deem able error (10 percent)

Considering the value of elements

$$n = \frac{(1.96)^2 (50)^2}{(10)^2} = \frac{3.8416 \times 2500}{100} = 96.04$$

Say = 100 and for both the projects, sample size will be 200 respondents. Considering both the site areas of the project the sample size will be doubled i.e 100 x 2=200 (respondents from both site areas).

This study employed the descriptive analytical narrative methods at first stage. Then it adopted OLS estimation procedure to estimate the impact of various relevant indicators on perception of workers about employment opportunities. Primary data is based upon structured questionnaire of employees of the projects on sites. The secondary sources of date are journals, newspapers, magazines and research articles. The questionnaire formulated through extensive study of the area by repeated visits. It is comprising of some sections including analysis for results and findings, summary and conclusion and lastly the recommendations. As the study is based upon multistage sampling, firstly cluster sampling and then purposive sampling techniques were adapted to collect data. This study will provide a schematic scenario with systematic analysis backed by the opinion of locals (employees) in the identified clusters around the solar and coal projects of Bahawalpur and Sahiwal respectively.

The model of perception on employment opportunities by workers of two power projects, one is coal power project Sahiwal and the second is Solar Power Project Bahawalpur is an important consideration. Using Principal Component Analysis (PCA) and response to relevant questions, four indices are constructed for opportunity in CPEC (CO), social change (SC), coal projects (CP) and employment opportunities (EO).

The model for perception of workers for employment opportunities is as under:

$$EO = f(CO, SC, CP, EO, Edu\ levels, area\ belong)$$

AS the value of all the indices are likely to be continuous including dependent variable. So, the model is estimated through OLS because it is best and unbiased to estimate the model of perceived employment opportunities in CPEC projects. Moreover, to avoid the problem of heteroskedasticity, robust standard errors are reported.

The validity of indices, constructed through PCA, is checked using Kaiser-Meyer-Olkin Measure of Sampling Adequacy.

3. RESULTS OF THE STUDY

The coal fire project has been initiated in Chak number 76/5-R in Qadirabad, District Sahiwal, Punjab and Quaid-e-Azam solar park in Bahawalpur. Sahiwal coal fire project is completed and operational capacity of 1320 MW with a total cost of US\$1802 million. Quaid-e-Azam solar park in Bahawalpur is in progress since it has attained a capacity of 300 MW in August 2016 and is also connected to national grid. It is pertinent to add that US\$1302 million are spent on it. Bahawalpur and Sahiwal are urban areas of Punjab. Bahawalpur division has cholistan desert in its territory. It is considerably a sandy area and exposed to sunlight for longer duration in hours round the year. Sahiwal district has multi-dimensional connectivity with road and rail routes towards various industrial centers of Punjab and Sindh provinces.

It is found that the labour employed in the projects are 60 and 330 males in Bahawalpur and Sahiwal energy projects respectively which are Pakistani nationals while 1 Pakistani national female in each of the project was employed making total of 61 in Bahawalpur and 331 in Sahiwal project. The foreigners are also employed in both the projects. The male members employed are 19 in Bahawalpur and 219 in Sahiwal (Foreign nationals). The females are also employed in both the projects which are 2 and 8 in Bahawalpur and Sahiwal projects respectively. The total foreign national employed members are 21 in Bahawalpur and 227 in Sahiwal projects. All these members are registered by Ministry of Labour and were working on sites at the time of survey. These employees are provided accommodation, food, medical facilities, transportation, on site shopping mart, oversees and local technical training opportunities in Sahiwal project. Furthermore, lunch allowance, mobile allowance, fuel allowance, laptop allowance and medical insurance is also provided to employees on Bahawalpur project site.

3.1 Analyzing Characteristics of Respondents

Classification of Labour force by Education

Since the labour force employed in both the projects are (locals) literate and illiterate. Classification of the labour force is made based on education. The literate labour force is 74 percent in both Bahawalpur and Sahiwal projects. Consequently, illiterate interviewed respondents remained 26 percent in both projects.

Table 1 portrays the currently working employees under different classifications of education in both energy projects. It reveals the rosy picture in term of employment generation for locals. Many jobs are going to locals with different levels of education. When interviewed, they showed their satisfactory remarks regarding provided facilities.

Table-1: Classification of Labour force by Education (%)

Project	Illiterate	Literate			
		≤Matric	Intermediate	Graduate	>Graduate & above
Bahawalpur	26%	74%			
		43.2	12.2	9.5	35.1

Sahiwal	26%	37.8	16.2	16.3	29.7	74%
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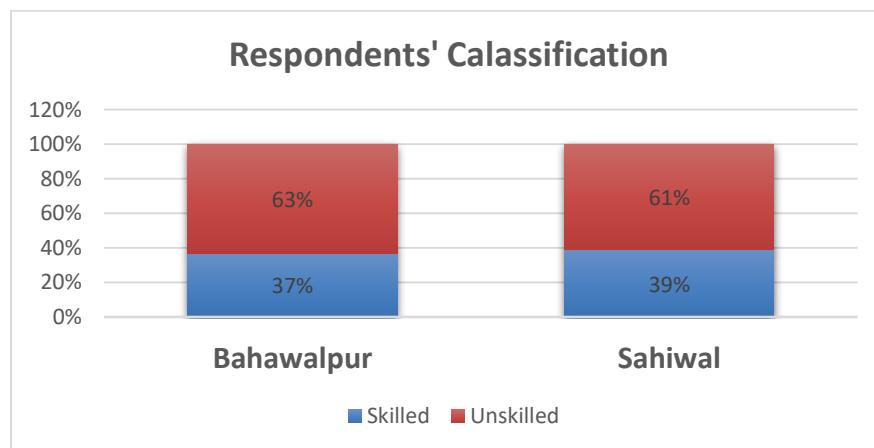
(Source: Primary Data)

Amongst the literate employees, maximum percentage is of those having education of more than 14 years which are 35.1 percent and 29.7 percent for Bahawalpur and Sahiwal projects respectively. This segment of employment contains engineers, managers and persons employed for operations. Employees acquiring intermediate education level and those who have also attained the equivalent diploma (Associate engineers) from technical colleges of Punjab are also employed on both site areas. However, the 9.5 percent and 16.2 percent graduates acquiring 14 years education are employed in Bahawalpur and Sahiwal projects respectively. These employees filled the vacancies for middle management. Graduate engineers are also employed which comprised of 35.1 percent and 29.7 percent in Bahawalpur and Sahiwal projects.

