Pak. j. life soc. Sci. (2024), 22(2): 23609-23619 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.001684

RESEARCH ARTICLE

Developing a Social Accounting Matrix Framework to Examine the Impact of Foreign Investment on Labour in Pakistan

Muhammad Sheharyar[1*], Mukaramah Harun[2], Wan Roshidah Fadzim[3]

[1,2,3] School of Economics, Finance & Banking, Universiti Utara Malaysia, Sintok, Malaysia

ARTICLE INFO

Received: Oct 22, 2024

Accepted: Dec 18, 2024

Keywords

China-Pakistan Economic Corridor (CPEC)

Social Accounting Matrix (SAM)

***Corresponding Author:**

muhammadsheharyar473@gmail.com

ABSTRACT

Economists recommend using the Social Accounting Matrix (SAM) for analyzing income distribution and employment generation, but few SAMs exist for Pakistan. The last official SAM was produced in 1984 by the Pakistan Bureau of Statistics and has not been updated despite significant economic changes. This paper proposes a new SAM framework for Pakistan to analyse the impact of Foreign Direct Investment (FDI) and China-Pakistan Economic Corridor (CPEC) investments on employment. This new SAM uses recent data to provide a current and detailed picture of Pakistan's economy. It includes detailed aggregation and disaggregation of accounts related to Gross Fixed Capital Formation and employment. The framework helps analyse the effects of FDI from China on different skill levels of labour in Pakistan. The SAM can answer questions about which mechanisms of FDI development help low-income groups. Traditional policy tools like econometric models, cost-effectiveness analysis, and social cost-benefit analysis often fail to capture the complex relationships between unemployment, poverty, and other variables. The SAM's ability to model income distribution and identify relationships between demand shifts, production, factor incomes, and household labour supply gives it an edge over these tools. This makes it a valuable method for evaluating the impact of FDI on employment and income distribution in Pakistan.

1. INTRODUCTION

Pakistan is a South Asian country with a population of more than 200 million people and a land area of 0.79 million square kilometres. Due to its vast population, Pakistan is considered the fifth most populous country in the world, and by area, Pakistan is ranked as the thirty-fifth largest country in the world. After the 9-11 incidents, Pakistan has been a victim of terrorism because of its neighbouring border to Afghanistan, which directly affects the confidence of foreign investors to invest in the country. Among many of the reasons Pakistan failed to attract foreign investment, the most prominent reason was the political Instability and militant violence. Currently, Pakistan urgently needs foreign investment to fuel its sluggish economic growth. Pakistan's average growth over the past decade has been at most 3 per cent (Hussain, 2017). The lack of Foreign Direct Investment (FDI) has also impacted domestic investment and slowed the country's economic growth, ultimately impacting employment issues. (Le et al.,2021).

Furthermore, in 2013, the governments of China and Pakistan together established the game-changing project China-Pakistan Economic Corridor (CPEC), which is valued at 54 billion US dollars and has a long-term strategy that extends until 2030 to solve the issue of low investment in the nation. Pakistan's socioeconomic and foreign policy circumstances will improve as a result. Several infrastructure, economic development, industrial zones, and regional connection projects are now being built throughout Pakistan as part of the CPEC. (Ahmad & Hong, 2017). (Kanwal et al., 2019) have proved that the CPEC initiative reduces unemployment by creating millions of job possibilities. It also connects isolated areas of Pakistan and offers domestic and foreign companies' numerous economic prospects. According to officials, the CPEC projects, which include energy, economic

ventures, education, and infrastructural development, are a game changer for Pakistan. Energy initiatives will address the country's power outages and blackouts, boost economic activity, and attract foreign investment.

CPEC mainly visualized as a source of employment generation for the Pakistani labour and poverty reduction, as Chinese authorities are the main stakeholders of this project and also providing the major part of investment in this project (Ali et al., 2020). Despite this (Hussain, 2017) (Hussain et al., 2020) (Khan et al 2023). Showed great concern in providing level playing field in the employment status and opportunities for Pakistani labour. According to the CPEC official report, the Chinese are using more than 80% of foreign labour in this project and less than 20% of domestic workers; nonetheless, the project employs less Pakistani trained labour force than Chinese. CPEC is a multiple-dimensioned infrastructure development project that includes road, rail, Gawadar port, and energy developments. The Figure below shows the data on job generation for finished projects of CPEC, which signifies the mixed picture of prospective employment creation for the locals and foreign labor

