ROLE OF OPEN NETWORK FOR DIGITAL COMMERCE IN ENHANCING MARKET EXPANSION OF MSMEs

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ABSTRACT

The Open Network for Digital Commerce (ONDC) has emerged as an important Digital Public Infrastructure initiative aimed at making e-commerce more inclusive and accessible for Micro, Small and Medium Enterprises (MSMEs) in India. Although ONDC offers significant opportunities, its awareness and adoption among MSMEs remain uneven, especially in tier-II cities. This study focuses on understanding the level of ONDC awareness and its influence on market expansion among MSMEs in Tiruchirappalli city. The research is based on primary data collected from MSME owners using a structured questionnaire. Statistical tools such as descriptive analysis, Chi-square test and Ranking method are applied to examine the relationship between ONDC awareness, adoption and key market expansion indicators including customer reach, sales growth, online visibility and business competitiveness. The results indicate that while many MSMEs are generally aware of ONDC, only a limited number have adopted it for business operations. Major challenges include lack of technical skills, inadequate training and operational difficulties. However, MSMEs that actively use ONDC experience better customer reach, stronger digital presence, and noticeable improvement in sales performance. The study clearly shows that higher awareness leads to greater adoption, which positively contributes to market expansion. The study concludes that ONDC holds strong potential to support MSME growth in Tiruchirappalli city. Effective training programs, simplified onboarding procedures and continuous technical support are essential to improve adoption levels. The findings offer valuable insights for policymakers, MSME associations, and digital platform developers to strengthen ONDC implementation at the grassroots level.
Keywords: Digital Public Infrastructure, Digital Commerce, Market Expansion, Technology and Economic Growth.

INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) play a vital role in India's economic development by generating employment, encouraging entrepreneurship, and contributing significantly to the Gross Domestic Product (GDP). In the era of digital transformation, MSMEs are increasingly required to adopt digital platforms to remain competitive and expand their market reach. To support inclusive digital commerce, the Government of India introduced the Open Network for Digital Commerce (ONDC) as a Digital Public Infrastructure initiative. ONDC aims to create an open, interoperable, and decentralized e-commerce ecosystem that reduces the dominance of large platforms and provides equal opportunities for small businesses. Through ONDC, MSMEs can connect with multiple buyer applications using a single network, thereby improving visibility, reducing dependency on intermediaries, and enabling wider market access. Despite these benefits, the level of awareness and adoption of ONDC among MSMEs remains limited, especially in tier-2 cities such as Tiruchirappalli. Factors such as lack of

digital literacy, inadequate training, and uncertainty about operational processes act as major barriers. Hence, it becomes essential to study the awareness of ONDC and its impact on MSME market expansion in Tiruchirappalli city to assess its effectiveness and future potential.

STATEMENT OF THE PROBLEM

The Open Network for Digital Commerce (ONDC) was introduced by the Government of India to create an open and inclusive e-commerce system that allows MSMEs to compete fairly in digital markets. ONDC helps small businesses reach more customers and reduces their dependence on large e-commerce platforms. However, awareness and usage of ONDC are still low, especially in tier-2 cities like Tiruchirappalli. Many MSME owners face problems such as lack of awareness, poor digital skills, limited training, and confusion about how ONDC works. Because of these issues, they are unable to use ONDC effectively for business growth and market expansion. As a result, the real benefits of ONDC have not yet been fully achieved in Tiruchirappalli.

OBJECTIVES OF THE STUDY

The present study is undertaken with the following objectives:
1. To study the level of awareness of ONDC among MSMEs in Tiruchirappalli city.
2. To identify challenges faced by MSMEs in using ONDC.
3. To evaluate the relationship between ONDC awareness and MSME market growth.

SIGNIFICANCE OF THE STUDY

This study is significant because it provides practical insights into the awareness and impact of the Open Network for Digital Commerce (ONDC) on MSMEs in Tiruchirappalli city. Since ONDC is a relatively new Digital Public Infrastructure initiative, there is limited empirical research at the city level.

REVIEW OF LITERATURE

Author	Year	Title	Focus	Findings
M. N. & Harshitha	2025	ONDC's role in democratizing India's e-commerce & empowering MSMEs	ONDC's role in democratizing India's e-commerce & empowering MSMEs	ONDC aims to decentralize e-commerce and support MSME inclusion within the open network.
Agarwal & Shweta	2025	Impact of ONDC on Small Retailers competitiveness	Impact of ONDC on small retailers' competitiveness	Finds ONDC can reduce operational costs and expand market reach for small retailers; infrastructure and awareness remain barriers.
Kumar, K.N. & Bobade, V.M.	2024	Open Network for Digital Commerce Developing Business Models of MSMEs and Agriculture	Examines how ONDC can help in developing business models for MSMEs and agricultural enterprises	ONDC presents opportunities for MSMEs and agricultural producers to innovate business models by leveraging an open digital commerce network; it can help widen market access and reduce reliance on traditional or proprietary platforms.

RESEARCH METHODOLOGY

This study follows a descriptive and analytical research design to understand the level of awareness of the Open Network for Digital Commerce (ONDC) and its impact on the market expansion of MSMEs in Tiruchirappalli city. The study covers MSMEs from manufacturing, trading, and service sectors. Primary data was collected from 80 MSME owners through a structured questionnaire focusing on ONDC awareness, adoption level, market expansion, and challenges in using the platform. Convenience sampling was adopted due to limitations of time and accessibility. Secondary information was obtained from research journals, ONDC reports, government publications, and relevant online sources. The collected data was analyzed using statistical techniques such as percentage analysis, mean score analysis, correlation, and regression to examine the relationship between ONDC awareness, adoption, and MSME market expansion. ONDC awareness and adoption were considered as independent variables, while customer reach, sales growth and online visibility were treated as dependent variables.

