NCAER
SINCE 1956
QUALITY. RELEVANCE. IMPACT

National Council of Applied Economic Research

IMPACT OF FOOD DELIVERY PLATFORM SECTOR ON THE INDIAN ECONOMY

December 2025

Impact of Food Delivery Platform Sector on the Indian Economy

December 2025

Study sponsored by

Prosus

NCAER SINCE 1956 QUALITY. RELEVANCE. IMPACT

NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH

NCAER India Centre, 11 Indraprastha Estate, New Delhi 110 002, India.
Tel: +91-11-2345-2698, info@ncaer.org www.ncaer.org

STUDY TEAM

Research Team: Bornali Bhandari and Ajaya K. Sahu

Research Support Team: Poonam Dhawan and Praveen Sachdeva

Published by
Professor Anil K. Sharma
Secretary and Operations Director
National Council of Applied Economic Research (NCAER)
NCAER India Centre
11, Indraprastha Estate, New Delhi–110 002
Tel: +91-11-2345 2657, 6120 2698
Email: aksharma@ncaer.org
www.ncaer.org

Foreword

The platform economy has immense transformative potential, with far-reaching effects across multiple dimensions of the economy and, consequently, society at large. Digitally enabled economic activities, particularly platform-based models, are reshaping the nature and character of work, as well as industrial relations.

This report, the third output of a three-part research programme undertaken by NCAER, provides a comprehensive examination of the overall economic impact of India's food delivery platform sector. The objectives of the report are twofold: first, to identify and delineate the food delivery platform sector, and second, to assess its overall impact on the economy. Accordingly, the report presents an economic footprint of the sector, covering its contribution to output, employment, and tax revenues.

To conceptualise the food delivery platform sector, the NCAER team undertook a series of analytical steps. As the sector did not previously exist as a standalone category, the first task involved identifying and defining it separately. The team then employed a value-chain approach to theorise the sector. Subsequently, the overall economic impact, both direct and indirect, on output, income, employment, and taxes was estimated.

The study adopts input–output analysis, which is particularly suited to measuring direct and indirect linkages across the economy. This method captures the interdependence among sectors through forward and backward linkages. The report estimates direct output, income, employment, and tax multipliers, as well as induced multipliers to assess the impact of consumption.

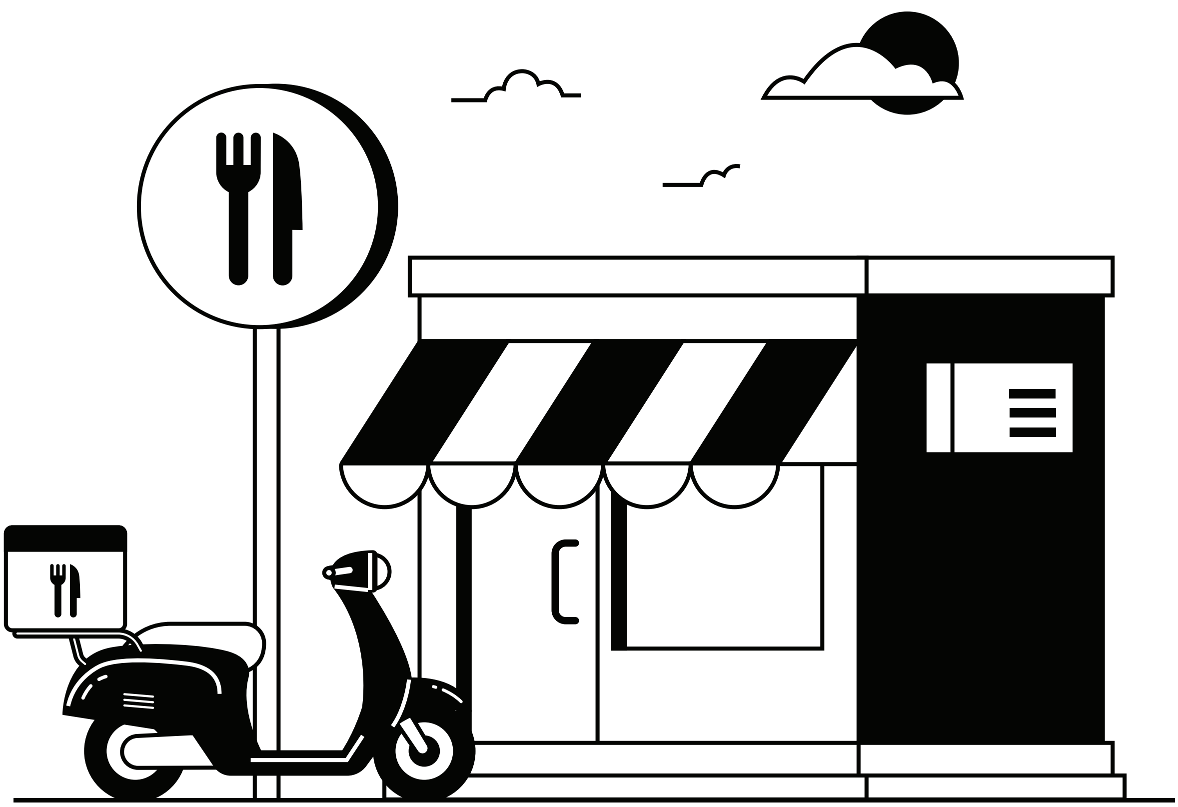
The analysis reveals that although the food delivery platform sector currently constitutes a relatively small share of the economy, it is expanding rapidly, at a pace faster than that of the national economy. Its total impact (direct plus indirect) on output, employment, and indirect tax revenues is substantial. Among service sectors, it ranks seventh in terms of output multiplier and second in terms of employment multiplier, surpassed only by the hotels and restaurants sector.

This assessment of the food delivery platform sector's contribution to gross value of output (GVO), gross value added (GVA), employment, and tax revenues is the first of its kind in India. It is hoped that the insights presented in this report will assist policymakers, industry stakeholders, researchers, and others in better understanding the sector and in formulating appropriate policy responses.

I thank Prosus for sponsoring the study and for supporting NCAER in building a new programme of work on the digital platform economy. We sincerely hope that this study will serve as a valuable and accessible resource for policymakers and academics alike in the years ahead.

Finally, I express my appreciation to the project team led by Dr Bornali Bhandari and the core team members, including Mr Ajaya K. Sahu, Mr Praveen Sachdeva and Ms Poonam Dhawan, for their dedicated efforts in carrying out this study.

Anil K. Sharma
Secretary and Operations Director
National Council of Applied Economic Research



Acknowledgements

The NCAER Gig Economy Initiative assessed the food delivery platform sector in a holistic manner. It analysed the impact of the sector on food delivery platform workers and restaurants. The last part of the three-part series, “Impact of Food Delivery Platform on the Indian Economy: GDP, Employment and Taxes” brings this work to a close. It builds upon the earlier two reports. This has been a long and rewarding journey, where we have argued, debated and learned a lot. However, this would not have been possible without the guidance of many people.

I am grateful to the erstwhile Director General, Dr Poonam Gupta and Secretary and Operations Director Dr Anil K. Sharma for their support and encouragement.

I am indebted to the eminent Research Advisory panel members who took time out repeatedly to comment on various drafts of the reports. The panel was chaired by Dr Sudipto Mundle and the members were Dr Shashanka Bhide, Professor Sonalde Desai, Dr GC Manna, Mr RCM Reddy and Mr Sehraj Singh. I especially acknowledge the detailed guidance that we received from Dr GC Manna, Professor Sanjib Pohit and Mr Devender Pratap, without which this report would have been left incomplete.

I am obligated to my team members, Dr Isha Dayal and Ms Nishika Pal who gave critical comments as we shaped this particular report. I am thankful to our editor Mr Pradip Bagchi. This work builds upon the two previous reports and all who contributed to that. I gratefully acknowledge their contribution to this work including the various research team members, the field research teams and the respondents (both delivery workers and restaurant owners). I am appreciative of Ms Poonam Dhawan for providing able administrative support during this process and Mr Praveen Sachdeva for providing IT support.

But of course, without the critical partnership of my co-author, Mr Ajaya K Sahu, this work would not get implemented and carried out meticulously in a thoughtful manner.

Last but not the least, I am beholden to our sponsor Prosus for their patience and support throughout this three-years long journey.

Bornali Bhandari
Professor
National Council of Applied Economic Research

Executive Summary

This report is the third and concluding part of the research series on the food delivery platform economy. The food delivery platform is an intermediary between three sets of agents – consumers who demand food, restaurants which supply food and workers who deliver food from the restaurants to the consumers. At any point of time, there are three separate markets that are functioning in this sector. It is a multi-sided platform. This is an eco-system that connects millions of households, restaurants, delivery partners, technology companies and support/allied services. The report provides an economic footprint on India's food delivery platform sector, covering its contribution to overall output, employment and tax revenue.

The two key objectives of the study were to identify the food delivery platform sector and assess its impact on the economy.

First, it was important to identify the food economy platform sector separately as it did not exist on a standalone basis. Therefore, carving it out was a challenge and a rigorous academic exercise. The first step was to use the value chain method to conceptualise the sector. The different stages in the value chain are: development, operation and maintenance of the food delivery platform; customers placing order on the food delivery platform; the platform placing food orders to restaurants, delivery of food to customers; and stakeholders' (restaurants, customers, food delivery platform workers) feedback about the platform. The second step, based on the conceptualisation of the sector, was to estimating the size of the food delivery platform sector. The key results are shown in Table ES.1 and explained below:

Table ES.1: Food Delivery Platform Sector

S. No.	Particulars	2021–22		2023–24	
		Current prices	Constant prices (2011–12)	Current prices	Constant prices (2011–12)
1	GVO (₹million)	612,710	418, 033	1,203,480	573, 086
2	GVA (₹million)	243, 150	165, 894	475, 880	226,605
3	Employment (million)	1.08		1.37	

Source: NCAER Computations.

- The Gross Value of Output (GVO) for the food delivery platform sector was ₹612,710 million in 2021–22 which formed 0.14 per cent of national GVO. In 2023–24, the GVO for the sector was ₹1,203,480 million, which was 0.21 per cent of the national GVO. The GVO of the food delivery platform sector formed 0.5 per cent of services GVO in 2023–24. In contrast, the land transport (without the food delivery platform sector) sector formed 8 per cent of services GVO in 2023–24, hotels & restaurants (without the food delivery platform sector) formed 3.9 per cent and other business services (without the food delivery platform sector) formed 2.1 per cent.

