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STRATEGIC SUPPLY CHAIN INNOVATION IN URBAN AGRICULTURE INSIGHT FROM EXOTIC FRUITS AND VEGETABLE SECTOR

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ABSTRACT
This study evaluates supply chain efficiency, sustainability practices, technological integration, and rejection and redistribution procedure. The main goals were to assess supply chain management, sustainability, technology, and firm waste management strategy. A quantitative approach was adopted, randomly stratifying 100 stakeholders consumers, suppliers, farm operators, distribution partners, etc.,using structured questionnaires, with descriptive statistics applied to assess key area performance. This research identify purposively selected agribusiness enterprise committed to supply chain performance and has moderate to high efficacy in timely delivery management, real-time monitoring tools, and order processing IT platforms. Sustainability is improved through biodegradable packaging and local and seasonal sourcing. Integration of technologies innovation, including transparency mechanisms and smart packaging, is significant, but blockchain adoption still not widely adopted in practice. Effective rejection and redistribution processes reduce waste, divert surplus to productive channels, and directly support the company's zero-waste objectives. Selected agribusiness enterprise demonstrates that supply chain excellence and environmental responsibility are mutually reinforcing: its biodegradable packaging, in-house waste management systems, and selective use of emerging technologies collectively enhance
operational performance. By incorporating sustainability at every stage of its supply chain, Selected Enterprise is establishing a valid model for responsible agritech business, one that balances efficiency, food safety, and long-term environmental efficiency.
Keywords: Supply Chain Efficiency, Sustainability Practices, Technological Integration, Biodegradable Packaging, Real-Time Monitoring
JEL Codes-Q01,Q56,O33,L91,L86,M11

INTRODUCTION

Food and Agriculture Organization (FAO, 2022) , about one-third of the food that is produced is either lost or wasted because there are considerable losses at various stages of the supply chain due to inefficiencies in storage, transport, and distribution systems. In India, it is estimated that there are losses of 15% to 25% in terms of fruits and vegetable post-harvest losses, as indicated by Indian Council of Agricultural Research (ICAR, 2021). This situation calls for the development of highly innovative and efficient supply chains for these products.Innovative supply chain strategies are being employed in urban agriculture ventures involved in handling exotic fruits and vegetables. In cities like Gurugram and Delhi there are companies that deal with fruits and vegetables. These companies use technology to do their job and make customers happy. (Kumar & Singh, 2020; Sarkar et al., 2022).

Nowadays people are also thinking about the environment. Companies are trying to use packing buy fruits and vegetables from local farmers and reduce waste. This is good for the earth. Can also save companies money. The Food and Agriculture Organization (FAO, 2022. Sharma et al., 2021).

The thing is, not all companies benefit from these ideas in the same way. We do not know much about how these strategies affect the supply chain and how much money companies make. Firms that handle fruits and vegetables like the ones, in Gurgaon and Delhi need to think about sustainability and how to make their supply chain work better.Also, comparative information on other similar firms has not been adequately explored (Rao & Mishra, 2019; Gupta et al., 2023). In this regard, this research paper will investigate the use of strategic supply chain innovations for enhancing performance and sustainability outcomes of an urban agricultural firm, relative to other competing firms within the same industry.

The movement of commodities and information between businesses that source raw materials, develop them into finished products, and distribute them to end users is the main emphasis of supply chains. Farmers are the first in the supply chain for fresh agricultural products, as they sell their produce to primary processors. After that, the produce is prepared by the processors before being packaged and sent to wholesalers. Information-driven supply chains assist companies in cutting expenses, improving the value of their goods, making the most use of their resources, speeding up time to market, and pleasing customers (Richey et al., 2022). How effectively activities throughout a supply chain coordinate to generate value for customers while boosting the profitability of each link serves as a barometer for the network's success. Supply chain activities encompass a connected process of providing value to final customers. The performance of a supply chain is always determined by how effectively it aligns all processes involved to create value for customers while maintaining the profitability of each individual link in the chain. In India, the industry is increasingly feeling the pinch of inconsistent rainfall, increased demand for food products, large productivity gaps with neighboring countries, and the need to manage food prices and limit imports (Yusuf & Soediantono, 2022). Within such an environment, agritech companies are increasingly compelled to develop supply chains that not only have high efficiency but are also advanced in technology and sustainability.Fresh product supply is crucial for in-store enterprises like supermarkets and convenience stores. When selecting their principal retailers, consumers give priority to fruits and vegetables of superior quality. Concerns over the sustainability of agricultural products in the future have been raised by recent trends, nevertheless. The need for India to reevaluate its approach has been brought to light by fluctuating rainfall patterns, rising food consumption, notable productivity disparities in farming when compared to neighboring nations, and the requirement to control food prices and import dependence to fulfill demand (Yusuf & Soediantono 2022).

