

# The Impact of Open Network Digital Commerce (ONDC) on India's E-Commerce Ecosystem

Mentor: **Dr. Richa Tiwari**  
Student Details

**Swarnika Rastogi; Ronil Kothari; Lakshay Dungarwal; Devansh Bhootra; Preksha J**

## Abstract

*This comprehensive analysis examines the significance, challenges, recommendations, and future scope of the Open Network for Digital Commerce (ONDC) in India's evolving e-commerce landscape. The findings highlight ONDC's potential to democratize the sector by promoting inclusivity, transparency, and competition, particularly benefiting small and medium-sized enterprises (SMBs) and consumers. The discussion underscores the importance of addressing regulatory, technical, and adoption challenges while leveraging ONDC's potential to bridge the digital divide, empower underserved communities, and drive innovation. Despite the promising future scope, the abstract also acknowledges the competitive landscape and regulatory complexities ONDC must navigate to realize its transformative vision fully. This analysis concludes that ONDC, with strategic collaboration and innovation, can significantly contribute to India's socio-economic development and global competitiveness in the digital age.*

## 1) Introduction

Open Network for Digital Commerce," was a proposed initiative by the Government of India in September 2021 to develop a digital platform for the e-commerce sector in the country. The goal of ONDC was to establish a level playing field for all participants in the e-commerce ecosystem and enhance transparency and competition in the sector among companies and local businesses. ONDC intends to facilitate various aspects of e-commerce, including product discovery, inventory management, order processing, and payments. Its purpose is to provide a standardized platform that would allow small and medium-sized businesses (SMBs) to compete more effectively with larger e-commerce platforms.

The need for ONDC, or the Open Network for Digital Commerce, arises from several challenges and concerns in the e-commerce sector, particularly in the context of India. Some of the key reasons for the need for ONDC include the promotion of free and fair competition among major players and smaller businesses, enhancing transparency in the e-commerce ecosystem by creating a standardized digital platform, that helps to reduce information asymmetry and provide consumers with more information about products and sellers, reducing platform dependence that reduces concerns about data control, commission fees, and access to customers. ONDC can facilitate the localization of e-commerce data, which can be important from a data sovereignty and security perspective. This aligns with India's data protection and privacy objectives. By fostering competition and creating an open and standardized platform, ONDC can encourage innovation in the

e-commerce sector. It may lead to the development of new business models and technologies. ONDC can provide consumers with more choices by allowing a wider range of sellers to participate in the digital commerce ecosystem. This can lead to increased product diversity and potentially lower prices. ONDC could help e-commerce businesses comply with various regulations and standards, making it easier for them to operate within the legal framework. It's important to note that the success of ONDC will depend on its implementation, adoption by businesses, and regulatory support. The Indian government's intent behind ONDC is to create a more inclusive and competitive e-commerce environment that benefits both businesses and consumers.

The Open Network for Digital Commerce (ONDC) is envisioned to bring several advantages to the e-commerce ecosystem in India. While the full extent of these advantages will depend on their implementation and adoption, some of the advantages it can offer include the promotion of digital inclusion and economic growth, as SMBs expand their online presence and potentially grow, ONDC can contribute to job creation, particularly in the micro, small, and medium-sized enterprise (MSME) sector. Smaller businesses can benefit from reduced infrastructure and technology costs when using the ONDC platform, as they can leverage the platform's resources. It can streamline various e-commerce processes, such as product discovery, inventory management, and order processing, making these operations more efficient for businesses. The platform can include features to protect consumers, such as ratings and reviews, dispute resolution mechanisms, and clear product information, ensuring a safer online shopping experience.

While the Open Network for Digital Commerce (ONDC) has the potential to bring several advantages to the e-commerce ecosystem, it may also have some disadvantages or challenges associated with its implementation. These potential challenges can include challenges related to infrastructure, interoperability, data security, legal or regulatory conflicts, and hurdles. Convincing businesses, especially larger ones, to participate in the ONDC platform may be challenging. They may have existing investments in other platforms or concerns about the platform's viability. Handling large volumes of e-commerce data raises significant data security and privacy concerns. Ensuring the protection of consumer data and business information is crucial. Developing and maintaining a platform like ONDC involves navigating a complex regulatory landscape. Balancing the interests of various stakeholders while complying with existing laws and regulations can be challenging. : As the platform grows and more businesses and consumers use it, ensuring scalability and responsiveness becomes increasingly important. Handling high traffic loads and ensuring a smooth user experience can be challenging. The success of ONDC hinges on providing a user-friendly experience for both businesses and consumers. If the platform is difficult to use or lacks key features, it may not gain widespread adoption. ONDC may lead to market fragmentation, with multiple e-commerce platforms vying for attention. This could potentially confuse consumers and businesses. While one of ONDC's goals is to reduce the dominance of a few major e-commerce players, there is a risk that the platform itself could become dominant, leading to similar concerns about monopolization. Sustaining and continuously improving a platform like ONDC requires significant financial resources. Ensuring long-term funding and operational sustainability can be challenging. Developing and maintaining a cutting-edge digital commerce platform involves dealing with evolving technologies and security threats.

Staying ahead of these challenges is critical. Traditional brick-and-mortar retailers may view ONDC as a threat to their businesses and may resist its adoption. Maintaining the integrity of the marketplace by preventing counterfeit products, fake reviews, and fraudulent sellers is a constant challenge in e-commerce. Building and maintaining consumer trust in the platform is essential. Any breaches, scams, or incidents that erode trust could harm the platform's reputation. The e-commerce landscape is dynamic, and consumer preferences can change rapidly. ONDC must be adaptable to meet evolving market demands. It's important to note that the success or failure of ONDC will depend on how effectively these challenges are addressed during its implementation and how well they align with the needs of businesses and consumers in the Indian e-commerce market. Policymakers, regulators, and industry stakeholders will play a crucial role in shaping the outcomes of ONDC.

The Open Network for Digital Commerce (ONDC) project launched in April 2022, aimed at democratizing the digital ecosystem in an attempt to become a single point of access for all digital services, registered significant growth and has achieved major milestones in the few months of its launch.

