

Impact of E-Commerce on Agribusiness in India

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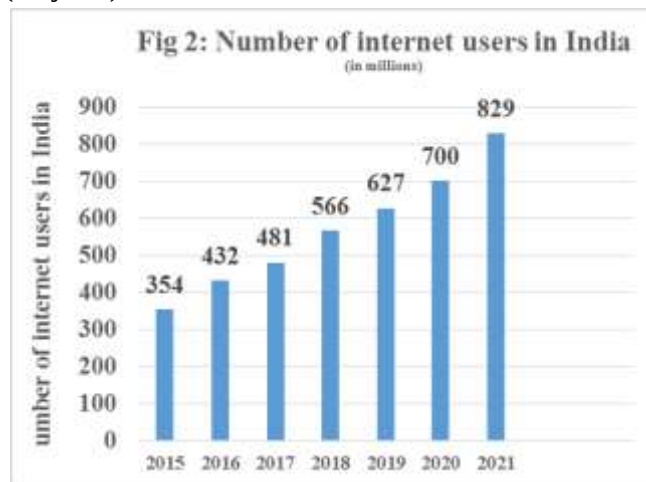
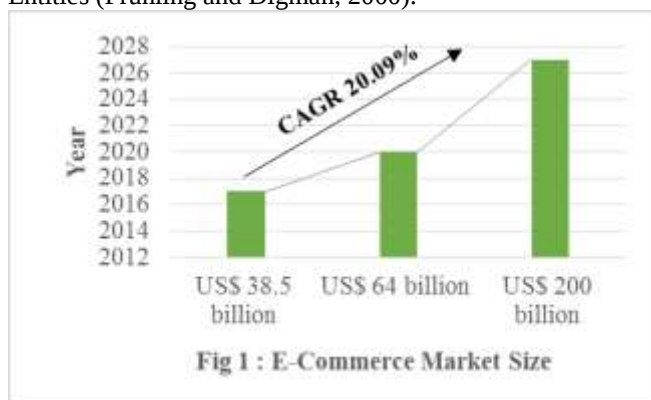
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Abstract— E-commerce is a major impact on how goods are bought and sold in agricultural markets. Agriculture is considered the backbone of the Indian economy. Internet and e-commerce technologies have rapidly penetrated the agriculture sector as marketing, management, service, and coordination tool. E-commerce provides an opportunity to streamline the agricultural value chain and Reduce Inefficiencies in the distribution of agricultural produce. It represents a new approach for farmers to sell their agricultural produce to an array of buyers, including Agribusinesses, retailers, restaurants, and customers. E-commerce has transformed the way Agribusiness is done in India. E-commerce is India's fastest-growing market with an annual multifaceted growth rate of 52% to touch USD 36.7 billion by 2020. The number of internet users in India has registered an annual growth of 18 percent and is estimated at 566 million as of December 2018 and estimates that the number of internet users will reach 627 million by the end of 2019 India's internet economy is expected to double from US\$125 billion as of April 2017 to US\$ 250 billion by 2020, majorly backed by e-commerce. India's E-commerce revenue is expected to jump from US\$ 39 billion in 2017 to US\$ 120 billion in 2020, growing at an annual rate of 51 percent, the highest in the world. This paper provides some background, some current facts, and some interpretation of the impact of e-commerce in the agribusiness sector of India.

Keywords: E-commerce, Agriculture, Agribusiness, Internet, Value chain

I. INTRODUCTION

E-commerce refers to the use of the Internet to market, buy and sell goods and services, exchange information, and create and maintain web-based relationships between participants Entities (Fruhling and Digman, 2000).



The E-Commerce industry is India's most exciting and fastest-growing channel for commercial industries. E-Commerce stands for electronic commerce and provides to exchange of products, services, and information via the internet. It includes the whole online process of developing, marketing selling, delivering, serving, and paying for products and services. The E-commerce market is expected to reach US\$ 200 billion by 2027 from US\$ 38.5 billion in 2017, growing at an annual rate of 51 percent, the highest in the world. India's e-commerce market has the potential to grow up more than four folds to US\$ 150 billion by 2022 supported by increasing incomes and flow in internet users. The current digital revolution in the country is expected to increase India's total internet user base to 829 million by 2021 from 354 million as of December 2015. E-commerce sales accounted for 11.9% of all retail sales worldwide in 2018, a figure projected to reach 17.5% in 2021. Growing Smartphone adoption is having a significant impact on the e-commerce of India. This evolution is underpinned by a number of factors. These include shifting consumer preferences, increasing internet adoption, and ever-improving delivery options. For buyers, e-commerce offers a more suitable way to purchase goods and services, while also providing more choice and better deals. E-commerce is held to have the potential to increase cost-effectiveness in agricultural markets by increasing sales and decreasing search inventory and transaction costs.