- The estimated Gross Value Added (GVA) of the food delivery platform sector in 2021–22 was ₹243,150 million, which was 0.1 per cent of the national GVA. In 2023–24, the GVA was ₹475,880 million, which was 0.2 per cent of the national GVA.

- The GVO grew at a Compound Annual Growth Rate (CAGR) of 17.1 per cent and GVA at 16.9 per cent between 2021–22 and 2023–24. For the corresponding period, all-India GVO and GVA grew at a CAGR of 8.7 per cent and 7.9 per cent respectively.

- The food delivery platform directly employed 1.08 million workers in 2021–22 and 1.37 million in 2023–24. This formed 0.2 per cent share of total workers in both 2021–22 and 2023–24.

- Employment in the sector grew at a CAGR of 12.3 per cent between 2021–22 and 2023–24, compared to all-India CAGR of 7.9 per cent.

The third and the last step was to assess the total (direct plus indirect) impact of the food delivery platform sector. Impact may be measured both directly (within the sector) and indirectly (its linkages with the rest of the economy). For example, once the sector is identified, one can measure how many people are directly employed in this sector. However, the sector is also linked to other sectors. For example, the agriculture sector contributes the raw materials to the restaurants catering to the food delivery economy. The rise in the size of food delivery economy will result in the rise of the agriculture sector. Similarly, the delivery workers have accident insurance and possibly health insurance, linking the insurance market to the sector. More food delivery workers will imply higher demand for accident insurance. The input-output analysis is the more appropriate method for measuring these direct and indirect linkages on the rest of the economy. The standard indicators on which impact of a sector is assessed are output (size of production), income (size of the economy), employment and taxes. Output in the economy is measured by the Gross Value of Output (GVO). Income is measured by the Gross Value Added (GVA).

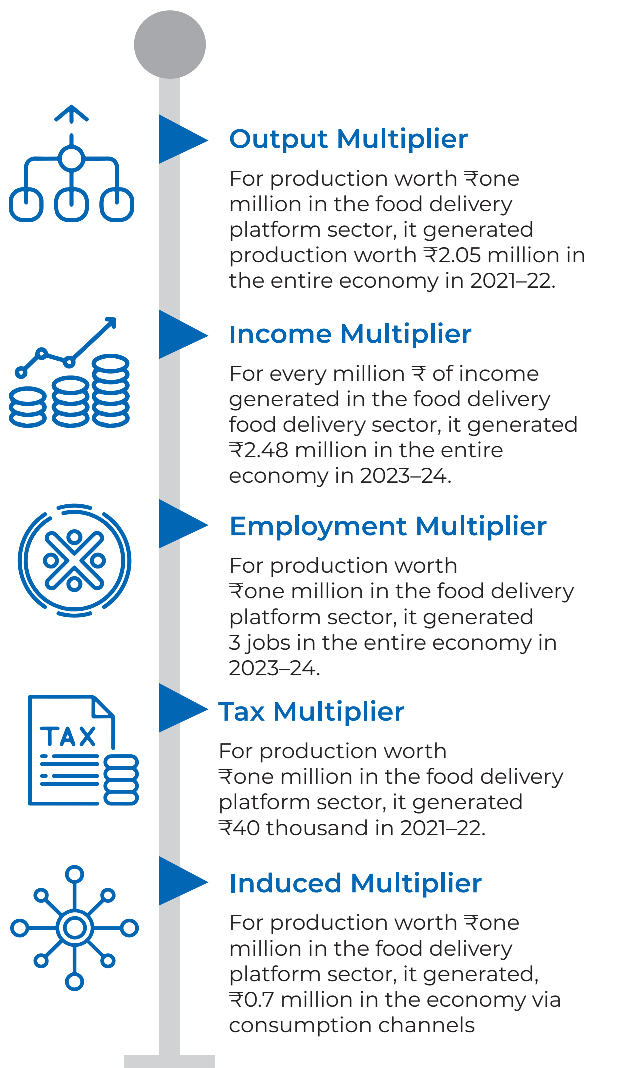
The 2021–22 64 sector input-output (I-O) tables were used to analyse the impact of the online food delivery platform. It was transformed to a 65- sector I-O model by carving out the share of food delivery platform sector from the three parent sectors. These are 'other business services', 'hotels & restaurants' and 'land transport'.

Output, income, employment and tax multipliers were estimated. The induced multiplier was also estimated to assess the impact of consumption. The results are explained below:

Output Multiplier: For one unit of addition to the output in the food delivery platform sector, it created 2.05 units of output in the entire economy in 2021–22 (Figure ES.1).

Income (GVA) Multiplier: The income multiplier in 2021–22 and 2023–24 was 0.96. This means, there was 0.96 unit of income generated in the economy due to 1 unit of additional output generation in the food delivery platform. The GVA/GVO in the sector was 0.4 for both the years. Thus, one unit of income generated in the food delivery platform sector created (1/0.4)* 0.96 unit of income in the entire economy, which was 2.48. This means that every million rupees of income generated in the food delivery platform sector generated ₹2.48 million in the entire economy in 2023–24 (Figure ES.1). It was the same as in 2021–22.

Figure ES.1: Summary of Multipliers



Source: NCAER Computations.

Employment Multiplier: The employment multiplier in the food delivery platform sector for 2021–22 was 3.4 and 3 in 2023–24, which meant 3.4 (3 in 2023–24) number of jobs were created in the economy when the output of the food delivery platform sector increased by ₹1 million.

The employment to output ratio in the food delivery platform sector for 2023–24 was 1.1. Thus, for every one job in the food delivery platform sector, there were 2.7 jobs created in the entire economy.

Tax Multiplier: The tax multiplier for the food delivery platform sector in 2021–22 was 0.04. This means that for production worth ₹one million in the food delivery platform sector, it generated indirect tax worth ₹40 thousand in 2021-22 (Figure ES.1). Indirect tax as a percentage of GVA of the food delivery sector was 4.7 per cent in 2021–22. Thus, overall impact on indirect tax proceeds for 2021–22 due to economic activities was almost double of the tax proceeds for the food delivery platform sector.

Induced Multiplier: As all workers in the food delivery sector spend out of their increased earnings, they are inducing further demand in the rest of the economy. This is captured through the concept of the induced multiplier. Production worth ₹one million in the food delivery platform sector generated, ₹0.7 million in the economy via consumption channels (Figure ES.1).

While still being a small part of the economy, the sector is growing at a fast pace. It is growing faster than the national economy. The total (direct plus indirect) impact is quite significant for output, employment and indirect taxes. This sector has the seventh highest output multiplier and the second highest employment multiplier (only after hotels and restaurants) amongst the services sectors.

Abbreviations

CAGR	Compound Annual Growth Rate
FSSAI	Food Safety and Standards Authority of India
GDP	Gross Domestic Product
GVA	Gross Value Added
GVO	Gross Value of Output
I-O	Input Output
MoSPI	Ministry of Statistics and Programme Implementation
NAS	National Accounts Statistics
NCAER	National Council of Applied Economic Research
NIC	National Industrial Classification
NRAI	National Restaurants Association of India
PFCE	Private Final Consumption Expenditure
RBI	Reserve Bank of India

Contents

List of Box and Figures

List of Tables

Impact of Food Delivery Platform Sector on the Indian Economy

I. Introduction

"Electronic commerce or e-Commerce, is the buying and selling of goods and services over the internet, on websites, mobile apps, or social media" (McKinsey & Company 2025). Verhoef et al. (2021) discuss that the information and communication technology (ICT) revolution has transformed business models and value chains, changed the nature of relationships between businesses and all its stakeholders, thereby affecting traditional firms and disrupting numerous markets. Consumers' aspirations and expectations have also transformed. Online transactions have penetrated numerous business sectors like retail, media and entertainment, health, education and food delivery. It has even changed how consumers transact.

Verhoef et al. (2021) document that it was the pandemic that gave a fillip to e-Commerce with the number of online transactions growing exponentially across the world. Structural changes like increased urbanisation and demographic changes like a younger population have further spurred the growth of e-Commerce in India. The Reserve Bank of India (RBI; 2024) projected that the e-Commerce market size will grow to USD 300 billion by 2030 and the share of online retail will go up to 14 per cent by 2028 in India.

Klenow (2019) discussed that e-Commerce offered gain in convenience (enabling consumers to access stores that are not located physically near them) and variety (a wider range of products). Kumar, Abror and Ganguly (2024) suggest that e-Commerce fostered consumer welfare through six parameters: convenience; competition; consumer confidence; access and inclusion; cost effectiveness; and grievance redressal. It also contributed to significant employment growth through its value chains.

The food delivery platform is a part of the e-Commerce sector where work organisation is done online but delivery of food is physical. Heeks (2017) categorises it as physical gig work. As per Statista, in 2023, the Indian online food delivery market was worth 7.4 billion U.S. dollars and the Indian cloud kitchen market reached a size of approximately $969.5 million USD.[1] As per Srivastava (2024), the National Restaurants Association of India (NRAI) reported in 2024 that the food services sector contributed 1.9 per cent to India's Gross Domestic Product (GDP). It was projected to grow at 8.1 per cent during 2024–28. The sector employed 8.5 million workers, which was expected to grow by over 20 per cent to 10.3 million by 2028. The share of the organised market segment had grown from 35 per cent in 2018–19 (Rohit and Pinto, 2024) to 43.8 per cent in 2024 (Srivastava 2024).

The main aim in this study is to analyse the systemic impact of online food delivery platform on the economy. This report brings to close a three-part series on this sector. The first part examined the socio-economic impact of food delivery platforms on delivery workers (Bhandari et al. 2023). Part 2 evaluated

[1] Statista.com website.

the socio-economic impact of food delivery platforms on restaurants. This report on Part 3 estimates the systemic impact of the sector on India's economy and labour markets.

The purpose of the study is to estimate the size of the online food delivery platform sector in India. Size is measured in terms of either output or employment or contribution to taxes.[2] Output is all the value created when people order food through platforms. It includes the meals the restaurants cook, the deliveries that riders provide, the technology platform, packaging and subscriptions among others. Why does output matter? It tells us about how big the food delivery economy is and how does it affect the rest of the economy? How many jobs it supports both within the sector and outside the sector? How much it contributes to Gross Domestic Product (GDP)? How does it affect consumption? How government policies will affect the sector?