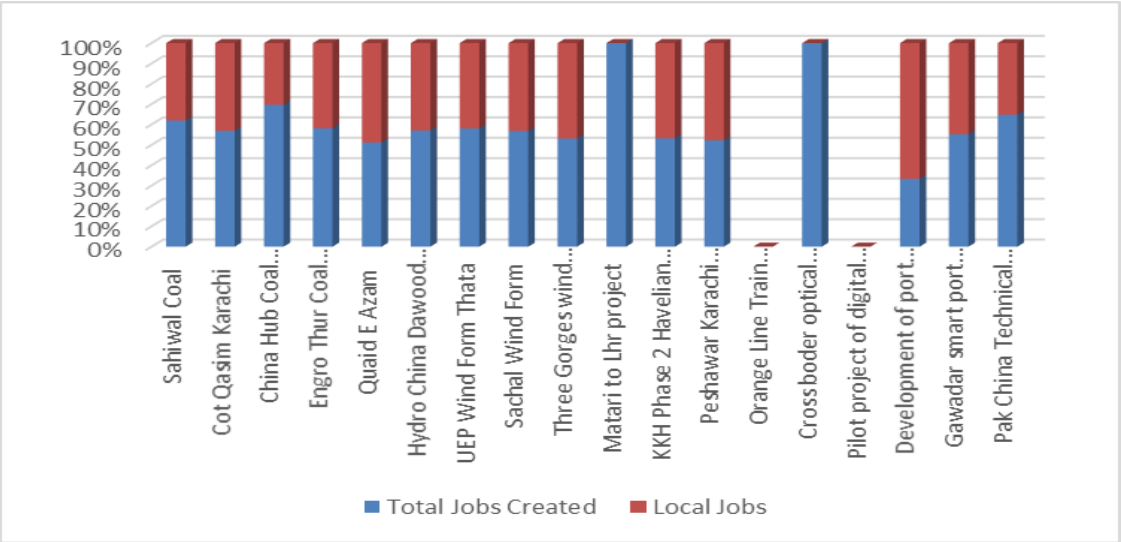

Figure 1: Employment creation under CPEC project

Source: official website of CPEC

In addition, among many of the economic challenges, Pakistan is facing income inequality issues, which is due to the lack of employment opportunities in the country (Khan et al., 2022). Moreover, keeping the skilled human capital useless results in severe income inequality. (Dakhli, & Clercq 2004). Income distribution issues attract multiple debates, being multifarious and unequal among the different social classes, such as rich and poor, urban and rural, and remain broad and persistent. Income disparity in Pakistan has typically been measured using the Household Income and Expenditure Survey (HIES) and the Pakistan Integrated Household Survey (PIHS). There are various commonly used metrics of income disparity, but in Pakistan, the most prominent are the Lorenz curve and Gini coefficients (Anwar, 2005). Pakistan has reduced the Gini coefficient from 31.3 in 2015 to 29.1 in 2019 (WDI), but this is still very high compared to neighbouring countries. The Income disparity between the Higher and lower classes is vast in the country, as the income of the urban areas is twice that of the rural areas (Khan et al., 2021). Inequality of income is rampant in Pakistan, where over 50% of the population needs help in meeting their necessities. On the other hand, a substantial section of the population is impoverished. In contrast to low-income people, whose income climbed by just 4.1% between 1988 and 2014, the upper class's income increased by 31.7%, according to a UNDP (2016) assessment. In 2013, a Planning Ministry report from Pakistan stated that the wealthiest elite spends seven times as much as the poor class. (Tabassum et al., 2023)

Using the SAM methodology, this research will help to assess the impact of foreign investment in the shadow of CPEC on employment in Pakistan. The primary goal of this research is to use SAM to assess how FDI affects skilled labour and job creation in Pakistan. This study endeavours to create the (SAM) framework tailored for the Pakistani economy, aimed at assessing the influence of FDI from China under the CPEC project on employment generation among different labour groups. The research will elucidate the configuration of the SAM utilised in this examination alongside a thorough breakdown

and amalgamation of data concerning local employment generation. The developed SAM framework will necessitate a comprehensive delineation of the diverse elements of FDI from China under the project of CPEC across production, household, and other sectors to scrutinise the varied impacts of public spending initiatives on household incomes across different segments. The outlined SAM structure in this study will address inquiries regarding the potential benefits of increased FDI for the impoverished and, specifically, which components are most conducive to supporting them. Both policymakers and academic economists frequently advocate using SAM to analyse different economic variables. This trend continues as policymakers and economists in Pakistan and other developing nations endeavour to refine and innovate macroeconomic instruments to gain deeper insights into how adjustment policies affect poverty levels. Stakeholders perceive SAM frameworks as offering a holistic perspective on the repercussions of adjustment measures on the economy, encompassing income distribution. This methodology could shed light on various inquiries, such as the existing distribution of economic gains, the sources of this income, and how it is distributed among different population segments.