Classification of Labour Force by skill

The classification of labour force is made based on skilled and unskilled respondents. The skilled manpower is employed in both energy projects (37 percent and 39 percent for Bahawalpur and Sahiwal respectively). Two third employees interviewed from both areas are unskilled which are 63 percent and 61 percent for Bahawalpur and Sahiwal energy projects respectively.

Figure 1: Respondents Classification



Classification of Labour Force by Experience

The study portrays that 43 percent employed persons in Bahawalpur project and 37 percent employed in Sahiwal project are not having any prior experience, While the percentage for experienced employees with duration of 36 months and above experience (depicted in months) showed the highest rank for experience of 3 years and above are 45.6 percent and 34.9 percent for Bahawalpur and Sahiwal respectively. These experienced persons are employed on high ranks of management already acquiring managerial skills. The second highest most category is formed by employees with twelve months experience which are 17.5 percent for Bahawalpur and 30.2 percent for Sahiwal projects.

Table 2: Classification of Labour Force by prior experience in months (%)

Project	No Experience	Experience					
		<6 Mths	<12 Mths	<18 Mths	<24 Mths	<30 Mths	<36 Mths & above
Bahawalpur	43%	57%					
		12.3	17.5	5.3	10.5	7	45.6
Sahiwal	37%	63%					
		11.1	30.2	6.3	9.5	7.9	34.9

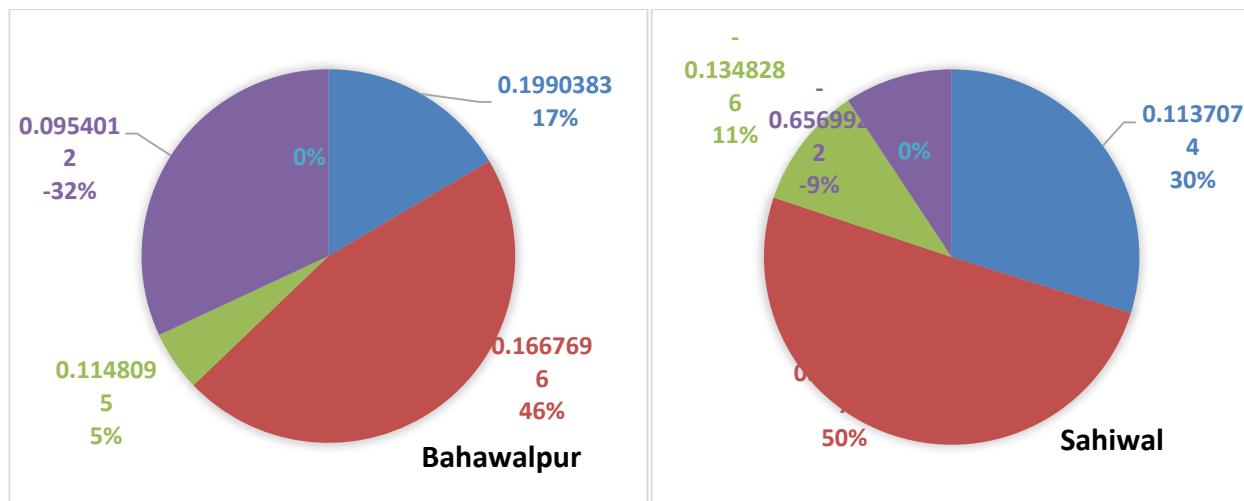
(Source: Primary Data)

Common person and the person ever employed in the project for a short duration of (0-3months) are likewise giving unsatisfactory remarks for the employability scenario. Indeed, even now an unskilled and 10 years education acquiring persons are keen to get employment in both power plants as they moderately respond for social infrastructure advancement and employment for locals. The facilities provided by registered companies were similar for locals and foreign employees, but the response rate of satisfaction was relatively lower by local employees.

Classification by Salary

Salary is classified under the lowest segment (less than Rs 15000 per month) while the second group of salary is made with income of less than Rs 25000. Maximum percentage of employees interviewed were getting salary between Rs 15000 to Rs 25000. Those were mostly primarily skilled with no experience or with a short duration of experience. They constitute for 60 percent and 53 percent in Bahawalpur and Sahiwal projects respectively. However, there are other employees getting salary more than Rs 45000 and above which are 28 percent in Bahawalpur solar and 27 percent in Sahiwal coal fire projects. These persons are performing managerial and professional jobs with the experience of minimum two years and are considered technical.

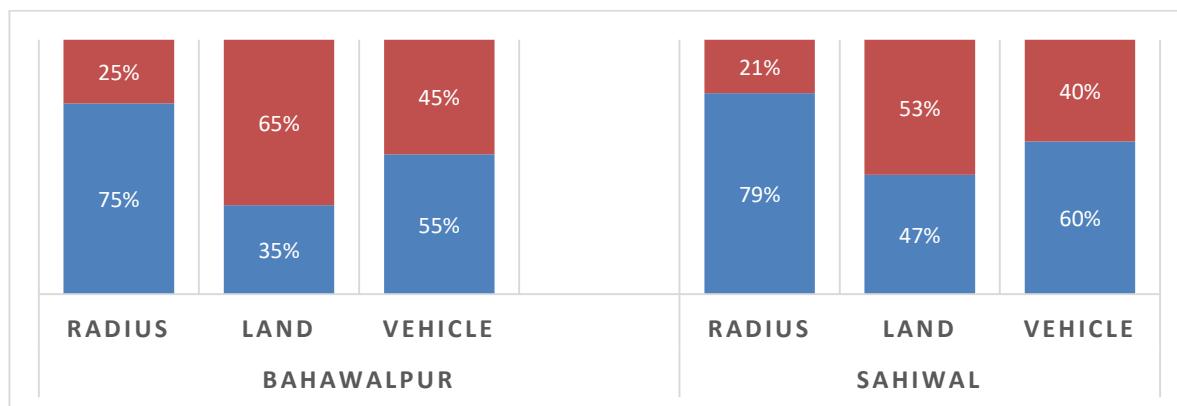
Figure 2: Monthly Salary of Employees



Classification by resident of area (within 15 km²)

The distribution of labour force by resident of area within 15 km² radius on both sites is also recorded. The respondents who are not the residents of specified radius are not familiar with the local languages of site areas. They used to use their local languages at homes and national language at work places for communication. The results are depicted in Figure 7.

Figure 3: Ownership of Assets



Rural labour force is generally classified as land owner or landless people. Those who responded for land ownership by family also responded that they were partly or completely employed with family members on the farms before getting employment in those projects under study. Most of them are unskilled and uneducated persons and are the residents of 15km² radius in both areas. Findings of the study show that 35 percent of labour force working in Bahawalpur Solar Project and 47 percent respondents from Sahiwal Coal fire project showed their farm ownership. However,

65 percent and 53 percent respondents were from landless families in Bahawalpur and Sahiwal energy projects respectively.