Specifically, the study had two key objectives: one, to estimate the size of the online food delivery platform sector in India in terms of output (measured by Gross Value of Output, GVO), income (measured by and Gross Value Added, GVA), employment and taxes, and two, to ascertain the overall impact of the online food delivery platform sector on each of these four parameters.

This assessment of the contribution of the food delivery platform sector to GVO, GVA, employment and taxes is the first of its kind, in the Indian literature and policy-making. Unfortunately, the online food delivery sector does not find a separate place in the Indian statistical system. Therefore, the first step is to construct (carve out) the sector from existing sectors i.e. from the existing statistical system. But from which sectors, will the online food delivery system be carved out? That is done by identifying the parent sectors from the value chain of the sector. Second is to assess its impact on the Indian economy.

How does one measure impact? Impact may be measured both directly (within the sector) and indirectly (its linkages with the rest of the economy). For example, once the sector is identified, one can measure how many people are directly employed in this sector. However, the sector is also linked to other sectors. For example, the agriculture sector contributes the raw materials to the restaurants catering to the food delivery economy. The rise in the size of food delivery economy will result in the rise of the agriculture sector. Similarly, the delivery workers have accident insurance and possibly health insurance, linking the insurance market to the sector. More food delivery workers will imply higher demand for accident insurance. The input-output analysis is the appropriate method for measuring these direct and indirect linkages.

The 64-sector input-output (I-O) tables are used to analyse the impact of the online food delivery platform. The baseline year is 2021–22 (this was the latest year for which I-O tables are available) as the I-O table from that year is used and the estimates are made for 2023–24, the latest year for which disaggregated national-level data are available. Since there was no such sector in the 64-sector I-O which can be called the food delivery platform sector, it was carved out from the relevant sectors. At the end, there were 65 sectors in the I-O table for 2021–22.

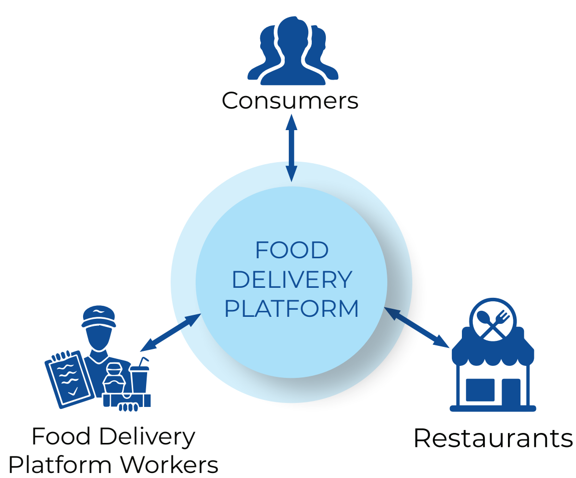
[2] GVO is the total value of output by producing enterprises in an accounting period (e.g. a quarter or a year). GVA is GVO less the value of intermediate consumption.
[3] Input-Output analysis is discussed in details in Annexure A1.3.

The rest of the report is divided into four sections. The second section defines the food delivery platform sector. The third section computes the size of the sector and the fourth assesses the impact of the sector on output, income, employment and taxes. The last section presents the summary findings.

II. What is Food Delivery Sector?

The food delivery platform is an intermediary between three sets of agents – consumers who demand the food, restaurants which supply the food and the workers who deliver the food from the restaurants to the consumers. At any point of time, there are three separate markets that are functioning in this sector (Figure 1). It is a multi-sided platform/market (Hagiu and Wright 2015).

Figure 1: Food Delivery Platform



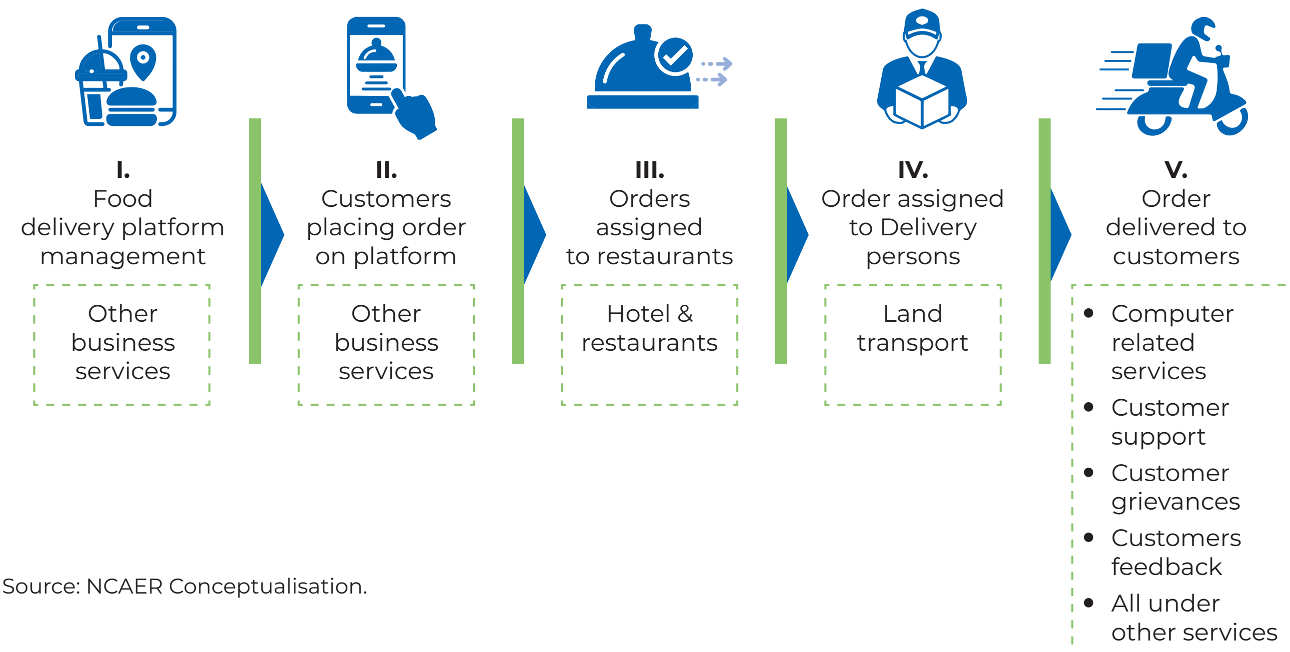
Source: NCAER Conceptualisation.

This sector does not exist separately in the Indian statistical system. As per the National Industrial Classification (NIC) 2008, there is no such sector which can be designated as the food delivery platform sector (MoSPI 2008). While there is no specific NIC 2008 code dedicated solely to "food delivery platforms" in India, the relevant activities are categorised under the 5-digit NIC code 56103, which includes "restaurants and mobile food service activities". However, from Figure 1, it is clear that the online food delivery platform is much more than just restaurants. Out of three markets, it captures only one market. As a next step, the value chain is defined.

The first step for that is to define the value chain (see Figure 2). The food delivery platform value chain in India covers several key stages like sourcing ingredients, restaurant operations, order management, delivery logistics, and customer service. The stages in the value chain are:

1. *Development, Operation and Maintenance of Food Delivery Platform:* The value chain in the food delivery platform sector starts with creation and management of the food delivery platform.
2. *Customers place order on the food delivery platform:* While placing orders, customers pay by using a payment gateway which falls under the 'financial services' sector.
3. *Place food orders to restaurants:* Orders are conveyed to restaurants which then prepare and package food to be delivered to customers.
4. *Delivery of food to customers:* Order assigned to the delivery partners for delivery to customers.
5. *Stakeholders' (restaurants, customers, food delivery platform workers) feedback to platform:* This includes associated services like computer-related services, customer support, customer grievances, customers' feedback, etc.

Figure 2: Value Chain for the Food Delivery Platform Sector



Source: NCAER Conceptualisation.

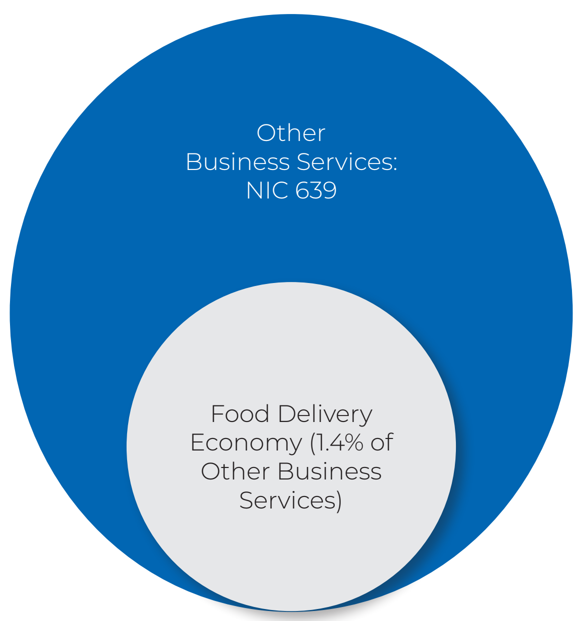
III. Estimating the Size of the Food Delivery Platform Sector: Carving out 'food delivery platform' sector from respective parent I-O sectors

III.1 Estimating Output

At each stage of the value chain, the parent sector(s) in the 64-sector framework are identified. Then the share of the food delivery platform from the respective parent sector was estimated using NCAER Surveys and Annual Reports of individual food delivery platforms. Finally, the GVO of the food delivery sector is estimated (look at Annexure A1.1 for details). The food delivery platform sector is derived from the parent sectors in the following manner:

- Development, Operation and Maintenance of Food Delivery Platform, customers placing order on platform and order delivered to customers (stages 1, 2 and 5 of Figure 2): This is derived from the parent NIC sector of 639 of other business services (see Figure 3 and Annexure A1.2 for details).[4] Data from food delivery platforms' Annual Reports are used to derive the share. The companies were identified from the NCAER Restaurants Survey 2023 (Annexure A1.2).