In recent decades, there has been an increase in the usage of SAM in foreign investment. The upsurge was directly linked to Pakistan's rising discontent with the outcomes of the CPEC. The unsatisfactory outcomes of these policies, particularly in terms of how they affected different workforce groups in different ways, brought attention to issues with the procedures and systems that establish the connections between foreign direct investment and the labour force already in the nation, Data necessary to allow for a thorough examination of different facets of the economic process are needed in order to investigate these kinds of problems. Conventional national accounts and input-output tables are examples of data frameworks that only supply a portion of the data needed for this kind of analysis. Early research on using SAMs to labour-related issues includes the study conducted by (Psaltopoulos et, al). In Pakistan (Waheed, & Ezaki 2008) applied a financial SAM by disaggregating Financial and non-financial sectors along with labour by different categories.

Market processes facilitate the distributional impact of Gross fixed capital in the SAM. Optimising enterprises would alter their supply of commodities as well as their demand for factor inputs and intermediate inputs in response to investments such as the CPEC project. A firm's demand for factors will fluctuate, which will impact the pricing of labour groups in the end as well as factors of production like wages and non-labour income in the factor markets.

History of SAM in Pakistan

A Social Accounting Matrix (SAM) can be defined as a double entry table that reflects

The circular flow of income of an economy during a given period of time. Each row of a SAM shows the incomes accruing to an account from all accounts in the system and the corresponding column the expenditures of that account. A SAM can be viewed as a

Natural integration of input-output (I-O) tables into the national account's framework. (Martínez & Polo 2014). SAM is often built to support Pakistan's entire economy. The first SAM, constructed in 1985, depicted the economic situation, taking into account the IO table published in 1979 by the Pakistan Institute of Development Economics (PIDE). The Pakistan Bureau of Statistics and the Dutch Government made another attempt in 1984–85 to enhance National Accounting Systems programs. A SAM that took into account the 1989–1990 IO matrix was developed in 1999 (Iqbal & Siddiqui, 1998); the SAM was created by combining five sectors and breaking down household income into eight categories. Subsequently, (Dorosh et al., 2004) addressed Siddiqui and Iqbal's SAM by combining 19 household income categories with 34 output sectors of the IO Table; this SAM was constructed using Global Trade Analysis (GTA). (Waheed & Ezaki 2008) combined just six production sectors and did not break down the 1999–2000 IO matrix by household to create a financial SAM that demonstrated the significance of capital flow in the economy. In 2013, a Detailed SAM was produced by aggregation of 51 sectors along with 18 household groups (Debowicz et al., 2013)

METHODOLOGY

SAM Structure to analyse

The superiority of Social Accounting Matrices (SAMs) over econometric models, cost-effectiveness analyses, and social cost-benefit analyses is rooted in its consistent modelling of income distribution

and its capability to track interconnected chains of effects from shifts in demand to alterations in production, factor incomes, labour incomes, capital income, and final demands. More than any other factor, income distribution emerges from intricate relationships necessitating analysis through a general equilibrium model like SAM (Harun et al., 2020). However, the SAM model's scale and quantitative nature put a great deal of strain on the database and restrict the number of variables that can be realistically included without compromising the veracity of the data. Furthermore, the high degree of disaggregation needed for the model can only be constructed via surveys and censuses, which are often conducted infrequently, irregularly, and by different authorities. The aggregate institutional savings-investment account summarises the financial activities of various entities within the economy. It encompasses production accounts, detailing commodity values and input factors and payments to production factors. Commodity accounts outline the components of total supply and demand, including domestic production, imports, taxes, and consumption. Factor accounts delineate factor income sources and distribution among different economic entities. Institutional accounts track income, expenditures, and transfers between institutions. Savings and investment expenditures across various institutions and commodities are presented in the savings-investment account.

The construction of SAM for this study is inspired by (Harun et al., 2012). The top-down approach is used for the production of this SAM. Usually, this approach requires the design of highly aggregated national account statistics. The top-down approach is applied in this study because of the restriction of the data availability and also for the cost-effectiveness of the researchers. Many developing countries like Pakistan are also facing the hurdle of data availability. More data is needed in this study due to the need for sufficient household surveys for high, medium, and low-income groups. The top-down approach seems the most effective and less time-consuming for the researchers.

SAM schematic

This SAM framework is constructed using Pakistan's 2019 input-output table. Pakistan also had difficulty making input-output tables because of insufficient money and skills. Under the name of a "regional capacity development technical assistance project," the Asian Development Bank started a project to help Asian countries build their skills. Supply and Use Tables for Selected Developing Member Economies: Updating and Construction (ADB, 2017)." Participation in this capacity-building project was approved by nineteen countries, with Pakistan being one of them. Initially, a highly aggregated macro-SAM is built by using the IO Table. Later on, the disaggregated micro-SAM is developed in the second stage. Mathematically, SAM is considered a square matrix with an equal number of rows and columns; every cell represents the flow of payments to the rows by the columns. The core idea of double-entry accounting states that total income (row total) matches total spending (column total) for each SAM account. For Pakistan's Economy, seven major accounts are incorporated in SAM 2019 Activities: The Production sector, Households providing labour by gender, Companies, Chinese investment in CPEC and FDI and the Rest of the world.