II. REVIEW OF LITERATURE

- 1) Sivanappan (2000) in his study stated that with modernization of existing post-harvest processing, establishment of suitable infrastructural facilities, huge amount of countries exchequer can be saved and further helps in feeding the teeming population in the country.
- 2) Pare (2003) the importance and role of electronic commerce may be particularly evident in international markets because the Internet is a global medium and

reduces the barriers of distance. However, the benefits of the electronic international trade may relate primarily to the companies from developed countries, as companies from developing countries barely overcome barriers and transaction costs associated with entering the markets, and electronic commerce only helps them to reduce search costs, which is insufficient to sell goods abroad.

- 3) Reardon et al. (2003) in their study documented that private firms now play a dominant role in countries such as China, India, South Africa in developing of improved seed varieties producing and distributing inputs, post-harvest operations and retailing through super markets.
- 4) Brithal et al. (2007) in their study suggested that by building efficient and effective supply chain using state of the art techniques it is possible to serve the population with value added food, while simultaneously ensuring remunerative prices to farmers.
- 5) Tripathi and Prasad (2009) in their paper reported that Indian agriculture has progressed not only in out-put and yield terms but the structural changes have also contributed.
- 6) Pathak (2009) in his research paper stated that the contribution of agriculture in growth of a nation is constituted by the growth of the products within the sector itself as well as the agricultural development permits the other sectors to develop by the goods produced in the domestic and international market.
- 7) Kohls and Downey (1972) Marketing is the performance of all business activities involved in the flow of goods and services, from the point of initial agricultural production until they are in the hands of the ultimate consumer.

III. E-COMMERCE IN AGRIBUSINESS

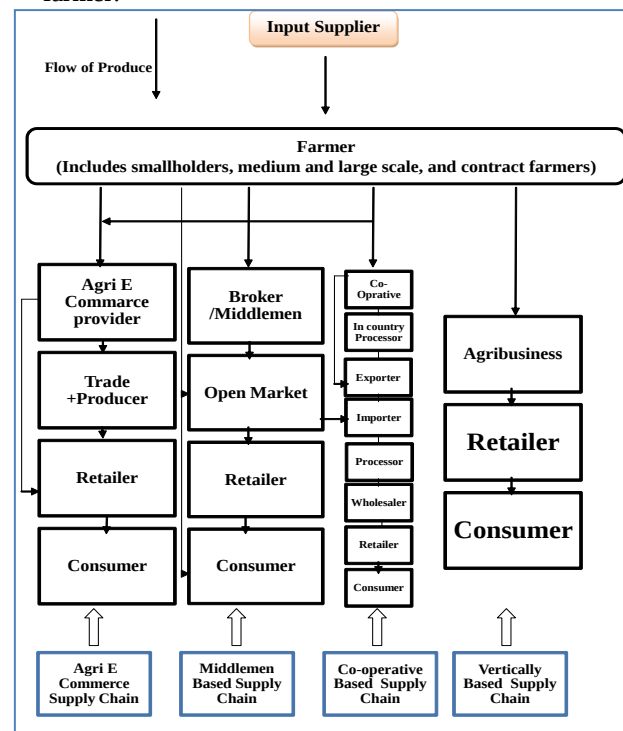
E-commerce has had a significant impact on every industry, from consumer electronics and apparel to entertainment and personal care industry. E-commerce in Agribusiness is an emerging opportunity in developing regions. Agribusiness includes the agricultural input, production and the processing manufacturing sector, providers of farm inputs, processors of farm outputs, manufacturers of food products, and those who transport, sell, and/or prepare food products and E-Agribusiness is simply an e-Business that has a focus on agricultural goods or services with application of information technology. The internet has empowered greater visibility into the worldwide supply chain, as buyers and sellers are much closer and more easily associated. Today, most customer journeys in the purchase of products in these segments begin online through search engines, online reviews digital advertisements and social media recommendations. In recent years, a number of e-agribusiness services have been launched across countries. These services provide farmers with new methods of selling their produce and reaching new buyers. There is limited study on the section of agriculture produce sales through these online services, relative to traditional distribution channels. However, insights on the actions of these services, including the number of buyers and sellers and transaction values and volumes, indicate strong growth and potential for the services to scale in the future. Interestingly, during the lockdown in India, there has been

