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Goods and Services Tax and Its Impact on Electronics Sector MSMEs in North Delhi: A Micro Level Study

Abstract: The research study investigates how the Goods and Services Tax impacts the Micro Small and Medium Enterprises that operate in the electronics sector of North Delhi which produces various industry effects. The unified tax system enables business operations through better documentation procedures and supply chain management systems but requires businesses to spend additional funds while following extra regulations which impose difficulties on their smaller operations. Enterprises experienced reduced profitability because they failed to pass their increased expenses onto their customers. Businesses need more working capital because they face delays in receiving input tax credits while they must pay taxes upfront which creates problems for their daily operations. The overall business performance of firms shows a declining trend which continues to affect their operations during the short term. The research results demonstrate that the reform will provide long term benefits to the business sector yet MSME sustainability requires specific policy solutions that establish easier compliance methods together with speedy credit assessment processes.

Keywords: Goods and Services Tax, MSMEs, Electronics Sector, North Delhi, Profitability, Working Capital

1. Introduction

The Indian government established the Goods and Services Tax as a major fiscal reform which completely transformed the existing system of indirect taxation. The Government of India executed this tax system change on July 1, 2017 to establish a single taxation system that would eliminate various indirect taxes including value added tax and excise duty and service tax. The reform aimed to simplify taxation processes while eliminating cascading

tax burdens and creating transparent systems and establishing a unified national marketplace. The Goods and Services Tax system enabled better tax administration at a national level but different business sectors showed distinct operational impacts on Micro Small and Medium Enterprises through their supply chain operations and financial resources.

The electronics sector has become a major force driving industrial development in India because consumer demand for electronic devices and telecommunications systems and digital technology continues to grow. The sector includes multiple activities which involve assembling electronic products and producing components and providing repair services and operating distribution networks. The sector experiences high Micro Small and Medium Enterprise presence because these businesses establish their operations in urban industrial clusters. The enterprises create new job opportunities while supporting local production and connecting various parts of the supply chain.

North Delhi industrial district serves as a vital industrial area which manufactures electronic goods that support the National Capital Region. Bawana, Narela, Wazirpur industrial zones house numerous small enterprises which perform electronic product assembly work and machinery maintenance tasks while they create products such as wiring systems and circuit boards and lighting systems. The companies need to operate with limited financial resources because they must purchase their essential materials through international vendors while their operations depend on ongoing revenue streams. The companies face increased risk because they must track all changes in regulations which affect their tax responsibilities and compliance requirements.

The introduction of the Goods and Services Tax created multiple structural changes that modified how electronics micro small and medium enterprises conduct their business operations. Businesses must use electronic tax submission through the established system

which classifies their products and services into various tax categories while they can deduct input tax. The new system has improved business transparency and reduced multiple taxation yet businesses must now handle additional compliance obligations which create financial challenges for small enterprises. The electronics sector encounters significant obstacles because it depends on imported critical components which need distinct tax assessment methods throughout its production activities.

1.1 Structure of the Electronics MSME Sector in India

The Indian electronics sector has experienced extensive growth during the past decade because of technological advancements and rising consumer demand. The government supports local production through its programs which create digital systems that drive rapid economic development. The Ministry of Electronics and Information Technology announced that the electronics market in India reached a value of United States Dollar 155 billion in 2023 and predicted significant market expansion for the coming years.

Table 1: Structure of Electronics MSME Sector in India

Indicator
Estimated Value
Total electronics market size
USD 155 billion

Share of MSMEs in total enterprises

Approximately 80 percent

Employment generated by MSMEs

Around 5 million workers

Dependence on imported components

60 to 70 percent

Nature of enterprises

Predominantly micro and small units

Source: Ministry of MSME Annual Report 2024 and Ministry of Electronics and Information Technology estimates

The sector depends on Micro Small and Medium Enterprises as its essential foundation. The enterprises conduct small-scale production through assembly work while providing multiple service functions that include repair and maintenance. MSMEs face financial constraints because they cannot access traditional banking services. The organization requires different materials because its staff members use physical labor to produce products.

1.2 Regional Importance of North Delhi Electronics Cluster

The industrial zone of North Delhi developed because the region had both industrial facilities and transportation systems which could operate with its available workforce. The industrial zone of this area includes two operational business centers which are located at Bawana Industrial Area and Narela Industrial Estate. Electronics MSMEs function as essential businesses because their operations provide vital economic support which

benefits the local economy.