The aggregate institutional savings-investment account summarizes the financial activities of various entities within the economy. It encompasses production accounts, detailing commodity values and input factors and payments to production factors. Production sector accounts outline the components of total supply and demand, including domestic production of commodities, imports, taxes, and consumption. Factor accounts delineate factor income sources and distribution among different economic entities. Institutional accounts track income, expenditures, and transfers between institutions. Savings and investment expenditures across various institutions and commodities are presented in the savings-investment account. (Harun et al., 2020). Economic agents' labour income distribution can be comprehended through an analysis of the flows within the Schematic SAM, a structured data system that offers preliminary insights into production structure, value-added payments, agent income distribution, capital allocation, tax arrangements, and external transactions. The SAM schematic of Table 1 mainly looks at labour accounts provided by households, the public sector, and the production sector. For consumption by diverse production sectors and end uses, the production sector generates a variety of sectoral goods and services. Each production sector sells its outputs as an intermediate input to other sectors (1,1), which we consider to be activity or production sectors, and (1,2) the use of production activities for labour Households consumption (1,3) is the use of these production activities to the companies (1,4) is the private investment in production activities(1,5) is the public expenditures on domestic commodities (1,6) is the investment

use in different production activities to CPEC project (1,7) is the investment in production activities by other countries to the ROW as exports (1,8).

The high, medium, and low-skilled employed individuals from both genders in the economy are represented by households in this SAM model. As a result, the SAM appropriately views households as institutional units. Households are frequently regarded as behaviourally unique entities that decide how much labour to offer and how much to spend on consumption. Furthermore, the definitions of poverty and economic welfare are commonly articulated in terms of per capita household income and consumption. As a result, the household naturally becomes the SAM analysis's focus point. Wages and other Labour income are examples of the factor income that households obtain from the production sectors. (2, 1); Factor payments to the labour (2, 3); distributed profits and transfers from companies (2, 5) is the transfer of public expenditures to the labour households. Similarly (2, 6) and (2, 7) are the investments in Special economic zone by the china and other countries for the households labour while (2, 8) is NIPHS. Companies are entities that own capital stock and receive payments. (3, 1); is the business cooperate profit (3, 3) is the transfer from companies to the companies (3, 5) are the expenditures to facilitate the companies for their business and (3, 8) is the net factor Income from Abroad and also included in ROW. (4, 5) and (5,4) is the inter transfer of public expenditures to the domestic private investment in the economy (4,8) is the direct purchase from abroad (5,6) is the domestic public expenditures on CPEC Project like expenditures on security of Chinese workers etc, where the (5,8) is Change in inventories and vulnerable. (6, 7) is the amount transfer from CPEC project to accommodate other countries investment in this project (6,8) is the exports and imports levy while (7,8) is the CIF/FOB adjustments on exports. (8, 1) is the Imports on RAW material (8,2) is the private households with employed persons (8,3) is the total cooperate Tax by the companies, (8,4) is the international transport margins and (8,5) is tax less subsidies while (8,7) and (8,8) are the net investment from abroad and Balance of payments BOP

The conventional method is predicated on the idea that Gross-fixed capital in manufacturing eventually helps household sectors. Lastly, the Rest of the World account records the transactions involving nonprofit organizations, exports, inventory adjustments, and net factor Income from Abroad. The ROW provides revenue to the Pakistani economy through exports, earned factor and non-factor income, and levies on imports and exports. When concentrating on labour by certain groups, monitoring the unique flow of income between the various institutions and the ROW is crucial.

A macro-aggregate Pakistan SAM is constructed to reflect this schematic SAM, as Table 1 illustrates. The aggregate value of all accounts is displayed in the Pakistan macro-aggregate SAM, which can be used as a control value when creating a comprehensive Pakistan SAM. The degree of disaggregation of each account is determined mainly by the subject the SAM is supposed to address. Here, the effects of the (CPEC) on Pakistani households providing Labour will be examined through a multidisciplinary lens. When combined, these components effectively convey the various facets of income disparity. Changes in Gross Fixed Capital Formation that impact different production structures are communicated to the Labour sector through disaggregation.

The study's main objective is to see the impact of CPEC investment by sectors on the average of skilled labour of Pakistan. Building up SAM requires extensive data from various sources, both published and unpublished. Published secondary data based on official local publications are used. These include the Asian Development Report of Input-output Table 2019, the Final Pakistan Bureau of Statistics 2019, and the Ministry of Human Resources.