Figure 3: Estimating Contribution of Other Business Services to Food Delivery (Stages 1, 2 and 5 from Figure 2)

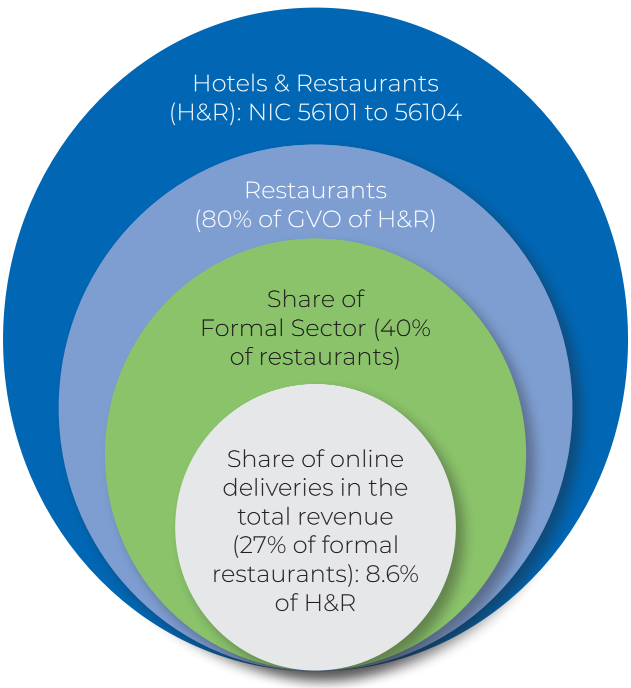


Source: NCAER Conceptualisation.

[4] The NIC 2025 has a dedicated code for operation of on-line platforms to allow booking of delivery including food delivery (MoSPI 2025). This is 533001.

- Orders assigned to restaurants (stage 3 of the value chain in Figure 2): This is derived from the parent sector of 'hotels and restaurants', NIC code 561. The share of online delivery of organised restaurants was derived in a step-wise manner (see Figure 4 and Annexure A1.2 for details).

Figure 4: Estimating Contribution of Hotels & Restaurants to Food Delivery (Stage 3 in Figure 2)



Source: NCAER Conceptualisation.

- Delivery of food to customers (stage 4 of the value chain in Figure 2): This is included under the 'land transport', NIC 492. The share of food delivery sector in land transport is estimated by multiplying average earning of food delivery workers and total number of food delivery workers (see Figure 5 and Annexure A1.1 for details).

Figure 5: Estimating Contribution of Land Transport to Food Delivery (Stage 4 in Figure 2)

Source: NCAER Conceptualisation.

Adding all the GVOs from each part of the value chain, the GVO for the food delivery platform sector was ₹612,710 million in 2021–22 which formed 0.14 per cent of national GVO (Table 1). In 2023–24, the GVO for the sector was ₹1,203,480 million, which formed 0.21 per cent of national GVO.

Table 1: Estimated GVO of the Food Delivery Platform Sector

S. No.	Stage of Value Chain	GVO 2021–22 (₹million)	GVO 2023–24 (₹million)
1.	The Food Delivery platform	129,957	255,260
2.	Customers place order on the food delivery platform		
3.	Place food orders with restaurants	413,951	813,080
4.	Delivery of food to customers	68,802	135,140
5.	Stakeholders' feedback	Merged in Stages 1 and 2	
6.	Total Food Delivery Platform Sector	612,710	1,203,480

Source: NCAER Computations.

The GVA was computed following the same process as explained in Annexure A1.1. The estimated GVA of the food delivery platform sector in 2021–22 was ₹243,150 million, which was 0.1 per cent of national GVA. In 2023–24, the GVA was ₹475,880 million, which formed 0.2 per cent of national GVA.

III.2 Estimating Employment

Following the same methodology (as detailed in Annexure A1.1), the employment share of the platform sector was carved out from the three parent sectors-other business services, hotels & restaurants and land transport. The employment numbers were derived from the Periodic Labour Force Survey, the annual survey on labour force in India, published by MoSPI. Table 2 shows employment at each stage of the value chain and the aggregate employment of the sector.

The food delivery platform directly employed 1.08 million workers in 2021–22 and 1.37 million in 2023–24. This formed 0.2 per cent share of total workers in both 2021–22 and 2023–24.

Table 2: Estimating Employment in the Food Delivery Platform Sector

S. No.	Stage of Value Chain	Employment 2021–22 (million)	Employment 2023–24 (million)
1.	The Food Delivery Platform	0.06	0.07
2.	Customers place order on the food delivery platform		
3.	Place food orders with restaurants	0.53	0.67
4.	Delivery of food to customers	0.49	0.62
5.	Stakeholders' feedback	Merged in Stages 1 and 2	
6.	Total Food Delivery Platform Sector	1.08	1.37

Source: NCAER Computations.

Table 3 summarises the size of the food delivery platform sector in terms of GVO, GVA and employment. This is the direct contribution of the food delivery platform to the economy in terms of share in GVO, GVA and employment. The share of the sector remained marginal, though the GVO grew at a compound annual growth rate (CAGR) of 17.1 per cent and GVA at 16.9 per cent between 2021–22 and 2023–24. For the corresponding time period, all-India GVO and GVA grew at a CAGR of 8.7 per cent and 7.9 per cent respectively. Employment in the sector grew at a CAGR of 12.3 per cent between 2021–22 and 2023–24 compared to all-India CAGR of 7.9 per cent.

Table 3: Food Delivery Platform Sector

S. No.	Particulars	2021–22		2023–24	
		Current prices	Constant prices (2011–12)	Current prices	Constant prices (2011–12)
1.	GVO (₹million)	612,710	418, 033	1,203,480	573, 086
2.	GVA (₹million)	243, 150	165, 894	475, 880	226,605
3.	Employment (million)	1.08		1.37	

Source: NCAER Computations.

Note: Using the price and quantum indices of the parent sectors, the GVA and GVO were estimated at constant 2011–12 prices.

IV. Impact of Food Delivery Platform Sector: I-O Analysis

The total impact (direct plus indirect) of a sector is analysed through the I-O analysis and estimation of various multipliers, like output, income or GVA, employment and tax multiplier (see Box 1 for definitions). The 2021–22 Input-Output table is used in this analysis. Initially there were 64 sectors in the I-O table (see Annexure A1.3 for a summarized understanding of this methodology). However, after carving out the share of the food delivery platform sector from the three parent sectors, a separate sector was created named "food delivery platform" sector. Thus, the I-O table was transformed to have 65 sectors.

Box 1: Definition of Multipliers

GVO Multiplier: Output generated in the economy due to 1 unit of output generation in the sector

GVA Multiplier: GVA or Income generated in the economy due to 1 unit of output generation in the sector

Employment Multiplier: Employment generation in the entire economy due to one unit of output generated in the sector

Tax Multiplier: Tax multiplier is the generation of indirect tax in the economy if the output of the sector increases by one unit

Induced Multiplier: This considers the impact of consumption induced by the sector (food delivery platform) on the overall economy.

Source: Literature Review.

The GVA and employment multipliers were further estimated for 2023–24 by incorporating the relevant numbers for 2023–24 (see Annexure A1.2 for detailed explanations). Numbers at disaggregated levels were available for 2023–24 only - employment numbers from PLFS 2023–24 (MoSPI 2024) and output statistics from National Accounts Statistics (NAS) 2025 (MoSPI website). Output and tax multiplier were estimated for 2021–22. Output multiplier was derived from the technology coefficient matrix which are for 2021–22. This means that technology was assumed to be fixed between base periods 2021–22 and 2023–24. Given only two years' difference, estimating for 2023–24 by using the I-O for 2021–22 should be close to reality. In the subsequent sections, change in multipliers for 2023–24 by using the I-O tables for 2021–22 were analysed. Tax number for input-output sectors disaggregated level were available for 2021–22.

IV.1 Type I and Type II Multiplier[5]

Type I Multiplier: It is the measure of the direct and indirect impact of the change in economic activities in a particular sector. The indirect impact is the result of the linkages of the sector with the rest of the economy in terms of the sector using output of other sectors as its inputs and providing its outputs to other sectors to be used as inputs. Thus, Type I multiplier operates through production processes.

Type II Multiplier: "This is the effect attributable to the ensuing change in compensation of employees and other incomes, which may cause further spending and hence further changes in final demand e.g. as a result of the direct and indirect effects the level of household income throughout the economy will increase as a result of increased employment. A proportion of this increased income will be re-spent on final goods and services. This is the induced impact" (Economic and Labour Market

[5] Source: Literature Review.

Statistics Branch, Northern Ireland Statistics and Research Agency 2025). Thus, unlike type I multiplier measuring impact of production process, induced multiplier measures impact of consumption.

Induced Multiplier: This is the difference between Type I and Type II multipliers. Individuals engaged in various sectors receive increased income due to the direct and indirect impacts (combined called type I multiplier). They then spend a portion of their income on goods and services, further stimulating demand. This is the induced impact. Thus, induced multiplier measures impact of consumption. This is unlike type I multiplier which measures impact of production process. Type I multiplier plus the induced multiplier is called 'Type II multiplier'. Induced and Type II multipliers are important in this analysis because of the presence of food delivery platform workers who are part of this sector. They finance their consumption expenditure from the income earned from the food delivery platform sector. Plus, the induced multiplier endogenizes the consumption expenditure. Therefore, the third market of the food delivery platform sector (consumers' market from Figure 1) does not have to be modelled separately.

In the estimation of Type II multiplier, the Private Final Consumption Expenditure (PFCE) is included in the multiplier analysis. For Type II multiplier estimation, what is required is estimating the PFCE of the newly created 'food delivery platform' sector. One way is the taking the output share of food delivery platform in the three parent sectors (from where the sector was carved out) and estimating the PFCE by taking that portions in PFCE of the three sectors. However, the problem is that food delivery sector is only urban and average urban-rural consumption is not same. Thus, while estimating the PFCE of the food delivery sector, apart from its share in the three parent sectors, another factor (apart from the output share) is used which is the share of urban workers in the parent sector * average urban/rural consumption ratio in the economy.

Type I, Type II and Induced multipliers for the food delivery platform sector for the years 2021–22 and 2023–24 are given in Table 4.

Table 4: Various Multipliers of the Food Delivery Platform Sector 2021–22 and 2023–24 (using 2021–22 I-O tables)

S. No.	Particulars	Year	Type I Multiplier	Type II Multiplier	Induced Multiplier (TII-TI)
1.	Output (GVO)	2021–22	2.05	2.75	0.70
2.	Income (GVA)	2021–22	0.96	1.31	0.35
		2023–24	0.96	1.31	0.35
3.	Tax	2021–22	0.04	0.05	0.01
4.	Employment	2021–22	3.41	4.03	0.62
		2023–24	3.03	3.65	0.61

Source: NCAER Computations.