Rural areas of Bahawalpur and Sahiwal district have no infrastructure for owning general vehicles as rural people are poor with a subsistence level of income and could not afford the vehicle use and ownership. Labour force showing the ownership of vehicle are those persons who purchased the vehicle after getting job in these energy projects under CPEC. It is a good number of persons showing purchase of vehicle after getting employment in these projects which are 55 percent and 60 percent in Bahawalpur and Sahiwal site areas respectively. This shows upward trend of living standard for the employees after getting the jobs in these energy projects. Going deep in the line of socio-economic background of respondents, it seemed pertinent to ask about the income of family head (father). These respondents were disguisedly employed upon the farm of father or were helping in his work before joining the jobs in these projects. 21 percent employees in Bahawalpur project and 17 Percent respondents in Sahiwal project responded for no income of father portraying that father was not involved in economic activity or was late. Amongst those who responded for father income through employment or any other economic activity were 41 percent from Bahawalpur and 45 percent were from Sahiwal in the total sample. This constituted the major group of income level and the recorded per month father income was Rs15000 or less. The 17 percent respondents reflected second major group of father income in Bahawalpur with Rs 55,000 and above whereas the second major group of father income in Sahiwal area with a percentage of 16 had income between Rs 15,000 and Rs 25,000.

3.2 Employees Response towards Perception of CPEC

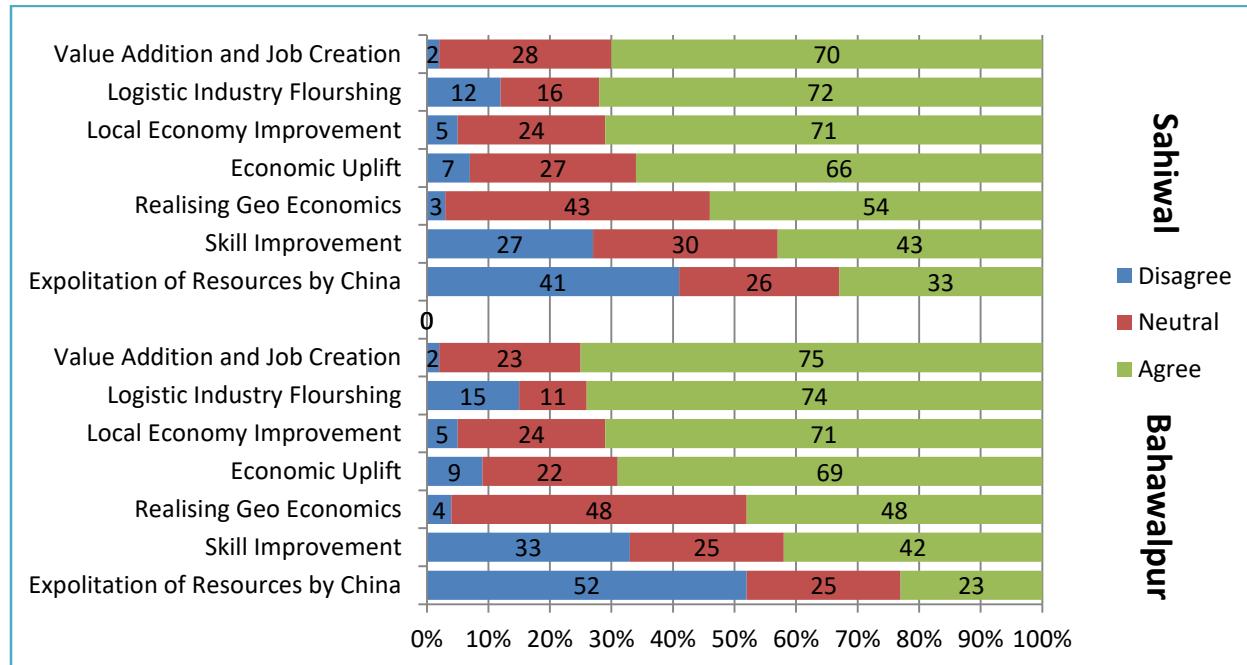
Initially, CPEC initiative had focused on energy and infrastructure development. Hence the employees' general response with respect to project perception was also collected from the concerned respondents. The operational procedures of relevant projects under CPEC are different from conventional investment projects as Pakistan has no experience of undertaking such huge investment in size and scale in the past (BIPP, 2017). The perception of respondents has been reprinted with the 5-point Likert scale.

General Perception of respondents

The response regarding project (CPEC) activity specifically in these energy projects possess relatively similar perception of respondents for the impacts upon their surroundings that ultimately will affect the local common man's life. The respondents interviewed from both the project are of the view that these will promote rural industrialization and enhance of SMEs etc. The persons interviewed from Sahiwal Coal fire plant showed their more optimistic views in their general remarks. They showed their perceptions in the post installation, operation and management phase as well as for the near and far future of the area under CPEC umbrella. The graph shows that the project has general concern of economic uplift of the backward areas by adding in the higher economic growth of Pakistan, advancement in logistic industry, local economy growth and value addition with employment generation and skill improvement in the employed labour force through new technology. Since the similar indicators for perception of the CPEC project were considered for both sites, the expected response must be similar. The response for disagreement was also

reported for some indicators like exploitation of resources by China and the coal use as capital flight.