In this SAM, the production sector is aggregated into an 11 x 11 production sector transaction matrix by aggregating some of the 35 X 35 production sector transaction matrix in the Input-output Table (2019) published by the Asian Development Bank. The aggregation is done by combining rows and columns of respectively agricultural and livestock products (1); (2) mining and quarrying products (3); Manufacturing (4); Energy (5); construction (6); wholesale retail and business (7); Transportation (8); Financial Activities other private services (9); Accommodation (hotel and restaurant) (10); Public administration. Others (11). The aggregation in production sectors is made to match the various categories of Gross Fixed Capital. Related to the FDI analysis, the framework emphasizes, most notably, labour by skills and gender. The disaggregation of the Labour sector can capture how changes in various production structures due to CPEC investment purchase

transmission to the skill and unskilled Labour sectors. The disaggregation of Labour is based on High-skill Labour, medium-skill Labour, and low-skill Labour groups. Being an overpopulated country, it is crucial to distinguish six major labour groups for the household, namely, high-skill, medium-skill, and low-skill male and female labour. This disaggregation is very important in employment opportunities created by this project for the Pakistani Labour.

The table 1 of SAM schematic represents the clear picture of Pakistan's economy which was transformed by the CPEC, as discussed before in this study while Table 2 represents the Macro SAM which is constructed using Input/output table 2019. For the construction of Macro SAM the data of household's Labor income and number of persons employed was taken from Pakistan's bureau of statistics and state Bank of Pakistan

Table 1: Schematic SAM for Pakistan

	production sectors (1)	**Household Labour by skill (2)**	**Companies (3)**	**Private Investment (4)**	**Public Expenditure (5)**	**CPEC Investment (6)**	**FDI (7)**	**ROW (8)**	**Total**
production sectors (1)	Intermediate demand/Domestic supply	Household consumption of domestic commodities	Profit and current transfer	Private Investments in Production Activities	Public expenditures on domestic commodities	Chinese investment by sectors	Foreign investment by sectors	Exports	Gross output
Household Labour by skill (2)	Factor payments to the households		Distributed Profit and current transfer to Households		Transfer	Investment in SEZ for Skill Household	Investment in SEZ for Skill Household	Non-Profit organisation NIPHS	Total Labour Income
Companies (3)	Business Cooperates profit		Transfer		Public expenditures tofacilitate companies business			Net Factor Income from Abroad	Total Company Income
Private Investment (4)					Tranfer			Direct purchases abroad by residents	Total Private Investment
Public Expenditure (5)				Transfer		Tariffs paid by the Chinese to the Government	Transfer	Change in Inventories and Vulnerable	Total Public expenditure
CPEC Investment (6)							Tranfer	Exports/imports levy	Total CPEC Investment
FDI (7)								CIF / FOB adjustments on exports	Total FDI
ROW (8)	Imports of Raw material	Private households with employed persons	Corporate Tax by the Companies	International Transport Margins	Taxes less subsidies on products		net investment abroad	Balance of Payment BOP	Total ROW
Total	Gross Input	Total Household Income	Total Company Expenditure	Total Private Investment	Total public expenditure	Total CPEC Investment	Total FDI	Total ROW	

Table 2: Macro SAM for Pakistan

	Factor of production	**Household Labour**	**Companies**	**Private Investment**	**Public expenditures**	**CPEC Investment**	**Foreign Investment from other countries**	**ROW**	**Total Output**

Factor of production	23750078.92	29483749.02	7188.29	3751.47	26318.32	1216298.78	2545100.28	8553325.01	65585810.09
Labour	5417550.00		1743353.62		7175757.34	590646	5564590.56	5220749.91	31028470.80
Household		0.00		0.00		9.37			
Companies	30470979.02	0.00	86981948.39		19009377.26	0.00	0.00	3925213402	175714438.69
Private Investment	0.00	0.00	0.00	0.00	86989136.68	0.00		1743353.62	88732490.30
Public expenditures	0.00	0.00	0.00	25062339.74	0.00	24595.88	1131705.57	7526080687	101479448.06
CPEC Investment	0.00	0.00	0.00	0.00	0.00		4080137.23	3067226.81	7147364.04
Foreign Investment from other countries	0.00	0.00		0.00	0.00	0.00		26433972.52	26433972.52
ROW	5947202.15	1544721.78	86981948.39	63666399.09	-11721141.53	0.00	13112438.89	17468999.53	177000568.30
Total	65585810.09	31028470.80	175714438.69	88732490.30	101479448.06	7147364.04	26433972.52	177000568.30	673122562.81

Generally, the main structures of the present SAM that discriminate it from the other SAMs of Pakistan are below:

1. In the SAM employed for this analysis, Gross Fixed Capital formation is divided into two categories: foreign direct investment from other countries and Chinese investment in CPEC. This categorization is critical because it allows for the analysis of the various effects of local and foreign investment in CPEC projects on labour generation for Pakistani inhabitants.
2. The SAM offers a detailed overview of labour categories organized by gender and skill level. The present SAM divides labour groups into six categories based on gender: high-skilled labour, medium-skilled labour, and low-skilled labour. This disaggregation is adequate as long as the analysis compares and contrasts the effects of foreign investment on different labour classes. However, such a disaggregation prevents more exact issues from being answered, such as how different the effect of foreign investment among both genders and talents, how much inequality varies, and how much policies influence the incidence of poverty.
3. The SAM employed in this study covers 11 production activities, foreign direct investment, and CPEC investment, which allows for both domestic and Chinese investment in Pakistan. Disaggregation of Gross Fixed Capital Formation is required to understand the effects of CPEC and foreign direct investment on family income distribution. Similarly, the rest of the world's accounts take the shape of a single account.