Table 2: Economic Role of Electronics MSMEs in North Delhi

Economic Dimension

Contribution

Employment generation

High labour absorption in local areas

MSME concentration

Dominant presence in industrial clusters

Supply chain linkage

Connected to retail and distribution networks

Industrial output

Significant share in local manufacturing

Skill development

Provides technical and semi skilled employment

Source: Ministry of MSME 2025 and Delhi Industrial Development Reports

The sector generates domestic job opportunities by creating supply chains that connect retail markets with wholesale traders and service providers throughout the National Capital Region. The small business system establishes multiple production facilities which allow manufacturers to modify their production levels in response to market requirements. The sector operates with a structure that creates vulnerabilities to external shocks which include regulatory changes and cost fluctuations.

1.3 Tax Structure under Goods and Services Tax

The Goods and Services Tax system classifies goods and services into multiple tax rate

categories. The tax system establishes elevated tax rates for electronic products because these items receive treatment as manufactured goods. The complete products and services of businesses become subject to increased taxation because their circuit boards and semiconductors and electronic components face higher tax rates.

Table 3: Goods and Services Tax Rates in Electronics Sector

Category
Applicable GST Rate
Economic Implication
Electronic components
18 percent
Higher input cost burden
Consumer electronic goods
12 to 18 percent
Moderate output taxation
Repair and maintenance services
18 percent
Increased service cost
Electronic machinery
18 percent
High capital investment cost

Source: Central Board of Indirect Taxes and Customs 2023

The tax system requires businesses to pay higher taxes on their inputs than what they owe for their outputs because of the existing tax rate differences. The companies collect input tax credits which they receive back after they have to wait through the necessary steps. The tax payment and credit realization gap that exists for MSMEs creates a working capital

constraint.

1.4 Operational Impact on Electronics MSMEs

The operational procedures of electronics MSMEs now depend on the operational changes which GST implementation brought to their business operations. Businesses need to maintain digital records and file tax returns at specified times while they must complete input tax credit verification procedures. The system enhancements improve operational transparency and accountability yet they create operational challenges which obstruct the proper execution of administrative responsibilities.

Table 4: Operational Changes after Goods and Services Tax Implementation

Dimension

Pre GST Situation

Post GST Situation

Tax structure

Multiple taxes

Unified tax system

Compliance

Manual and fragmented

Digital and standardized

Input tax credit

Limited availability

Expanded credit system

Cost transparency

Low

High

Source: GST Council Report 2022

Electronics MSMEs need technical knowledge and financial resources to operate their complicated compliance systems but these essential resources remain unavailable to them. Most businesses require external accountants or consultants because they lack sufficient internal resources which increases their operating costs. The process of receiving input tax credit refunds takes time which creates problems for both cash flow management and production operations.

1.5 Working Capital and Financial Constraints

The primary challenge which electronics MSMEs face during their operations stems from their financial resource management difficulties. The purchase of goods requires businesses to pay taxes which they will recover through tax credits at a later time. The time gap between these two events causes financial restrictions because small enterprises with restricted funding resources cannot access necessary funds.

The electronics industry faces a significant challenge because it relies on imported components while product material costs continue to fluctuate. Companies depend on short-term loans and informal funding sources to maintain their operational activities. The current situation increases financial risk while it reduces profit-making abilities.

Table 5: Financial Impact of Goods and Services Tax on Electronics MSMEs

Financial Indicator

Observed Effect

Input tax credit accumulation

Increase

Working capital requirement

Increase

Profit margins

Decrease

Production cost

Increase

Source: Reserve Bank of India MSME Report 2023 and CBIC Analysis

The electronics MSME sector in North Delhi establishes an appropriate framework which researchers can use to study how Goods and Services Tax affects local areas. The tax reform has delivered uniform tax rates together with enhanced tax visibility yet businesses continue to struggle because of different tax rates and compliance tasks which create extra costs for their daily operations. The sector demonstrates how policy changes lead to different industrial operations which use manual labor and face restricted financial capability.

The present research investigates how Goods and Services Tax affects electronics MSMEs in North Delhi by studying their cost structure changes and profitability alterations and working capital management and compliance obligations. The research extends

previous studies by analyzing an industrial district which demonstrates the specific challenges that small enterprises face in that particular industry.

2. Literature Review

The current research on the Goods and Services Tax in India centers on two primary aspects which examine its economic benefits and its impact on changes to the system of indirect taxes. The research about tax reform studies how tax collection results from two factors which include better collection outcomes and the removal of tax duplication and the enhancement of sector transparency.