Delhi on April 6, 2023, joint secretary, DPIIT, Ministry of Commerce and Industry, Sanjiv, and ONDC CEO T Koshy said that “the platform has been able to find 37 network participants ranging from market leaders to emerging Indian startups with the likes of PhonePe, Hindustan Unilever and ITC joining the platform as sellers. The platform is presently working with over 26,000 merchants, offering more than 27 lakh products on its network.”

The platform presently works as a non-profit entity but is funded majorly by banks including State Bank of India, Axis Bank, Kotak Mahindra Bank, HDFC Bank, ICICI Bank, and Punjab National Bank, among others. The network primarily started with only two domains, food, and groceries, however, later it expanded to diversify its offerings (fashion, beauty, electricals, etc.). The platform has also grown in the total number of merchants, going from around 800 in December 2022 to more than 3,00,000 merchants in Feb 2024. Shiprocket was the first intercity logistics provider to plug into the ONDC network, enabling sellers from all segments to ship products to cities and towns across India. Since then, the logistics sector has seen remarkable growth on the platform with names such as Dunzo, Delhivery, Loadshare, Grab, and Ekart signing up. The platform is also under incorporation with India Post to strengthen and boost its logistics services and expand to take online deliveries to all parts of the country. Initiating its footsteps from Bengaluru, ONDC has reported transaction fulfillment from more than 800 cities. ONDC in conjunction with the Quality Council of India has launched a Digi Ready Certification that assesses and certifies the digital readiness of MSME entities through an online self-assessment tool. Through such modules, MSME entities will be able to evaluate their preparedness to seamlessly onboard as sellers on the ONDC platform, thereby expanding their digital capabilities and business potential.

Presently there are many ONDC mobile applications broadly divided as ONDC seller apps such as Mystore; eSamudaay; SellerApp; ITC store, Digiit, and ONDC buyers apps such as PayTM, MagicPin, Pincode, etc. The research aims to look into the presence of ONDC in different business segments and analyze the rate of awareness of these segments among people through the distribution of the questionnaire.

## 2) Review of literature

The literature review aims to analyze the significance of the Open Network for Digital Commerce (ONDC) in India's evolving e-commerce landscape. It synthesizes information from multiple sources, discussing the objectives, findings, and potential implications of ONDC for businesses, consumers, and the overall digital commerce ecosystem. India's e-commerce sector has observed exponential growth in recent years, directed by factors such as increasing access to the internet, adoption of smartphones, and a burgeoning middle class. The Open Network for Digital Commerce (ONDC) is an initiative backed by the government that seeks to transform and democratize the e-commerce landscape in India. This literature review delves into the emergence of ONDC, its fundamental principles, and its potential impact on various stakeholders within India's digital commerce ecosystem.

The fast-paced growth of India's e-commerce industry has made it one of the most dynamic and competitive markets globally. Major players like Amazon and Flipkart dominate the sector, and barriers to entry have traditionally been high. ONDC emerged as a response to this evolving landscape, aiming to create a more inclusive and transparent digital commerce platform. It's important to understand the context in which ONDC operates to appreciate its potential impact fully. ONDC is not just a concept; it's a tangible initiative with clear objectives. As outlined in the literature, ONDC aims to level the playing field by providing equal opportunities for businesses of all sizes. Its principles revolve around transparency, interoperability, and reducing barriers for smaller players. Stakeholders involved in ONDC's development include both public and private sector entities, making it a collaborative effort to reshape the e-commerce ecosystem. This literature review is based on an extensive analysis of reports, studies, and expert opinions available up to the present date. These sources collectively provide a comprehensive view of ONDC, its objectives, and its potential implications.

**Impact on Small Businesses:** Small and medium-sized enterprises (SMBs) form the backbone of India's economy. ONDC seeks to empower these businesses by providing them with a platform to compete in the digital commerce space.

1. Akshat stated that the key to dominating the Indian retail market is to dominate the Kirana segment dominated by local people and families. The opportunity to dominate the Kirana segment seemed impossible until COVID-19 seriously affected the retail industry. As a result, retailers have either joined the digital commerce market or failed to survive. It was a new domain in the market for these local players. And things were not in their favor. E-commerce is dominated by very few players. They control the entire market. The barrier to entry is very high. It is a duopoly market.

2. Sighting these challenges another study by P.R. Venugopal stated that Open Network for Digital Commerce is a private non-profit company established by the Department for Promotion of Industry & Internal Trade of the Government of India to develop open networks for e-commerce. The government-allied Open Network Digital Commerce (ONDC) platform is anticipated to transform the e-commerce landscape in India. The literature suggests that ONDC holds promise in transforming India's e-commerce landscape. By promoting competition, supporting MSMEs, enhancing user experiences, and fostering innovation, ONDC has the potential to revolutionize digital commerce while addressing challenges associated with digital inclusivity.

3. Dr. Mahesh stated that “The ONDC Initiative creates an online market where the products of small businesses could be bought and sold easily.

4. Business Insider, published that ONDC acts as a link between buyers and hyperlocal sellers creating a comprehensive e-commerce ecosystem in the country. The platform is an open network portal that facilitates micro-enterprises to gain visibility in comparison to e-commerce giants like Flipkart and Amazon by fueling the accessibility of products for consumers while generating a broad market base for hyperlocal suppliers.

**Consumer Experience and Trust:** Consumer trust is paramount in the e-commerce sector. ONDC is expected to enhance transparency and security in online transactions, fostering trust among consumers. Early indications point to improvements in the online shopping experience, but further research may reveal more profound impacts.

5. The Government of India, furnishes an overview of the context, underlying principles, and building blocks regarding the operation and development of the Open Network for Digital Commerce (ONDC). The paper discusses, studying the diversity of use cases and players in the e-commerce ecosystem, implementing ONDC on a population scale to make it a public utility is a long-term plan that will show its results step-by-step in a business-economic environment. Taking into account the metamorphosis that ONDC will bring to how the digital commerce industry operates today, the initiative will face challenges in building trust amongst small and large digital commerce companies, managing user expectations, and managing customer and seller fraud/issues. Therefore, it can be concluded that initially, ONDC needs to be executed quickly to attain acceptance and develop practical considerations for implementation at a larger scale. The execution strategy for ONDC has been designed to focus on three key aspects - technology, business, and institution building.

**Regulatory and Privacy Considerations:** ONDC operates within a regulatory framework aimed at protecting consumer data and ensuring fair competition. However, challenges related to data privacy and alignment with existing regulations are subjects of ongoing discussion. The literature underscores the importance of addressing these concerns effectively.