CONCLUDING REMARKS

This paper goals to construct a Pakistani SAM to study the effect of type of labour generated by this project. The detailed structure of the SAM utilized in the study describes the impact of China's and Pakistan's enormous investment in the CPEC project by different sectors and labour utilization from the country. Initially in 2013 when CPEC was launched, policy makers visualized it as it will take part in the reduction of unemployment from the country but the real picture is quite different. Considering low skill and unskill labour from Pakistan was not the motive of bilateral relationship among both of the countries. The whole picture may not be shown by looking only at how CPEC has affected the creation of jobs. The paucity of data, the potential for the study to grow enormously in scope, and other factors prevented this study from incorporating many other social and economic issues, such as corruption, the kind and terms of investment into SAM analysis. Policymakers need to remember that locals should be given preference when employing labour. Since Chinese investors make up the majority of this project's stakeholders, they should be guaranteed the protection of labour rights and

ethical standards. Additionally, since the CPEC project aims to create jobs for locals, Pakistani investors, from the elite class to the grassroots, must be treated and led in a manner consistent with that of Chinese investors.

A framework that takes into account the various labour groups and gender-specific occupational groupings that make up households and their impact on different economic variables because these components are also involved in the buying and selling of goods and services by various economic sectors. Furthermore, this framework will expound upon the effects of the CPEC project on the generation of jobs for individuals of both genders. The wage disparity between high-, medium-, and low-skilled workers is also depicted in detail in this SAM.A framework that takes into account the disparities in gender and labour groups, which are elements of households and have an impact on a range of economic variables since these elements are also involved in the buying and selling of goods and services by many economic sectors. The impact of the CPEC project on the generation of jobs for both genders will also be covered in detail by this framework. Organizing Gross Fixed Capital in four classes in the SAM utilized in this study represents an improvement over the extant literature on this subject as its impact on household labour

REFERENCES

Ahmad, R., & Mi, H. (2017). Arts and Social Sciences Journal. *Arts and Social Sciences Journal*, *8*(2).

Ali, D. F. H., & Qazi, A. A. (2020). Exploring the awareness of China Pakistan Economic Corridor: A stakeholder's perspective. *South Asian Studies*, *33*(1).

Álvarez-Martínez, M. T., & Polo, C. (2014). A new social accounting matrix for Spain with investment disaggregated by capital goods. *Estad Esp*, *183*, 5-37.

Dakhli, M., & De Clercq, D. (2004). Human capital, social capital, and innovation: a multi-country study. *Entrepreneurship & regional development*, *16*(2), 107-128.

Debowicz, D., Dorosh, P., Haider, H. S., & Robinson, S. (2013). A disaggregated and macro-consistent social accounting matrix for Pakistan. *Journal of Economic Structures*, pp. *2*, 1–25.

Harun, M., Zakariah, A. R., & Azali, M. (2020). Constructing a social accounting matrix framework to analyse the impact of public expenditure on income distribution in Malaysia. *arXiv preprint arXiv:2001.03488*.

Hussain, M. (2017). *China Pakistan Economic Corridor (CPEC): challenges and the way forward* (Doctoral dissertation, Monterey, California: Naval Postgraduate School).

Hussain, S., Sohail, A., Yu, C., Manzoor, S., & Zahid, A. (2020). China-Pakistan Economic Corridor (CPEC's) Socio-Economic impacts on Pakistan. *International Journal of Management & Entrepreneurship Research*, *2*(6), 416-436.

Hussain, Z. (2017). The China-Pakistan economic corridor and the new regional geopolitics. *IFRI. June2017*.

Iqbal, Z., Siddiqui, R., & Zaidi, A. (1998). The Impact of Structural Adjustment on Income Distribution in Pakistan A SAM-based Analysis [with Comments]. *The Pakistan Development Review*, 377-397.

Khan, A., Zhong, L. H., Ilmas, F., Rashid, A., & Jan, A. (2023). The Impact of CPEC on Pakistan Economy: An Analysis Framework. *Russian Law Journal*, *11*(12S), 252-266.

