



Input Tax Credit Efficiency and Working Capital Dynamics under GST: Evidence from the Ichalkaranji Power loom Cluster

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Available online at: www.isca.in, www.isca.me

Received 10th April 2026, revised 22nd April 2026, accepted 6th May 2026

Abstract

The introduction of the Goods and Services Tax (GST) in India brought major changes to the country's indirect taxation system, which particularly affected the operations of micro, small, and medium enterprises (MSMEs). The research investigates how Input Tax Credit (ITC) efficiency affects the working capital operations of businesses located in the Ichalkaranji powerloom textile cluster. The research study used primary data collection methods to gather information from 60 textile MSMEs through a structured questionnaire, which included a five-point Likert scale. The researchers used statistical methods such as descriptive analysis, Cronbach's alpha, correlation analysis, and regression analysis to analyze the data. The research results demonstrate that ITC inefficiencies create two main problems: delays and procedural difficulties that increase working capital constraints for businesses, while GST compliance requirements create additional liquidity challenges for businesses. The correlation results show a strong negative correlation between ITC efficiency and working capital constraints, which shows an inverse relationship between the two variables ($r = -0.62$), while regression analysis shows that ITC efficiency serves as the main predictor variable which explains 52% of financial constraints. The research establishes that business performance declines because of working capital constraints that businesses experience. The research shows that GST implementation brought better transparency and formalization to the tax system, but existing ITC system problems and compliance requirements create major financial difficulties for textile businesses. The research results demonstrate that the sector needs policy changes that will increase ITC efficiency and make compliance easier while creating better financial assistance systems to promote sustainable business growth and competitive advantages.

Keywords: Input Tax Credit (ITC), Working Capital Management, GST Compliance, Textile MSMEs, Ichalkaranji Powerloom Cluster.

Introduction

The Goods and Services Tax, which India implemented in July 2017, represents a major change to the country's system of indirect taxation¹. The GST system unifies various central and state taxes into one tax system, which improves tax visibility and removes tax chain reactions while supporting formal economic growth².

The reform has been widely acknowledged for improving tax compliance and integrating markets across states. The discussion about its effects on Micro, Small, and Medium Enterprises (MSMEs) continues because its small-scale effects need further study³. The textile industry makes an essential contribution to India's industrial sector and job market through its decentralized powerloom clusters which include Ichalkaranji⁴.

The clusters operate with small-scale businesses that use multiple supply networks while depending on working capital to support their constant production needs and credit-based business operations. Tax policy changes in this environment affect business operations through their impact on liquidity and

their role in determining cost structures and operational efficiency⁵. The Input Tax Credit mechanism is the main component of GST, enabling businesses to deduct input taxes from their tax obligations on output sales⁶.

The implementation of ITC faces various challenges for MSMEs, although it serves its purpose of decreasing tax obligations and enhancing operational efficiency⁷. The company experiences major financial disruptions because of ITC refund delays, invoice discrepancies, supplier violations, and complex business processes⁸. The procedure requires companies to either freeze their assets or take out loans, which creates additional financial difficulties. The evidence demonstrates that GST impacts MSMEs through its twofold effect. The system enhances visibility and enables businesses to develop official operations while it improves their supply network performance, but businesses face higher expenses and need more advanced technology and face reduced cash flow capacity⁹.

The research findings reveal that entrepreneurs face higher costs because of compliance requirements and ITC delays, which create negative financial impacts, but digital adoption and corporate development initiatives result in better outcomes.

The existing research about GST shows a national and state-level focus, while it fails to study the specific operations of textile hubs such as Ichalkaranji.

The powerloom sector requires micro-level empirical research to determine how ITC efficiency affects its working capital management practices.

The present study intends to investigate how the efficiency of the input tax credit affects the working capital movements in the Ichalkaranji powerloom cluster. The study uses primary data to conduct statistical analysis through correlation and regression methods in order to demonstrate the financial difficulties textile MSMEs experience under GST regulations while providing information for policy development, which will enhance GST enforcement.

Review of Literature: The present literature shows that GST has significantly influenced the working capital dynamics of MSMEs. Several studies show that the requirement to pay taxes before realizing sales income raises working capital requirements and creates more liquidity among small firms¹⁰. It has also been observed that GST interrupts the old-style cash conversion cycle and affects financial stability¹¹.

A major concern identified in the literature is the inefficiency of the Input Tax Credit (ITC) mechanism. The study findings reveal that delays in ITC refunds and mismatches in tax credits negatively affect liquidity and increase dependence on short-term borrowing¹². Empirical evidence further suggests that ITC inefficiencies have a direct negative impact on working capital management and the financial performance of MSMEs¹³.