6. Dr. Vibha Jain stated the rules and regulations adopted by the Indian government to cure the dominance of MNCs like Amazon and Flipkart. The ONDC is incorporated as a "not-for-profit private company" under section 8 of the Companies Act 2013 and the company cannot pay dividends to members. During its alpha test phase and beta test phase, ONDC was active across 85 Indian cities (including tier 2 cities). Apart from having a diversified and broad scope, the ONDC is forecasted to ultimately have a nationwide footprint and serve as a single point of access for all goods and services.

7. Bibhu Dash, stated that ONDC, an enterprise platform owned by private and public sector banks and financial organizations enables a decentralized digital infrastructure. More than 20 companies, including most of India's leading banks and retail chains, have already registered with ONDC. However, it must diminish the thoughtfulness of the method. The Government of India constituted an advisory committee for ONDC consisting of experts in the field to implement the master plan. With its unique design, it will undoubtedly develop a value chain-based e-commerce network with growth potential for all small, medium, and large enterprises. The ONDC network is still in the improvement

phase; it's going through some needed, effective unique, and innovative changes, and will be concept-wise cleared after a regular trend is seen in the market for the same.

**Competition and Monopoly:** One of ONDC's primary objectives is to promote competition and reduce the dominance of a few e-commerce giants. While existing players may view ONDC as a challenge, it also offers opportunities for collaboration and growth.

8. Dr. Shaji described that Global digital commerce is reshaping the global business environment and holds the potential to provide a broad scope and vision that will be accepted by all types of businesses.

There exist a scope to open the market, to new groups of players, especially small businesses. COVID-19 has accelerated the growth of the digital economy worldwide. Although digital marketing declined in the travel and service sectors, digital marketing in retail grew and its share in total retail sales increased. The growth in sales can be due to an increase in business-to-consumer (B2C) sales. This is especially evident in the online sales of basic household goods, medical supplies, and food. Additionally, COVID-19 has led to an increase in business-to-business (B2B) digital marketing. The current version of e-commerce stifles innovation and creates large barriers to entry for novice players. Market analysts have come up with solutions to manage bottlenecks in India's digital marketing ecosystem. Internet Message Access Protocol (IMAP), Simple Mail Transfer Protocol (SMTP), HTTP (Data Communications and Browsing Protocol), etc. Using current standards such as Open Network for Digital Commerce (ONDC) was established. Revolutionize digital business in India. It will be an open network built on open processes based on open standards with ledgers, allowing broad participation of digital business ecosystem players in India from multiple platforms. The Open Network for Digital Commerce (ONDC) project aims to strengthen the digital ecosystem in the economy. ONDC intends to offer a competitive field for big and small digital commerce applications and platforms via the possibility of being ONDC-permitted and making buyers and sellers registered with all of them visible as well as discoverable. ONDC aims to make e-commerce processes open source, thus developing a platform that can be utilized by all online retailers.

9. Chetan Barapatre and Shreya Das cited Open Network for Digital Commerce (ONDC) as a set of protocols built on open network systems. It aims to provide a fair opportunity for micro, small, and medium enterprises (MSMEs) to participate in the digital economy. This will lead to an increase in the digital economy and the separation of commodity and credit markets. Through ONDC, it is possible to ensure the independence of the e-commerce ecosystem and preserve the independence of existing platforms. A recent communication shared by ONDC proves that it is starting to succeed in helping consumers and leveling the playing field for small retailers. The paper concludes by stating "ONDC is in nascent stages and its success will largely depend upon its acceptance by the Indian retail sector. While it is not here to compete with the big e-commerce platforms, it will surely impact their business. The protocols will have to continue to evolve and stay updated in the technological sphere for ONDC to be a preferred choice in the industry. Only time can tell if ONDC will be a threat to established e-commerce platforms."

In conclusion, the Open Network for Digital Commerce (ONDC) represents a significant milestone in India's e-commerce journey. It has the potential to democratize the sector, empower small businesses, and enhance consumer trust. However, challenges related to

regulation, competition, and privacy must be navigated effectively. ONDC's future remains promising, and its evolution will be closely watched by stakeholders across the digital commerce ecosystem. Policymakers, businesses, and researchers should actively support and engage with ONDC's development. Collaboration among stakeholders will be crucial in realizing ONDC's potential. Future research should focus on monitoring its impact, addressing regulatory challenges, and fostering innovation within the ecosystem.

### **3) Research Objectives**

Based on the contextual information presented, four research objectives may be identified as follows:

- (1) An Analysis of the Present State and Trends of E-commerce Markets in India.
- (2) Examining the Constraints of the Existing E-Commerce Framework and the Supremacy of Multinational Corporations such as Amazon and Flipkart.
- (3) To Define and Critically Examine the Components and Functions of the ONDC Network.
- (4) Analyzing consumer experience and Trust among consumers and exploring Regulatory and Privacy Considerations.

#### **4.1) Research Methodology**

The research methodology for studying Open Network Digital Commerce (ONDC) in India utilizes a quantitative approach, aiming to comprehensively understand the research problem and gather accurate data. This methodology combines both secondary and primary data sources to explore ONDC in India.

Secondary data was gathered from newsletters, articles, research papers, and reports concerning the subject that provided valuable insights into existing knowledge and perspectives over ONDC platforms.

Primary data was collected through online surveys in the form of structured questionnaires among consumers that helped in gaining useful insights related to consumer experiences, opinions, and perceptions regarding ONDC in India. The snowball sampling technique was employed which allows for the peer-to-peer selection of participants for the online survey or questionnaire distribution. The research scope focuses on studying the implementation and impact of ONDC specifically in the southern region of India.

The data collected through the survey was analyzed using statistical tools through structured and systematic placement of data that yielded effective and efficient results. Descriptive statistics was used to summarise the qualitative response in a statistical dataset. Correlation analysis was performed on the collected data, through which the relationship between various variables has been established Cronbach's Alpha was employed to measure the internal consistency of survey instruments, ensuring reliability. ANOVA Two-Factor Analysis analyzed the variation between groups and factors influencing ONDC implementation and impact.