Khan, M. A., Walmsley, T., & Mukhopadhyay, K. (2021). Trade liberalisation and income inequality: The case for Pakistan. *Journal of Asian Economics*, *74*, 101310.

Le, Q. H., Do, Q. A., Pham, H. C., & Nguyen, T. D. (2021). The impact of foreign direct investment on income inequality in Vietnam. *Economies*, *9*(1), 27.

Psaltopoulos, D., Skuras, D., & Thomson, K. J. (2011). Employment effects of private investment initiatives in rural areas of southern Europe: A regional SAM approach. *Agricultural Economics Review*, *12*(2).

Sultan, M. F., Omar, M., & Imtiaz, R. (2019). Analysing prevalent internal challenges to China China-Pakistan economic corridor (CPEC) through public opinion. *Journal of Economics and Sustainable Development*, *10*(7), 1-9.

TABASSUM, U. (2023). UNVEILING ECONOMIC INEQUALITY: An analysis of Income inequality trends in Pakistan. *Pakistan Journal of Applied Economics*, *33*(2), 241–249.

Waheed, A., & Ezaki, M. (2008). Aggregated and compact disaggregated financial social accounting matrices for Pakistan. *Journal of economic cooperation*, *29*(4), 17-36.

APPENDIX

		Agri	**MINI**	**MANU**	**ENERGY**	**CONST**	**WASL**	**TRANS**	**FINI**
		1	2	3	4	5	6	7	8
1	Agri	1965789.6	4708.8	4736282.0	13057.7	23415.8	12028.8	600752.5	1277.4
2	MINI	3130.9	3393.6	394052.2	421928.8	30591.4	810.1	49146.4	2120.1
3	MANU	311122.8	20107.2	1463390.1	278775.2	437904.1	392530.5	1138201.9	18361.4
4	ENERGY	37363.2	7738.4	393702.2	1165344.7	24207.4	3285.4	146161.9	1629.8
5	CONST	0.0	0.0	0.0	0.0	43569.6	25607.4	0.0	0.0
6	WASL	483865.1	6918.3	1526483.7	199230.2	192678.2	148411.0	580764.6	6648.7
7	TRANS	49650.5	29404.3	490006.9	247710.6	155480.2	213882.3	515010.3	18600.8
8	FINI	13228.2	6109.4	52444.5	5884.0	38444.5	125756.1	86467.5	22574.7
9	Accomodation	60120.4	87044.2	371364.2	20794.5	76089.8	251809.1	609028.0	102865.0
10	PUBL	0.0	337.4	26193.2	123.7	0.0	46185.7	6359.8	7145.8
11	Othr	8626.9	17946.7	94005.1	2637.7	8666.2	35183.6	110449.1	18145.2
12	High Skill Labor (Male)	315318.4	2271.7	169487.9	11280.4	49398.7	253025.5	136367.4	45466.3
13	Medium Skill Labour (Male)	282219.4	2033.3	151696.8	10096.3	44213.3	226465.4	122052.9	40693.7
14	Low skill Labour (Male)	157187.3	1132.5	84490.3	5623.3	24625.4	126134.1	67979.6	22665.1
15	High Skill Labor (female)	348105.0	2508.0	187111.2	12453.3	54535.2	279335.0	150546.9	50193.8
16	Medium Skill Labour (Female)	292747.2	2109.1	157355.6	10472.9	45862.7	234913.4	126606.0	42211.7
17	Low skill Labour (Female)	113872.7	820.4	61208.1	4073.8	17839.6	91376.5	49247.1	16419.5
18	companies	6857158.9	993085.4	3917521.1	476779.7	508451.0	5167903.2	3734405.7	690251.6
19	Private Investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	Public Expenditures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	FDI from China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Foreign Investment from Other countries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	othr Account	380654.7	17887.6	2487433.3	611362.2	394497.4	440829.4	1053427.4	24771.5
24	TOTAL output	11680161.2	1205556.2	16764228.2	3497629.0	2170470.5	8075472.7	9282975.0	1132042.0

Continue

		Accomodation	**PUBL**	**Other**	**High Skill Labor (Male)**	**Medium Skill Labour (Male)**	**Low skill Labour (Male)**	**High Skill Labor (female)**	**Medium Skill Labour (Female)**
		9	10	11	12	13	14	15	16
1	Agri	2707.81	37861.17	1496.53	800881.12	716812.61	399241.91	884156.44	743552.44
2	MINI	5149.94	14991.18	2846.23	49311.18	44134.98	24581.79	54438.54	45781.39
3	MANU	41225.79	473932.20	22784.31	1748100.46	1564602.32	871433.92	1929867.29	1622967.92
4	ENERGY	25714.60	129264.33	14211.73	322131.95	288317.75	160583.85	355627.11	299073.10
5	CONST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