LIMITATIONS OF THE STUDY

1. The study covers only Tiruchirappalli city MSMEs
2. The study is based on primary data, which depends on the honesty and understanding of respondents.
3. Time and sample size constraints may affect the depth of analysis.

DATA ANALYSIS AND INTERPRETATION

Chi-Square Test

To test whether there is a significant association between ONDC awareness and ONDC adoption among MSMEs.

Table No 1 Chi-Square Test Result

Particulars	Value
Chi-Square Value (χ^2)	12.45
Degrees of Freedom	4
Significance (p value)	0.014

The Chi-square test was applied to examine the association between ONDC awareness and ONDC adoption among 80 MSME respondents. The calculated Chi-square value is 12.45 with a significance value of 0.014. Since the p-value is less than 0.05, the result is statistically significant.

This indicates that there is a significant association between ONDC awareness and ONDC adoption among MSMEs. MSMEs with higher awareness are more likely to adopt ONDC for business purposes. Therefore, awareness plays a crucial role in influencing adoption behavior.

Ranking Method

Table No : 2 Awareness-Based Ranking Method on ONDC among MSMEs

S. No	Factors	Mean Score	Rank
1	Awareness about benefits of ONDC	3.58	III
2	Awareness about ONDC concept	3.98	I
3	Awareness about technical support facilities	3.06	V
4	Awareness about buyer applications	3.35	IV
5	Awareness about registration process	3.76	II

The awareness-based ranking analysis shows that MSMEs are most aware of the basic concept of ONDC, which secured the first rank with the highest mean score of 3.98, indicating general familiarity with the initiative. Awareness about the registration process occupies the second rank, suggesting moderate understanding of how

to join the ONDC platform. Awareness regarding the benefits of ONDC is ranked third, reflecting partial knowledge about its business advantages. Awareness about buyer applications is ranked fourth, showing limited understanding of operational usage, while awareness about technical support facilities is ranked fifth, indicating the lowest level of awareness among respondents. Overall, the ranking analysis reveals that although MSMEs are aware of ONDC at a conceptual level, detailed operational and technical awareness remains insufficient, which may hinder effective adoption of the platform.

Table No 3 : Challenges Faced by MSMEs in Using ONDC

S. No	Factors	Mean Score	Rank
1	Poor internet infrastructure	2.95	V
2	Lack of technical knowledge	3.90	I
3	Limited awareness about benefits	3.18	IV
4	Difficulty in onboarding process	3.45	III
5	Inadequate training support	3.73	II

The ranking analysis reveals that lack of technical knowledge is the most critical challenge faced by MSMEs in using ONDC, securing the first rank with the highest mean score of 3.90, which indicates that many MSME owners are not sufficiently skilled in handling digital platforms. Inadequate training support emerges as the second major problem, showing that respondents strongly feel the need for proper guidance and hands-on training to effectively utilize ONDC. The difficulty in the on boarding process occupies the third rank, suggesting that procedural complexity discourages MSMEs from adopting the platform. Limited awareness about ONDC benefits is ranked fourth, highlighting the necessity for systematic awareness campaigns, while poor internet infrastructure is ranked fifth, indicating that although it is a comparatively lesser barrier, it still affects adoption. Overall, the ranking method clearly demonstrates that technical and training-related issues are the primary obstacles preventing effective ONDC adoption among MSMEs in Tiruchirappalli city.

SUGGESTIONS OF THE STUDY

1. The government and ONDC authorities should conduct regular awareness programs and workshops in tier-II cities like Tiruchirappalli to improve MSMEs' understanding of ONDC features, benefits, and operational procedures.
2. Practical, hands-on training sessions should be provided to MSME owners to enhance their technical skills and confidence in using digital commerce platforms.
3. The ONDC onboarding and registration process should be simplified to reduce procedural complexity and encourage more MSMEs to join the platform.
4. Dedicated local support centers or help desks may be established to provide continuous technical assistance and problem-solving support to MSMEs.
5. Awareness campaigns through MSME associations, chambers of commerce, and digital media can help improve knowledge about buyer applications and technical support facilities.
6. Internet infrastructure and digital connectivity in business areas should be strengthened to ensure smooth ONDC operations.

Conclusion

The study concludes that the Open Network for Digital Commerce (ONDC) has strong potential to support the market expansion and digital transformation of MSMEs in Tiruchirappalli city. Although a majority of MSMEs are generally aware of ONDC, the level of actual adoption remains limited due to lack of technical knowledge, inadequate training, and procedural difficulties. The findings clearly indicate that higher awareness significantly influences ONDC adoption, which in turn positively impacts customer reach, sales growth, and online visibility.

MSMEs that have adopted ONDC experience better business performance and improved competitiveness in digital markets. However, several operational and infrastructural challenges continue to restrict its full utilization. Therefore, focused awareness programs, simplified onboarding procedures, continuous technical support, and policy-driven incentives are essential to enhance ONDC adoption. With proper implementation and sustained support, ONDC can become a powerful Digital Public Infrastructure tool for strengthening MSME growth and promoting inclusive digital commerce in Tier-II cities like Tiruchirappalli.

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