Odimarha et al. (2024**)** analyzed the large number of dangers that contemporary stockpile networks should fight with, from cyberthreats and disturbances in worldwide exchange examples to cataclysmic events and international strains. It investigates how continuous perceivability, information driven bits of knowledge, and proactive alleviation estimates presented by innovative progressions like blockchain, Internet of Things (IoT), artificial intelligence (AI), and prescient examination are changing customary gamble the executive's procedures. The paper researches the progressive capability of these innovations in further developing store network versatility, deftness, and rection to unanticipated aggravations
through an exhaustive examination. It stresses the upsides of involving IoT sensors for constant checking of products on the way, blockchain innovation for protected and straightforward store network exchanges, computer based intelligence calculations for prescient gamble displaying, and prescient investigation for spotting and deflecting potential interruptions before they go crazy. The concentrate likewise investigates the troubles and difficulties engaged with carrying out and incorporating new innovations into current production network methodology, like the necessity for specific information, interoperability issues, and information security issues. The review means to empower strategies experts, policymakers, and industry partners to completely use innovation driven answers for overseeing store network gambles and guaranteeing business progression in an unpredictable and progressively unsure worldwide climate. This will be accomplished by offering useful experiences, contextual investigations, and best practices.Supply chain integration (SCI) and intellectual capital (IC) capability as intervening elements among SHRM and OI. This study explains the significant communication that drives the progress of OI among SHRM, IC, and SCI. The outcomes feature that handling OI with an intensive and incorporated system that considers the two assets and dynamic capabilities is so essential.(Melody et al. 2024) The asset based view and the powerful capacity viewpoint was incorporated, and a study test of 136 Chinese assembling organizations was utilized to assess the speculations utilizing the progressive relapse and bootstrap techniques. The discoveries show that SHRM emphatically influences OI and that IC and SCI capability as a few levels of middle people in the connection among SHRM and OI. Besides, there has been extra confirmation of the "SHRM-IC-SCI-OI" chain intercession impact.Sustainable Supply Chain Management (SSCM) in the assembling business, a field that is turning out to be increasingly more significant in light of ethical constraints and monetary prizes. With an emphasis on SSCM's importance to assembling, the review evaluated papers that were gotten from Scopus, Web of Science, and PubMed while keeping up with rigid qualification prerequisites. Subsequent to directing an intensive hunt and screening, we found 381 exploration, of which 46 were picked for an exhaustive examination of innovative progressions and helpful strategies. As indicated by starter research, there is a decent connection between's SSCM reconciliation and cost-viability, ecological supportability, and functional productivity. (Ahmed et al. 2024).Despite conceivable imperatives, for example, systemic heterogeneity among examinations and distribution predisposition, the outcomes highlight the meaning of innovation and collaboration in driving. SSCM. These discoveries recommend that more exploration is expected to comprehend the drawn out effects and flexibility of SSCM in different assembling settings completely.

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SC development interceded the connection between its dynamic limits and DSC. Utilizing information from Chinese assembling organizations, the review model and speculations were inspected utilizing the factual bundles SPSS 25.0 and AMOS 24.0 (Statistical Package of Social Sciences). The review shows that SC development and SC dynamic abilities are essentially improved by DSC. The powerful abilities of SC are fundamentally improved by SC advancement. Moreover, the review directed by the creators shows that the connection among DSC and SC dynamic abilities is generally interceded by SC advancement.(Li et al. 2024)

Yang et al. (2024), a urgent calculate driving SC development is SC transformational leadership, which is a hierarchical framework inside the SC. The effect of SC transformational leadership on SC development can be made sense of by the upside of SC coordinated effort, which is a vital part of the between hierarchical framework. Moreover, we examine the limit condition that advances the adequacy of SC transformational leadership and SC collaboration, featuring the critical capability of pioneering center. The study utilized underlying condition demonstrating and collaboration examination in light of overview information from 288 Chinese apparatus producing organizations to confirm our speculations. The review's discoveries add to the assemblage of information, offer valuable guidance for organizations' SC advancement the executives systems, and exactly approve our perspectives.

Chen and Su (2023) discussed the development and utilization of store network the executives in organizations. To begin with, the activity construction and the executives content of the undertaking's production network are recognized, and the advancement and improvement qualities of the Business 4.0 setting are inspected. Second, production network the board information is accumulated to recognize production network the executives mode issues. Thirdly, the idea of electronic inventory network the executives is introduced, carrying state of the art innovation to the board and making persevering through associations with providers At the point when this administration model is at last put to use in real administration undertakings, it is found that the endeavor the board execution complete marker has worked on by generally 0.25; this demonstrates that the administration model has a positive application impact.

Yang et al. (2023) researched the interaction by which inventory network learning, as a company's procedure, further develops production network development execution. To test our speculation, The study made a primary condition model utilizing the poll study information from 303 Chinese organizations that produce hardware. As per the discoveries, incorporating a production network learning approach assists supply with tying accomplices fabricate their social capital and make dynamic store network capacities, which upgrades store network development execution. Also, this study will offer exact help and hypothetical progressions for production network advancement the board.

From the analysis of the previous research, the current research is set to determine the efficiency of the supply chain practices in the management of deliveries in an urban agricultural enterprise, especially considering the significance of real-time monitoring systems and IT-driven platforms in ensuring effective order management. It is essential to explore how sustainable supply chains can be developed in terms of the application of biodegradable packing, local and seasonal sourcing, and waste reduction. Furthermore, in the objective to gain more managerial insights, this research seeks to conduct a comparison of the supply chain practices and innovations of the company with other similar companies such as Otipy.