IV.2 Descriptions of Multipliers

Output Multiplier: One unit of addition to the output in the food delivery platform sector created 2.05 units of output in the entire economy in 2021–22 (Figure 6). It was among the highest in the services sectors as seen in Annexure A1.4. Only sectors like air transport, rail transport, hotel & restaurants, and land transport had higher output multiplier than the food delivery sector. The induced multiplier indicated that for every unit of increase in output, 0.7 units of output was generated in the economy.

Income (GVA) Multiplier: There was 0.96 unit (same for 2023–24) of income generated in the economy by 1 unit of additional output generation in the food delivery platform sector in 2021–22 (Figure 6). GVA/GVO in the sector being 0.40 in 2021–22, one unit of income generated in the food delivery platform sector created (1/0.40)*0.96 unit of income (GVA) in the entire economy, which was 2.48.

In 2023–24, GVA/GVO in the sector was 0.4 i.e. one unit of income generated in the food delivery platform sector created (1/0.4)*0.96 unit of output in the entire economy, which was 2.48. The estimate for induced multiplier indicated for every unit of increase in output, 0.35 (same in 2023–24) unit of income was generated in the economy in 2021-22.

Employment Multiplier: Employment multiplier denotes employment generated in the entire economy due to one unit of output generated in the said sector (Box 1). The employment multiplier in the food delivery platform sector for 2021–22 was 3.4 (3 in 2023–24), which meant there were 3.4 (3 in 2023–24) number of jobs created in the economy when the output of the food delivery platform sector increased by ₹1 million for the year 2021–22 (Figure 6).

The employment to output ratio in the food delivery platform sector for 2023–24 was 1.1. Thus, for every one job in the food delivery platform sector, there were 2.7 jobs created in the entire economy.

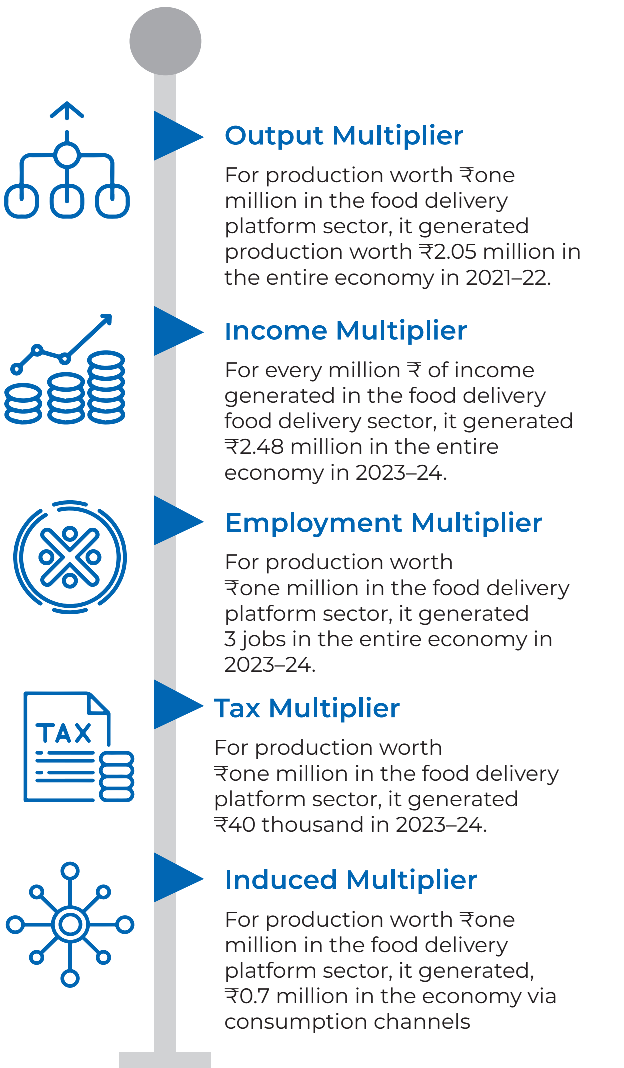
Tax Multiplier: Tax multiplier is the generation of indirect tax in the economy if the output of the sector increases by one unit. The tax multiplier for the food delivery platform sector in 2021–22 was 0.04 (Figure 6). The GVA/GVO in the sector was 0.40 in 2021–22. Thus, one unit of income generated in the food delivery platform sector created (1/0.40)*0.04 or 0.09 units of indirect tax in the entire economy. Indirect tax as a percentage of GVA of the food delivery sector was 4.7 per cent in 2021–22. Thus, overall impact on indirect tax proceeds for the year 2021–22 due to economic activities was almost double of tax proceeds for the food delivery platform sector.

Induced Multiplier: As all workers in the food delivery sector spend out of their increased earnings, they are inducing further demand in the rest of the economy. This is captured through the concept of the induced multiplier. One unit of change in the production in food delivery platform sector generated 2.75 units of output in the economy via both production and consumption channels. While production-generated output multiplier was 2.05 (as mentioned above), the consumption- induced multiplier (a difference between the two) was 0.7 i.e. for every unit of output generated in the food delivery sector, 0.7 units of output were being generated in the entire economy via the consumption channel (Figure 6).

The estimate for the induced employment multiplier indicates that for every ₹1 million of increase in output in 2021–22, 0.62 jobs were generated in the economy. The corresponding number for 2023–24 was 0.61.

Various multipliers (both type I and Induced) for the various services sectors are given in Annexure A1.4.

Figure 6: Summary of Multipliers



Source: NCAER Computations.

V. Conclusion

The food delivery platform is an intermediary between three sets of agents – consumers who demand food, restaurants which supply food and the workers who deliver food from restaurants to the consumers. At any point of time, there are three distinct markets that are functioning in this sector. It is a multi-sided platform.

This report is the third and concluding part in the research series on the food delivery platform. It examined the systemic impact of the sector on output, income employment and taxes. The study had two key objectives: identify the food delivery platform sector and then to assess its impact on the economy.

This assessment of the contribution of the food delivery sector to GVO, GVA, employment and taxes is the first of its kind in the Indian literature and policy-making. Unfortunately, the online food delivery platform sector did not exist as a separate sector in the Indian statistical system, until November 2025. Even then the entire sector is not identified.

The first step was to use the value chain method to conceptualise the sector. The food delivery platform value chain in India covers several key stages like sourcing ingredients, restaurant operations, order management, delivery logistics, and customer service. The five stages in the value chain are: development, operation and maintenance of the food delivery platform; customers placing order on the food delivery platform; placing food orders to restaurants; delivery of food to customers and stakeholders' (restaurants, customers, food delivery platform workers) feedback about the platform.

The second step was to construct (carve out) the sector from the existing sectors in the statistical system as it did not exist on a standalone basis. That was done by identifying the parent sectors from the value chain. The 64-sector Input-Output (I-O) analysis was used to analyse the impact of the online food delivery platform. The I-O tables for 2021–22, which was the latest available, were used to study the overall impact of the sector. After carving out the food delivery sector separately from the relevant sectors, the I-O table finally had 65 sectors.

The percentage share of food delivery platform from the three parent sectors – other business services, hotels & restaurants and land transport were estimated. Using appropriate numbers, the estimated key results about the sector were:

- The GVO for the food delivery platform sector was ₹612,710 million in 2021–22 which formed 0.14 per cent of national GVO. In 2023–24, the GVO for the sector was ₹1,203,480 million, which formed 0.21 per cent of national GVO.
- The estimated GVA of the food delivery platform sector in 2021−22 was ₹243,150 million, which was 0.1 per cent of national GVA. In 2023–24, the GVA was ₹475,880 million, which formed 0.2 per cent of national GVA.
- The GVO grew at a CAGR of 17.1 per cent and GVA at 16.9 per cent between 2021−22 and 2023−24. For the corresponding time, all-India GVO and GVA grew at a CAGR of 8.7 per cent and 7.9 per cent respectively.
- The food delivery platform directly employed 1.08 million workers in 2021–22 and 1.37 million in 2023–24. This formed 0.2 per cent share of total workers in both 2021–22 and 2023–24.
- Employment in the sector grew at a CAGR of 12.3 per cent between 2021–22 and 2023–24 compared to all-India CAGR of 7.9 per cent.

The third and last step was to assess the total (direct and indirect) impact of the food delivery platform sector. Output, income, employment and tax multipliers were estimated. The induced multiplier was also estimated to assess the impact of consumption.

- The output multiplier was 2.05 in 2021–22, one of the highest amongst the services sector.
- The income multiplier was 0.96 in both 2021–22 and 2023–24. In 2021–22 and 2023–24, for every unit of income generated in the sector, 2.48 units of income was generated in the economy.
- The employment multiplier in the food delivery platform sector for 2021−22 was 3.4 (3 in 2023−24), which meant 3.4 (3 in 2023−24) jobs were created in the economy when the output of the food delivery platform sector increased by ₹1 million.
- The employment to output ratio (number of jobs per ₹ 1 million of output) in the food delivery platform sector for 2021−22 was 1.7. Thus, for every one job in the food delivery platform sector, there were 1.9 jobs created in the entire economy through the sector's linkages with rest of the economy. The employment to output ratio for 2023−24 was 1.1. Thus, for every one job in the food delivery platform sector, there were 2.7 jobs created in the entire economy.
- In the food delivery platform sector, the tax multiplier was 0.04 in 2021–22. One unit of income generated in the food delivery platform sector created 0.09 units of indirect taxes in the entire economy. Indirect tax as a percentage of GVA of the food delivery sector was 4.7 per cent in 2021−22. Thus, overall impact on indirect tax proceeds for 2021-22 due to economic activities was almost double of the tax proceeds for the food delivery platform sector.

While still small as compared to the rest of the economy, the sector is growing at a fast pace. It is growing faster than the national economy. The total (direct plus indirect) impact is quite significant for output, employment and indirect taxes. It has one of the highest multipliers amongst the services sector.

References

Bhandari, B., Das, G., Gupta, S., Sahu, A.K., Urs, K.S., Pal, N., Raj, K. and Thomas, S. 2023. Socio-economic Impact Assessment of Food Delivery Platform Workers. https://ncaer.org/wp-content/uploads/2023/08/NCAER_Report_Platform_Workers_August_28_2023.pdf. August 28.