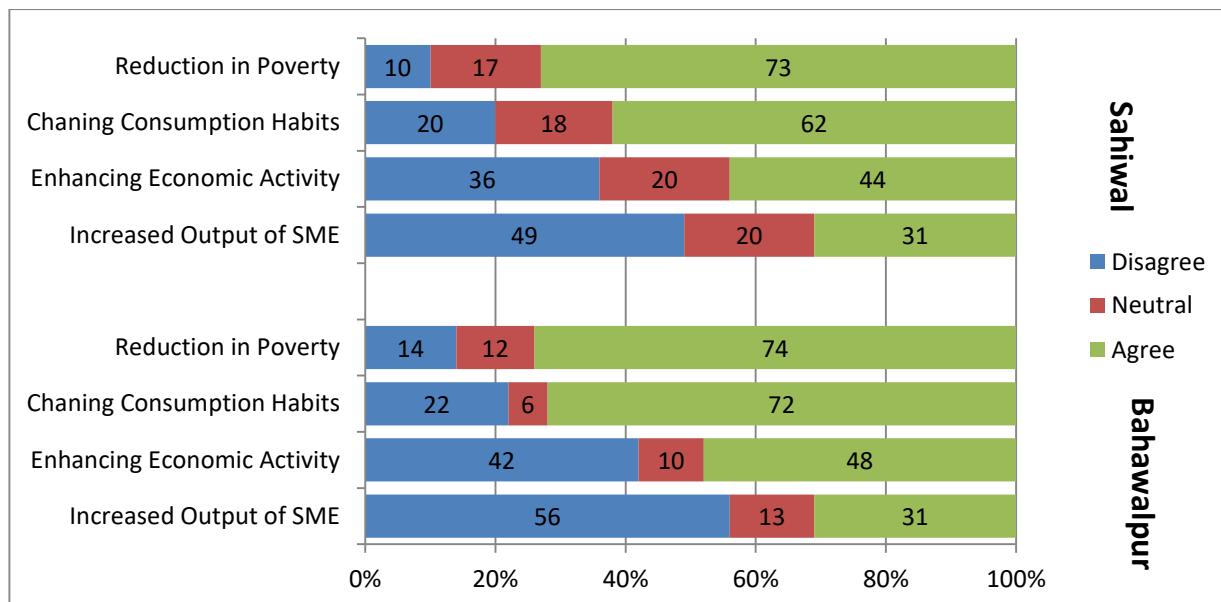
Figure 4: General Perception of Respondents



Perception about Infrastructure Development

The development of infrastructure parallel to the project activities are essential to make the implementation of the CPEC project successful. This could increase level of output and income of the respondent. Such investment to provide infrastructure will lead to reduction in poverty level of the concerned periphery. Consequently, the adequate infrastructure would increase economic activity and would also impact the consumption habits of local communities which ultimately will increase level of output and income of the respondents. The small and medium enterprise (SMEs) are the enterprising foundations of Pakistan. Almost 90 percent of the existing enterprises are contributing to 80 percent non-agriculture workforce, 40 percent to the annual GDP and contribute 35 percent in the value addition (Pakistan Economic Survey, 2017). The graph indicates the respondents agreed 74 percent, 72 percent and 48 percent in Bahawalpur area and the similar situation with respect to response in infrastructure development was reported 73%, 62% and 44% in Sahiwal project area. Several respondents reported disagreement and neutral response in case of both projects for some indicators.

Figure 5: Perception about Infrastructure Development



Perception about energy improvement

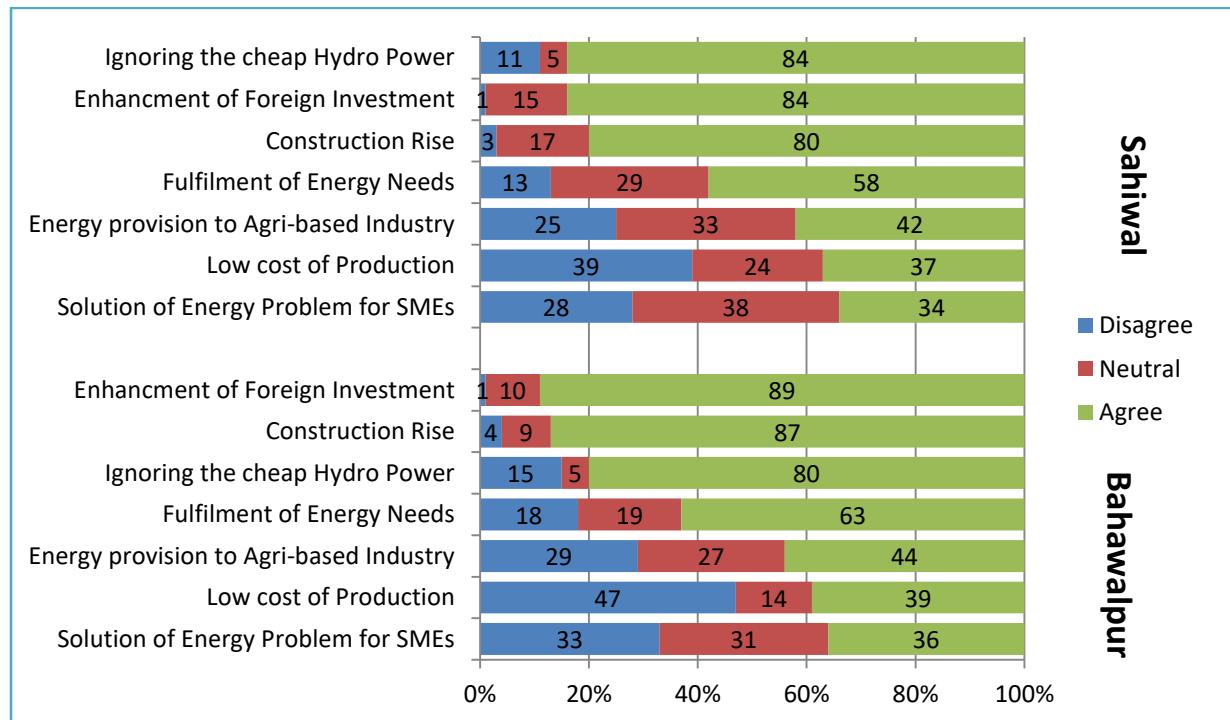
The lion's share of China's investment (\$32 billion constituting 70 percent of investment funds) are allocated to energy projects. The bulk of funds are coming under CPEC umbrella for solving Pakistan's energy problem. Energy shortage had been a great hurdle in economic growth of the country for last many years. If all such investment is made according to plan about 20 projects of energy will generate nearly 17,000 MW of additional energy by 2020. The energy projects are financed by foreign investment under contracts which will generate outflows in the form of profit repatriation and fuel imports. And the peak outflows of \$3.5 to \$4.5 billion will occur by 2025 (IMF, 2017).

The respondents of the project area have shown certain indications on completion of the project with respect to provision of energy and solution of energy related problems. The provision of energy would increase the establishment of new small and medium industries. This may indirectly attract foreign investment and betterment in local industry and agriculture based industry may also be realized. China intends to initiate collaborative research in agriculture sector as agriculture sector is the most important sector of Pakistan economy and accounts 19.5 percent of GDP and is employing 50 Percent workforce (Economic Survey 2017).

The collaborative effort under umbrella of CPEC will open new ways for growth and will impact positively on livelihood of masses with the creation of better jobs to them. There is a setback that CPEC has been ignoring the cheap hydro power projects and focusing upon costly fuel for generation of electricity. The graph shows perception of respondents for energy improvement which was 63 percent, 87 percent, 89 percent and 80 percent for certain indicators in Bahawalpur project area and a slightly lower response for same indicators was reported by Sahiwal. respondents. 47 percent respondents remained disagree for low cost production after

implementation of CPEC project in Bahawalpur. It shows certain fluctuations in the respect of response by respondents.