Previous literature on the topic of agricultural supply chain management has mostly focused on traditional agricultural systems and staple products, neglecting any discussions of modern urban agriculture firms specializing in exotic produce (Sharma et al., 2019; Rao, 2021). Recent academic works have begun recognizing the role that digitalization and sustainability play but fail to include empirical evidence from firm-level practices (Kamble et al., 2020; Singh & Trivedi, 2022).More specifically, there has not been enough research on the influence of real-time tracking technologies and IT-based order management systems on supply chain efficiency,the impact of sustainable innovations such as biodegradable packaging materials, local procurement, and reduced wastage on firm financial performance, and comparative assessment of various urban agriculture platforms to find best practices in the industry (Gupta et al., 2023; FAO, 2022).Moreover, the discussion of innovation and sustainability remains disconnected from one another. The absence of comparative and empirical research poses a considerable gap in the literature regarding ways of strategic optimization of supply chains for urban agriculture enterprises (Sarkar et al., 2022; Kamble et al., 2020).

Thus, the present research attempts to address a multifaceted research gap by providing empirical, comparative, and contextual insights along with incorporating the technological and sustainable aspects in one coherent strategic approach.

Selected agribusiness Private Limited was chosen for this study due to its nature of being a growing business that has been set up at the Atal Incubation Centre, Ambedkar University, Delhi, and deals with the field of urban agriculture in exotic fruits and vegetables. The connection between the researcher and the university enabled access to pertinent company data. Established in 2023, the firm is a proper subject for analysis.

DATA BASE AND METHODOLOGY

The study applied a descriptive research methodology to understand in detail Selected agribusiness enterprise's supply chain management techniques. This was done in view of getting a full understanding of the procedures and how well they work to reduce wastages.

The sample population for this research therefore includes a varied group of stakeholders either actively working or passively affected by activities of the supply chain function within the organization of purposively selected agribusiness enterprise. The sample should be able to provide an in-depth representation of all the variety of activity dimensions inside the company in running their supply chain. The participants represent broadly five categories: suppliers, farm operators, distributors, consumers, and other stakeholders or mentioned below:

Table 1: Target Sample population

Category of Population	% of Population
Consumers	30%
Suppliers	20%
Farm Operators	10%
Distribution Partners	15%
Other Stakeholders	25%

Source: Author's own work

In light of this, the study made use of a sample size of 100 respondents in order to examine in-depth the supply chain effectiveness, sustainability policies, technological integration, and rejection and redistribution processes of Selected Enterprise.To ensure every stakeholder group connected to purposively selected agribusiness enterprise is fully represented in this study, a stratified random sampling technique will be used. This method was selected in order to gather perspectives from various supply chain segments and associated activities.Surveys were used to get first-hand information. To collect quantifiable data regarding the experiences and satisfaction levels of consumers, suppliers, and other participants in the supply chain, standardized surveys were administered to a sample of these parties..Secondary data were taken from scholarly publications, reports, and records that were already in existence and related to waste reduction and supply chain management.Company internal records, industry reports, and case studies have all been used to identify the company's procedures and performance.

By reading pertinent scholarly articles, journals, and trade publications, the results were contextualized within the larger field of supply chain management and sustainability.

RESULT AND ANALYSIS

It deals with the patterns and connections found in quantitative data that were examined using Excel.Selected agribusiness enterprise is one of the many companies in the agritech industry facing such challenges. This research evaluates several aspects of the supply chain processes at Selected Enterprise with specific emphasis on the efficiency, sustainability, application of technology, and the reject and redistribute process. While employing different approaches, selected agribusiness enterprise and Otipy both seek to minimize waste and improve the sustainability of their supply chains.Otipy use pre-cooling methods such forced air, hydro, and vacuum cooling to maintain the quality of the food and links farmers directly with consumers to cut out intermediaries. Because of the excessive water and energy usage, this may result in higher carbon footprints.Otipy use pre-cooling methods such forced air, hydro, and vacuum cooling to maintain the quality of the food and links farmers directly with consumers to cut out intermediaries. Because of the excessive water and energy usage, this may result in higher carbon footprints.

In contrast, company's sources locally and seasonally whenever possible to reduce their carbon footprint. They also collaborate with fair-trade and organically certified farmers. Reusing the water used for pre-cooling reduces the effect on the environment even further, and precision farming is one of the sustainable practices used. In addition to using biodegradable packaging, selected agribusiness enterprise also makes use of smart packaging technology, such as sensors and QR codes that track the freshness of fruit and cut down on waste. Additionally, they are researching the use of cutting-edge methods like vacuum packaging and MAP, or modified atmosphere packaging, to extend the shelf life of the product. While blockchain is a digital technology that enhances food safety, transparency,