Chaudhary, C., Pratap, D. and Pohit, S. 2024. "Estimation of SAM for India: An Application for India's Energy Transition Targets". Margin: The Journal of Applied Economic Research. 18(1–2), 74–133. https://doi.org/10.1177/00252921241284278. NCAER, New Delhi, India.

Economic and Labour Market Statistics Branch, Northern Ireland Statistics and Research Agency. 2025. "Input-Output Analytical Tables and Multipliers 2021". https://datavis.nisra.gov.uk/economy-and-labour-market/input-output-analytical-tables-and-multipliers-2021.html. June 4.

Hagiu, A. and Wright, J. 2015. "Multi-sided platforms". *International Journal of Industrial Organization*. 43: 162–174. https://doi.org/10.1016/j.ijindorg.2015.03.003.

Heeks, R. 2017. "Digital economy and digital labour terminology: Making sense of the "gig economy", "online labour", "crowd work", "microwork", "platform labour". *Development Informatics Working Paper No. 70*. Manchester Centre for Development Informatics. https://doi.org/10.2139/ssrn.3431728.

Klenow, P. 2019. "How valuable is e-commerce?". *Policy Brief*. https://siepr.stanford.edu/publications/policy-brief/how-valuable-e-commerce. Stanford Institute for Economic Policy Research (SIEPR). August.

Kumar, A., Abrol, S. and Ganguly, S. 2024. Assessing the Net Impact of E-Commerce on Employment and Consumer Welfare in India. https://pahleindia.org/wp-content/uploads/2024/08/Assessing-the-net-Impact-of-Ecommerce-Report.pdf. Pahle India Foundation, New Delhi.

McKinsey and Company. 2025. "What is e-commerce?". https://www.mckinsey.com/~/media/mckinsey/featured%20insights/mckinsey%20explainers/what%20is%20e%20commerce/what-is-e-commerce-v2-cs.pdf?shouldIndex=false. January.

Ministry of Statistics and Programme Implementation (MoSPI). 2008. National Industrial Classification 2008. Central Statistical Organisation, MoSPI. https://mospi.gov.in/classification/national-industrial-classification.

____. 2024. Periodic Labour Force Survey (PLFS), July 2023-June 2024. Survey ID number DDI-IND-CSO-PLFS-2023-24. https://microdata.gov.in/NADA/index.php/catalog/213. National Sample Survey Office. New Delhi, India.

____ website. National Accounts 2025. https://www.mospi.gov.in/publication/national-accounts-statistics-2025.

____ website. Supply Use Tables, 2025. https://mospi.gov.in/publication/supply-use-tables.

____. 2025. National Industrial Classification 2025 (All Economic Activities). Economics Statistics Division, National Statistics Office, MoSPI. https://new.mospi.gov.in/uploads/publications_reports/publications_reports1763457214315_c3e5d4f3-8e25-4775-85e3-ad42d571652f_NIC_2025_Final.pdf. November 18.

National Restaurants Association of India (NRAI). 2024. India Food Services Report 2024. https://nrai.org. New Delhi, India.

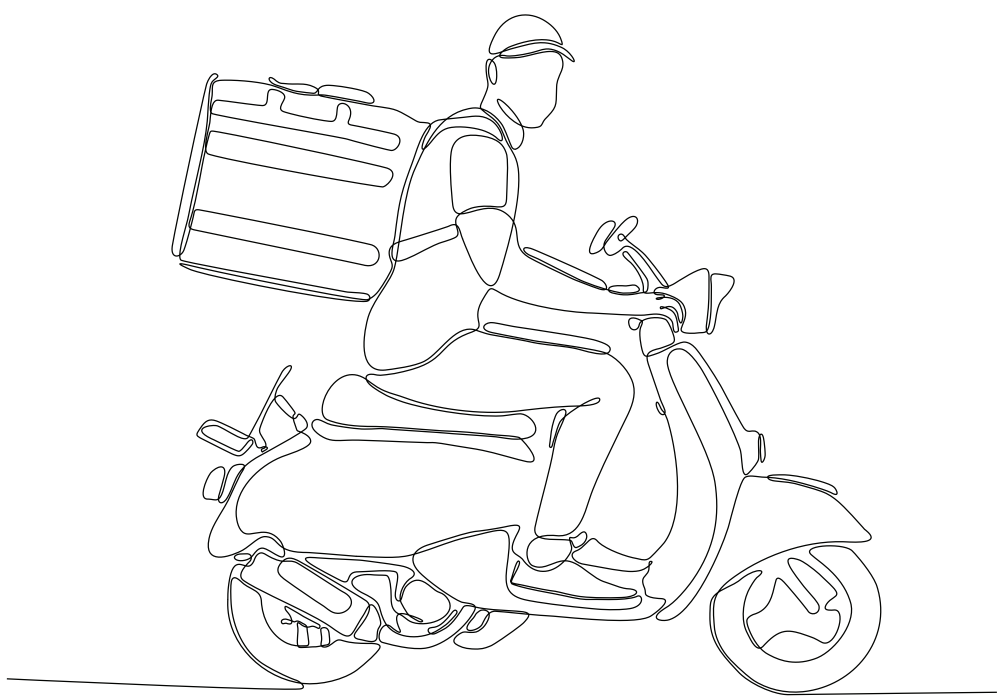
Reserve Bank of India (RBI). 2024. Report on Currency and Finance 2023–24. https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Report%20on%20Currency%20and%20Finance. July 29.

Rohit, B. and Pinto, P. 2020. "A Socio-Economic Study of Unorganised Restaurant Workers in Mangaluru, India". *India Development Policy Review*. 1(1): 33–42.

Srivastava, A. 2024. "Indian food services sector to grow by 8.1% from 2024 to 2028: Report". Business Standard. https://www.business-standard.com/industry/news/indian-food-services-sector-to-grow-by-8-1-from-2024-to-2028-report-124070900997_1.html. July 9.

Statista.com website. https://www.statista.com/statistics/744350/online-food-delivery-market-size-india/#:~:text=Market%20size%20of%20online%20food%20delivery%20in%20India%202020%2D2026&text=In%202023%2C%20the%20Indian%20online,billion%20U.S.%20dollars%20in%202026%20.

Verhoef, P. C., Broekhuizena T., Bartb Y., Bhattacharya, A., Dong, J. D., Fabian, N. and Haenlein M. 2021. "Digital transformation: A multidisciplinary reflection and research agenda". *Journal of Business Research*. 122: 889-901. January.



Annexure A1.1: Estimation of Size of the Food Delivery Economy

The GVA is estimated in the following manner.

1. **Development, Operation and Maintenance of Food Delivery Platform**

   i. **Identifying the parent sector:** This is included under the 'other business services' sector as per the 64-sector I-O analysis. It has the NIC 5-digit code 63999 (Other information service activities n.e.c.) which includes the business activity 'other information & communication service activities'. This stage of the value chain is directly related to the food delivery sector and thus a portion of its parent I-O sector 'other business services' is attributed to the food delivery platform sector.

   ii. **Estimating the share:** The NCAER Restaurants Survey 2023 was used to identify the major food delivery platforms. 2021–22 is the reference point as the I-O table from that year (latest available I-O tables for India) is used as a baseline. The revenue from operations of the food delivery platform companies is used, which are sourced from their respective Annual Reports. The companies are identified from the NCAER Restaurants Survey 2023. This is included under "other business services" under I-O 64 sector matrix. The share of 'online food delivery platform' in the 2021–22 I-O table, 'other business services', was 1.1. The corresponding number in 2023–24 was 1.4 per cent.

2. **Customers Place Order on the Food Delivery Platform**

   i. The customers pay by using a payment gateway which falls under the 'financial services' sector. The payment gateway may or may not be part of the food delivery platform sector. If the food delivery platform owns its own payment gateway or wallet, then it would be considered part of the food delivery platform sector. If not, then it is outside the contours of the online food delivery market.6 The financial services sector is indirectly linked to the sector which can be captured under the 'indirect effects' of food delivery platform business through I-O multipliers.

3. **Place Food Orders to Restaurants**

   i. **Identifying the sector:** This is included under the 'hotel and restaurants' sector as per the 64–sector I-O analysis. This stage of the value chain is directly related to the food delivery sector as the platforms add business to the hotel and restaurants sector, which has been ascertained in the NCAER survey of restaurants conducted in 2023. A

[6]One thing may be noted here is that Zomato Payment Pvt Ltd (ZPPL), a wholly-owned subsidiary of Zomato Limited was incorporated in August 2021 and it was having the NIC code 7490. It received approval from the Reserve Bank of India to operate as an online payment aggregator in January 2024. This could have been taken as a direct effect of the food delivery platform sector. As the analysis is done for the year 2021–22 and for 2023–24, this is excluded from direct effect of the sector.

portion of its parent I-O sector 'hotel and restaurants' is attributed to the food delivery platform sector.

ii. **Estimating the share:** Following steps were involved in carving out the 'online food delivery platform' from 'hotel and restaurants' sector.

   a) According to National Restaurants Association of India (NRAI), the share of food service market in hotel and restaurant is around 80 per cent (NRAI 2024).

   b) The share of organised share of food services market was around 40 per cent (NRAI 2024). As Food Safety and Standards Authority of India (FSSAI) licence is a must to join any food delivery platform (NCAER Restaurants Survey 2023), platform restaurants can be assumed as organised.

   c) The NCAER Restaurants Survey 2023 found that for those restaurants which were on any or multiple food delivery platforms, on average, 17 per cent of revenue of those restaurants came from online food delivery in 2018–19. The corresponding figure for 2023–24 was 27 per cent.

   d) Thus, revenue share of food delivery platform in the sector 'hotel and restaurants' would be 0.8*0.4*0.27, which was 8.6 per cent in 2021–22.

4. Delivery of Food to Customers

i. **Identifying the sector:** This is included under the 'land transport' sector as per the 64-sector I-O analysis. This stage of the value chain is directly related to the food delivery sector as the sector adds to the land transport sector directly. A portion of its parent I-O sector, 'land transport', could be attributed to the food delivery platform sector, which would be discussed in the next section.

ii. **Estimating the share**

Following steps were involved in carving out the 'online food delivery platform' from 'land transport' sector:

   a) Bhandari et al. (2023) found that a food delivery worker earned ₹19,200 (long shift) and ₹11,400 (short shift) per month in 2018–19. Ratio of long shift and short shift was almost 1:1. Thus on an average, a food delivery platform worker earned ₹15,300 per month. The corresponding number for 2023–24 was ₹12,149 (short shift) and ₹20,026 (long shift). Thus, on an average, a food delivery platform worker earned ₹16,088 per month.