In conclusion, the research methodology identifies the importance of combining secondary and primary data sources to gain a collaborative and comprehensive understanding of ONDC in India and its implications. It acknowledges potential limitations, such as sample size constraints or data collection biases, and ensures adherence to ethical guidelines in data collection and analysis, including informed consent and confidentiality of participants' information.

#### 4.2) Research Hypothesis

1. Government initiatives to promote hyper-local markets have a direct impact on the digital commerce ecosystem
2. Security and Privacy considerations have a direct impact on user adaptiveness to ONDC platforms
3. Ease in the Product Delivery Process has a direct impact on the platform preference of a user in the digital commerce ecosystem
4. User Interface and Customer Convenience have a direct impact on the acceptance of ONDC in the digital commerce ecosystem.

#### 5) Data Interpretation and Analysis

ONDC is built to transform Indian e-commerce by enhancing the discoverability of hyper-local merchants and vendors. Despite being at a nascent stage, India's e-commerce market is projected to grow from US\$ 83B in 2022 to US\$ 150B in 2026, as per FIS 2023 Global Payments Report. This move towards a comprehensive and inclusive system like ONDC could propel India's e-commerce ambition to new heights, reshaping the entire industry.

In the pursuit of comprehensive understanding and rigorous analysis, the data interpretation and analysis is done on the online survey as an integral component of the research endeavor. With an unwavering commitment to unraveling complex phenomena and extracting meaningful insights, this survey serves as a cornerstone in our quest for empirical evidence and data-driven conclusions. Designed with meticulous attention to detail and executed with precision, the survey encapsulates the essence of the research objectives, poised to illuminate the intricacies of the chosen subject matter.

The online survey, conducted within the scope of our research objectives, engaged a total of 112 participants. The demographic composition of the participants revealed a diverse representation: 45% identified as female, 42% as male, 8% as third gender, and 5% preferred not to disclose their gender. In terms of age distribution, the majority (88.4%) fell within the bracket of 15-25 years, with 8% aged 26-35, and 2% each in the age ranges of 36-45 and 45 years and above. Regarding education levels, the respondents varied, with 10% having completed Higher Secondary, 5% Senior Secondary, 52% Undergraduate, 30% Postgraduate, and 3% holding Professional/Doctoral degrees. Professionally, a significant portion (79%) identified as students, followed by 8% as homemakers, 4% in the private sector, 1% in the public sector, and 8% self-employed or engaged in professional/business roles. Furthermore,

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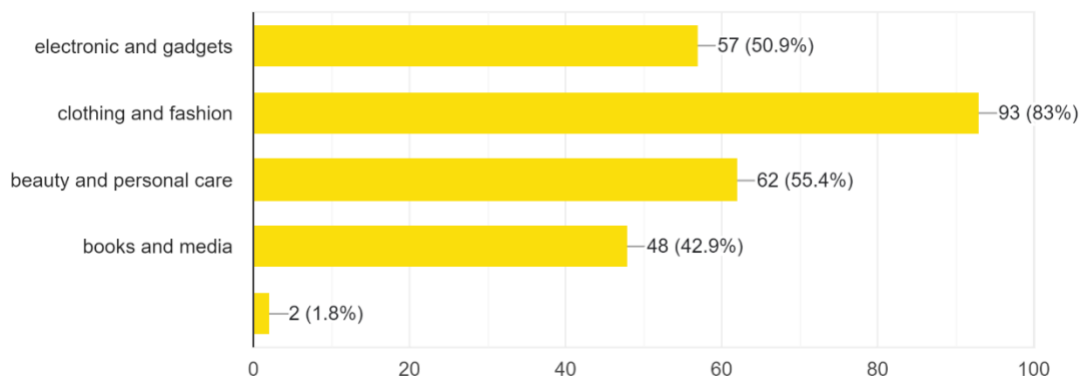
concerning income, the majority (77%) reported an income ranging from 0 to 5,00,000, with smaller percentages falling into higher income brackets: 4% in the range of 5,00,001 - 7,50,000, 4% in 7,50,001 - 10,00,000, 5% in 10,00,001 - 12,50,000, and 11% earning 12,00,001 and above. Further, the questionnaire included a set of multiple-choice questions that yielded the following results:

### Items for Online Shopping Preference of Consumer

Based on the provided data, it's evident that online shopping preferences among consumers vary across different product categories. Consumer electronics and gadgets emerge as the most favored category, with a significant majority of 50.9% of participants expressing a preference for purchasing these items online. Following closely behind is clothing and fashion, with a substantial 83% of respondents indicating a preference for online shopping in this category, highlighting the convenience and accessibility of e-commerce platforms for fashion-related purchases. Beauty and personal care products also garnered notable traction in the online sphere, with 55.4% of participants opting for online channels for their beauty and personal care needs. However, the preference for purchasing books and media online was relatively lower, with 42.9% of respondents favoring online platforms for these items, suggesting potential areas for improvement or alternative marketing strategies in this segment of e-commerce.

#### 9. Products I prefer to purchase online in India (Select all that apply)

112 responses



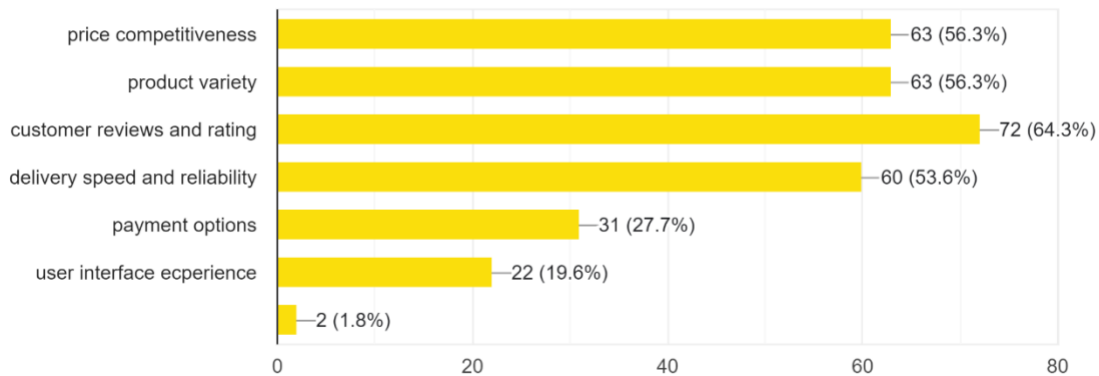
### Factors Influencing Consumers to Shop Online