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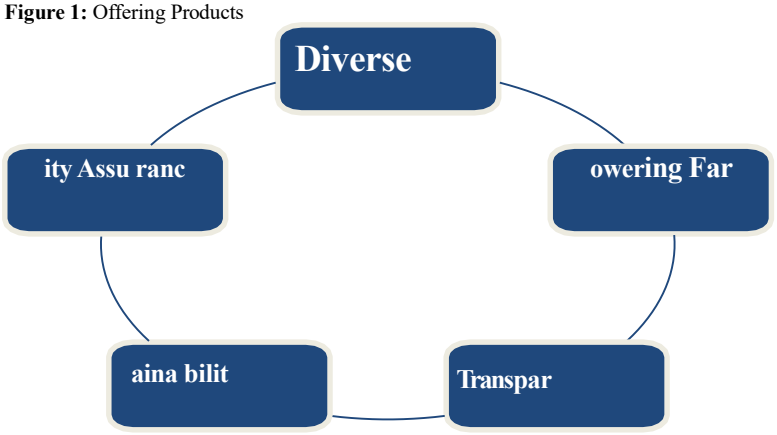
and traceability through digital ledgers, smart contracts, and customer engagement tools, Company has adopted more modern technologies. IoT is being used by company for inventory management, predictive maintenance, and real-time monitoring. When combined, these tactics seek to increase the effectiveness of the supply chain, reduce waste, and promote sustainable practices (Najmaei, 2010).

The business provides a state-of-the-art e-commerce platform designed specifically to meet the demands of the agritech industry. In order to create a smooth and transparent supply chain, the company's network links farmers, food producers, and customers. Additionally, the company offers users specific nutritional need baskets, which are crucial for upholding a healthy lifestyle. The company employs a number of experts who have received training in accordance with WHO requirements. In addition, The Company is developing eco-friendly packaging in order to meet the goal of using zero plastic. There are some things you may anticipate from us going forward (Patel & Sharma, 2023) has been shown in Figure 1:

Figure 1: Offering Products



r's own compilation based on company data

Source- Autho

To provide the best and freshest produce possible with no waste, revolutionizing the exotic fruit and vegetable market Promote an environmentally responsible supply chain that benefits nearby communities and protects the environment for coming generations. Achieve zero waste in our supply chain for exotic fruits and vegetables by utilizing cutting-edge, creative, and sustainable processes and technology. The company is committed to procuring products responsibly, assisting regional and indigenous farmers, and providing our clients with the best fruits possible while having a minimal environmental impact. Innovative businesses in the rapidly evolving agritech sector are redefining traditional agricultural supply chains to build more effective and sustainable solutions. The study looks at how Otipy, an agritech business, has integrated cutting-edge technology and environmentally friendly methods to optimize its supply chain. Additionally, by evaluating the Otipy model, we look at how Selected agribusiness enterprise, another significant participant in this market, has been preparing for the future in the current study. In order to better understand the best supply chain management techniques; this comparative analysis also aims to clarify selected agribusiness enterprise future actionable initiatives for boosting its market impact, sustainability, and operational efficiency.This research is intended to conduct an assessment of the efficiency of the supply chain management methods used by selected agribusiness enterprise in its deliveries with special attention paid to real-time monitoring systems and IT-based order management systems, the influence of its green initiatives like the use of bio-degradable materials, local and seasonal products, and waste reduction on the company's overall performance, and a comparison between its supply chain management approaches and those of its rivals such as Otipy.

Figure 2: Services given by company

Source: Author's own compilation based on company data

The demographic profile of the study is represented by a pool of participants from a variety of backgrounds. It indicates diversified representation of the subject pool in terms of the nature of participation in the following manner:

Table 2: Demographic Profile of Population

Variable	Category	Frequency (n) [100]	Percentage (%)
Age	18-24 years	21	21%
	25-34 years	40	40%
	35-44 years	24	24%
	45+ years	15	15%
Gender	Male	50	50%
	Female	50	50%
Education Level	High School	15	15%
	Some College	20	20%
	Bachelor's Degree	35	35%
	Master's Degree	20	20%
	Doctorate	10	10%
Experience in Industry	Less than 1 year	10	10%
	1-3 years	25	25%
	4-7 years	30	30%
	8-10 years	20	20%
	More than 10 years	15	15%

Source-Author's own work

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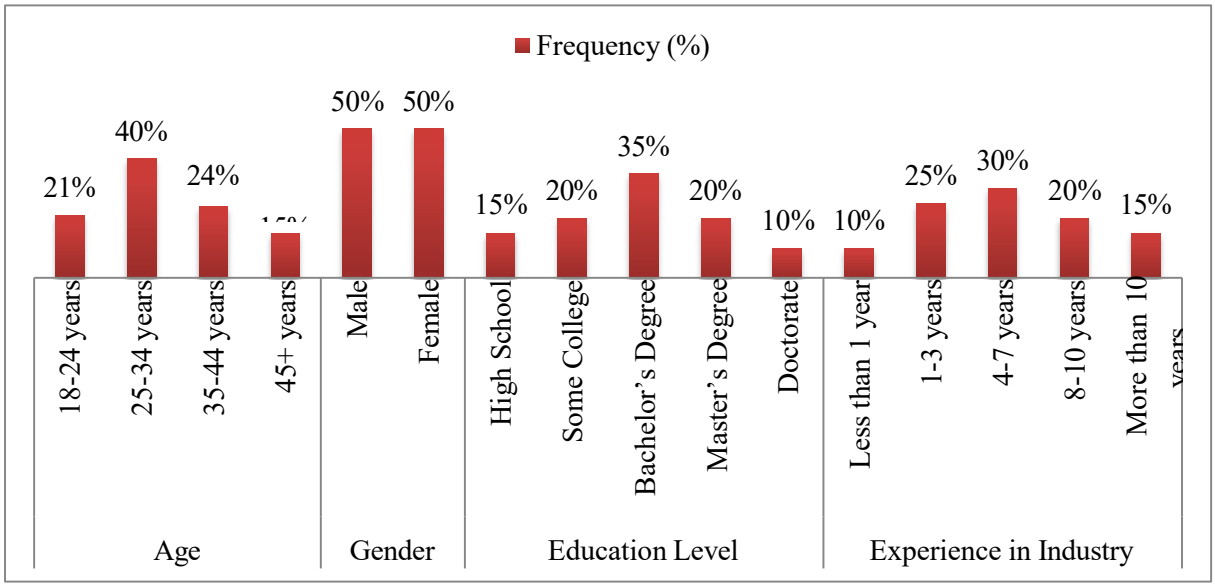
Figure 3: Graphical presentation of Demographic Profile of Population