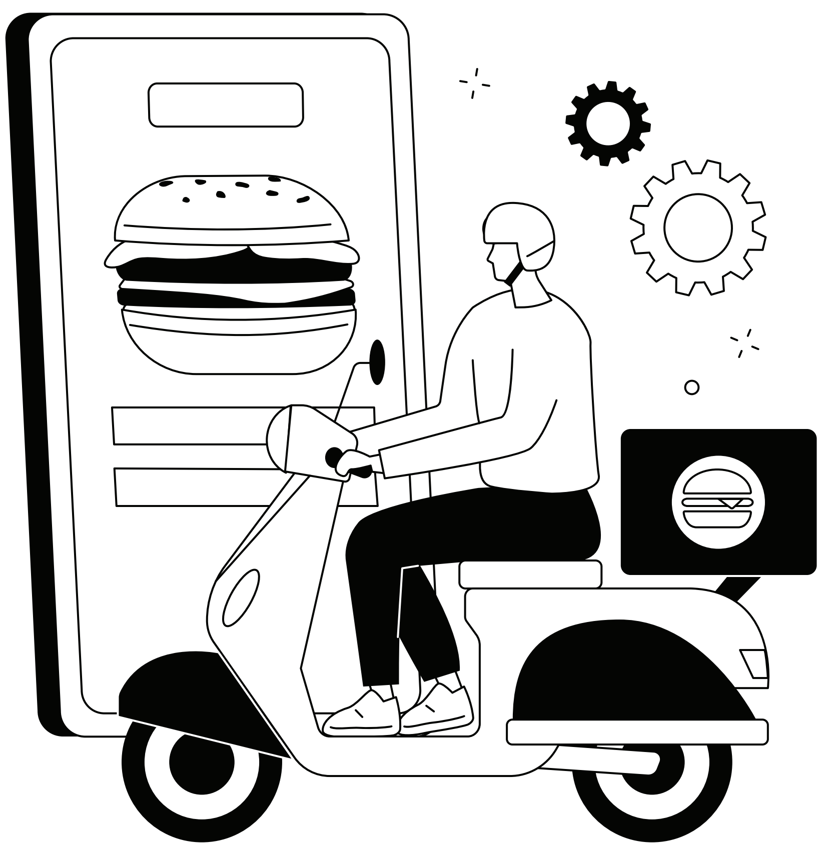
   b) From the identified food delivery platform companies (NCAER Restaurants Survey 2023), the number of delivery workers were identified from their respective Annual Reports. The average income was multiplied by the total number of workers declared in their Annual Reports to derive total income.

   c) Thus, total earnings by delivery workers was ₹68,802 million in 2021–22. This was 0.71 per cent of the I-O sector "land transport", as provided in I-O table 2021–22. The two corresponding numbers in 2023–24 was ₹1,35,140 million and 0.75 per cent.

5. **Stakeholders' (Restaurants, Customers, Food Delivery Platform Workers) Feedback to Platform**

   i. This stage of the value chain subsumed under the food delivery platform because this is inside. In case this is outsourced, then it will be indirectly linked to the sector which is then captured under the 'indirect effects' of food delivery platform business through I-O multipliers. Since in majority of the companies, this forms a part of the companies itself, it is not separately counted.

Adding all the GVOs from each part of the value chain, the GVO for the food delivery platform sector was ₹612,710 million in 2021–22 which formed 0.14 per cent of national GVO (Table 1). In 2023–24, the GVO for the sector was ₹1,203,480 million, which was 0.21 per cent of national GVO.



Annexure A1.2: Sample Selection of Restaurants

I. Introduction

The survey of restaurants is complementing the survey of delivery workers and thus will enable us to study the food delivery platform business from the point of view of restaurants as well as delivery workers (Bhandari et al. 2023). The same 28 cities as in Bhandari et al. (2023) were included. Similar to the platform workers, we choose the same cities and zones within Tier 1 cities. The sample size of restaurants within the cities and zones within the cities has to be determined based on the universe.

The challenge was that there is no available universe of restaurants and within that how to choose and stratify restaurants. A sample strategy of restaurants may be based on either type of establishment (quick service, fine dining, coffee shop etc.), or on the scale or using the combination of both scale and type of establishment. In view of the absence of a universe of restaurants across cities, an alternative strategy was devised.

II. Geographical Distribution of States/UTs

The first step is choosing the zones. Similar to the platform workers' study, the States and Union Territories (UTs) are divided into four geographical regions—North, South, East, and West (Table A1.1). Cities are grouped under regions depending on the State/UT they belong to (Table A.1). Cities are selected from all four regions such that all the four regions are equally represented.

Table A1.1 Geographical Distribution of the States and Union Territories

Zone of the Country	Name of the State/Union Territory
North	Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Ladakh, Punjab, Uttarakhand, and Uttar Pradesh
East and North-east	Bihar, Chhattisgarh, Jharkhand, Odisha, West Bengal, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura
West	Dadra and Nagar Haveli and Daman and Diu, Goa, Gujarat, Madhya Pradesh, and Maharashtra and Rajasthan
South	Andhra Pradesh, Karnataka, Kerala, Puducherry, Tamil Nadu, and Telangana

Source: NCAER.

III. Method of Selection of the Cities and Samples

During the survey of delivery partners, the cities were categorised into the three tiers within each geographical region. All the eight cities in Tier 1 were included since Tier 1 cities accounted for a large share in the total number of delivery workers and restaurants (Table A1.2). The following sampling method was used to pick the 12 Tier 2 and 8 Tier 3 cites, that is, 3 Tier 2 cities and 2 Tier 3 cities from each geographical region.[7]

[7] The Ministry of Finance classifies the cities as 'X', 'Y' and 'Z' to determine the housing rental allowance for Central Government employees. Cities classified as 'X' are Tier 1 cities, typically with a population greater than 5 million (Census 2011 website). There are 8 such mega-cities in the country, which are all included in our sample. Cities classified as 'Y' are Tier 2 cities, typically with a population greater than 0.5 million but less than 5 million. Cities classified as 'Z' are remaining cities.

1. The city which had the maximum number of workers in the given geographical region among the Tier 2/Tier 3 cities was selected with certainty (i.e. probability 1).

2. From among the remaining Tier 2/Tier 3 cities in each geographical region, two Tier 2 cities/one Tier 3 city were selected using the random sampling method.

Tables A1.3 and A1.4 show the selected Tier 2 and Tier 3 cities.

Table A1.2 Tier 1 Cities

S. No.	Regional Zone	City Name	Geographical Location
1	West	Ahmedabad	West
2	South	Bangalore	South
3	South	Chennai	South
4	North	Delhi	North
5	South	Hyderabad	South
6	East	Kolkata	East
7	West	Mumbai	West
8	West	Pune	West

Source: NCAER Computations.

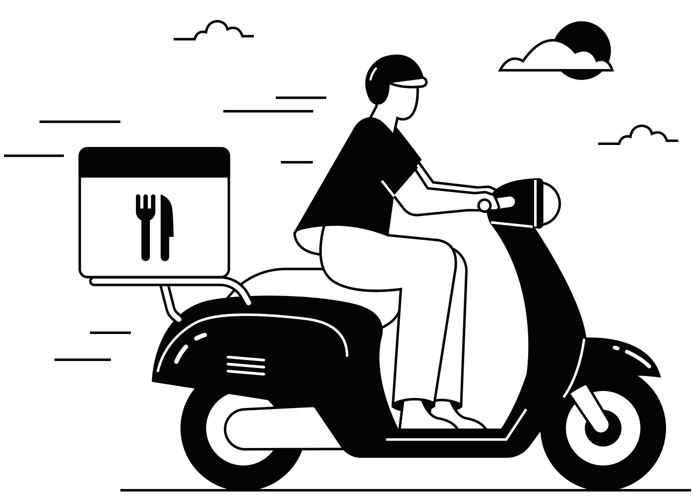


Table A1.3 Selected Tier-II Cities

S. No.	Regional Zone	City Name	Geographical Location
Sample Selection Based on Highest Total Numbers of Workers (Probability 1)			
1	South	Coimbatore	South
2	West	Jaipur	West
3	North	Lucknow#	North
4	East	Guwahati	East
Sample Selection Based on Random Sampling			
5	East	Bokaro*	East
6	East	Patna*	East
7	North	Gorakhpur	North
8	North	Meerut	North
9	South	Palakkad	South
10	South	Kakinada	South
11	West	Nashik	West
12	West	Central Goa	West

Source: NCAER Computations.

Note: #Gurgaon was the largest Tier 2 city in the northern region in terms of the total number of delivery partners. However, given its proximity to Delhi and the fact that its dynamics are influenced by Delhi, the city was left out of this sample.

*These are third-party cities.

Table A1.4 Selected Tier III Cities

S. No	Regional Zone	City Name	Geographical Location
Sample Selection Based on Highest Total Numbers of Workers (probability 1)			
1	North	Jalandhar	North
2	East	Agartala	East
3	West	Udaipur	West
4	South	Manipal	South
Sample Selection Based on Random Sampling			
1	East	Gaya	East
2	North	Sirsa	North
3	West	Waidhan/ Anand	West
4	South	Vizianagaram	South

Source: NCAER Computations.

IV. Sampling Methodology

The names of the restaurants were obtained through web scraping of the website of the platform company (that was used for platform workers in Bhandari et al. 2023) for the above specific cities durin 26th to 29th April, 2023. Web scraping is accumulating the information given in the website through programming. The platform company provided information about the partner restaurants (like name, menu, address, average cost for two, ratings, etc) across cities in its website. Through web scrapping, all the publicly given information about the restaurants across cities have be accumulated through programming.

In this process, it was discovered that Waidhan a Tier 3 city from Bhandari et al. (2023) in the western region had only 25 restaurants on the platform. From the platform workers' random sampling, the next city after Waidhan was Anand. Therefore, Anand replaced Waidhan. Anand had 195 restaurants on the platform. Using the publicly available information about the restaurants from the above 28 cities, the sample was stratified using the variable, cost for two in the restaurants. Using this method, the following distribution of restaurants was obtained across 28 cities Table A1.5

Table A1.5 City Tier Frequency

City Tier	Frequency	Percent
1	20,111	61.7
2	10,481	32.2
3	2,007	6.2
Total	32,599	100.00

Source: NCAER Computations.