Figure 6: Perception about Improvement in Energy Availability



The interviewed Pakistani nationals showed some similarities and some differences against same questions of the questionnaire. Among these interviewed persons 75 percent and 79 percent were locals within the above mentioned radius in Bahawalpur and Sahiwal respectively, 26 percent of which were illiterate in both areas and in the bracket of literate persons maximum percentage of respondents were matriculate and intermediate(holding associate engineering diploma) made up 55.4 percent in Bahawalpur and 54 percent in Sahiwal project and the percentage of locals employed in both the projects with 10 to 12 years of education is likewise similar.

The next major bracket of Pakistan national employees in both projects is for engineers acquiring 16 years education are 35.1 and 29 percent in Bahawalpur and Sahiwal projects respectively. This bracket of employees also contains the persons working on top management positions in both the projects. Apparently it is a less percentage of local, skilled and educated persons employed in both site areas. The rest of the unskilled persons are illiterate or a bit literate earning salary between Rs 15000 to Rs 25000 per month. Some indicators like spouse employment, spouse education and income of father (family head) were also inquired from the respondents. Maximum percentage of respondents responded for father income between Rs 15000 to Rs 25000 monthly and the fathers were small land owners (self employed) or were working labourers. The respondents who were uneducated and unskilled could not provide information about their prior experience but the same respondents reported that they were working on farms with fathers and seems they were disguisedly employed (major problem of Pakistan).

Among the married respondents a large chunk of respondents reported for illiterate spouse with no participation in economic activity. Although these indicators were not directly targeting the research topic yet these overt a clear difference in both districts under study. As Sahiwal is near to the central Punjab, 18 percent respondents reported for employed Spouse with maximum sixteen years education while in Bahawalpur 10 percent respondents reported the spouse employment which is almost half of the percentage at Sahiwal.

3.3 Analyzing Perception about Employment Opportunities

Table 3 shows that all the variables are valid therefore these can be used for estimation purpose.

Table 3: Validity of Indices constructed using PCA

Indicator	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Sig.
Opportunity in CPEC (CO)	0.672	0.0000
Social Change (SC)	0.693	0.0000
Coal Projects (CP)	0.711	0.0000
Employment Opportunities (EO)	0.694	0.0000

The results of the estimated model, at table 2, show that all the variables have significant impact on perception of employment opportunities except the coal project and the area of belonging of the workers.

Table 4: Linear Regression

$$\begin{aligned}
 \text{Number of Observations} &= 200 \\
 F(7, 192) &= 44.22 \\
 \text{Prob} > F &= 0.0000 \\
 \text{Root MSE} &= 0.70906
 \end{aligned}$$

EO	Coef.	Robust Std. Err.	t	P > t	[95% Conf. Interval]	
CP	-0.05315	0.0559318	-0.95	0.343	0.1634669	0.0571724
CO	0.241787	0.0496347	4.87	0.000	0.1438877	0.3396863
SC	0.273661	0.0678933	4.03	0.000	0.1397489	0.4075737
Edu						
2	0.272516	0.1503341	1.81	0.071	0.0240028	0.5690340
3	0.50629	0.1990383	2.54	0.012	0.1137074	0.8988723
4	1.187842	0.1667696	7.12	0.000	0.8589067	1.5167780
Areabelong	0.091621	0.1148095	0.8	0.426	0.1348286	0.3180712
_Cons	-0.46882	0.0954012	-4.91	0.000	0.6569922	-0.2806542

The employees working at Coal Power Project Sahiwal and Coal Power Project Bahawalpur perceive that CPEC will bring more employment opportunities through economic upliftment of the region of interest, innovative culture, size of the local economy, expansion of trade opportunities, change in consumption habit of household and increased level of output of small and medium enterprises. Workers perceive insignificant impact of both the projects on employment opportunities due to their failure to reverse brain drain and capital flight. The results confirm the positive and significant impact of social change on employment opportunities. As workers perceive, various levels of education are significantly important for employment opportunities. However, the response of perceived employment opportunities is higher for higher level of education and the results are more robust as the level of education increases. Employment opportunities will be created irrespective of the area or region to which the workers belong. Overall the model is significant which can be witnessed by the F test. The results are available at table 4 above.

Table 5: Variance Inflating Factor Analysis

Variable	VIF	1/VIF
CP	1.02	0.981420
CO	1.01	0.987144
SC	1.87	0.534242
Edu		
2	1.3	0.768703
3	1.97	0.508753
4	1.9	0.525706
Areabelong	1.28	0.782814
Mean VIF	1.48	

Analysis of Variance Inflating Factors (VIF) shows that there is no-multicollinearity problem in the model as the max value of is 1.90 whereas the mean value of VIF is 1.48. the results are reported in table 5.

4. CONCLUSION

Labour force at the projects is dominated by local male workers followed by foreign workers and female workers respectively. Like any project, the workers have different levels of education whereas the majority is either have education of less than matric or graduate. Further, most of the workers are un-skilled. Generally, most of the employees perceive positive socioeconomic situation after the inception of projects. The results also suggest that social change, opportunity in CPEC, different levels of education will lead to employment opportunities in the country irrespective of the region to which the workers belong. The results suggest that policy makers should more focus on developing the skill level of labour force so that more benefits can be accrued from the investments in various projects. It can be made easy through developing close linkage between the universities and industry.

The necessity of conducting further multidimensional research on CPEC in Pakistan for assessing the solidity of its impacts. The micro level studies may be conducted to collect the information about uplifting the livelihood of residents across the root and around installed projects. The further deep dwelling research with appropriate analysis, monitoring and evaluation with the special focus on employment generation under all job classification. Policy makers in Pakistan should re-evaluate their entities to avoid contradictions and apprehensions. The investment, employment and per capita GDP in Pakistan should correlate the aims of China considering the priorities of each country for generating the maximum benefit. The changes in social structure might be made to reap the benefit of this huge investment under CPEC.

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Ethics declarations

Competing interests

The authors declare that they have no competing interests.

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Availability of data and materials

Data and material would be made available upon request.

Authors' contributions

Ramsha Saleem prepared and designed the questionnaire, interpreted the results qualitatively and composed the manuscript. Shahzada M. Naeem Nawaz is the research advisor and provided explanation of the model result along with helping in preparation of the manuscript. Altaf Hussain helped in collecting the survey data from the field.