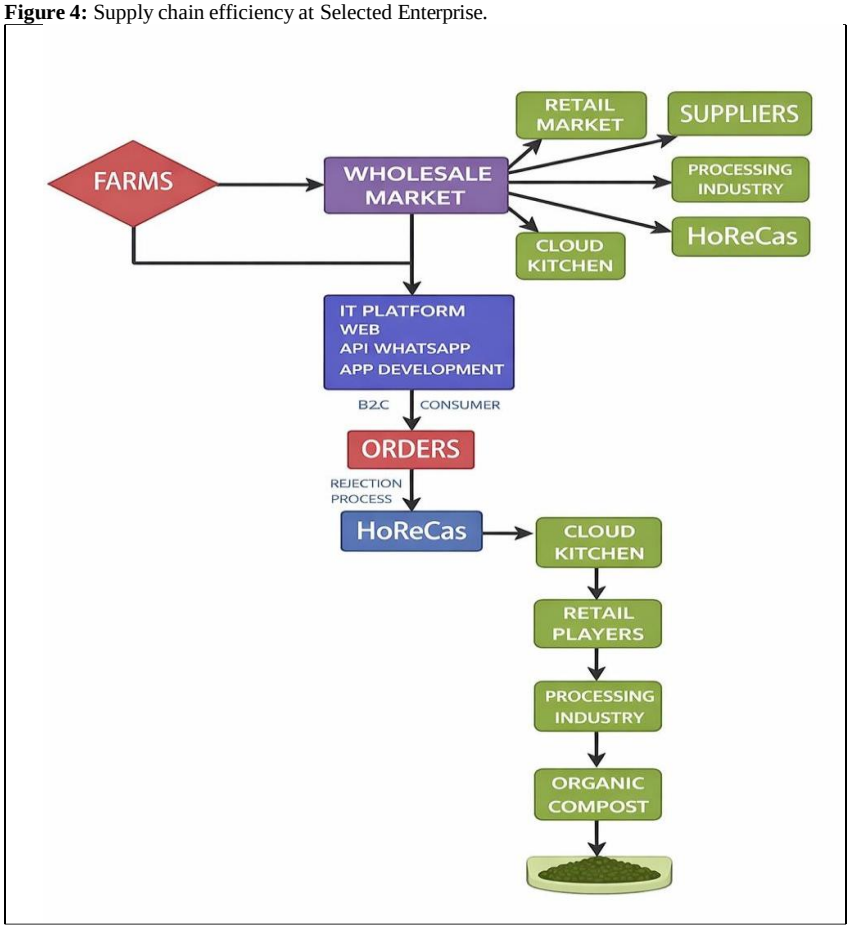
Source-Author's own work

Table 2 presents the Suppliers comprise 20% of the sample, and Consumers make up 30%. Distribution Partners are at 15%, Farm Operators are at 10%, and Other Stakeholders are at 25%. This would guarantee a fair representation of viewpoints from the various supply chain components.

According to age, the sample's largest representation was in the 25–34 age range, which was followed by 24% in the 35–44 age range, 21% in the 18–24 age range, and 15% in the 45+ age range. Additionally, gender representation is very evenly distributed, with 50% of the population being male and the other 50% being female. In terms of education, the majority

held a bachelor's degree (35%), which was followed by a doctorate (10%), some college education (20%), a master's degree (20%), and high school education (15%). According to industrial experience, the remaining respondents are virtually evenly split between those with 1-3, 8-10, less than 1 year, and more than 10 years, with 25%, 20%, 10%, and 15% of each group, respectively. Lastly, roughly a third of the respondents had 4–7 years of experience. A distribution like this suggests that there is strong representation across experience levels and educational backgrounds.

Figure 4: Supply chain efficiency at Selected Enterprise.