Additionally, GST compliance requirements such as return filing, documentation, and technological adaptation have increased operational complexity and compliance costs for MSMEs¹⁴. These challenges are more important for small enterprises with limited digital capabilities, which affects their efficiency and profitability.

Also, some recent studies highlight that MSMEs continue to face working capital, ITC delays, and regulatory difficulties under GST¹⁵. It is also observed that GST creates a disparity between tax liability and actual cash inflows, leading to liquidity constraints and increased support for external financing.

Although some research has been conducted on GST and MSMEs, most studies focus on macro-level or state-level analysis. Limited attention has been given to cluster-level studies, particularly in textile hubs like Ichalkaranji, where ITC efficiency plays a crucial role in working capital management. Therefore, the present study attempts to fill this research gap.

Objective of the Study: To study the efficiency of Input Tax Credit (ITC) under the GST regime in the Ichalkaranji powerloom cluster. To analyze the impact of GST on the

working capital requirements of textile MSMEs. To evaluate the relationship between ITC efficiency and working capital constraints. To assess the effect of GST compliance burden on liquidity and financial stress. To study the impact of working capital constraints on business performance.

Methodology

The research study adopts descriptive and analytical research methods to investigate how ITC efficiency affects the working capital of MSMEs at the Ichalkaranji textile cluster. The quantitative methods are used to analyze the collected data. The study population includes all powerloom textile MSMEs that operate in Ichalkaranji. The convenience sampling is used to choose respondents, resulting in a total sample of 60 MSME units.

The structured questionnaire is prepared to collect primary data, which includes a 5-point Likert scale for measuring responses, and also collects secondary data from research journals, government reports, and GST-related publications. Statistical methods, which included descriptive statistics and Cronbach's alpha, together with correlation and regression analysis to conduct data analysis. The significance level of 5% ($p < 0.05$) for testing the hypotheses.

Hypotheses of the Study: i. H1: ITC efficiency has a significant effect on the working capital dynamics of textile MSMEs. ii. H2: ITC inefficiency has a significant positive relationship with working capital constraints. iii. H3: GST compliance burden has a significant positive effect on working capital constraints. iv. H4: Working capital constraints have a significant negative effect on business performance.

Results and Discussion

Interpretation (Table-1): The results demonstrate that the majority of organizations operate as microenterprises, which make up 40 percent of the total, and the businesses function as proprietary companies, which account for 63.33 percent of their operations.

The cluster shows its powerloom character because weaving activities make up 70 percent of its operations. Most companies maintain operations for more than 10 years, which demonstrates their operational stability, while half of the companies use 10 to 50 looms for their manufacturing process.

The regular GST scheme covers 80 percent of businesses, which shows their formalization process, but their digital technology implementation remains at a moderate level. The most common credit cycle duration of 30 to 60 days requires businesses to maintain substantial working capital for their operations.

Table-1: Demographic Profile of Respondents under Study.

Demographic Attribute	Category	Micro (24)	Small (21)	Medium (15)	Total (60)
Type of Enterprise	Proprietorship	18 (75.00%)	12 (57.14%)	8 (53.33%)	38 (63.33%)
	Partnership	5 (20.83%)	6 (28.57%)	4 (26.67%)	15 (25.00%)
	Pvt. Ltd.	1 (4.17%)	3 (14.29%)	3 (20.00%)	7 (11.67%)
Nature of Activity	Weaving	17 (70.83%)	14 (66.67%)	11 (73.33%)	42 (70.00%)
	Processing	3 (12.50%)	3 (14.29%)	2 (13.33%)	8 (13.33%)
	Trading	2 (8.33%)	2 (9.52%)	1 (6.67%)	5 (8.33%)
	Integrated	2 (8.33%)	2 (9.52%)	1 (6.67%)	5 (8.33%)
Years of Operation	< 5 Years	6 (25.00%)	3 (14.29%)	1 (6.67%)	10 (16.67%)
	5–10 Years	8 (33.33%)	6 (28.57%)	4 (26.67%)	18 (30.00%)
	10–20 Years	6 (25.00%)	8 (38.10%)	6 (40.00%)	20 (33.33%)
	> 20 Years	4 (16.67%)	4 (19.05%)	4 (26.67%)	12 (20.00%)
Number of Looms	< 10	12 (50.00%)	2 (9.52%)	0 (0.00%)	14 (23.33%)
	10–50	10 (41.67%)	12 (57.14%)	6 (40.00%)	28 (46.67%)
	50–100	2 (8.33%)	5 (23.81%)	3 (20.00%)	10 (16.67%)
	> 100	0 (0.00%)	2 (9.52%)	6 (40.00%)	8 (13.33%)
GST Registration	Regular	17 (70.83%)	18 (85.71%)	13 (86.67%)	48 (80.00%)
	Composition	6 (25.00%)	3 (14.29%)	0 (0.00%)	9 (15.00%)
	Not Registered	1 (4.17%)	0 (0.00%)	2 (13.33%)	3 (5.00%)
Digital Usage	Fully Digital	6 (25.00%)	9 (42.86%)	7 (46.67%)	22 (36.67%)
	Partially Digital	10 (41.67%)	10 (47.62%)	5 (33.33%)	25 (41.67%)
	Manual	8 (33.33%)	2 (9.52%)	3 (20.00%)	13 (21.66%)
Credit Period (Customers)	< 30 Days	6 (25.00%)	5 (23.81%)	3 (20.00%)	14 (23.33%)
	30–60 Days	10 (41.67%)	9 (42.86%)	6 (40.00%)	25 (41.67%)
	60–90 Days	6 (25.00%)	5 (23.81%)	4 (26.67%)	15 (25.00%)
	> 90 Days	2 (8.33%)	2 (9.52%)	2 (13.33%)	6 (10.00%)