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Figures

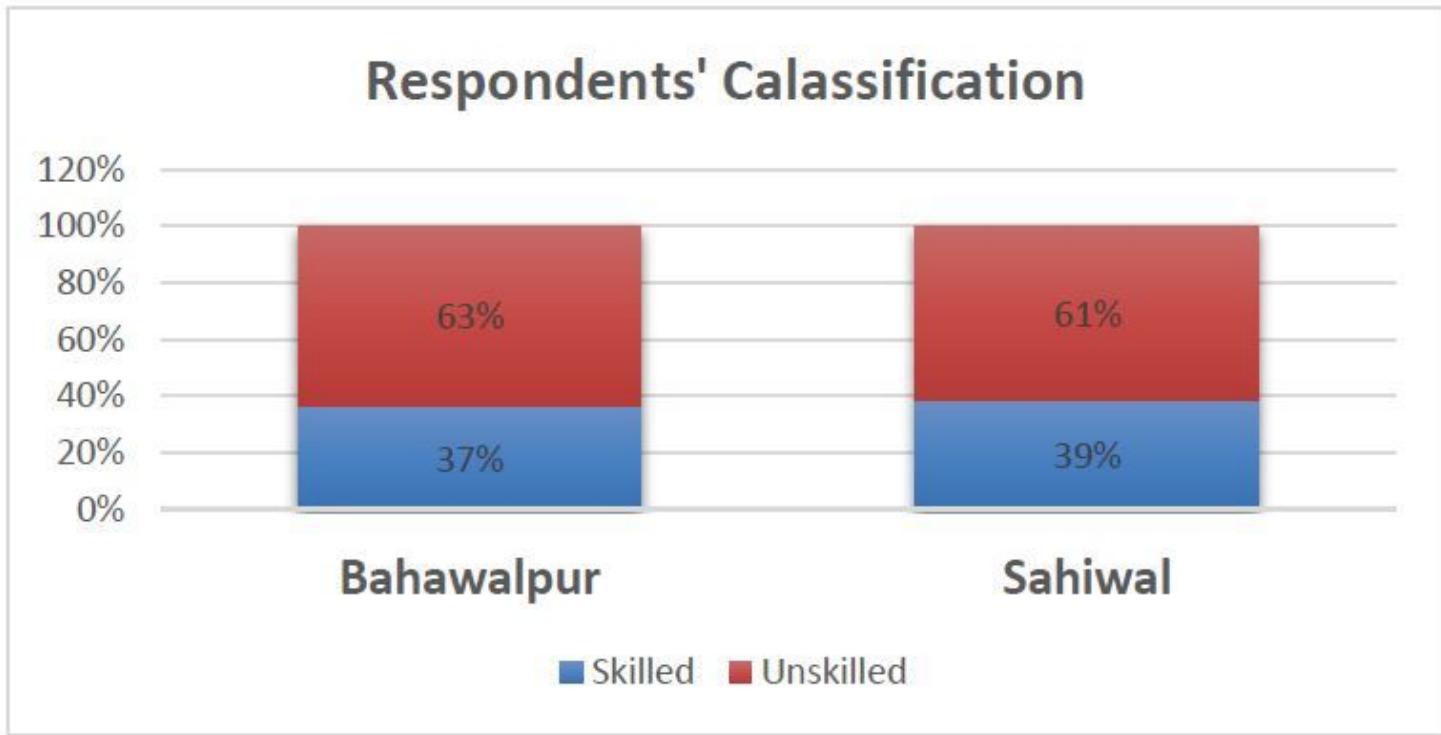


Figure 1

Respondents Classification

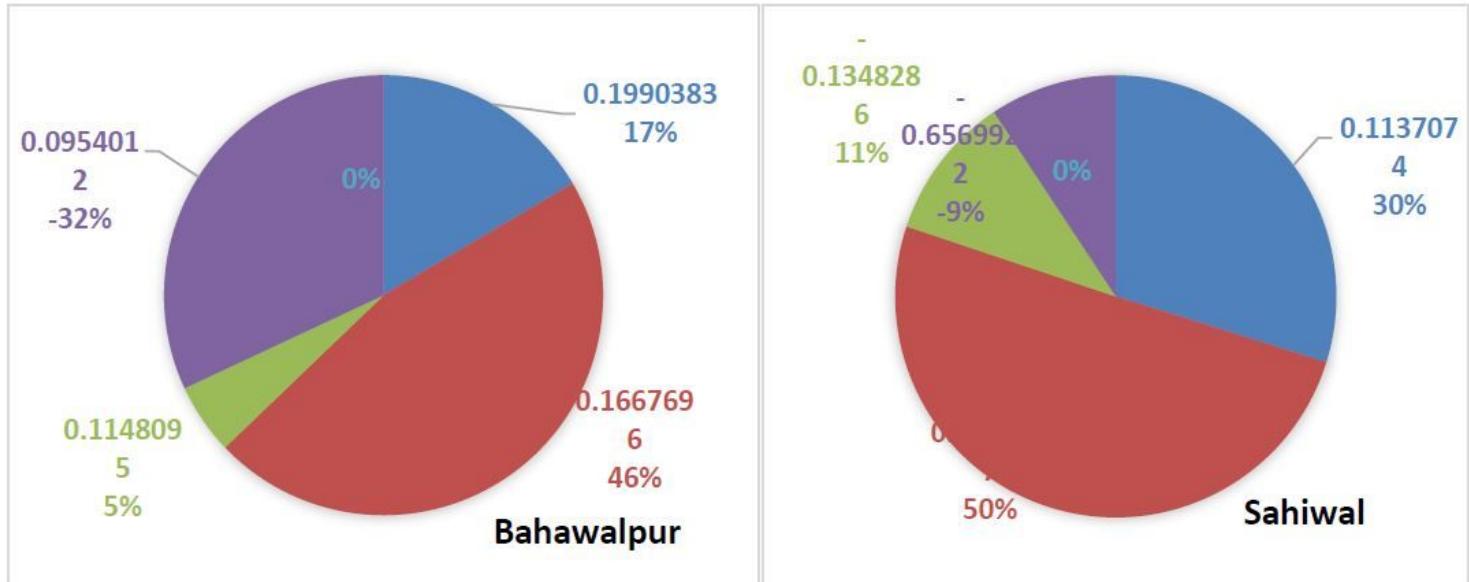


Figure 2