Source- Author's own compilation based on company data

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The supply chain topology adopted by selected agribusiness enterprise to achieve nearly zero waste is depicted in the Figure 4. The chain supply operation commences at the farm level, whereby raw materials are harvested and transported to the wholesale market, which involves multiple distribution channels, such as the retail market, suppliers, processing industries, HoReCa (Hotel, Restaurant, Cafes) channels, and cloud kitchen operators. The IT system facilitates B2C operations by making it possible to place an order via the online portal, APIs, WhatsApp, and apps, with customer orders being captured electronically. Product rejection results in the return of goods back to HoReCa channels, where they are distributed to cloud kitchens and retail operators, with some undergoing additional processing at the processing industry level.For Selected agribusiness enterprise, timely and customer-satisfied product delivery is essential to effective supply chain management. It is possible to illustrate the efficiency by looking at the way the business manages and integrates various supply chain stages. On time delivery is essential to preserving product quality, preventing losses, and guaranteeing client satisfaction. As a result, the practice at Selected Enterprise is meticulously organizing and planning for prompt delivery. Real-time monitoring tools play a great deal in providing real- time visibility into the supply chain and also allow immediate actions concerning any possible deviations. These tools track the movements of products and are often beneficial to manage inventory efficiently. The IT order management platform is also part of the supply chain process, arranging smooth order processing and communication in the whole process of stakeholders. The IT platform's precise order tracking and order handling improves the overall efficiency of the supply chain.

Table 3: Enhancing Supply Chain Efficiency at Selected Agribusiness Enterprise

	Low	Moderate	High
Timely Delivery Management	40%	35%	25%
Effectiveness of Real-Time Monitoring Tools	45%	40%	5%
IT Platform for Order Management	30%	32%	38%

Source-Author's own work

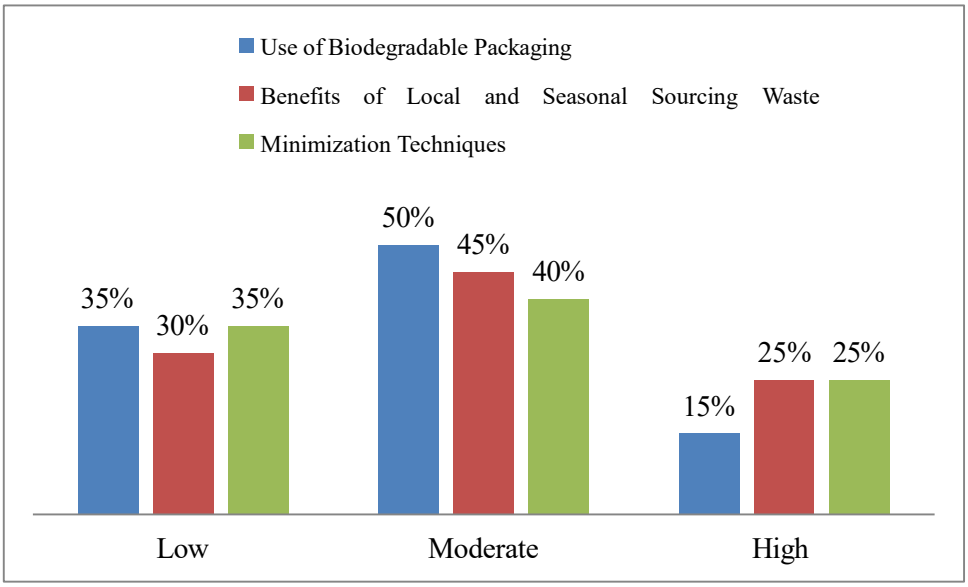
Table 3 shows only 25% of respondents gave timely delivery management a high evaluation; the majority of responses are poor (rates at 40%) and moderate (rates at 35%). This only serves to highlight the enormous gaps that need to be filled if selected agribusiness enterpriseis to regularly satisfy consumer expectations that are commensurate with the quality of its products, despite the company's best efforts to ensure timely deliveries. The majority gave real-time monitoring tools a bad rating of 45%, while a moderate grade of 40% was assigned. With only a very small fraction (5%) rating it highly, this may suggest that even while real- time monitoring technologies are being used, they are not sophisticated or effective enough to significantly alter supply chain visibility and responsiveness. IT platform for order management: 30% low, 32% moderate, and 38% high. This would indicate that although the IT platform is regarded as a crucial link in the supply chain, there are differences in its efficacy, even if a sizable percentage of respondents said it was an excellent tool for communication and order processing.One of the companies that speaks out the loudest about using sustainable methods in its operations is Selected Enterprise. Biodegradable Packaging Usage This demonstrates a significant concern for the environment because it leads to the use of packing materials that break down naturally, minimizing waste. This reduces ecological footprints and fits in nicely with the overarching environmental objectives (Khan et al., 2022). Minimize carbon emissions from transportation since it forces local material sourcing; use the advantages of local and seasonal sourcing to strengthen the local economy. Selected agribusiness enterprise makes sustainable purchases while ensuring fresher items by buying locally and in season. Additionally, it has implemented waste management strategies that lower waste production throughout its supply chain. This is accomplished by using methods like inventory management and production process optimization, which increase productivity while lowering the total amount of waste produced.

Table 4: Sustainability Initiatives at Selected Enterprise

	Low	Moderate	High
Use of Biodegradable Packaging	35%	50%	15%
Benefits of Local and Seasonal Sourcing	30%	45%	25%
Waste Minimization Techniques	35%	40%	25%

Source-Author's own work

Figure 5: Graphical Presentation of Sustainability Initiatives at Selected Enterprise



Source-Author's own work

In terms of biodegradable packaging, 50% of respondents rate it as medium, 35% as low, and 15% as high. Table 4 indicates that even though selected agribusiness enterprise has made progress in employing biodegradable materials, there is still considerable work to be done in order to fully integrate them into packaging procedures and increase the rate of acceptance. Advantages of Seasonal and Local Sourcing: A distribution of responses was found, with 25% rated as high, 45% as moderate, and 30% as low. This suggests that although seasonal and local procurement is thought to be one of the most successful approaches to sustainability, it may not be utilized consistently or thought to be highly effective in allsupply chain operations. Regarding waste minimization techniques, it has a rating of 25% high, 40% moderate, and 35% low. It so demonstrates that, despite selected agribusiness enterprises emphasis on waste conservation, efficiency varies. This suggests that, despite their best efforts, the organization has not been able to implement the best practices for cutting wastes throughout the supply chain.