The data provided sheds light on the key factors that influence consumers' decisions to shop online. Among these factors, customer reviews and ratings emerge as the most influential, with a significant majority of 64.3% of respondents considering them when making online purchasing decisions. This underscores the importance of social proof and peer feedback in shaping consumer behavior in the digital marketplace. Price competitiveness and product variety are also crucial determinants, both scoring equally at 56.3%, indicating that consumers prioritize affordability and a wide range of choices when shopping online. Delivery speed and

reliability are also highly valued, with 53.6% of participants emphasizing the importance of prompt and dependable delivery services. However, payment options and user interface experience seem to have a relatively lesser impact, with 27.7% and 19.6% of respondents considering them, respectively. These findings suggest that while consumers appreciate a seamless payment process and user-friendly interfaces, they may prioritize other factors when deciding where to shop online.

10. Factors that influence my choice of e-commerce platform for online shopping in India (Select all that apply)

112 responses

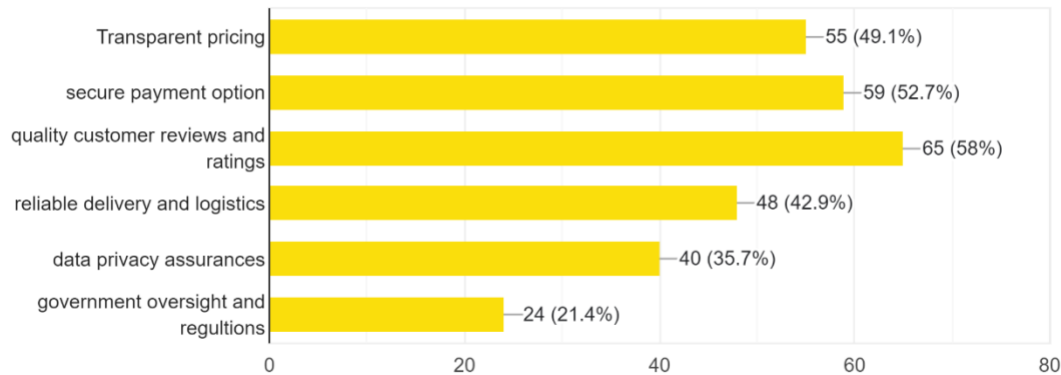


**Factors Promoting Trust in ONDC**

The data provided unveils the pivotal factors fostering trust in the Open Network for Digital Commerce (ONDC) platform. Among these factors, quality customer reviews and ratings emerge as the most influential, with a substantial 58% of respondents placing significant importance on them. This highlights the critical role of peer feedback and social validation in instilling confidence among users regarding the platform's reliability and service quality. Secure payment options closely follow, with 52.7% of participants emphasizing the importance of safeguarding their financial transactions, underscoring the paramountcy of trust and security in online commerce. Transparent pricing also plays a significant role, with 49.1% of respondents valuing clear and upfront pricing information, fostering transparency and accountability within the marketplace. Moreover, reliable delivery and logistics services are vital in building trust, as indicated by 42.9% of participants who prioritize timely and dependable delivery of their orders. Although data privacy assurance and government oversight are considered important, with 35.7% and 21.4% of respondents acknowledging their significance, respectively, they appear to be slightly less influential compared to other factors. Nonetheless, these findings collectively underscore the multi-faceted approach required to cultivate trust in the ONDC platform, encompassing aspects of pricing transparency, payment security, service quality, and regulatory compliance.

## 11. Factors that contribute most to your trust in the ONDC platform (Select all that apply)

112 responses

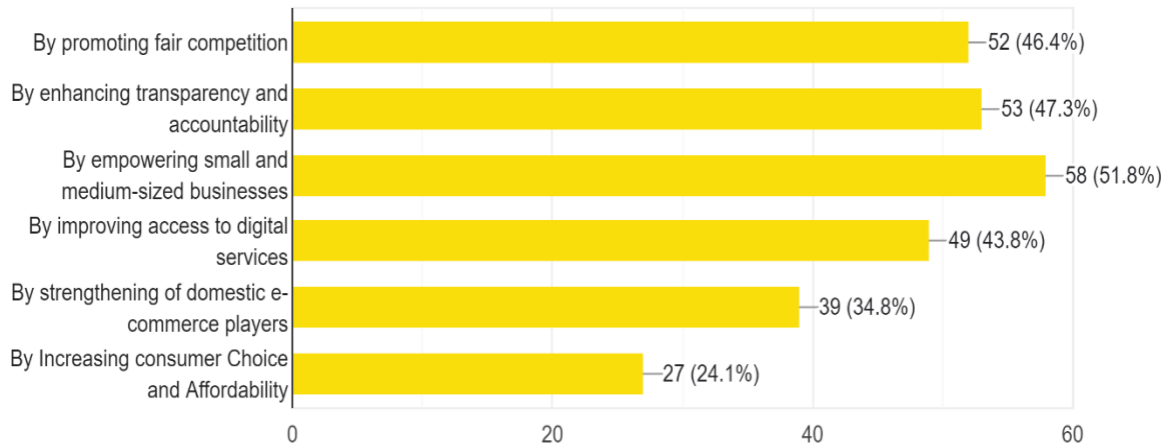


### Acting as a Bridge

The provided data underscores several key areas where the Open Network for Digital Commerce (ONDC) has the potential to bridge existing gaps within the digital commerce landscape. One significant aspect is its ability to promote fair competition, with 46.4% of respondents recognizing its potential in leveling the playing field for businesses. Additionally, ONDC stands to enhance transparency and accountability in the digital marketplace, as emphasized by 47.3% of participants, thereby fostering trust and confidence among consumers and businesses alike. Moreover, by empowering small and medium-sized enterprises (SMEs), ONDC can address the disparity in market access and opportunities, as indicated by a substantial 51.8% of respondents who believe in its capacity to uplift smaller businesses. Furthermore, by improving access to digital services, ONDC can bridge the gap in digital inclusivity, with 43.8% of participants acknowledging its potential to extend the reach of digital commerce to underserved populations. While the strengthening of domestic e-commerce players and increasing consumer choice and affordability received slightly lower percentages of 34.8% and 24.1%, respectively, these aspects still highlight areas where ONDC can contribute to a more robust and inclusive digital commerce environment, catering to the diverse needs and preferences of both businesses and consumers.