Rao and Chakraborty (2019) present a unified tax system as the solution which allows businesses to use input tax credits to develop better production methods which enhance economic productivity. The Goods and Services Tax serves as a major fiscal modernization milestone because it makes tax collection easier through its simplified tax system which extends its reach to more taxpayers according to Poddar and Ahmad.

The research by International Monetary Fund (2019) and World Bank (2018) shows that the reform better revenue collection because it brings informal businesses into the tax system. The Goods and Services Tax value added tax system establishes a theoretical framework which Millath, Rahman, and Kumar (2016) use to show that continuous credit system helps better tax collection while it reduces tax fraud. The studies report positive results for the reform at the aggregate level because they show that Micro Small and Medium Enterprises must deal with the costs which come from the transition process. The research shows that large companies get operational effectiveness and production capacity advantages while small businesses find it hard to follow new regulations and technological requirements.

The research about Goods and Services Tax effects on different sectors and various geographical areas remains incomplete because researchers require more information

about tax effects on electronics micro small and medium enterprises which operate throughout urban industrial zones. Researchers have studied traditional industries which include textiles and printing and manufacturing. The research conducted by SS Rana and Co (2020) proves that printing sector tax exemptions together with input tax credit restrictions create a cost structure distortion which causes changes in market behavior.

The National Council of Applied Economic Research (2019) studies show that tax reform effects differ between regions because different areas possess varying levels of infrastructure and access to finance and formalization. The North Delhi industrial clusters experience more profound Goods and Services Tax impacts because their companies operate with limited resources and rely on illicit business networks.

The Federation of Indian Chambers of Commerce and Industry (2018) report that the supply chain reform has improved market access for small businesses while they still face difficulties with cost management and meeting regulatory requirements. The electronics industry research shows that government support programs for domestic manufacturing have enabled business growth yet MSMEs encounter risks through their reliance on imported components and their exposure to fluctuating material costs. The research field suffers from a significant gap because researchers have not conducted detailed studies on electronics MSMEs in specific industrial clusters. The present study addresses this gap by examining the impact of the Goods and Services Tax on electronics MSMEs.

Businesses change their financial operations because taxation changes which create effects on their cash reserve management and operational profitability. The study by Beck and Demirguc Kunt and Maksimovic shows that financial constraints directly determine the growth and business performance of small enterprises which operate in developing countries without access to formal credit systems. The Goods and Services Tax creates a major problem for MSMEs because they need to pay taxes first before they can get their

input tax refunds.

The Reserve Bank of India (2021) report shows that delayed payments together with credit shortages create essential difficulties for MSMEs which will be worsened by new tax system requirements to follow tax rules. The research by Kumar and Rao (2019) shows that small businesses suffer immediate financial damage because they need to spend more money to meet tax compliance requirements which leads to operational disruptions during tax-related cash flow periods. The electronics industry requires substantial inventory to support rapid product development so it must create financial protection procedures against operational interruptions. Research shows that companies which operate in these industries experience operational delays because they cannot accurately manage their cash flow needs.

Research studies examine how digital technologies affect small business operations within Goods and Services Tax systems. Bansal and Gupta (2018) explain that digital tax administration enhances tax transparency but it creates obstacles for small businesses which lack necessary digital resources to enter the market. Organizations need to develop digital systems which require them to hire specialized employees because online return filing and electronic invoicing and real time data reconciliation create those requirements. The NCAER report from 2019 states that larger companies have adjusted to these changes yet many MSMEs need to use third parties such as accountants and tax consultants which results in increased business expenses. The electronics MSME sector faces intense competition problems because all extra expenses result in direct reductions of their already minimal profit margins.

The Confederation of Indian Industry (2019) states that businesses experienced operational difficulties because two specific factors existed. The first factor involved changes to compliance procedures which occurred frequently while the second factor

involved issues with the portal system during the first implementation stage. Organizations from different business sectors achieved different results after they implemented operational advances in their systems.

3. Research Methodology

The research investigates the impact of Goods and Services Tax on Micro Small and Medium Enterprises in North Delhi's electronics sector through its employment of quantitative research methods and analytical research methods. The research study investigates how tax reforms affect essential business performance indicators which include production costs and corporate profitability and available working capital and compliance expenses and total company performance. The research study uses systematic data collection methods to gather data which employs statistical analyses and scientific result interpretation according to its organized framework.