Monthly Salary of Employees

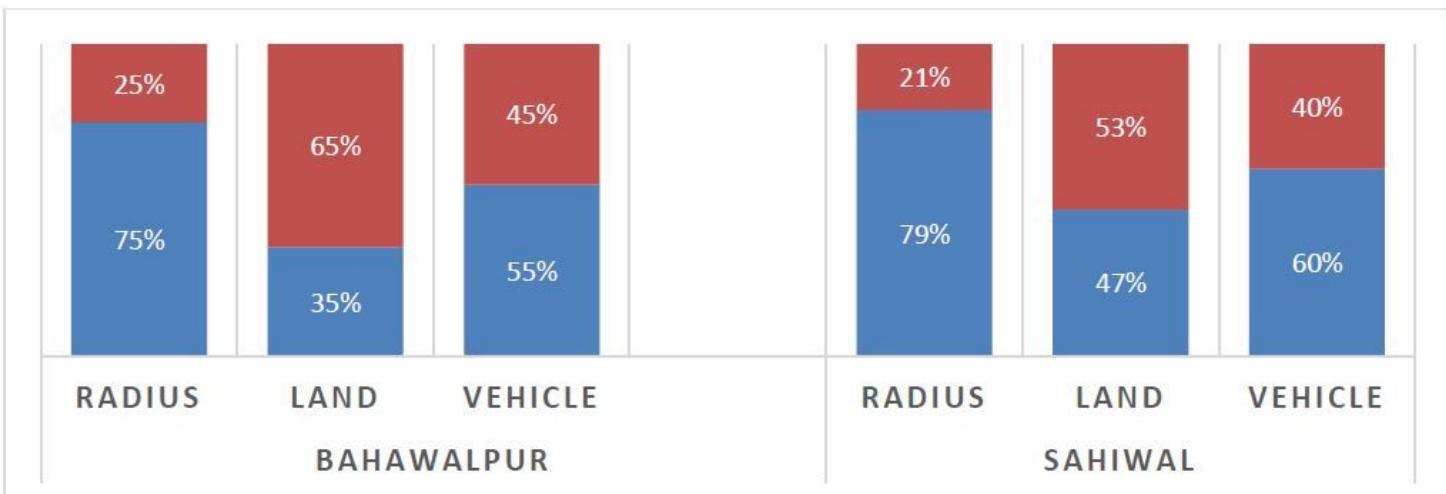


Figure 3

Ownership of Assets

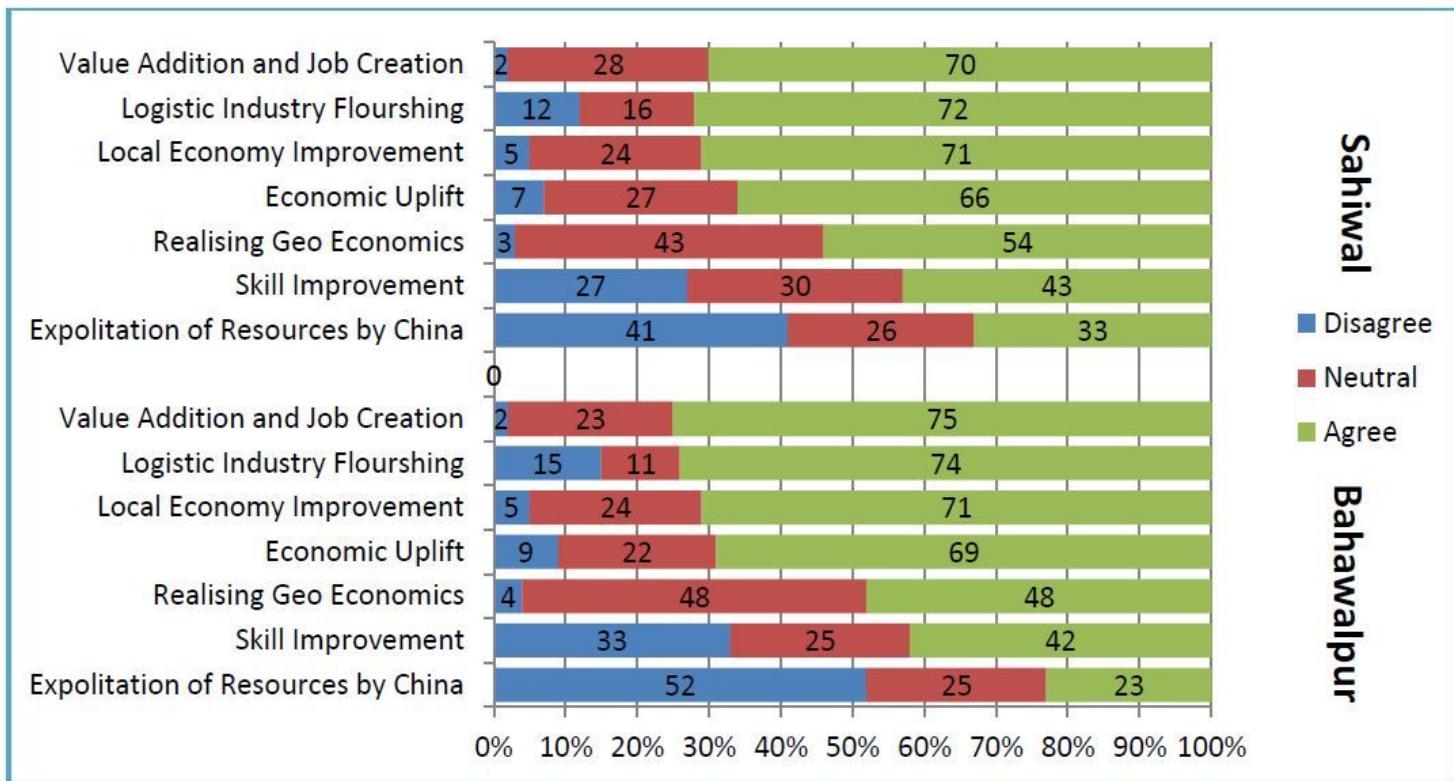


Figure 4

General Perception of Respondents