6	WASL	14800.26	213412.54	8179.68	791984.83	708850.17	394807.08	874335.12	735292.97
7	TRANS	46678.52	235878.87	25797.89	1432912.26	1282499.43	714311.55	1581905.94	1330341.53
8	FINI	82298.31	69682.44	45483.92	120219.94	107600.45	59930.04	132720.37	111614.36
9	Accomodation	266762.95	275788.67	147432.25	590672.17	528669.30	294452.05	652090.04	548390.67
10	PUBL	7161.79	67620.35	3958.12	144064.00	128941.60	71816.39	159043.73	133751.61
11	Othr	32383.52	68410.56	17897.45	158765.04	142099.47	79144.90	175273.37	147400.32
12	High Skill Labor (Male)	100661.85	41095.10	7332.26	0.00	0.00	0.00	0.00	0.00
13	Medium Skill Labour (Male)	90095.38	36781.35	6562.59	0.00	0.00	0.00	0.00	0.00
14	Low skill Labour (Male)	50180.27	20486.05	3655.15	0.00	0.00	0.00	0.00	0.00
15	High Skill Labor (female)	111128.64	45368.16	8094.66	0.00	0.00	0.00	0.00	0.00
16	Medium Skill Labour (Female)	93456.28	38153.43	6807.40	0.00	0.00	0.00	0.00	0.00
17	Low skill Labour (Female)	36352.59	14840.91	2647.94	0.00	0.00	0.00	0.00	0.00
18	companies	4135730.44	2771442.62	1218249.60	0.00	0.00	0.00	0.00	0.00
19	Private Investment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	Public Expenditures	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	FDI from China	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Foreign Investment from Other countries	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	othr Account	52839.99	454097.08	29401.58	0.00	0.00	1544721.78	0.00	0.00
24	TOTAL output	5195328.94	5009107.01	1572839.29	6159042.94	5512528.08	4615025.27	6799457.93	5718166.30

		Low skill Labour (Female)	**companies**	**Private Investment**	**Public Expenditures**	**FDI from China**	**Foreign Investment from Other countries**	**othr Account**	**TOTAL output**
		17	18	19	20	21	22	23	24
1	Agri	289226.76	0.00	250.98	24595.88	0.00	50446.66	371618.37	11680161.22
2	MINI	17808.03	2.81	0.00	0.00	274.92	563.86	40497.86	1205556.21
3	MANU	631301.48	0.00	3394.61	0.00	332671.34	682315.70	2779237.85	16764228.24
4	ENERGY	116333.35	0.00	0.00	0.00	0.00	0.00	6938.28	3497628.99
5	CONST	0.00	6955.86	0.00	0.00	681674.57	1398128.46	14534.67	2170470.53
6	WASL	286013.99	0.00	0.00	1722.43	168798.43	346209.03	386066.22	8075472.67
7	TRANS	517475.77	0.00	23.09	0.00	2262.96	4641.38	388499.83	9282974.98
8	FINI	43415.71	0.00	0.00	0.00	0.00	0.00	8167.55	1132042.00
9	Accomodation	213312.81	0.00	82.80	0.00	8114.07	16642.11	73803.93	5195328.94
10	PUBL	52026.65	0.00	0.00	0.00	0.00	0.00	4154377.11	5009107.01
11	Othr	57335.72	229.62	0.00	0.00	22502.50	46153.08	329583.35	1572839.29

12	High Skill Labor (Male)	0.00	0.00	0.00	1131705.57	0.00	1947815.90	1947815.90	6159042.94
13	Medium Skill Labour (Male)	0.00	1743353.62	0.00	1743353.62	1012910.42	0.00		5512528.08
14	Low skill Labour (Male)	0.00	0.00	0.00		3486707.25	0.00	564159.01	4615025.27
15	High Skill Labor (female)	0.00			4300698.14	0.00	0.00	1249379.90	6799457.93
16	Medium Skill Labour (Female)	0.00	0.00	0.00		0.00	3616774.66	1050695.82	5718166.30
17	Low skill Labour (Female)	0.00	0.00	0.00		1406851.71	0.00	408699.28	2224250.28
18	companies	0.00	86981948.39		19009377.26	0.00	0.00	39252134.02	175714438.69
19	Private Investment	0.00	0.00	0.00	86989136.68	0.00		1743353.62	88732490.30
20	Public Expenditures	0.00	0.00	25062339.74	0.00	24595.88	1131705.57	75260806.87	101479448.06
21	FDI from China	0.00	0.00	0.00	0.00		4080137.23	3067226.81	7147364.04
22	Foreign Investment from other countries	0.00		0.00	0.00	0.00		26433972.52	26433972.52
23	othr Account	0.00	86981948.39	63666399.09	-11721141.53	0.00	13112438.89	17468999.53	177000568.30
24	TOTAL output	2224250.28	175714438.69	88732490.30	101479448.06	7147364.04	26433972.52	177000568.30	