One of the pillars of selected agribusiness enterprise's strategy is the integration of technology to improve supply chain operations. Advanced Technologies for Transparency enable the business to see and understand its supply chain activities in real time (Al- Rawashdeh et al., 2023). Technologies like IoT and data analytics contribute to increased operational efficiency and transparency. An unchangeable and safe record of all transactions and product movements is provided by blockchain technology for food safety and traceability. Food safety is increased, fraud is prevented, and supply chain traceability is encouraged by this

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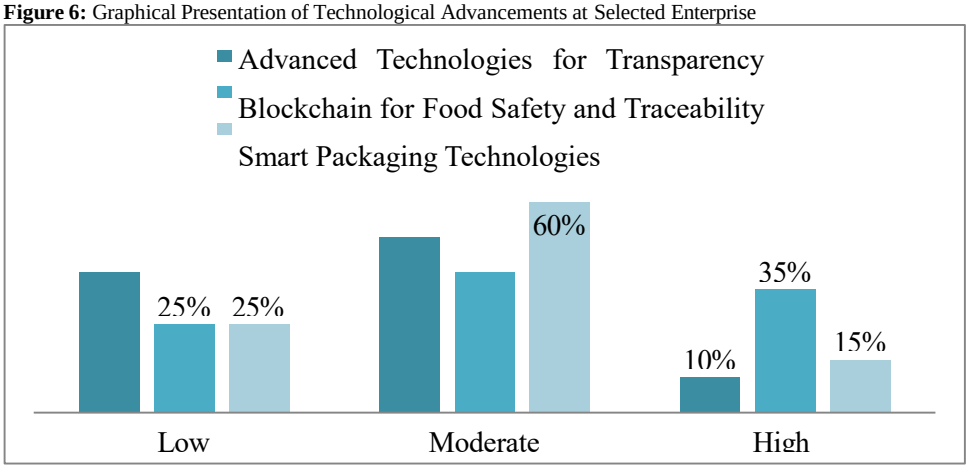
technology. Moreover, features like sensors and QR codes can be added with smart packaging technology used in product management. All of these technologies contribute to maintaining product quality and tracking its freshness, which increases the supply chain's overall efficacy.

Table 5: Technological Advancements at Selected Enterprise

	Low	Moderate	High
Advanced Technologies for Transparency	40%	50%	10%
Blockchain for Food Safety and Traceability	25%	40%	35%
Smart Packaging Technologies	25%	60%	15%

Source-Author's own work

Figure 6: Graphical Presentation of Technological Advancements at Selected Enterprise



Source-Author's own work

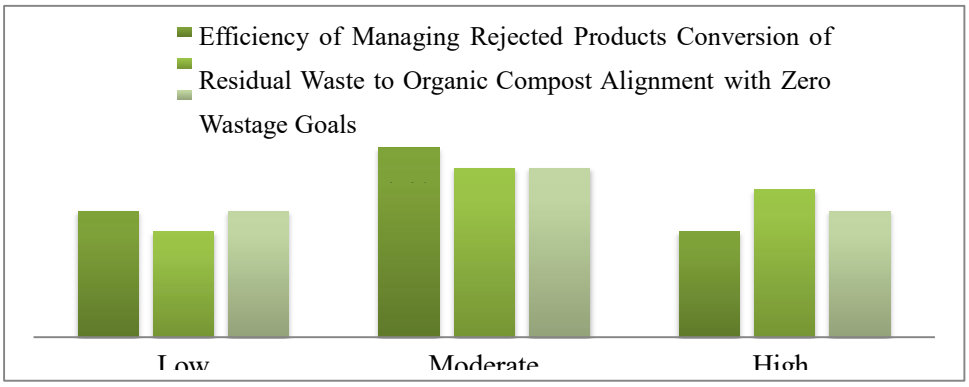
The majority of respondents assess Advanced Technologies for Transparency as moderate (50%) and Low (40%) respectively, with High receiving the lowest percentage (10%) as shown in Table 5. This merely indicates that, even though selected agribusiness enterprise uses cutting-edge technology to promote transparency, more work needs to be done to expand these technologies so that they can improve efficiency and visibility. A quarter of the experts ranked blockchain's potential influence on food safety and traceability as low, while three- quarters rated it as moderate. This further demonstrates that while most people are aware of the enormous advantages blockchain technology offers for food safety and traceability, implementation may still be ongoing or not yet be fully integrated into all sectors. Smart Packaging Technologies received high ratings from 60% of the respondents, low ratings from 25%, and intermediate ratings from 15%. This resounding endorsement of the usage of smart packaging would demonstrate appropriateness in product quality and freshness monitoring, which is considered to be one of the main factors contributing to the efficacy of the supply chain.