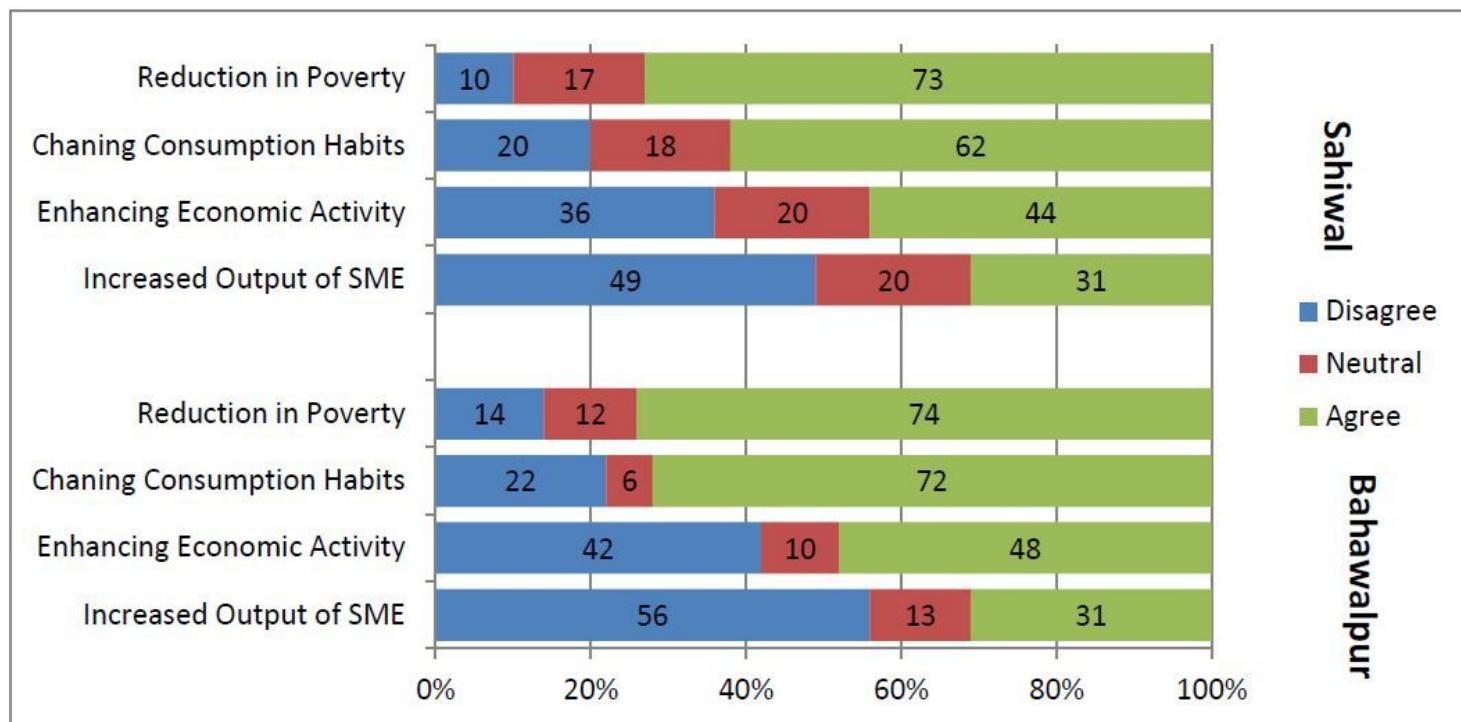


Figure 5

Perception about Infrastructure Development

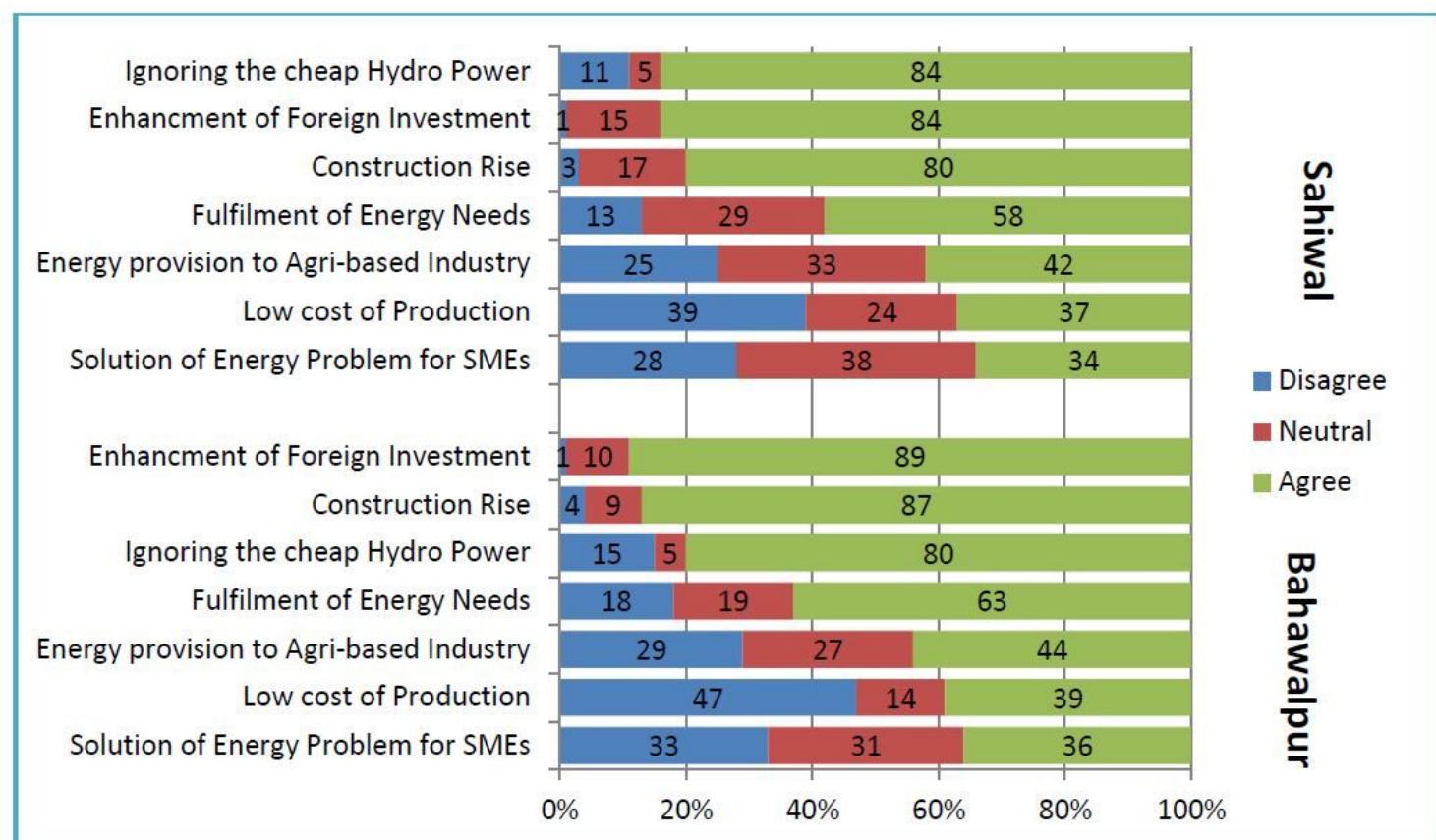


Figure 6

Perception about Improvement in Energy Availability