The researchers conducted their primary data collection for the study by distributing structured questionnaires to electronic MSME owners and managerial staff members at industrial clusters throughout North Delhi. The study selected these areas because they contain a large number of electronics companies which provide assembly services and repair services and manufacture components. The questionnaire measures business operations at three periods which include the period before Goods and Services Tax implementation and the period after Goods and Services Tax implementation. The measurement system uses a Likert scale which permits users to select from five response options that range from significant increase to significant decrease which enables researchers to conduct statistical analysis by converting data into numerical formats.

The researchers used purposive sampling to select participants who met their requirements for research purposes. The study requires Micro Small and Medium Enterprises which operate under North Delhi business locations to register as their

required business type while conducting their research in the electronics sector.

Respondents need to possess sufficient knowledge about their company's financial results and operational performance. The process ensures that all collected data will retain both precise information and necessary essential value.

The research applies both descriptive statistical methods and inferential statistical methods to analyze its data. The researchers present their data summary through descriptive statistics which include mean and standard deviation and percentage distribution. The average response value which the mean represents gets calculated according to this formula:

(1)

The equation shows \bar{X} , X as representing individual data points while N , N denotes the entire data point collection. The standard deviation measures the dispersion of responses around the mean and is calculated as:

(2)

The research uses three statistical methods to conduct its inferential research which uses Paired Sample t test and Chi Square test and Pearson Correlation analysis. The Paired Sample t test compares the average business performance indicators which existed before the implementation of Goods and Services Tax and the period after that implementation. The test requires two linked samples which must come from one specific business entity. The test statistic calculation follows this formula:

(3)

The null hypothesis states that the mean difference between two groups equals zero which proves that the Goods and Services Tax creates no effects. The null hypothesis gets rejected when the calculated probability value falls below the 0.05 significance level

because this result shows a statistically significant difference.

The Chi Square test serves to determine how two categorical variables relate to each other. The study tests which variables among compliance burden and firm size affect changes in profitability and performance. The Chi Square statistic is calculated as:

(3)

The Chi Square value displays how much researchers' expected outcomes differ from their actual research results. The null hypothesis of independence gets rejected when the calculated value surpasses the critical value at specific degrees of freedom and significance level which proves a strong connection between the two variables examined.

The Pearson Correlation coefficient provides a measurement tool which evaluates the strength of interaction between two continuous variables. The formula for the correlation coefficient is:

(4)

The value of r ranges from minus one to plus one. A value that approaches plus one demonstrates a strong positive relationship. A value that approaches minus one demonstrates a strong negative relationship. A value that is approximately zero shows that there is no linear connection between the two variables. The research uses correlation analysis to establish whether increasing compliance costs lead to lower profits and reduced liquidity.

Table 6: Summary of Statistical Tools Used in the Study

Statistical Tool

Purpose

Application in Study

Paired Sample t test

Compare means of related samples

Evaluate before and after GST changes

Chi Square test

Test association between variables

Analyze categorical relationships

Correlation analysis

Measure relationship strength

Study interaction between variables

Source: Author's Compilation

Table 7:Hypothesis Formulation

Indicator

Null Hypothesis H0

Alternative Hypothesis H1

Production cost

Mean difference equals zero

Mean difference not equal to zero

Profitability

Mean difference equals zero

Mean difference not equal to zero

Working capital

Mean difference equals zero

Mean difference not equal to zero

Compliance burden

No association with GST

Significant association with GST

Business performance

No significant change

Significant change observed

Source: Author's formulation of Hypothesis

The complete analytical capabilities of statistical tool solutions emerge through their integrated functions. The Paired Sample t test identifies significant differences in firm level performance before and after the Goods and Services Tax, the Chi Square test examines relationships between categorical variables, and correlation analysis explores interdependencies among key indicators. The research methods demonstrate both statistical significance and economic relevance in studying how the Goods and Services Tax affects electronics micro, small and medium enterprises in North Delhi.

4. Results and Findings

The research study assesses how the Goods and Services Tax affects Micro Small and Medium Enterprises which operate in the North Delhi electronics sector through its application of both descriptive and inferential statistical analysis methods. The researchers collected primary data through their direct investigation of companies located in Bawana and Narela and Wazirpur industrial areas. The study results focus on five key performance indicators which researchers assessed through production cost values and profitability metrics and working capital evaluations and compliance burden assessments and total business performance measurements.