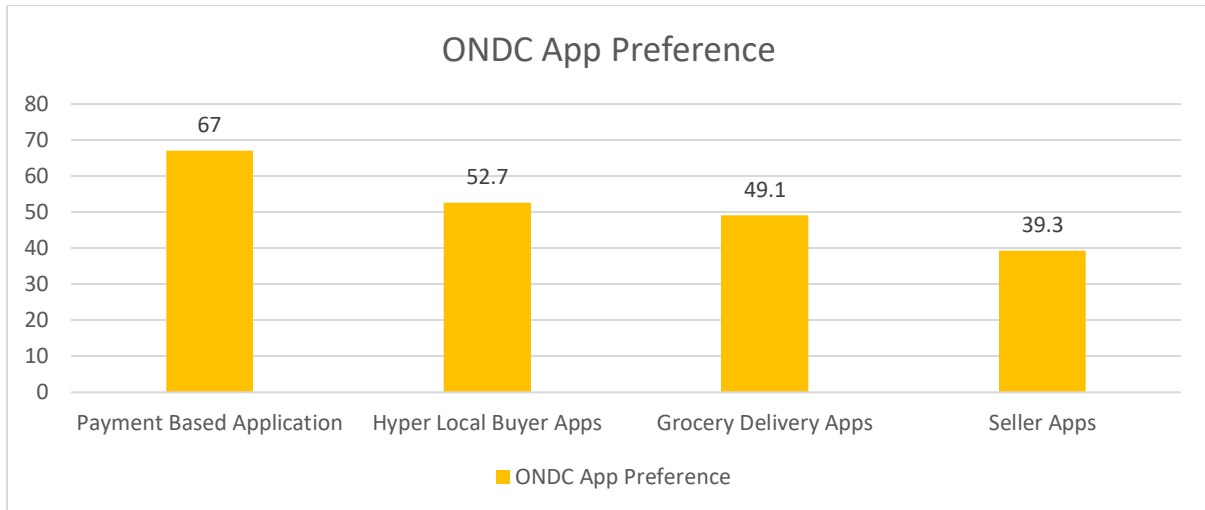
12. I think ONDC can address challenges and improve the e-commerce ecosystem? (Select all that apply)

112 responses



### Most Preferred ONDC Platform

Among the various options within the Open Network for Digital Commerce (ONDC) ecosystem, the Payment Based Application emerges as the most preferred platform, with a significant 67% of respondents expressing a preference for it. This preference underscores the crucial role of seamless and secure payment solutions in facilitating transactions within the digital commerce landscape. Following closely behind is the Hyper-Local Buyer Apps category, capturing the interest of 52.7% of participants. These apps, which enable users to connect with nearby sellers and access localized products and services, resonate with consumers seeking convenience and proximity in their shopping experiences. Additionally, Grocery Delivery Apps garnered considerable traction, with 49.1% of respondents opting for this category, highlighting the growing demand for efficient and convenient grocery shopping solutions. While Seller Apps garnered a slightly lower preference rate of 39.3%, they still represent a significant segment of the ONDC platform, catering to sellers' needs for efficient management and optimization of their online businesses. Overall, the preference for Payment Based Applications underscores the foundational role of secure and efficient payment mechanisms in driving the adoption and success of digital commerce platforms within the ONDC ecosystem.



### Factors Reducing Trust in ONDC Platforms

The data provided sheds light on several factors that contribute to a reduction in trust within the e-commerce landscape. Among these factors, ambiguous return policies stand out as a primary concern, with 48.2% of respondents highlighting them as a significant deterrent to trust. Unclear or convoluted return policies can leave consumers feeling uncertain about their rights and protections when making purchases online, undermining their confidence in the reliability of the platform. Additionally, the absence of transparent pricing and product information poses another challenge, with 36.6% of participants expressing reservations about incomplete or misleading details regarding pricing and product specifications. The lack of customer reviews further exacerbates the issue, with 51.8% of respondents citing the absence of peer feedback and social validation as a key factor eroding trust. Moreover, data breaches represent a significant threat to consumer trust, with 31.3% of participants expressing concerns about the security of their personal and financial information on e-commerce platforms. Finally, the lack of proper customer support emerges as a notable issue, with 33.9% of respondents citing inadequate or inaccessible customer service channels as a barrier to trust. These findings collectively underscore the multifaceted challenges that e-commerce platforms must address to cultivate and maintain trust among their user base, emphasizing the importance of clear policies, transparent communication, robust security measures, and responsive customer support in fostering a trustworthy digital commerce environment.

## 14. Factor contributing to lack of consumer trust in e-commerce platforms (Select all that apply)

112 responses



The Cronbach Alpha Value attained using the data set derived from the questionnaire was 0.802. This states that the data achieved from the questionnaire is highly reliable and can be used for further research.

Variables	Mean	Standard Deviation
Security and Confidentiality	3.518182	0.809709634
Customer Service Quality	3.5	0.763261952
Behaviour Change	3.590909	0.901532381
Success Essential	3.681818	0.877149451
Positive development	3.727273	0.800333542
Government Initiative	3.636364	0.832011174
Customer Satisfaction	3.218182	0.881843546
Exponential Experience	3.536364	0.659124701
Quick Access	3.681818	0.777337472
Security Issue	3.718182	0.80288263
Trial Reduction	3.536364	0.672899692
Fair Competition	3.445455	0.873528788
Product Delivery Process	2.345455	0.850648578
Protect Domestic Business	3.7	0.68469507
MNC-Dominance	3.672727	0.71816651
Less Fraud	3.736364	0.762387278

The security and Confidentiality, variable has a mean of 3.52 with a standard deviation of 0.81, indicating that, on average, respondents perceive security and confidentiality measures to be moderately high, with a moderate level of variability in responses. Customer Service Quality with a mean of 3.5 and a standard deviation of 0.76, customer service quality is perceived similarly to security and confidentiality, with moderate variability. The mean of Behaviour Change is 3.59 with a standard deviation of 0.90, suggesting that respondents perceive some

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variability in the extent to which behavior change is facilitated, but the average score is slightly higher than for security and customer service. Success Essential has a mean of 3.68 and a standard deviation of 0.88, indicating that respondents perceive success essentials to be moderately high, with similar variability to behavior change. Positive Development with a mean of 3.73 and a standard deviation of 0.80, positive development is perceived relatively positively, with moderate variability. The mean of the variable Government Initiative is 3.64 with a standard deviation of 0.83, suggesting moderate perceptions of government initiatives with moderate variability.