extensive digital platform and mobile-based applications to ensure procurement, logistics and marketing of crops is seamless. The government platforms, such as e-NAM and KISAN RATH have enabled farmers to conduct operations, albeit at lower capacity, during the pandemic induced lockdown. The technological advantage of these platforms collective with an easy user-interface, wide-spread applicability and low cost will push these platforms in the long term. Examples include the following:

A. e-NAM:

National Agriculture Market is envisaged as a pan-India electronic trading portal, to be managed centrally by a lead implementing agency i.e. Small Farmers' Agribusiness Consortium (SFAC), which will network 585 selected markets in a span of three years (2015-16 to 2017-18) to create a unified national market for agricultural commodities. e-NAM is a "virtual" market but it has a physical market at the back end. e-NAM is designed and implemented to benefit all the stakeholders - Farmers, Mandis, Traders, Buyers, Processors, and Exporters. The benefits to stakeholders include:

- Transparent online trading with greater accessibility to the market
- Real-time price discovery for better & stable price realization for producers
- Reduced transaction cost for buyers
- Availability of information on the e-Nam mobile app about commodity prices.
- The details of the price of the commodity sold along with quantity are received through SMS
- Quality certification
- More efficient supply chain & warehouse based sales
- Online payment directly to the bank accounts of the farmer.



Farmers grow their products for domestic and commercial purposes. Commercially the farmers sell their products in four ways; to retailers, to dealers, to open markets, and to the consumers. Similarly, in the product purchasing model farmers or producers purchase their required goods in three ways; from retailers who purchase from the open market, from retailers who purchase from the dealer and the farmer purchases from direct markets. As many parties are involved in the selling or purchasing of goods, there may increase in the expenses because the Middlemen (brokers) also take their marks upon each sale and purchase. In recent years, e- Agribusiness can streamline farmers' access to buyers, creating new links between stages of the value chain. e- Agribusiness can also help farmers overcome problems with conveyance and post-harvest wastage through storing produce arranging delivery and generating demand through sales and marketing. As an outcome, e- Agribusiness has the potential to increase value chain effectiveness and transparency, increase farmers' incomes and improve productivity levels over time.

IV. E-AGRIBUSINESS PROMOTING FACTORS IN INDIA:

The size of the e- agribusiness opportunity in a given market depends on a number of supporting factors, which can have a significant impact on the sustainability and scalability of an e- agribusiness sector.

A. Mobile Internet Penetration:

As per the Statista 2020 report, India's digital journey is one of exuberance. The country had the world's second-largest internet population at over 483 million users in 2018. Of these, 390 million users accessed the internet via their mobile phones. Estimates suggest that this figure would reach over 500 million by 2023. Mobile internet has been such a positive development in the country's digital progress, that in 2019, over 73 percent of India's total web traffic coming from mobile phones. Two main factors point to the sudden spike in mobile internet penetration in the south Asian country. Firstly, the increased availability of cheap smart phones since 2010 had created a productive ground for digital adoption and literacy. Along with this, the government of India understood the vitality of investments in its telecommunications sector and further opened the market with new telecom spectrum licenses. Approximately 293 million active internet users reside in urban India, while there are 200 million active users in rural India, 97 % of users use the mobile phone as one of the devices to access the internet.

B. Logistics Networks:

Logistics is a crucial factor for buying or selling any physical product online. This includes national infrastructure, such as roads, as well as transport services for first- and last-mile delivery. Markets with a developed logistics infrastructure and addressing system are better appropriate to e-commerce and, by extension, e-agribusiness. While e-agribusiness can own their logistics infrastructure, this can be capital intensive and could have significant implications for the business model. Infrastructure will play a key role in e-agribusiness. Good infrastructure is expected to improve operational efficiency, reduce transit times, control costs and result in better utilization of assets.