Table-2: Reliability Test.

Scale	Items (No)	Cronbach's Alpha	Interpretation
ITC Efficiency	5	0.81	High Reliability
Working Capital	4	0.78	Acceptable Reliability
Working Capital Constraints	4	0.83	High Reliability
Compliance Burden	4	0.76	Acceptable Reliability
Business Performance	3	0.74	Acceptable Reliability
Overall Scale	20	0.82	Highly Reliable

Reliability test using SPSS, Cronbach's Alpha was calculated to ensure internal consistency of the measurement scales. Thus, the survey data were deemed statistically reliable for hypothesis testing.

Table-3: Correlation Matrix.

Variables	ITC	WC	WCC	CP	BP
ITC Efficiency (ITC)	1	-0.48	-0.62	-0.40	0.45
Working Capital (WC)	-0.48	1	0.68	0.52	-0.30
Working Capital Constraints (WCC)	-0.62	0.68	1	0.57	-0.55
Compliance Burden (CP)	-0.40	0.52	0.57	1	-0.42
Business Performance (BP)	0.45	-0.30	-0.55	-0.42	1

Interpretation of Correlation Results: The analysis reveals significant relationships among the study variables: ITC Efficiency and Working Capital Constraints show a strong negative relationship ($r = -0.62$), indicating that improved ITC efficiency reduces liquidity constraints. Working capital and working capital constraints exhibit a strong positive relationship ($r = 0.68$), suggesting that higher working capital requirements increase financial pressure. Compliance Burden and Working Capital Constraints show a moderate positive relationship ($r =$

0.57), indicating that GST compliance increases liquidity stress. Working capital constraints and business performance have a negative relationship ($r = -0.55$), implying that higher constraints reduce performance. ITC Efficiency and Business Performance show a moderate positive relationship ($r = 0.45$), indicating that efficient ITC improves performance.

Table-4: Regression Analysis.

Predictor	β Coefficient	t-value	Sig.p-value	Interpretation
ITC Efficiency	-0.520	-3.98	0.000	Significant (Negative)
Compliance Burden	0.380	3.12	0.003	Significant
Working Capital	0.410	3.45	0.001	Significant
Constant	—	—	—	—
$R^2 = 0.52,$ $F(3,56) = 21.84,$ $p < 0.001$				The model is statistically significant

Summary: The statistical analysis of the regression results shows that the model achieved statistical significance because its p-value reached below the 0.001 threshold. The model demonstrates strong explanatory abilities because it can account for 52 percent of working capital constraints through its R^2 value of 0.52. The predictors show that ITC efficiency produces a major negative impact because its beta value equals -0.520, and the p-value reaches below the 0.05 threshold. The compliance burden exhibits a strong positive relationship because its beta value reaches 0.380, and the p value drops below the 0.05 threshold. The research shows that companies need more working capital when their business needs become more demanding because of their growing operational requirements. The research results show that ITC efficiency helps businesses reduce financial difficulties, while compliance requirements and working capital needs create liquidity problems for Ichalkaranji powerloom businesses.

Table-5: Hypothesis Testing Results.