Selected agribusiness enterprise's rejection and redistribution procedures include both rejection and redistribution. They are designed to manage returned goods effectively while adhering to the business's waste minimization objectives (Cataldo et al., 2022). Effectively handling returned goods requires clearly defined procedures for identifying and handling goods that don't meet established criteria for quality. For the purpose of minimizing disturbances and guaranteeing that returned goods are properly distributed or disposed of, this efficiency is crucial. One of selected agribusiness enterprise main sustainability initiatives is the conversion of residual trash to organic compost, which reduces the amount of waste that ends up in landfills and turns it into usable compost instead. This supports the development of a circular economy and the achievement of environmental goals. Finally, it is in line with zero waste objectives: Selected agribusiness enterprise is concerned about cutting wastes across all aspects of its operations. A company is more likely to be environmentally friendly and sustainable if its rejection and redistribution procedures are in line with the objective of zero waste.

Table 6: Rejected Product Management and Waste Redistribution

	Low	Moderate	High
Efficiency of Managing Rejected Products	30%	45%	25%
Conversion of Residual Waste to Organic Compost	25%	40%	35%
Alignment with Zero Wastage Goals	30%	40%	30%

Figure 7: Rejected Product Management and Waste Redistribution



Source-Author's own work

Efficiency of Managing Rejected Products is rated as moderate by 45% of respondents, low by 30%, and high by 25% as shown in Table 6. This indicates that although the administration of returned goods is overseen by well-established procedures, there are undoubtedly areas in which sorting and handling of quality-related issues may be done more effectively. Conversion of Residual Waste to Organic Compost is rated highly by 35% of respondents, poorly by 25%, and medium by 40% of respondents. This shows that customers have a very positive attitude toward the organization for turning waste into compost and achieving sustainability goals; yet, there has been variety in the effective perception and process implementation. The replies gave it a low score since it is uniformly distributed to the point of aligning themselves with zero waste goals. This leads to the realization that, although Selected agribusiness enterprise has made a sincere commitment to zero waste, there is still more work to be done, particularly in meeting the same standards across all processes. Additionally, staff opinions regarding

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the company's alignment with the established goals and expectations regarding waste reduction are not all that consistent.

Table 7: Comparison of Supply Chain Management between Selected Agribusiness Enterprise and Otipy

Aspect	Selected Agribusiness Enterprise	Otipy	Comparative Insights
Supply Chain Strategies	Selected agribusiness enterprise focuses on timely delivery management, real-time monitoring, and effective IT platforms for order management.	Otipy emphasizes efficient logistics and supply chain visibility with a strong emphasis on reducing lead times.	Both companies prioritize efficiency, but Selected agribusiness enterprise excels in real-time monitoring and IT integration, whereas Otipy is more focused on logistics efficiency.
Technological Integration	Selected agribusiness enterprise employs advanced technologies such as IoT, blockchain for traceability, and smart packaging to enhance transparency and product management.	Otipy uses technology for demand forecasting and route optimization but is less focused on blockchain and smart packaging.	Selected agribusiness enterprise has a stronger emphasis on emerging technologies for transparency and traceability, while Otipy focuses on logistics and forecasting.
Sustainability Practices	Selected agribusiness enterprise uses biodegradable packaging, supports local and seasonal sourcing, and implements waste minimization techniques.	Otipy also focuses on sustainability but places more emphasis on reducing carbon footprint and energy-efficient practices.	Both companies are committed to sustainability; Selected agribusiness enterprise excels in packaging and waste management, whereas Otipy focuses more on energy efficiency and carbon reduction.
Rejection and Redistribution Processes	Selected agribusiness enterprise has a structured approach to managing rejected products, converting waste to compost, and aligning with zero wastage goals.	Otipy has effective processes for product rejection and redistribution but places less emphasis on composting and zero wastage.	Selected agribusiness enterprise has a comprehensive approach to waste management and zero wastage, while Otipy's approach is effective but less focused on composting.

CONCLUSION

The effectiveness of Selected Enterprise's supply chain, sustainability policies, and technology integration with rejection and redistribution procedures are all comprehensively summarized in this report. The findings suggest that while the organization demonstrated some effectiveness in certain domains, like managing delivery times or providing real-time monitoring tools, there was still room for enhancement in terms of utilizing cutting-edge technologies to promote transparency in food safety. The benefits of local sourcing are not fully realized, even though the use of biodegradable packaging and reduced-waste procedures is very clearly reflected. Improved use of technologies like blockchain and intelligent packaging is necessary to genuinely enhance supply chain operations optimization. While the company's zero waste objectives align well with the rejection and redistribution procedures, there is still opportunity for improvement in the management of product rejection and the conversion of residual trash to increase overall environmental sustainability. This study by Selected Enterprise shows a notable improvement in technologically advanced, sustainable, and effective supply chains. There are still areas that could be incrementally improved to further enhance operational and environmental performances.

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Abbreviation

(SCI) Supply chain integration (IC) Intellectual capital
(SHRM) Society for Human Resource Management
(OI) Organizational Intelligence
(SSCM) Sustainable Supply Chain Management (DSC) Digital Supply Chain
(HoReCa) Hotel, Restaurant, Cafes