C. Online Payments:

E-commerce services in common are facilitated by digital payment solutions. As part of encouraging "Faceless, Paperless, and Cashless" transactions and converting India into a less-cash society, various modes of digital payments are available. Digital payments accelerate the transaction process and avoid the difficulties associated with cash on delivery, such as fraud, delays to the transaction fulfilment, and the time and cost of paying the suppliers. India is projected to see the fastest growth in digital payments transaction value between 2019 and 2023, with a CAGR of 20.2 %, ahead of China and the United States,"

D. Agricultural Willingness:

To succeed, e-agribusiness providers require the agricultural sector to be prepared for e-commerce. This means that agricultural workforces have access to mobile devices, to receive notifications of orders and perform key tasks, such as uploading details of produce for sale. It is also for farmers to have some experience with formal value chains, know quality standards, and have comparatively high productivity so that they have adequate produce to sell through the online channel.

E. Income Structure:

The development of a social group with a higher amount of disposable income leads to changing food habits and lifestyle patterns as well as demographic growth, which e-agribusiness can meet through direct-to-consumer services.

F. E-commerce Familiarity:

Buyers that have used any e-commerce services previously are likely to be more open to emerging e-commerce services geared towards the agribusiness sector. Experience of using services also increases consumer trust and appreciation of the benefits of online shopping, such as convenience and choice.

G. Urbanization:

The process of Urbanisation is taking place at a faster rate in India. The population residing in urban areas in India, according to the 1901 survey, was 11.4%. This count increased to 28.53% according to the 2001 census, and crossing 30% as per the 2011 census, standing at 31.16%. In 2017, the statistics increased to 34%, according to The World Bank. According to a survey by the UN State of the World Population report in 2007, by 2030, 40.76% of the country's population is expected to reside in urban areas.

V. BENEFITS OF E-AGRIBUSINESS:

E-agribusiness offerings a range of economic welfares to farmers, communities and the wider society, in the form of improved income and livelihood.

- 1) Supply chain effectiveness: Electronic platforms provide greater transparency and visibility of market prices to farmers, resulting in fairer prices compared to those offered by a typical middleman. This is often achieved by removing intermediaries in the value chain as well as improving the efficiency of the supply chain and boost farmers' incomes.
- 2) Global Marketplace: e-Agribusiness provides a virtually global distribution marketplace. Internet is used by

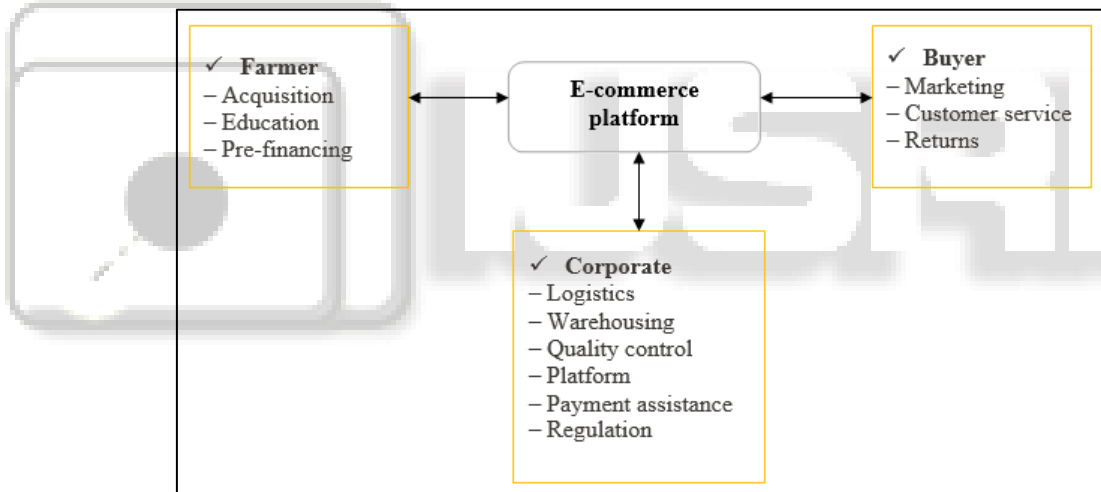
millions of people throughout the globe and therefore, conducting business through this new system is endless unlimited and.