Further, Customer Satisfaction has a mean of 3.22 and a standard deviation of 0.88, indicating moderate satisfaction among respondents but with relatively high variability. Exponential Experience with a mean of 3.54 and a standard deviation of 0.66, respondents perceive a moderate level of exponential experience with relatively low variability. The mean of Quick Access is 3.68 with a standard deviation of 0.78, indicating moderate perceptions of Quick Access with moderate variability. Security Issue has a mean of 3.72 and a standard deviation of 0.80, suggesting relatively high perceptions of security issues with moderate variability. Trial Reduction has a mean of 3.54 and a standard deviation of 0.67, which means that respondents perceive a moderate level of trial reduction with relatively low variability. The mean of variable Fair Competition is 3.45 with a standard deviation of 0.87, indicating moderate perceptions of fair competition with relatively high variability. Product Delivery Process has a mean of 2.35 and a standard deviation of 0.85, suggesting relatively low perceptions of the product delivery process with moderate variability.

In the Variable ‘Protect Domestic Business’ with a mean of 3.7 and a standard deviation of 0.68, respondents perceive a relatively high need to protect domestic businesses with low variability. MNC-Dominance’s mean is 3.67 with a standard deviation of 0.72, indicating moderate perceptions of multinational corporation dominance with moderate variability. The variable ‘Less Fraud’ has a mean of 3.74 and a standard deviation of 0.76, suggesting relatively high perceptions of reduced fraud with moderate variability.

In summary, respondents generally perceive moderate to moderately high levels of various factors related to security, customer service, government initiatives, and business practices. However, there is notable variability in perceptions across different variables, indicating that opinions may vary widely among respondents.

	Customer Service Quality	Behaviour Change	Positive Development	Government Initiative	Exponential Experience
<b>Success Essential</b>		0.414			
<b>Positive Development</b>			1.000		
<b>Government Initiative</b>	0.405	0.411	0.442	1.000	
<b>Quick Access</b>			0.493		0.461
<b>MNC-Dominance</b>			0.466	0.413	
<b>Less Fraud</b>				0.426	

Through the correlation table, it could be interpreted that, Government Initiative is moderately correlated to customer service quality and behavior change and will control the

dominance of Multinational Corporations. Also, it could be observed that factors essential for the success of ONDC could be studied through changes in customer behavior patterns. Further, it could be studied that Government initiatives are relatively correlated to factors essential for the success of ONDC and will lead to less fraud. Quick accessibility will also contribute to positive development in the sector and will lead to exponential growth. MNC-Dominance is relatively correlated to Positive Development in the sector, through which it can be said that- a positive development could be seen in case the dominant MNCs come forward with an innovative approach in this sector with a relatively similar and a better alternative.

## 7. Findings and Discussion

### **Significance of ONDC in India's E-commerce Landscape:**

The literature review underscores the significant role of the Open Network for Digital Commerce (ONDC) in transforming and democratizing India's e-commerce sector. India's e-commerce industry has experienced rapid growth, driven by factors like increasing internet penetration and smartphone adoption. ONDC emerged as a response to the dominance of major players like Amazon and Flipkart, aiming to create a more inclusive and transparent digital commerce platform. Its fundamental principles revolve around transparency, interoperability, and reducing barriers for smaller players, with objectives focused on promoting competition, supporting MSMEs, enhancing user experiences, and fostering innovation.

### **Impact on Small Businesses:**

ONDC is poised to empower small and medium-sized enterprises (SMBs) by providing them with a platform to compete in the digital commerce space. Research indicates that ONDC creates opportunities for local retailers and hyper-local sellers to gain visibility and compete with larger e-commerce platforms. The platform aims to level the playing field by offering equal opportunities for businesses of all sizes, thereby addressing the challenges of dominance by a few major players in the market.

### **Consumer Experience and Trust:**

ONDC is expected to enhance transparency and security in online transactions, fostering trust among consumers. Research suggests that ONDC can improve the online shopping experience by promoting competition, supporting MSMEs, and enhancing user experiences. Factors such as quality customer reviews, secure payment options, transparent pricing, and reliable delivery services are critical in building trust in the ONDC platform.

### **Regulatory and Privacy Considerations:**

ONDC operates within a regulatory framework aimed at protecting consumer data and ensuring fair competition. Challenges related to data privacy and alignment with existing regulations are subjects of ongoing discussion, highlighting the importance of addressing these concerns effectively. The literature emphasizes the need for building trust among digital commerce companies, managing user expectations, and addressing fraud and security issues to ensure the successful implementation of ONDC on a larger scale.



### Competition and Monopoly

ONDC's primary objective is to promote competition and reduce the dominance of a few e-commerce giants in the market. While existing players may view ONDC as a challenge, it also offers opportunities for collaboration and growth, fostering a more diverse and inclusive digital commerce ecosystem. The platform aims to create a level playing field for businesses of all sizes, thereby encouraging innovation and driving economic growth in the digital commerce sector.

To Conclude, the literature review provides compelling evidence of the significance of ONDC in India's evolving e-commerce landscape. By promoting competition, supporting MSMEs, enhancing consumer trust, and addressing regulatory challenges, ONDC has the potential to revolutionize digital commerce in India. However, addressing concerns related to data privacy, competition, and regulatory compliance will be crucial for its successful implementation and long-term sustainability. Policymakers, businesses, and researchers must actively engage with ONDC's development to realize its full potential and foster a more inclusive, transparent, and thriving e-commerce ecosystem in India.

## 8. Recommendations and Conclusion

While the recommendations outlined offer valuable strategies for improving the effectiveness and efficiency of the Open Network for Digital Commerce (ONDC) platforms, it's essential to acknowledge certain limitations that may impact their implementation and impact:

**Resource Constraints:** Implementing comprehensive UX enhancements, data security measures, and supply chain integration requires significant financial and human resources. Small-scale sellers, in particular, may face challenges in adopting these changes due to limited budgets and technical expertise.