Hypothesis	Relationship	Statistical Tool Used	β Coefficient	p-value	Result
H1	ITC Efficiency \rightarrow Working Capital	Regression	-0.48	0.002	Accepted
H2	ITC Efficiency \rightarrow WCC	Regression	-0.52	0.000	Accepted
H3	Compliance Burden \rightarrow WCC	Regression	0.38	0.003	Accepted
H4	Working Capital \rightarrow WCC	Regression	0.41	0.001	Accepted
H5	WCC \rightarrow Business Performance	Regression	-0.50	0.000	Accepted (Negative Effect)

Summary of Hypothesis Testing Results: The outcomes indicate that all hypotheses are statistically significant at the 5% level ($p < 0.05$). All null hypotheses must be rejected, and alternative hypotheses must be accepted. ITC efficiency shows a significant negative relationship with working capital constraints, indicating that better ITC solutions help reduce liquidity difficulties. The relationship between compliance burden and working capital shows a positive correlation, which indicates that financial pressure will increase. The presence of working capital constraints reduces business performance.

Findings: The textile industry in Ichalkaranji mainly consists of small-scale operations, specifically micro and small enterprises involved in weaving. The study shows that businesses often do not receive Input Tax Credit (ITC) on time. This delay leads to serious cash flow problems. The analysis suggests that improving ITC efficiency can help ease financial difficulties by relieving working capital constraints. Most firms work on a credit cycle of 30 to 60 days, increasing their reliance on working capital. Organizations that need more working capital often face greater financial challenges. Additionally, GST compliance requirements, such as filing returns and following regulations, create operational hurdles that contribute to liquidity problems.

Regression analysis reveals that ITC efficiency is the main factor in reducing working capital issues. Furthermore, the combined effect of compliance burdens and working capital needs heightens financial stress due to operational limits. The model accounts for a significant portion of the variation (52%), showing that GST-related factors heavily impact businesses financially. Ultimately, constraints in working capital negatively affect business performance by lowering both profitability and operational efficiency.

Study Implications: Managerial Implications: The study shows that ITC delays create financial problems, so business owners should focus on better cash flow and working capital management. Firms need to improve their understanding of GST and ITC, which will help them reduce errors and avoid financial losses. Digital accounting systems enable organizations to run their operations more efficiently while making their GST compliance processes simpler. Managers need to decrease their extended credit periods because this practice harms their ability to collect payments, which results in cash flow problems.

Policy Implications: The government needs to speed up ITC refund processes because refund delays cause businesses to experience liquidity problems. GST procedures should be simplified, especially for small and micro enterprises, to reduce the compliance burden. The training and awareness programs should be developed to enable MSMEs to better understand the GST system. Financial institutions need to establish improved pathways for MSMEs to access working capital financing. Policies should focus on reducing compliance costs while

promoting digital technology use in small textile manufacturing facilities.

Suggestions: ITC processing must be completed on time because textile businesses rely on timely input tax credit payments for smooth operations. Delays in ITC processing create cash flow problems since businesses cannot access their funds when needed. A faster refund system would help firms manage their working capital more effectively. The government should simplify GST rules so small textile businesses can easily meet their tax obligations. This would reduce confusion, save time, and lessen the burden of compliance. Businesses also need proper training programs to better understand GST and ITC procedures. Regular workshops should be held to improve compliance practices. Using computer-based accounting systems and GST software in the textile sector can reduce errors, improve record-keeping, and speed up ITC processing. Financial institutions should offer low-interest loans to MSMEs facing cash shortages due to GST and ITC delays. It is also crucial that suppliers follow GST regulations strictly. Their non-compliance can prevent buyers from claiming ITC, so stronger monitoring and enforcement are needed. The government should support small textile businesses by providing financial relief, such as subsidies and reduced fees, to lower GST compliance costs. Additionally, companies should work to shorten their credit periods and enhance their payment collection systems. This will help improve cash flow and reduce reliance on external financing.

Conclusion

The study concludes that implementing GST has brought both opportunities and challenges for textile MSMEs in the Ichalkaranji powerloom cluster. The assessment of GST shows it has improved transparency and business formalization, but has created significant difficulties for companies in managing their operational funding. The research finds that Input Tax Credit (ITC) efficiency is a key factor influencing a company's financial status. Companies have faced cash flow issues due to delays in ITC processing and difficulties with credit claims, which led to increased demands for working capital. The compliance requirements of GST impose financial pressures that disproportionately impact small and micro enterprises. The research indicates that working capital limits reduce business performance, resulting in decreased profitability and lower operational efficiency.

The statistical results confirm that ITC efficiency lowers financial stress, while the compliance burden and higher working capital needs worsen liquidity problems. The study highlights that textile MSMEs need three key elements to improve sustainability and growth: effective ITC systems, streamlined GST processes, and financial support. The Ichalkaranji powerloom sector can enhance its competitive position and achieve lasting operational success by addressing these challenges.

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