- 3) **Reduce wastage:** According to the FAO, a third of food produced for human consumption is wasted. e-Agribusiness platform reduces post-harvest wastage through improving market efficiency. Online platforms provide farmers with alternatives; farmers no longer have to choose between accepting low prices offered by middlemen, or searching for a last-minute buyer and increasing the risk of post-harvest losses. e-Agribusiness services also allow farmers to sell directly to buyers. This shortens the time it takes for the product to reach the customer, leading to a lower risk of post-harvest wastage as well as fresher and more nutritious produce.
- 4) **Increase productivity:** Some of the economic benefits of e-Agribusiness to farmers, such as improved incomes, reduced wastage, and access to financial services, can serve as an incentive for farmers to increase their on-farm investments and productivity. Also, buyers have more choice online and, in certain cases, can trace the origin of specific supplies, further encouraging farmers to enhance the quality of products to maintain their quality ranking and access to the market.

E-commerce influences positively the productivity of agricultural business. Labour productivity of agricultural business is understood as the result of the resources that are applied. Therefore, increasing productivity is about maximizing what is achieved sell/provide maintaining the same resources. One of the reasons for companies adopt e-commerce is to generate short-term productivity gains (Karakaya & Shea, 2008).

- 5) **Financial inclusion:** Through digital payment and other digital solutions e-Agribusiness platforms, farmers can build a digital history of their business transactions which, in turn, could allow them to demonstrate their creditworthiness to financial institutions and other economic service providers.
- 6) **Minimize Inventory & transaction Costs:** e-Agribusiness helps to minimize inventory costs many times by adopting just-in-time systems. It also improves the firm's ability to forecast the demand of an industry more accurately. In e-commerce, however, all information, money, and sometimes even the produce too, are transformed into binary digits or bits, which can be sent through the Internet over long distances at the speed of light and zero marginal cost.

A. E-Agribusiness Operational Functions:



Source: GSMA Intelligence

VI. SCOPE OF E-AGRIBUSINESS:

- 1) The scope for productivity gains in agribusinesses through e-commerce is centered on reducing the costs of inputs, transportation, and middlemen to sell farm products.
- 2) There is also scope for improved productivity in selling agricultural product.
- 3) Farmers get up-to-date information about the market and can sell their produce through the online medium.
- 4) Businesses have larger scope to promote and sell their products into a global market at lower cost. The domestic market also becomes more accessible to foreign businesses. Especially in horticulture and value added products. Grapes, mango and spices etc. has large demand in domestic and global market.

- 5) The value added chain becomes a value added business network, with feedback loops that improve the value of the product to the customer.

VII. RISKS AND BARRIERS OF E-AGRIBUSINESS

- Digital illiteracy and unawareness about e-commerce: It may be necessary for e-Agribusiness to educate farmers on the use of their service. In India digital literacy is often low and farmers lack experience of e-commerce services.
- ☐ Insufficient agricultural infrastructure/logistic and support facilities: A lack of logistics infrastructure increases costs for e-Agribusiness and prevents the expansion of services into new regions.
- Perishable in nature: Fresh fruit and vegetables can only be stored for a limited time before it deteriorates in quality. As a result, e-Agribusiness must be able to balance demand and supply on their platforms.

- Customer preferences: Farm produce is different from other product categories such as household items or electrical, which are consistent in physical appearance. Fresh fruit and vegetables differ in quality and size, color, depending on factors such as batch, age, and transportation method. Because it is not always possible to examine these differences when shopping online, some buyers are unwilling to switch to e-Agribusiness services.
- Dependence on middlemen in the supply chain of agriculture: Farmers depend on Middlemen for support beyond selling their farm produce.
- Cash on delivery payments: e-Agribusiness can accept cash on delivery, but this adds operating costs, as it requires manual cash management, which is typically more expensive than the merchant concession rate associated with online payments. In some instances, cash-on-delivery also allows buyers to return products without making any payment, increasing the losses for e-Agribusiness

A. Some example of E-agribusiness Platforms in India

- 1) e-National Agriculture Market
- 2) DestaMart and DestaTalk
- 3) e-Chaupal
- 4) AGMARKET
- 5) "I Say Organic" (ISO)
- 6) Agro star
- 7) Bigbasket.com etc.

VIII. CONCLUSION

E-agribusiness presents significant opportunities for the agricultural sector and, by extension, the wider society and local economies in developing markets. It has the potential to generate significant social and economic benefits, from improving the efficiency of supply chain, livelihoods of farmers and increasing productivity to reducing wastage and driving digital and financial inclusion in rural areas. The majority of e-agribusiness sells domestically, but e-agribusiness also empowers farmers to reach international buyers.

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