The 'cost for two' could be a proxy for the restaurants across scale. Table A.6 shows the summary statistics of that variable for the 32, 599 restaurants' data across 28 cities. Table A.7 shows the frequency distribution of these restaurants.

Annexure A1.3: Input-Output Analysis

The sector, apart from generating output, income, taxes, and employment within itself, also generates output, income, taxes, and employment in other sectors of the economy through its linkages with other sectors. Each sector generates output, income, taxes, and employment in other sectors of the economy through both backward (the sector using the output of other sectors as inputs in its production process) and forward (the output of the sector is used by other sectors as their inputs) linkages.

Estimation of multiplier uses the Input-Output methods put forward by Prof. Wassily Leontief. The Leontief input-output model is a quantitative economic model that shows how different sectors of an economy are interdependent through the backward and forward linkages. Each column of the Input-Output Matrix shows how a particular sector uses the outputs of other sectors as its inputs. Each row of the Input-Output Matrix shows how the output of a particular sector is used as inputs by other sectors (thus intermediate use share of output) and as final use (like consumption, capital formation and net exports) referred to as final demand.

The Ministry of Statistics and Programme Implementation (MoSPI), provides Supply-Use Tables (SUTs). The input-output table is to be derived from the supply-use tables. Analysis in the report uses the Input-Output (I-O) table for 2021–22 as estimated by Chaudhary, Pohit and Pratap (2024).

The Leontief Inverse is an exhibition of the interlinkages among all the sectors in the economy. This is computed using the 65-sectors I-O table for 2021–22. Using the Leontief Inverse matrix for 2021–22, various multipliers for subsequent years could be estimated by using respective numbers (like income-output ratio for calculating income multiplier, labour-output ratio for calculating employment multiplier and tax-output ratio for calculating tax multiplier) for that particular year. One thing may be noted here is that technology (and thus interlinkages among sectors) is assumed to remain fixed between 2021–22 and 2023–24. This is a limitation of the I-O analysis.

Output Multiplier

The Output multiplier for a sector is the output generated in the entire economy due to one unit of output generated in that particular sector. It is computed by adding the column of the Leontief Inverse matrix with regard to a sector.

Employment Multiplier

The output generation in all the sectors of the economy due to interlinkages among the sectors will lead to creation of jobs in each sector. One unit of output generation in a sector will lead to L/Y unit of direct jobs, where L/Y is the labour-output ratio for a sector. In this way, employment multiplier matrix can be generated by multiplying the Leontief inverse matrix with the labour-output (L/Y) matrix. For a 65-sector economy, the L/Y matrix will be a 65*65 matrix. This will be a matrix with only non-zero diagonal elements and all non-diagonal elements being zero. The diagonal elements give respective sectoral L/Y ratios.

Multiplying the L/Y matrix with the Leontief inverse matrix, one gets a 65*65 matrix, which gives the employment multiplier matrix for the 65 sectors. Column sum of the matrix gives the sectoral employment multiplier. Employment multiplier for a sector denotes the employment generation in the entire economy due to one unit of output generated in the said sector.

The diagonal elements in each column gives the direct share of the employment multiplier (sector's own contribution to jobs) and sum of all non-diagonal elements in each column gives the indirect share of the employment multiplier (sector's indirect contribution to jobs).

The direct jobs in a particular sector are estimated from the PLFS, and direct plus indirect jobs are estimated by using the I-O approach. From this, one can estimate number of jobs created in the economy by the economic activities in a particular sector per unit direct jobs in that sector.

Income (GVA) Multiplier

Output (Gross Value of Output or GVO) generation in a sector would lead to addition to Gross Value Added (GVA or Income) of the sector. If the total output of a sector is 'O' and total GVA of the sector is 'I', one unit of output increase will lead to increase in GVA by I/O, which is the GVA/GVO ratio. Thus, the GVA multiplier matrix is estimated by multiplying GVA/GVO ratio with the Leontief inverse matrix. Column sum of the GVA multiplier matrix gives the income or GVA multiplier for the sector. GVA multiplier for a sector can be denoted as total income generated in the entire economy due to one unit of output (or GVO) increase in the said sector.

Tax Multiplier

Tax multiplier is the generation of indirect tax in the economy if the output of the said sector increases by one unit. If the total output of a sector is 'O' and total indirect tax of the sector is 'T', one unit of output increase will lead to increase in indirect tax by T/O, which is the indirect tax/GVO ratio. Thus, the tax multiplier matrix is estimated by multiplying indirect tax /GVO ratio with the Leontief inverse matrix. Column sum of the tax multiplier matrix gives the tax multiplier for the sector. Tax multiplier for a sector can be denoted as total indirect tax proceeds in the entire economy due to one unit of output (or GVO) increase in the said sector.

Annexure A1.4: Multipliers

Table A1.6	Various Multipliers for the Services Sectors 2021–22							
Services Sectors	Type I Multiplier				Induced Multiplier			
	Output	GVA/ Income	Employment	Tax	Output	GVA/ Income	Employment	Tax
Air Transport	2.75	0.88	1.80	0.12	0.96	0.48	0.85	0.02
Water Transport	2.29	0.94	1.47	0.06	0.75	0.37	0.66	0.01
Supportive & Auxiliary Transport activities	2.26	0.93	1.32	0.07	0.75	0.37	0.67	0.01
Land Transport	2.13	0.94	2.27	0.06	0.67	0.33	0.59	0.01
Hotels & Restaurant	2.12	0.97	4.55	0.03	0.61	0.30	0.54	0.01
Storage & Warehousing	2.06	0.96	2.52	0.04	0.91	0.46	0.81	0.02
Food Delivery Platform	2.05	0.96	3.41	0.04	0.70	0.35	0.62	0.01
Communication	2.05	0.95	1.01	0.05	0.86	0.43	0.77	0.02
Other Services	1.96	0.95	4.90	0.05	1.30	0.65	1.16	0.02
Insurance Services	1.85	0.96	1.16	0.04	0.93	0.46	0.83	0.02
Trade	1.84	0.96	2.37	0.04	0.54	0.27	0.48	0.01
Medical and Health	1.83	0.96	1.74	0.04	1.30	0.65	1.16	0.02
Renting of Machinery and Equipment	1.82	0.96	1.46	0.04	1.06	0.53	0.94	0.02
Other Business Services	1.81	0.96	1.07	0.04	0.88	0.44	0.78	0.02
Real Estate activities	1.73	0.96	0.94	0.04	0.89	0.44	0.79	0.02
Railway Transport	1.68	0.97	0.99	0.03	1.64	0.82	1.45	0.03
Computer related Services	1.59	0.97	0.73	0.03	0.80	0.40	0.71	0.01
Community, Social & Personal Services	1.56	0.97	2.37	0.03	1.44	0.72	1.27	0.03
Financial Services	1.52	0.98	0.77	0.02	0.87	0.43	0.77	0.02
Legal Services	1.49	0.98	1.69	0.02	0.84	0.42	0.75	0.01
Public Administration and Defence	1.42	0.99	1.61	0.01	1.85	0.92	1.64	0.03
Education & Research	1.39	0.98	1.65	0.02	1.47	0.73	1.30	0.03
Ownership of Dwellings	1.09	1.00	0.10	0.00	0.04	0.02	0.03	0.00

Source: NCAER Computations.
Note: Sectors are arranged in terms of descending order of Type I output multiplier.

Table A1.7 Various Multipliers for the Services Sectors 2023–24 using 2021–22 I-O Tables

I-O Sectors	Type I Multiplier				Induced Multiplier			
	Output	GVA/ Income	Employment	Tax	Output	GVA/ Income	Employment	Tax
Air Transport	2.75	0.96	1.74	0.12	0.96	0.48	0.84	0.02
Water Transport	2.29	0.99	1.48	0.06	0.75	0.37	0.65	0.01
Supportive & Auxiliary Transport activities	2.26	0.94	1.25	0.07	0.75	0.37	0.65	0.01
Land Transport	2.13	0.93	2.20	0.06	0.67	0.33	0.58	0.01
Hotels & Restaurant	2.12	0.99	4.05	0.03	0.61	0.30	0.53	0.01
Storage & Warehousing	2.06	0.95	2.34	0.04	0.91	0.45	0.80	0.02
Food Delivery Platform	2.05	0.96	3.03	0.04	0.70	0.35	0.61	0.01
Communication	2.05	0.93	0.87	0.05	0.86	0.43	0.75	0.02
Other Services	1.96	1.37	6.22	0.05	1.30	0.65	1.14	0.02
Insurance Services	1.85	1.12	1.19	0.04	0.93	0.46	0.81	0.02
Trade	1.84	1.08	2.49	0.04	0.54	0.27	0.47	0.01
Medical and Health	1.83	0.98	1.61	0.04	1.30	0.65	1.14	0.02
Renting of Machinery and Equipment	1.82	0.94	1.56	0.04	1.06	0.53	0.93	0.02
Other Business Services	1.81	0.94	0.82	0.04	0.88	0.44	0.76	0.02
Real Estate Activities	1.73	0.95	0.87	0.04	0.89	0.44	0.77	0.02
Railway Transport	1.68	0.95	0.92	0.03	1.64	0.82	1.43	0.03
Computer related Services	1.59	1.00	0.71	0.03	0.80	0.40	0.69	0.01
Community, Social & Personal Services	1.56	1.02	1.85	0.03	1.44	0.71	1.25	0.03
Financial Services	1.52	0.95	0.78	0.02	0.87	0.43	0.76	0.02
Legal Services	1.49	0.46	1.07	0.02	0.84	0.42	0.74	0.01
Public Administration & Defence	1.42	0.98	1.55	0.01	1.85	0.92	1.61	0.03
Education & Research	1.39	0.99	1.47	0.02	1.47	0.73	1.28	0.03
Ownership of Dwellings	1.09	1.00	0.09	0.00	0.04	0.02	0.03	0.00

Source: NCAER Computations.

Note: Sectors are arranged in terms of descending order of Type I output multiplier. Output and Tax multipliers are for 2021-22

SINCE 1956
NCAER
QUALITY . RELEVANCE . IMPACT

NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH
NCAER India Centre, 11 Indraprastha Estate, New Delhi 110 002, India.
Tel: +91-11-2345-2698, info@ncaer.org www.ncaer.org