**Regulatory Compliance:** Ensuring compliance with data privacy regulations and standards poses a complex challenge, especially in a dynamic regulatory landscape. Navigating the legal requirements across different jurisdictions while maintaining operational efficiency can be a daunting task for ONDC operators.

**Technical Complexity:** Integrating digital payment systems, supply chain solutions, and robust analytics tools requires advanced technical capabilities. Limited access to skilled IT professionals and technical infrastructure may hinder the seamless integration of these functionalities within ONDC platforms.

**User Adoption:** Despite efforts to enhance user experience and promote the benefits of ONDC platforms, achieving widespread adoption among both sellers and buyers may prove challenging. Resistance to change, loyalty to existing platforms, and concerns about platform reliability and security could impede adoption rates.

**Market Dynamics:** The competitiveness of the e-commerce landscape and the rapid evolution of consumer preferences present ongoing challenges for ONDC platforms.

Adapting to emerging trends, technological advancements, and shifting market dynamics requires agility and strategic foresight.

**Stakeholder Collaboration:** While collaboration with stakeholders is crucial for driving platform adoption and growth, achieving consensus among diverse stakeholders with varying interests and priorities may be challenging. Balancing competing interests and aligning strategic objectives could require extensive negotiation and compromise.

**In conclusion,** the recommendations provided offer a comprehensive roadmap for enhancing the effectiveness and efficiency of ONDC platforms in the digital commerce ecosystem. By prioritizing user experience, data security, seller support, and stakeholder collaboration, ONDC operators can position themselves as trusted facilitators of digital commerce, driving innovation and prosperity in the Indian market.

However, it's essential to recognize the inherent limitations and challenges associated with implementing these recommendations. Resource constraints, regulatory compliance, technical complexity, user adoption, market dynamics, and stakeholder collaboration represent significant hurdles that must be navigated effectively.

Despite these challenges, the potential benefits of implementing the proposed recommendations are substantial. By addressing key pain points, improving platform functionality, and fostering collaboration, ONDC platforms can unlock new opportunities for small businesses, empower consumers, and contribute to the growth of India's digital economy.

Moving forward, a concerted effort from policymakers, industry stakeholders, and technology providers will be essential to overcome these challenges and realize the full potential of ONDC platforms. By addressing limitations thoughtfully and leveraging opportunities strategically, ONDC can emerge as a transformative force in the Indian e-commerce landscape, driving inclusive growth and prosperity for all stakeholders involved.

## 9) Future Scope

The Open Network for Digital Commerce (ONDC) represents a transformative initiative poised to revolutionize India's digital commerce landscape. Its future scope encompasses several key areas that hold immense potential for driving inclusive growth, fostering innovation, and empowering businesses and consumers across the country. ONDC's commitment to providing a level playing field for all participants in the digital commerce ecosystem promises to foster competition and drive innovation. By enhancing accessibility, particularly for small businesses and entrepreneurs, ONDC can enable them to reach a wider audience and compete more effectively with established players.

With a strong focus on data security and privacy, ONDC aims to establish robust frameworks and protocols to safeguard consumer information. By instilling trust among users through enhanced data protection measures, ONDC can encourage greater participation in digital commerce activities, thereby fostering a more secure and

reliable digital ecosystem. Its potential to expand the digital commerce ecosystem lies in its ability to facilitate the integration of diverse stakeholders, including retailers, manufacturers, logistics providers, and payment gateways. This expansion creates new opportunities for collaboration and partnership, driving economic growth and job creation across various sectors.

ONDC's initiatives to promote digital commerce in rural and remote areas have the potential to bridge the digital divide and empower underserved communities. By leveraging technology and last-mile connectivity solutions, ONDC can facilitate access to goods and services, improve livelihoods, and spur inclusive development in these regions. Its open and interoperable platform provides developers and startups with access to standardized APIs, data sets, and tools, stimulating innovation and entrepreneurship. By catalyzing the creation of new digital commerce solutions and business models, ONDC fosters a vibrant ecosystem of innovation, driving economic growth and competitiveness. The Platform aims to establish a regulatory framework that balances innovation and consumer protection, ensuring compliance with applicable laws and regulations. By promoting transparency and accountability, ONDC enhances market integrity and mitigates risks associated with digital commerce activities, fostering a trusted and sustainable ecosystem.

By fostering a robust and inclusive digital commerce ecosystem, ONDC strengthens India's position as a global leader in digital innovation and technology. This attractiveness can attract investment, talent, and partnerships from around the world, driving economic growth and enhancing India's competitiveness on the global stage.

ONDC empowers consumers by providing them with a wider choice of products and services, transparent pricing, and better access to information. This enables informed decision-making, enhances consumer welfare, and fosters a more dynamic and consumer-centric digital commerce landscape. On the other hand, the system also empowers hyper-local vendors by providing them with enhanced visibility and allowing fair competition in the market. Promoting the initiative of #vocalforlocal and #atmanirbharbharat.

ONDC's vision involves digitizing the entire value chain, streamlining operations, encouraging supplier engagement, optimizing logistics, and enhancing customer value. Once fully implemented and regulated, all e-commerce businesses in India, irrespective of their brand, will be mandated to adhere to standardized protocols, similar to Android-based mobile devices. This move will introduce discoverability, interoperability, and inclusivity, benefiting smaller online stores and new players in the market. By breaking the monopolies held by major platforms in sectors like retail, food, and mobility, ONDC will empower suppliers and customers, enabling them to drive innovation and transform their businesses. However, on the other hand, analyzing the present progress and the future scope of ONDC, giant e-commerce platforms have introduced their

models of serving customers locally. This will result in stiff competition between ONDC and giant e-commerce monopolies.

In conclusion, the future scope of the Open Network for Digital Commerce (ONDC) holds immense potential to revolutionize India's digital commerce landscape. By promoting inclusivity, efficiency, and entrepreneurship, ONDC paves the way for a more interconnected and prosperous world. Its transformative approach to digital commerce promises to drive inclusive growth, foster innovation, and empower businesses and consumers, ultimately contributing to India's socio-economic development and global competitiveness in the digital age. However, it has to be prepared for the upcoming challenges and threats posed by big corporations holding monopolies in the same industry.

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