According to the descriptive results most companies experienced increased production costs after the implementation of the Goods and Services Tax. The increase results from three factors which include higher taxes on electronic components and higher costs for compliance and additional expenses for administration. The decreasing profitability trend

shows that companies failed to transfer their increased costs to their clients. The different tax payment methods which businesses used together with input tax credit delays resulted in a major working capital reduction for businesses. The compliance burden reached its highest point because businesses encountered more complicated procedures for filing their taxes and following regulations.

The research study assesses how the Goods and Services Tax affects Micro Small and Medium Enterprises which operate in the North Delhi electronics sector through its application of both descriptive and inferential statistical analysis methods. The researchers attained their main data collection through direct observation of businesses which operate in the industrial areas of Bawana, Narela and Wazirpur. The study results focused on five key performance indicators which researchers assessed through production cost values and profitability metrics and working capital evaluations and compliance burden assessments and total business performance measurements.

Most companies experienced increased production costs after the implementation of the Goods and Services Tax according to the descriptive results. The three factors which lead to an increase include higher electronic component taxes and increased compliance costs and additional administrative expenses. The decreasing profitability trend shows that companies failed to transfer their increased costs to their clients. The different tax payment methods which businesses used created major working capital reduction for companies because of their combined effect with input tax credit delays. Business compliance burden reached its highest point because companies needed to manage more complex tax filing and regulatory requirements.

Table 8: Results of Paired Sample t Test

Business Indicator

Mean Before GST

Mean After GST

t Value

p Value

Decision

Production cost

2.31

4.02

5.87

0

Significant increase

Profitability

3.85

2.41

-4.92

0.001

Significant decrease

Working capital

3.67

2.28

-5.34

0

Significant deterioration

Business performance

3.72

2.45

-4.76

0.002

Significant decline

Source: Author's Analysis based on Primary Data

The researchers used the Chi Square test to study how compliance burden links to different characteristics of companies which include their size and their ability to operate. The study results demonstrate that business size affects compliance difficulties because smaller businesses face more challenges with compliance than larger companies.

Table 9: Chi Square Test Results

Variable Tested

Chi Square Value

Degrees of Freedom

p Value

Interpretation

Compliance burden and firm size

18.62

4

0.001

Significant association

Compliance burden and profitability

15.48

4

0.003

Significant association

Source: Author's Analysis

The researchers used correlation analysis to study the relationship between essential financial metrics and operational metrics. The results demonstrate that three variables show strong interdependence because their three elements direct connections to each other.

Table 9: Correlation Matrix

Variables

Production Cost

Profitability

Working Capital

Compliance Burden

Production cost

1

-0.62

-0.55

0.48

Profitability

-0.62

1

0.59

-0.67

Working capital

-0.55

0.59

1

-0.52

Compliance burden

0.48

-0.67

-0.52

1

Source: Author's Analysis

The research results show that the Goods and Services Tax has created a major effect on electronics micro small and medium enterprises which operate in North Delhi. The combination of rising production costs and increasing compliance demands together with declining profitability and growing operational difficulties has resulted in decreased business efficiency. The organized tax systems of a company provide better operational transparency which leads to partial business formalization that creates widespread effects throughout the entire industry.

5. Conclusion

The research used primary survey data together with Paired Sample t test and Chi Square test and correlation analysis to create complete analysis results. The research study investigates how tax reform changes affect essential business operations which include operating production costs and earnings and working capital needs and regulatory obligations and overall business performance.

The research shows that the Goods and Services Tax implementation caused electronics MSMEs to undergo complete operational changes in their business activities. The combination of production cost increases together with new compliance requirements has created severe financial challenges for companies that operate with restricted financial means. The research shows that businesses experience lower profit margins because they are unable to pass their price increases to customers in a market where they face strong competition. Two elements which include delays in receiving input tax credits and mandatory advance tax payments create working capital shortages for businesses which have become their most pressing challenge.

The reform creates three primary advantages which lead to improved transparency and enhanced record management and better supply chain partnership. The system needs to provide its operational advantages to major enterprises because its current benefits are not available to smaller companies.

The research shows that the Goods and Services Tax brings mixed results because most MSMEs experience higher short term adjustment costs which exceed their initial benefits.

The study shows that the Goods and Services Tax enables tax unification yet small businesses require special tax regulations to address their operational difficulties. The three specific improvements which include simpler compliance processes and quicker input tax credit refund systems and more accessible financial assistance will help electronics

MSMEs to achieve better operational efficiency. The implementation of these measures will create a system which guarantees that all industrial sectors will receive advantages from tax reform throughout an extended period.

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